

SURVEILLANCE CAPITALISM IN THE CONTEXT OF FUTUROLOGY

**An inquiry to the implications of surveillance
capitalism on the future of humanity**

Roy Sandberg

University of Helsinki

Faculty of Social Sciences

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HELSINGIN YLIOPISTO
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<p>This dissertation owes its research topic largely to Shoshana Zuboff's book, <i>The Age of Surveillance Capitalism: A fight for a human future at the new frontier of power</i>. The work ushers in a novel theory of the contemporary strain of capitalism and posits a shift from neoliberalism to surveillance capitalism. The origins and ramifications of this phenomenon will be at the focus of this thesis.</p> <p>In the review of relevant literature, the background and the commitments of futures studies as a field are eclectically touched upon by the aid of both scholarly work and science fiction. Concomitantly, the concept of surveillance capitalism is unfurled and welded to Yuval Noah Harari's notion of dataism. Harari's thoughts on humanity's past and future shall also furnish the overhead projector for my interpretation of surveillance capitalism.</p> <p>Imagination, the foremost forte that Homo Sapiens enjoys the monopoly of in the known universe, is singled out as the main theatre of war, as it is the area where surveillance capitalism is carrying out its most crippling strafe. The raison d'etre for this treatise is lent support to by virtue of a once-over of popular futurology, as I seek to sort out, where and why the discipline has gone off at a tangent and detracted from acute matters, divagating into disputes over synthetic intelligence that echo theological dialectics. I propose the problematization that this befuddles the human agency at the core of surveillance capitalism and thus works as an adjuvant to it.</p> <p>In the third compartment a précis of the history of Sohail Inayatullah's causal-layered-analysis method as well as its viability and pertinence to this dissertation is presented. The boon and bane of CLA as an epistemology is audited as the reader is familiarized with the stratum-superpositioning approach which shall inform this thesis passim before the analysis itself is presented.</p> <p>In the summarization surveillance capitalism is sized up from top to bottom, accompanied by a cursory contemplation apropos of the question to what degree surveillance capitalism is equipped to emblemize capitalism in the first place, or perhaps rather something altogether outré.</p>			
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<p>Tämä tutkielma ammentaa aiheensa parhaastaan <i>Shoshana Zuboffin The Age of Surveillance Capitalism: A fight for a human future at the new frontier of power</i> -teoksesta. Kirja panee pöydälle uuden teorian ajanmukaisimmasta kapitalismista ja esittää vallanvaihdoksen uusliberalismista valvontakapitalismiin. Ilmiön alkujuuret sekä seurannaisvaikutukset tulevat olemaan tämän maisterintyön polttopisteessä.</p> <p>Kirjallisuuskatsauksessa tulevaisuudentutkimuksen tieteenalan taustaa ja sitoumuksia puntaroidaan pintapuolisesti niin akateemisen- kuin kaunokirjallisuudenkin voimin. Rinnakkaisesti raotetaan valvontakapitalismin käsitettä ja tehdään juotos sen ja Yuval Noah Hararin dataismin välillä. Hararin näkemykset ihmiskunnan eilispäivästä ja huomista palvelevat piirtoheittimenä työn tulkinnoille valvontakapitalismista.</p> <p>Mielikuvitus, kardinaalivaltti, joka kuuluu tavaramerkkioikeudella ainoastaan Homo Sapiensille koko tunnetussa maailmankaikkeudessa, nostetaan tapetille olennaisimpana sotänäyttämönä, jolla valvontakapitalismi toteuttaa lannistavinta täsmäiskuaan. Tämä tutkielma oikeuttaa olemassaolonsa kertaamalla pääpiirteittäin kansantajuisten futurologian suuntauksia ja pyrkii tekemään selväksi, missä ja miten tieteenala on kulkeutunut kiertoraiteille, vieraantunut kiireellisimmistä kysymyksistä ja langennut kamariteoreettisiin kiistoihin keinoälystä jumaluusopin jalanjäljissä. Tutkielma puolustaa pulmanasettelua, jonka mukaan tämä sumentaa inhimillistä toimijuutta valvontakapitalismin kuliseissa ja toimii täten sen tehosteena.</p> <p>Maisterintyön kolmannessa kappaleessa esitetään kiteytys Sohail Inayatullahin syy-yhteyksien kerrostuneen tarkastelun menetelmästä sekä siitä, miksi se on omiaan tämän tutkimuskysymyksen tarpeisiin. CLA-metodologian vahvuuksia ja vajavuuksia ruoditaan ja lukija vihitään tasoja taaplaavaan tutkimusotteeseen, joka tulee sävyttämään tätä maisterintyötä pitkin matkaa, ennen kuin itse analyysi toteutetaan.</p> <p>Yhteenvedossa edessä on valvontakapitalismin tyhjentävä ruodinta, jota säestetään aprikoimalla ylimalkaisesti sitä, noinkohan valvontakapitalismi alkuunkaan välttää edustavasta markkinatalouden muunnelmasta, vai ilmentääkö se jotakin tyystin toisenlaista.</p>			
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Terminology

To guide the reader through this dissertation, a selective inventory of some of the ad rem concepts has been arrayed below:

An **Algorithm** (Macmillan English Dictionary, 2007, p.37) refers to "a set of rules for solving problems or doing calculations, especially rules that a computer uses."

Artificial Intelligence corresponds to "the use of a computer technology to make computers and other machines think and do things in the way that people can." Artificial General Intelligence, computerized consciousness, electronic brains, and synthetic intelligence/sentience, are employed substitutably as further appellations. AI denotes a truly cognizant contraption mainly in the review of the relevant literature of this thesis, otherwise it is used more loosely of so called "weak AI" of the mindless, yet matchlessly numerate machines of the present day.

Dataism/Big Data is outlined as a system/phenomenon that accelerates the shift of authority from human beings to algorithms dictated by the urge for ever-improving efficiency (Kelly, 2010; Hidalgo, 2015; Bloom, 2001; DuBravac, 2015). According to dataism, humanity is merely the hitherto most triumphant data-processing system in the world. It predicts that, eventually, civilized life is bound to incubate a superior data-processing system – algorithms operated by artificial intelligence – and evaporate into it. (Harari, 8.26.2016.)

A **Focus Group** denominates (Merriam-Webster, 2020) "a small group of people whose response to something is studied to determine the response that can be expected from a larger population."

The term "**General Relay**" shall signify systems of communication in a metaphorical vein.

A **Hadron Collider** is the compound of (Merriam-Webster, 2020) hadron, "any of the subatomic particles (such as protons and neutrons) that are made up of quarks and are subject to the strong force", and collider, "a particle accelerator in which two beams of particles moving in opposite directions are made to collide."

Homo Deus (Harari, 2017, p.54) represents a suppositious second-generation humanity with an Olympian aptitude to instauration and termination that allows them to exist indefinitely and hardwire happiness into their chromosomes.

Humanism is understood (MacMillan, 2007, p.739) as "the belief that people can live using their intelligence and reason rather than depending on a god or religion."

Omertà designates (Merriam-Webster, 2020) a "code of silence".

The **Third Modernity** stands for a future, where (Zuboff, 2019, p.54) "a genuine inversion and its social compact are institutionalized as principles of a new rational digital capitalism aligned with a society of individuals and supported by democratic institutions."

Surveillance capitalism is capsulized (Zuboff, 2019, The Definition) as "a rogue mutation of capitalism marked by concentrations of wealth, knowledge and power unprecedented in human history", in the synopsized vein that this treatise addresses it. Surveillance capitalism agglutinates recherche machinations of extirpation, reification as well as monitoring that for all practical purposes ostracize people from their individual self-direction. Simultaneously it elicits a novel, cosmopolitan emporium of the domination and reorientation of human demeanour. I call this the commercial sphere of the *comportment residue* that rebrands upcoming human actions as sales articles for speculation. Surveillance capitalism takes exception to the parliamentary rule of the majority and veers from the trends that have informed the market economy since its commencement in the scholarly circles in the late 18th century. (Zuboff, 2015.)

Surveillance capitalists are corporations that act as the torchbearers or adopters of this new strain of commercial enterprise. Zuboff singles out Google (2019, p.63) and Facebook (2019, p.91) as the most peremptory patron saints of surveillance capitalism but Microsoft and Amazon are also explicitly enumerated, while Apple is still straddling at the fence (Zuboff, 2019, p.9). Any companies that emulate the practices of the first four of these are classified as surveillance capitalists in this thesis.

Virtual Assistant AI's (Brill & Munoz & Miller, 2019) "(e.g., Apple's Siri, Amazon's Alexa, Google's Google Assistant) are highly complex and advanced artificial intelligence (AI) based technologies. Individuals can use digital assistants to perform basic personal tasks as well as for more advanced capabilities." "Intelligent personal assistant" will be exercised as an alternative expression.

1. Introduction

My incipient infatuation with the subject matter of this treatise was ignited by Yuval Noah Harari's *Homo Deus: A Brief History of Tomorrow* (Harari, 2017). This inquiry to the implications of surveillance capitalism on the future of humanity, formulated as it is in the rubric, ensued from the questions posed to the reader on the closing pages of Harari's masterpiece (2017, p. 405). It is my abridged compromise of adapting them into an copacetic circumscription of a theme for a master's thesis. Surveillance capitalism is primarily related to one of the broader motifs unpacked through the course of Harari's book, something that the author designates as dataism (Harari, 8.26.2016). The term was coined years before its deployment in Harari's writing, but his specific reading of the phenomenon sparked my personal interest.

Surveillance capitalism is a part of a wider context of big data and dataism, trajectories that call into question the human superintendence over the statistics provided by algorithms. Roughly speaking, dataism and big data provide the means whereas surveillance capitalism is the ideology that puts them into practice, and that is why it is the nub of the dissertation.

I shall explore surveillance capitalism with the help of Sohail Inayatullah's causal-layered-analysis. The method is purely theoretic and deconstructive by its nature (Inayatullah, 2009, Chapter 35). In the main, this thesis draws from the futurological and historical research traditions, but social policy is nonetheless at its core. This is true because some of the most salient problems that surveillance capitalism creates have everything to do with inequality, democracy and discretion.

The analysis itself is split into two sections as per Inayatullah's four tiers of litany, social causes, worldviews and myths, with the last and deepest stratum addressed in isolation and the foregoing three synchronously in a pyramided fashion. The discussion of the latter is markedly more protracted and subdivided to five domains where surveillance capitalism is making its presence felt. These domains feature neoliberalism and meritocracy, which are weighed up as a set of two, and inequality – further segmented into its economical, informational, political and academical dimensions – not to mention statecraft and identity, where the more pernicious facets of surveillance capitalism come to play in subjective decisioning besides the collective management of affairs.

I have tried to assume as synergetic a style as feasible to the mapping of

the fallout of surveillance capitalism to render it the utmost pluridisciplinarity. My main research kit comprises the following tomes from two historians, Harari (*Sapiens: A Brief History of Humankind & Homo Deus: A Brief History of Tomorrow* as well as his other work en passant) and William H. McNeill (*Plagues and Peoples*), two futurists, Gerd Leonhard (*Technology vs Humanity: The coming clash between man and machine*) and Martin Ford (*The Rise of Robots*), one social-psychologist (Zuboff, and her aforementioned book at the heart of this treatise), two sociologists, Goran Therborn (*World: A Beginner's Guide*) and Randall Collins (his chapter in *Does Capitalism Have a Future?*), a physicist (Max Tegmark, *Life 3.0: Being human in the age of Artificial Intelligence*), two journalists and authors, Jamie Bartlett (*The People vs Tech: How the internet is killing democracy (and how we can save it)*) and Peter Pomerantsev (*This is Not Propaganda: Adventures in the War Against Reality*) as well as one Professor of National Security Affairs (Tom Nichols, *The Death of Expertise: The Campaign against Established Knowledge and Why it Matters*).

According to Zuboff (2019), surveillance capitalism jeopardizes the indispensable capacity of planning one's life forward that every human being ought to be entitled to. She dubs this "our elemental right to the future tense" (Zuboff, 2019, p.20). For instance, as I undertook the quest of completing this thesis, I earmarked a petite piece of the times to come for myself. As I'm spelling these sentences, my dissertation is yet merely a figment of my imagination, and nothing other than actualizing it step by step can evoke my personal paracosm (Petrella, 2009, 2).

The *faculty for aspiration* is cardinally momentous, not only to the self-realization of any human being but, furthermore, to social policy as a field of study. As the branch is made up of people and their ambitions, it is naturally permeated by the urge to envisage eventualities, not to mention that social policy according to its namesake Apartment of the London School of Economics (circa 2020) styles itself as "distinguished by its multidisciplinarity, its international and comparative approach, and its particular strengths in *behavioural public policy, ... economic and social inequality, education, ... and population change and the lifecourse.*" Within these rather broad confines, it naturally strives to improve the current standing of the world or in the very least to keep it from deteriorating any further. There is only one space, where this attempt may

take place, and it is the future.

This is not to say that social policy is one with futurology, but rather that there is a considerable conjunction between the two. Hence it follows that futures studies and its appurtenances are my weapon of choice to tackle the fundamentally sociopolitical question of the implications of surveillance capitalism on the future of humanity. In the following section of this thesis I shall inspect what might be in store for the futurological ideal of tomorrow as a boundless, uncharted no-man's-land, free for anyone to set their eyes on and make room for themselves in, as surveillance capitalism sets in.

2. The Review of Relevant Literature

2.1 The order of the day in popular futurology: superficial intelligence and existential crises

To kick off this review of relevant literature, I'm going to address modish futurology in an equally vulgarized vein as I treat surveillance capitalism, since figures such as Ray Kurzweil (Harari, 2017, p.30; Tegmark, 2017, p.155; Leonhard, 2016, p.9), Nick Bostrom (Tegmark, 2017, p.34; Harari, 2017, p.336) and Elon Musk (Tegmark, 2017, e.g. 35; Bartlett, 2018, p.159) appear at a much higher rate in the public discussion of the days ahead than any futures scientist operating mostly within the academia. Musk, for instance, has featured on Forbes' Most Powerful People -listing in 2016 at 21st place, (Ewalt, 2016), Bostrom has made it onto two editions of Foreign Policy's Top 100 Global Thinkers List among billionaires and heads of state in 2009 and 2015 (Frankel, 11.30.2009; Foreign Policy, circa 2015), and Kurzweil enjoyed the same honor in 2009 and was credited by PBS (circa 2004) as one of the sixteen "revolutionaries, who made America" among the likes of Thomas Edison and the Wright Brothers.

This is not to say that these popular polymaths would be most adept in the matters of futurology. Rather I aim at highlighting that they wield more sway over the admass than the ascendant theories in the scholarly world of futures studies at any given time. This problem is peculiarly symptomatic to futurology, as it is still repugned if the field bears a starker resemblance to literature per se than scientific literature (Williams, 2013, p.122-123), and as a result, there persists an innate perplexity of distinguishing its truly sophisticated displays from the pamphlets even among the professoriate let alone laymen.

Kurzweil, Bostrom and Musk are specifically emphasized here not because they would add up to an encyclopedic overview of all the in-vogue orientations of futurology at the moment. Instead, their ideas are inspected due to the fact that they are motley enough to comprise some semblance of a "best moments compilation" of the frontage of futurology in the 21st century. All three are synonymous with the topic of artificial general intelligence, dubbed "the most important conversation of our time", by physicist Max Tegmark (2017, p.22). As shall soon be

uncovered, Kurzweil plays the role of the ultimate optimist here, while Musk, strangely enough, poses as a sceptic – not necessarily of the possible emergence of computerized consciousness, but of the conviction that it must be propitious to the human race –, and Bostrom tops off the trio furnishing both camps with suitable scenarios.

Much of Kurzweil's work hinges on the Singularity-hypothesis of John von Neumann. According to him (Shanahan, 2015, p.233): "the ever accelerating progress of technology ... gives the appearance of approaching some essential singularity in the history of the race beyond which human affairs, as we know them, could not continue." Neumann ideated the Singularity as the instance on the far side of which "technological progress will become incomprehensively rapid and complicated."

Kurzweil's writings revolving around the Singularity-concept are an outlandish concoction of a to the purpose and consilient account of the precipitation of computer-science melded with brainchildren so conjectural that they verge on bizarreness. They involve, for instance, Kurzweil's ardent yen to raise his deceased father from the grave via collecting a genetic sample from the burial grounds and afterwards restoring his soma with the help of prospective microelectronics. An effervescent circle of awe-inspiring and largely exuberant personages has converged in the sphere of influence of Kurzweil and the Singularian philosophy. In fact, Singularitarianism is not only a school of thought – it boasts its respective school in corporeal space as well. Singularity University is situated in Silicon Valley, and there are curriculums of entire academic degrees available with the emphasis on the scholarship on multiplicative advancement. The institution enjoys the patronage of e.g. Google, Genentech, Cisco as well as Autodesk. (Ford, 2015, p.234.)

Kurzweil is a firm believer in the vision that humanity shall, nolens volens, amalgamate with the computers of tomorrow. People will be supplemented with neural insertions that emphatically amplify mental capacities (Matyszczyk, 10.1.2015). The aforementioned cerebral enhancements shall be indispensable in order for humans to keep up with the post-Singularity pace of scientific progression. And this is only the beginning. As a rule, Singularians count on escaping their very mortality. This is grounded on the combat strategy of "wearing down" time itself, the plan of attack being to continue to subsist from one existence-perpetuating breakthrough to the next until the ultimate deathlessness is attained. The

aforementioned could be accomplished via employing elaborate engineering to sustain and cybernetically bolster one's organic structure. Whole brain emulation might eventually allow for an alternative approach. (Ford, 2015, p.235.)

Robert Geraci (4.6.2011), a Manhattan College scholar on the study of religion, penned an article under the rubric of "The Cult of Kurzweil" in 2011. It rose concerns over the facility of the techno-revivalism of the "Singularity creed" – elicited by Kurzweil's writings on the subject – to give time-honored congregations a run for their money, as their superannuated graces of incorporeal redemption might be outclassed by the prospects of overstepping human impermanence in the purely physical realm.

Notwithstanding, one could comfortably pretermite this as mere folderol if it was as effortless to brush aside the fact that a veritable menologion of tech-tycoons has indicated a curiosity in the Singularity. It ranges from Larry Page and Sergey Brin, the progenitors of Google, to Peter Thiel, a longevist in his own right, who pathologically poaches from J.R.R. Tolkien's nomenclature, having acted as the business angel of firms such as Palantir Technologies, Valar Ventures and Mithril Capital, as well as sporting his very own Thiel *Fellowship*. Over seven years ago, Google enlisted Kurzweil to lead its operations in the domain of pioneering exploration of elaborate electronic brains, and the next year Google introduced an outgrowth in biotechnology christened Calico. It shall specialize in redressing senescence and in prolonging life-expectancy. (McNicoll, 10.3.2013; Ford, 2015, p.236.)

Elon Musk, on the other hand, despite being the primus motor of such enterprises as SpaceX (circa. 2020), the public face for businesses such as Neuralink and one of the establishers of OpenAI (Brockman & Sutskever, 2015; Tegmark, 2017, p.327), was the main benefactor in what Max Tegmark has branded the groundbreaking AI-security fieldwork-initiative launched at Puerto Rico upon the inception of 2015 (Tegmark 2017, p.321). Partially due to the press' scaremongering and misrepresentation of him, and to a certain extent because of his outspoken and monetary support to foundations campaigning for a precautionary approach to AI research (Tegmark, 2017, p.321-327), Musk has come to be regarded as somewhat of a figurehead for the worries related to synthetic intelligence that run counter to at least the most credulous euphoria over the anticipated arrival

of the electronic brains to match the mind of Homo Sapiens.

For all one knows, Musk might be the solitary major name in the machine intelligence circles who has openly gainsaid both Google's Larry Page and Facebook's Mark Zuckerberg in contentions concerning the correct path to take with AI development (Tegmark, 2017, p.32 for an account of Musk clashing with Page's cyber-idealism; Clifford, 7.24.2017; Petroff, 7.25.2017 for the back-and-forth between Musk and Zuckerberg). Musk has even went as far as to assert that public supervision may occasionally facilitate making inroads in innovation instead of curtailing creativity (Tegmark, 2017, p.108), a statement downright verboten at Google and Facebook, as shall be evidenced later on in the CLA of this dissertation. On top of this, Musk endorses universal basic income (Strange, 11.5.2016).

Regardless of how tirelessly Musk goes against the grain in the realm of popular futurology, his stance to the affairs of state is nevertheless fairly technocratic: according to him, the state ought to provide acuity, not guardianship to the enhancement of electronic brains (Tegmark, 2017, p.108). He would like to see professionals with more expertise in engineering fill out administrative offices (*ibid.*), apparently irrespective of what the democratic system has to say about it.

Albeit there isn't much amiss about Musk's position on the AI-debate, he entertains another ambition equally extravagant to Kurzweil's flimsiest figments, namely interplanetary travel. Musk would have humanity colonize the macrocosm (Tegmark, 2017, p.322), and in his view, the most sensible departure station is Mars. The catalyst of this concern according to Musk himself is that a planetoid or an erupting megavolcano might annihilate Homo Sapiens, not to mention the possibility of a biological weapon, the unintended generation of a quantum mechanical black hole, devastation through the greenhouse effect let alone any hitherto unforeseen scientific discovery that might lead to the ruination of our species. In addition, Musk highlights the deleterious dynamics of nuclear arsenals. (Suter, 11.1.2018.) This is the line of thought that has prompted Musk to champion the space conquest as a contingency plan in case of an earthly impasse for humanity.

Musk is characterized as a mover and shaker. As Tegmark (2017, p.322), one of his more erudite proponents, has it: when Musk fancied people to map out and occupy the macrocosm, he set up a spacefaring enterprise,

and when he wished for ecological power sources, he established a photovoltaic factory and Tesla, Inc. To a devotee, Musk might sound like a firebrand with stellar purposes for humanity, but to a social scientist this information merely imparts that Musk is a frightfully well-heeled individual to be able to take such measures at will and without asking anybody else.

While diversifying life onto other planets certainly would be advisable from a biological standpoint, NASA (The National Aeronautics and Space Administration) discerned over 30 distinct health hazards related to interplanetary travel in 2015, which are still unresolved. In some cases, they are also orders of magnitude more tortuous than obstinate, tellurian predicaments such as the spread of infectious disease (exemplified by the currently rampant COVID-19-pandemic) that remain bewildering to existing medicine. (On the level of microbiology, for instance, spacefaring humans can be double-teamed on by the triggering of inert bacteria (Rooney & Crucian & Pierson & Laudenslager & Mehta, 2019) and the general intensification of the severity of certain pathogens that apparently prosper in the absence of gravity (Dvorsky, 9.13.2017)).

Needless to say, this begs the question, whether it is any less preposterous to siphon billions of dollars to peregrinations to the "Red Planet" than to Kurzweil's penchant for athanasia. Another factor to reckon with is that if we exclude the timeline of Homo Sapiens before the last 70 000 years, humanity has for the better part of its existence proven itself inept at fashioning any durable equilibrium with its habitat or the biosphere (Harari, 2014, p.465-466). Hitherto, the panacea has always been to look outward to uncharted territories to make up for the tapering resources. But there is something congenitally unsound about this approach, as at this rate, the quandary of the overexploitation of the external world will continue to beleaguer humanity until there is no new ground to cover even if it takes the entire universe to be populated before that – and the cosmic counterweights assert themselves upon Homo Sapiens. As long as humans systematically fall short of harmoniously husbanding even the one *habitable* planet known to man, one must be in way over one's head to expect for us to manage it in any *less* hospitable atmospheres.

Nick Bostrom is plausibly the most resourceful sketcher of omnifarious scenarios in the department of popular futurology. With human mass-

extinction perils spanning real-time nanobot-enabled molecular disintegration on the strength of some futuristic microelectronics in wrong hands (Bostrom, 2002, p. 5-6), to the inadvertent occasioning of a star-system-sized "death bubble" that engulfs everything on its way as a result of revving up the contemporary hadron colliders (Coleman & Luccia, 1980), Bostrom's compendium of conceivable cataclysms is the ultimate futurological bestiary, against the background of which writers such as Tegmark and public figures like Musk reflect their own scenarios.

Most of Bostrom's work is devoted to classical as well as unconventional AI seizure arguments and the hazards and advantages of the creation of a computerized consciousness in addition to related themes with at least 10 articles in different journals on the subject up to date (Armstrong & Sandberg & Bostrom, 2012; Bostrom, 2012; Bostrom & Youdkowski, 2011; Bostrom, 2006a; Bostrom, 2006b; Bostrom, 2006c; Bostrom, 2003a; Bostrom 2002; Muehlhauser & Bostrom, 2014; Schulman & Bostrom, 2012). Not all Bostrom's forecasts are dismal: He has plunked for a concord-grounded settlement amongst computer-consciousness crews worldwide (Bostrom, 2016, p.180-184). In addition, he speaks for approaches such as keeping tabs (Bostrom, 2016, p. 84-86) on these crews and fostering engagement between them (Bostrom, 2016, p. 86-87) in pursuance of upgrading security and the mitigation of the menace of a game of one-upmanship between corporations or countries in the area of the elaboration of electronic brains.

Bostrom exhorts us to strive for miscellaneous restraining measures, spanning the circumscription of the delineation of the province of the computerized consciousness to, say, sibylline or untensil-esque operations (Bostrom, 2016, Chapter 10). The computerized consciousness could be charged with principles, for example via programming a memory-referencing principle piling or ethics training into it. Case in point, one could hardwire an elaborate electronic brain to consider what hypothetical sister-AIs around the Universe potentially wished for, or deploy the modus operandi of an arithmetic-algebraic interpretation of the human psyche coupled with an explicit cyber-milieu. (Bostrom, 2016, Chapter 12.)

On top of this, Bostrom is also to thank for when it comes to calculations of otherworldly thoroughness on how well exactly everything might turn out. According to his approximation, even by modest speculations a whopping 10^{58} human lives might be enacted before the

power yield of the universal total available to us is depleted. (Tegmark, 2017, p. 233.) In an excerpt borderlining on poetry, Bostrom describes the potential of this optimum as follows (ibid.):

"If we represent all the happiness experienced during one entire such life by a single teardrop of joy, then the happiness of these souls could fill and refill the Earth's oceans every second, and keep doing so for a hundred billion billion millennia. It is really important that we make sure these truly are tears of joy."

The aforementioned and the fact that Bostrom is approbative of "transhumanism" or personal amelioration as well as the furtherance of Homo Sapiens by dint of a moral implementation of new technologies (Sutherland, 5.9.2006; Bostrom, 2003b), situates Bostrom among those scholars well-disposed towards AGI, although he is nowhere near as unsuspecting of it as Kurzweil for instance. In addition, Bostrom rebukes those with reservations concerning genetic modification (Bostrom, 2005).

By the same token as his colleagues, Musk and Kurzweil, Bostrom was the other originator of the World Transhumanist Association (Sutherland, 5.9.2006) – nowadays known as Humanity+ – as well as the Institute for Ethics and Emerging Technologies over 15 years ago. In the context of his nomination to Foreign Policy's 2009 ranking, Bostrom was claimed to be included (Frankel, 11.30.2009) "for accepting no limits on human potential."

There is a reason why I saved Bostrom for last, to wit, that albeit his assortment of aversion-strategies and assessment of all the conceivable avenues open for the undoing of humanity are more rigorous and irrefutable than those of Kurzweil and Musk, Bostrom's outlook still serves to underscore a pretermisssion of the immediate reservoir that all of these risks – or leastways those humanity can reasonably affect – stem from.

In Bostrom's view, the coming decades mark a watershed on the timeline of Homo Sapiens, as we are confronted by a cutoff to dialectics and the requirement to reach an ethical consensus before the arrival of artificial general intelligence (Tegmark, 2017, p.281). This is where contemporary popular futurology is jumping to conclusions. Thought experiments with electronic brains do not constitute empiric evidence, and as things stand, humanity remains so utterly clueless when it comes to our

own consciousness that there is no telling if we even could discern whether or not a machine has or will become aware of itself (Harari, 2017, p.116, 321).

There is a striking absence of any incentives to do research on synthetic sentience as opposed to simple, thoughtless machine intelligence ready to do one's bidding at her behest for two reasons. Firstly, engineers have yet to find a better way of staying in charge than making sure that even the most intelligent machine is devoid of a will of its own. Secondly, the market economy and its current trend of surveillance capitalism award the most knowledgeable computers, not the most thoughtful electronic brains (Harari, 2017, p.320-321).

Hence, this dissertation dedicates its attention to *why* and *how* computing power and computing power alone, with no trace of cognition but presumed upon by humanity's worst instincts, is on track to do away with human consciousness altogether instead of dethroning it (Zuboff, 2019, p.308). Therefore, the shenanigans of "weak AI" -systems such as Google's and Facebook's algorithms handily outrank suppositious computer-consciousness worries in the order of precedence. Present informatics merit more contemplation than the guesswork of what kind of cosmic "manifest destiny" humanity is headed to in the upcoming decades.

While Bostrom, Musk and Kurzweil, and all of their aficionados focus on technology and computers, they overlook the human drives behind the curtain. This obfuscates the power struggle taking place. Even if AI is the scene of action, humanity's greatest existential threat will nonetheless come from within. As I shall elucidate in due course with the help of Zuboff's conceptual apparatus, regardless of whether or not there looms an computerized consciousness ready to take over the world in a decade or two, as long as there is any human agency, one must look inside, not to the outside world for answers. Should the counterargument insist that human agency is to be forfeit altogether, then there really is no point in taking any measures to anything.

Consequently, it's hard to fight the inference that much of contemporary futurology has been ensnared by a misguided dispute over the putative agency of a superhuman being. This is not all that far removed from the medieval theological preoccupation with controversies over whether demons may independently engage in malevolence or only because God suffers them to distort His power as thus. (Heinrich Kramer insisted on the

sovereign activity of fiends and, as a result, that of witches as well in *Malleus Maleficarum* in 1486, and the tome was condemned by the Inquisition (Jolly & Raudvere & Peters, 2002, p.241)). This disagreement appertained to the vast framework of "the problem of evil", and sure, it amounted to a great many books and witch-hunts and economic as well as public activity – mostly harmful in every imaginable aspect. Nowadays however, people tend to agree that it was mostly unwarranted speculation on events with very little bearing to the unfolding everyday life of contemporary humans.

One would think that in more than half a millennium, the literati would have come somewhere from the days of "The Hammer of Witches". No kind of deific decree delusion – be it in reference to the command of a conventional God or an artificial intelligence – will provide a solution to "the problem of evil" since the only force in the universe in possession on self-direction is the human species. Ergo, all nefariousness radiates from people's individual and collective actions towards each other.

It is herein, where Zuboff's theory of surveillance capitalism reconciles popular futurology with its constitutional component, reinstating the human carryings-on at the root of our algorithmic conundrums to the spotlight. The flesh-and-blood penmanship at the bottom of surveillance capitalism is inordinately evasive, but the impending CLA of this thesis is undertaken expressly to unravel it inch by inch.

2.2 The struggle of Futurology versus Futsureology

The problem of studying the future in an exhaustive manner has been crystallized as early as thousands of years ago in the Greek oracle tragedies, where sibyls are consulted to prefill destinies. Each of the ancient heroes, who resort to these divinations – Oedipus perhaps the most notorious – inexorably end up implementing the worst-case scenario, which they have pried into by preternatural means, even if they leave no stone unturned to eschew their kismet. Consequently, self-fulfilling prophecies trace their roots to times no less immemorial than the Antiquity.

In the present segment of this dissertation I shall dissect the future of futurology in a popularized vein from the vantage point of the "new frontier of" surveillance capitalism as Shoshana Zuboff has delineated it

(Zuboff, 2019, p.12). Surveillance capitalism represents an unexampled configuration of the market economy that is on track to dismantle humans' ultimate *entitlement to aspire* which bestows upon them the agency to conceive of such a thing as a hereafter (a worldly one) in the first place (Zuboff, 2019, p.20).

Gerd Leonhard (2016, p.23-24) on the other hand cautions about a future, where so-called androrithmic, i.e. humanitarian, forms of reasoning are becoming supplanted by algorithmic – machinic or machine-oriented approaches – in human decisioning. The said dichotomy sparks another, more profound bifurcation in the Tomorrowland of futures studies. Whereas consciousness-intensive actors, such as humans in search of "the third modernity" (Zuboff, 2019, e.g. p. 46-52) or Leonhard's androrithms, are interested in exploring the future, intelligence-intensive systems such as algorithms (Harari, 2017, p.405) – the ever-amplifying maintenance engines to Zuboff's surveillance capitalism (Zuboff, 2019, p.65) – seek to establish a more immutable "ever after" (Zuboff, 2019, The Definition).

As evidenced by the introductory illustration, already in the plays of the ancient Greeks there was a tangible awareness that a foretelling of one's fortunes, which would irrevocably follow a clinched course of some unwavering fate, could scarcely be of any aid in the pursuit of a preferable outcome from the standpoint of any living soul. It is actually quite the opposite, as a certain sort of unwitting confirmation bias guarantees that the protagonists in the Greek prophesy-dramas never manage to divest themselves of their destinies, and it is more often than not their own precautions that essentially bring the halsenies to fruition.

2.3 Futures studies and Hencity

According to Zuboff's description – condensed in advocacy of this thesis – surveillance capitalism is a new form of financial order that appropriates human experience as feedstock for abstruse economic practices of bereavement, prognostication and vending. Similarly germane to surveillance capitalism is that it is a crusade committed to devise a novel, all-encompassing global supremacy that is founded on impeccable surety. (Zuboff, 2019, The Definition.)

In Stanislav Lem's (2017, p.77) sci-fi-novel *The Futurological*

Congress, the main character Ijon Tichy declares at one point that the study of history is almost extinct – as it has been ousted by the "study of *hencity*, the science of what will be". *Hencity* is more than just forecasting the future, it is the art of knowing what shall come to pass. When one inserts businesses trading in Evil itself (Lem, 2017, p.84-90) as well as "mascons", which according to another personage in Lem's story, professor Trottelreiner, enable one to disguise anything in the external world behind a concocted image – glued on top – and with such subtlety, that the "psychemasconated" person is incapable of even discerning, which one of their senses is deluded and which isn't (Lem, 2017, p.98-99), to the equation, the common denominators betwixt Lem's prose and surveillance capitalism as it is theorized in Zuboff's (2019) brand new contemporary diagnosis, start assuming a rather shivery quality.

Reflecting further on the concept of *hencity*, one can but tip one's hat to Lem's prescience. Almost half a century ago the author had such a lucid notion of what futurology should and shouldn't be, that he was adroit enough to lampoon it for laughs in his oeuvre. After the fashion of Lem, futures studies itself recognizes that there may be no tomorrow without a yesterday – hereby rendering it a ludicrous assumption that history would be pushed aside in favor of any reasonable futurology.

As is maintained by James Dator (2019, p. 92), the future is something that is called to mind not unlike the past, and in effect, no other means to chart the coming days exist at all. It would certainly prove an arduous exercise to imagine a more persuasive exhibit of the fact that history and futurology are complementary and symbiotic disciplines.

What this all boils down to is that *hencity* is better fit to make a mockery of wholesome futurology, than to steer its direction. Futures studies strives to probe every imaginable thing that *might be*, not to set things in stone (Dator, 2019, p.3). The feasibility of altering the course of events at will at all times is indispensable – even paramount – to futurology. The discipline does not pretend to utter certitude of the future but does its utmost to uphold the prerequisites to contemplate and conceptualize the days ahead in lieu, as is epitomized, say, in the "fan of alternative futures", of Bertrand de Jouvenel (Malaska, 2013, p.18).

2.4 Why humanism and democracy are of no aid against surveillance capitalism

As peerlessly meritorious and meticulous as Zuboff's portrait of surveillance capitalism is, her tremendously humanitarian presumption of the urge toward legal and political egalitarianity between individuals not to mention the equality of opportunity as the cosmopolitan cynosure of the entire race of Homo Sapiens (Zuboff, 2019, e.g. p.522-525) – while wholeheartedly agreeable – would be due for some sharpening. Throughout Zuboff's magnum opus, one is left hankering after sturdier counterforces for surveillance capitalism more airtight against refutation at least from already prevalent sources.

Needless to say, this has little to nothing to do with any dearth in Zuboff's work, as it stands as one of the most luminary examples of painstakingly circumnavigating neoliberalism to trailblaze an entirely avant-garde comprehension of the status quo. It has everything to do with the bulk of study within the social sciences still being preoccupied on the flat Earth of neoliberalism, shirking its responsibility of staying abreast of the times. One might insist that the current Byzantine state of the world is also incriminated in this, but no science in possession of an ounce of scholarly self-esteem should ever acquit itself on such grounds. Nonetheless, it would be egregiously unreasonable to expect one author on her own to provide every answer at once.

So, what could possibly be out of place about humanitarianism and democracy as the lodestars championing the efforts to keep surveillance capitalism at bay? Albeit there is nothing amiss about the intentions of either ideal, Yuval Noah Harari's *Homo Deus A Brief History of Tomorrow* (2017) as well as his *Sapiens: A Brief History of Humankind* (2014), go a long way to vitiating the belief that anything could be postulated solely in the name of democracy let alone humanism. Among other things, the ginormous magnification of biometric data, which in Harari's words (2017, p.405) furnishes algorithms to "know us better than we know ourselves", spares barely any leeway for individual volition – something that Zuboff and others enthrone at the apostolic see of the humanitarian worldview (Zuboff, 2019; Bartlett, 2018).

As e.g. Niiniluoto underscores by stipulating Hume's Guillotine to be imposed upon all ethical consideration (Niiniluoto, 2013, s.26), one

mustn't surmise any quintessential and exigent inducement for anthropocentrism let alone any vindication as for why it should override all other convictions. Harari (2014, p.258-263) provides a cogent testimony that bespeaks on behalf of including Nazism of all things in the family tree of humanism, as it differed from its contemporaries, capitalism and communism, solely in the sense that its circumambience of the human race was riddled with unscientific undercoverage. Harari lists individual, i.e., capitalist- and collective, i.e., socialist varieties as the two other offshoots of humanism (2014, p. 257-258).

On the other hand, the ideologies pertaining to the current mixtures of market- and planned economies are not exempt of the aforementioned deficiency, and one wouldn't be entirely devoid of footing in asserting that it is moot, whether or not communism even should be held to a higher regard than Nazism in this sphere (Courtois et al 1999; Mardolin & Werth, 1997; cf. Suny 2007).

We have yet to see a single incarnation of humanism to successfully concede the humanity of all the members that make up the species of *Homo Sapiens*. Capitalism itself has repeatedly failed to grant humanity to its cheap labour toiling in draconian working environments (Perrault, 1998), and planned economies upstage it by the occasional supplementary political persecution to boot.

Should one for the sake of the argument engage in the wishful thinking that in the future humanitarianism may still make good on its promise to mankind, by virtue of the potential that anthropocentrism has expressed for incremental amelioration in the long haul, there would still be another contretemps to deal with. The gravest challenge for humanitarianism is posed by its ideological duelist, dataism. As Harari has it, the multifarious upper echelons everywhere on the planet are relocating under a shared roof of a new set of principles – one which revolves around data and its frictionless operating and accretion, and where humanity doesn't enter the equation at any point. (Harari, 2017, p.376-378.)

As has been substantiated above, Zuboff's intellection of surveillance capitalism – notwithstanding the fact that this is never cited or corroborated by the author herself – cannot escape being interpreted as an elaboration and enlargement of Harari's expounding of dataism in order to denude the background processes at its helm. This is only too timely and propitious, all the more inasmuch as Harari investigates dataism

principally on the phenomenal level, whereas in Zuboff's writing a much more ample origin story, loaded with a great deal of additional circumstantiality about the phenomenon's recent history, is bestowed upon it.

The "third modernity" advocated by Zuboff (2019, p.46-52) and already touched upon previously in this treatise, would, according to her paragon, consist of sincere progression and its unique strain of social contract. These would be institutionalized as the principles of a novel, rational, digitalized market economy, which are in alignment with the individuals society is comprised of, and derive their legitimacy from its democratic institutions (Zuboff, 2019, p.54).

The rudiments of humanitarianism that hallow the idiosyncracies of the individual as well as egalitarianity, will nevertheless come under a fusillade literally from within as biotechnology and genetic engineering start switching gears (Harari, 2014, p.459; Harari, 2017, p.31). Mannermaa characterizes the conceivable future juxtapositions by auguring a bipartition between "the genetic elite" and "organic folk" (Ahlqvist, 2012), whereas Harari (2017) on the other hand alerts his readers to the peril of the apotheosis of the ascendant technocracy into a Homo Deus -pantheon which will hightail it to orbits beyond the ambit of the rest of civilization.

In the Deus Ex -videogame-franchise (Eidos Interactive & Square Enix, 2003-2016), characters are classified to those fortified by "augments" and ordinary humans. A musical piece prompted by the third edition in the series, *Deus Ex: Human Revolution*, Youtube-singer-songwriter Gavin Dunne (10.27.2013) encapsulates the atmosphere of the game in the following verses:

*"Slave to the new black gold, there's a heartbeat under my skin
Search my electric soul for the hidden man within..."*

"The new black gold" is an epithet of data, as it has been hailed by a number of others, who deem digitalized information the second coming of oil (WEF, 2011, p.5-7). Dunne's lyrics correspond fairly intuitively to the idea of information-idolatry – and the unheard-of society and system of values it entails – endorsed by Silicon Valley sectarians that Harari so perspicaciously ruminates on within the pages of *Homo Deus* (2017, e.g. p.30-31). Harkening back to Kurzweil and the Singularitarianists, it is a

rather impregnable interpretation that they stand out as the clean-cut elementals of what Harari and Dunne have in mind with the moniker of "Silicon Valley sectarians".

2.5 Imagination – the master-androrphism

It is a veritably thorny task to come to grips with what humanitarianism in effect stands for – or what exactly is the item of concern that all of the parties alluded to above worry humans might be stripped of. For my part, I contend that it is all crystallized inside a lone ingredient of human experience, to take a page from Leonhard's writing, inside something akin to an *original* androrphism, which runs every bit and piece of the precious consciousness that separates human beings from other earthly life, namely imagination.

In an entry titled *Future-awareness and awareness of the future: Future as a subject of interest*, Pentti Malaska (2013, p.14-16) breaks down the timeline of the human apprehension of the days ahead and dates the emergence of the future in the form of the appearance of utensils to approximately two and a half million years ago. The aforementioned time span beseems the commencement of several traits that inform human exceptionality in the animal kingdom, advanced communication for example (which shall be revisited minutely in the causal-layered-analysis of this dissertation), and possibly also the headwater of all the meanings in the world, imagination.

There is no telling whether imagination is of as primordial a vintage as thinking ahead or communicating (as they are estimated from the age of the eldest found tools in the world after the fashion of Malaska). No cave paintings, which have sometimes been invoked as the initial attestation of abstract thinking, have survived from more than 64 000 years in the past (Hoffman et al., 2018) – but the fact remains that both communication and the notion of a time to come are *meaningless* in the absence of imagination. A squirrel may stow its nuts in anticipation of wintertime, but if up to date science is on to anything at all, the rodent-species is incapable of relating sagas about Furry the Farsighted, who would've invented the practice of preserving food in nest holes. In a similar vein, there is a plethora of animal species able to convey signals to each other, say, via lekking, but the intricacy of something on the order of an amoretto devised to laud a loved-one escapes them.

2.6 The idea of humanity – and some other ideas in store for it

I would be inclined to espouse the inference that the single most conspicuous commonality colligating Zuboff, Leonhard, Harari, Dunne, Lem and others in their inquietude over the future of humanity – and by the same token the future of futurology – is that they are all alarmed by the menace of the subtraction of imagination as the information economy muscles onward supercharged by data. As has been established, Zuboff and Harari limn and extrapolate further a worldwide doctrinal twist steered by surveillance capitalist/dataist priorities where comprehension plays second fiddle to computation, when it comes to information (Zuboff, 2019; Harari, 2017). To all intents and purposes and especially in terms of the interrogative of the preponderant set of values, this occasions a front-loaded lopsidedness between the how- and why-orientations to problem solving.

Max Tegmark's formidable *Life 3.0* (2017) adduces evidence as to what goes awry about the aforementioned how-approaches. As the Universe unassailably marches towards an ineludible heat-death (Tegmark, 2017, p.251), it follows that for the duration that all technological betterment spends on a cosmic timeline, it must never fail to stay true to its ultimate mortal inadequacy.

Surveillance capitalism and dataism will fall short of beatifying the human race lest perhaps in the shape of the "zombieverse" -scenario outlined by Tegmark (2017, p.184), insofar as they continue to overlook the deliberation of significance and the finite nature of human existence (Leonhard, 2016, p.13-14; Bailey, 2014). For instance, as Harari (2017, p.361) heralds the impending appearance of Homo Deus – the deified scion of Homo Sapiens – he reckons with immortality (or "amortality" as Harari prefers it) solely in light of the mennish timescale. In genuine spacetime, not even the choreography of atoms is eonian. This point stands also as far as Ray Kurzweil and the singularity he habitually eulogizes (e.g. 2005), are concerned. The second law of thermodynamics is not about to turn on its head irrespective of how many laws of nature humans learn to reverse-engineer and master on the present planet or any prospective other one for that matter. Hence, any sentiment of algorithms that are going to unravel all the matters of the macrocosm for better or worse, is as

hopeless as it is pointless.

While there might be nothing infinite in the entire Universe on a cosmic timescale, the next best thing for humanity, and something that in the very least approximates infinity, is the tally of ways that the world may be perceived by humans. On that account, futures studies, and any discipline that minds its own best interests for that matter, ought to endeavour to expedite and restore worldviews that celebrate the perplexities- and not the reducibility of (Tegmark, 2017, p.246) "this great cosmic drama", which humans stand witness to for as long as they do.

Regardless of what surveillance capitalism and dataism have in their crosshairs, they will never attain an immaculate precognition of upcoming events by means of futurology any more than with the help of other fields of study. Nevertheless, by dint of inequality, undoing the separation of power as well as coercion, humans have been obtruded into figuring into expectations in the past (Curtis & Kelsall, 17.3-7.4.2002a-d). The new techniques and strategies on the pipeline, which are transmogrifying the aforementioned apparatus into an unforeseen, pantagruelian distortion of its former self, and entrenching it in fewer hands than ever in the history of mankind (Zuboff, 2019, p.127; Harari, 2014, p.460), shall be chronicled in the upcoming chapters of this dissertation.

For the nonce, there is a flagrant paucity of robust resistance against the concatenations of surveillance capitalism. Consequently, futurology would be ill-advised not to take it under a magnifying glass, as its own survival is at stake in the 21st century, and that is also why I've set my sights on the present research question at this hour.

3. Causal-Layered-Analysis as a method

3.1 The history and definition of Causal Layered Analysis

CLA as a method of futurology dates to the turn of the decade between the 1970s and 1980s. Its originator, Sohail Inayatullah, obtains that during those years there existed a tetrad of orientations within his department of Political Science at the University of Hawaii surrounding the discipline of Futurology under the auspices of James Dator, who was in charge of a specific branch of Futures Studies at the faculty. (Inayatullah, 2009, p.1; Dator, 2002, p.5-7; Dator, 2003, p.1-6.) This quartetto featured an empiricist school of thought intent on instituting statistics as the mainspring of political research and poststructuralists preoccupied with the cavernous nuances of public affairs and predisposed to regard the ballot-box-scale of the affairs of state as facile and empiricism as vapid, owing to the fact that it is destitute of heritage, the appreciation of social divisions as well as linguistics. On top of these two, another pair of scientific alignments was also embroiled, namely the interpretive philosophy to politics that rejects both subjugating everything to numbers and disintegrating each of the existing assortments, and is more of the mind to yield a concerted colloquy, where sincere relevance and discussion can surface, and lastly the final stance, emphasizing implemented intelligence, an intransigent academic erudition and empirical prowess, to say nothing of sporting luminous ethics as well as enlightenment through experimentation. (Inayatullah, 2009, p.1.)

CLA constitutes a coalescence of all four and Inayatullah recognizes the imprint of the frame of reference that the method's early life from halfway through 1970s to 1990s was subject to. Throughout the aforementioned years, Inayatullah admits to bouncing back and forth between these four alternatives, swayed by the apologists of every respective school of thought in turn. On top of this the showdown betwixt agency and structuralism pitted at opposite corners familiar from economics and sociology, was running rampant. The presence of poststructuralism also made its mark, taking a diachronic and cultural angle to collective development. Humanity was additionally reimaged by a kind of New Age environmentalism. (Inayatullah, 2009, p.1-2.)

This is the configuration of constituents Inayatullah cites as the lineage of his own outlook to futurology. The scholarly ancestry of CLA may be disassembled to a motley host of inspirations. To begin with, there is Johan Galtung's concept of cultural scripts, which he purports to be behind the mundane workings of societies. Galtung avers that if one is to properly grasp the connections across countries, one must transcend formal governmental attitudes and decipher their cultural provenance. (Galtung, 1981a & 1981b.) For instance, the idea of centrally planned seafaring raids to unsuspecting foreign countries as the principal industry in the kingdom spearheaded by the Vikings in the ninth century bears stark likeness to later practices of the British world conquest, when the same enterprise was institutionalized via *the letter of marque and reprisal* (Stark, 1897, p.272) among other things. In the realms of these two distinct European peoples of their time, one might discover underlying correspondences when it comes to conceiving of sailing ships and pillaging as crucial maintenance infrastructure, and the overseas territory as something "the finder may keep" regardless of finding it already inhabited by someone else. The oriental cultures both in East- and South-Asia in turn are associated in their own inscriptions (Therborn, 2012, p.24-39).

Galtung made it his business to unearth the cultural sequelae in the past. He styled it the "CTM syndrome", for civilization, trauma and myth. Galtung would avail himself of it in the elucidation of the behaviour and the molding of the self-portraits of states. Inayatullah construed this as the requirement to transcend states' outwardly operations in order to gain access to their roots in earlier times and the *weltanschauungen* responsible for their demeanour, as well as to etiological myths at the core of the states themselves. (Inayatullah, 2009, p.2.)

Furthermore, Michel Foucault, generally filtered by Michael Shapiro's exegesis, has likewise been instrumental to Inayatullah. Foucault's systems of perception, not to mention his diachronic contexts of cognizance, are foremost in coming to grips with the different manners in which specific designations of actuality get established. (Foucault, 1973, Shapiro, 1992.) Notwithstanding that Foucault didn't ideate his writings as methodological, Inayatullah apprehended that from pairing the dissection of phenomena with their descent, there would issue a sedimented methodology. And not only that, but it would patently render itself to philosophizing in the Foucauldian turn of phrase into the bargain.

(Inayatullah, 2009, p.2.)

Grasping physical existence as perpendicular to what is taking place at any particular moment rather than something longitudinally mutable as it is envisioned by poststructuralism, stems from Tantric metaphysics, whose most formidable elaboration Inayatullah attributes to P.R. Sarkar. This mentality deems the mind to be composed of shells or kosas. (Sarkar, 1978). Ascending and descending these shells as if playing a platform game, one engages in an exercise of ethical as well as inner illumination. (Inayatullah, 2009, p.2.)

Sarkar ascribed an internal and external element (a crossover between personal bias and impartiality) to scientific work as a whole. According to him, astuteness will only be achieved through the charting and revelation of these two spheres synchronically. A policy, if it is to deliver, ought to overhaul personal individuality on the side of the collective at large. (Inayatullah, 2009, p.2.)

As far as futurology is concerned, Inayatullah credits Richard Slaughter and his refined futurological taxonomy of the trendy tomorrows, the untangling of issues as well as the ontology of what is to come, as an inspiration (Slaughter, 1991). Inayatullah appreciated the fact that if afforded substantial reassessment alongside modification, these diverse taxonomies might also render themselves to being processed into a methodology. (Inayatullah, 2009, p.2-3.)

Hence, CLA is not only a coalescence of four schools of thought, but of these individual thinkers withal. Needless to say, the method has undergone continuous self-betterment throughout the years. The writings of two psychotherapists, Hal and Sidra Stone (1989) alongside additional holistic-psychoanalytic *modi operandi* have proven their worth in bringing about and shining light upon the underlying elements of CLA. (Inayatullah, 2009, p.3.)

Nonetheless, CLA is originally positioned in the field of evaluative futurology, no matter how many frames of mind it consolidates (Inayatullah, 2007). It gravitates lieber to outdistancing the topical classifications, than to the empirical indifference or even to fashioning reciprocal sympathy, akin to the interpretive school. CLA's remoteness permits one to perceive the prevalent public policies for their frailty, the peculiarity of their place and time, and rids them of their pretensions to overarching properties. It follows that societal norms are regarded as

narratives, something akin to the concept of paradigm, only also encompassing ontological illations. (Inayatullah, 2009, p.4.)

CLA doesn't attempt to foretell a future occurrence (like the empirical praxis might, for instance, prewise the GDP of a country), nor does it seek to decode the connotations behind concepts (say, currencies or the definitions of a nation). CLA engages in problematizing the indicators of the examination (what for should GDP merit a survey rather than, for instance, inequality, as is posited under the 4.2.3.1 rubric of the forthcoming CLA). Therefore, CLA charges itself, to some extent, with annulling the future and taking exception to it, instead of bolding the contours of the coming times (by yielding more precise prognostications or attaining a consensus on its discernment). (Inayatullah, 2009, p.4.)

The noteworthiness of keeping track of GDP, to stick with the previous examples, pales in comparison to the preeminence of the path-dependencies of the past that have put it on a pedestal as an indicator of progress in the first place. Wherefore are the means of production the object of speculation rather than, say, information as it is measured by data? The triage of the former at the expense of the latter shall also be on trial in the CLA on the mythological stratum below the heading 4.1. In what ways could divergent futures manifest if unorthodox indicators of examination are employed? (Inayatullah, 2009, p.4.)

From this, eclectic vantage point (*ibid.*), one may debate, how come GDP is measured at all. What for should output override equality on the scientific agenda, for instance? The part that governments and additional parties with political and economic clout, private capital and popular culture to name a few, play in fabricating prestigious narratives – in establishing and validating specific concerns while discarding the rest – is climacteric in fathoming the trajectories behind the ascendancy of a precise kind of future. Nevertheless, philosophies as well as the anatomies of noesis circumscribe that which is cognizable as well as that which is less so, that is to say, they designate and constrain apprehensibility. This entails that albeit social frameworks and establishments on the order of the present-day body politic come in handy in breakdowns, they will not be conceptualized as ubiquitous, but as ephemeral and transitory, and always subject to the cultural past and philosophies (the confines imposed by the respective context).

A poststructural *modus operandi* aims at taking to task the tendencies suggested by futurological publications and to desecrating their socioeconomical bedrock, not unlike traditional neo-Marxian evaluative studies. It is not enough to consider the alternative occurrences and patterns that might have predominated or still predominate. One must additionally ponder the manner in which a specific concern has been formulated in the shape of an occurrence or pattern to begin with not to mention the "expenses" of the social construction question i.e. what narrative is put first, whenever a pattern or occurrence is posited. (Inayatullah, 2009, p.4). Paraphrasing Randall Collins (2013, p.61), all things might be socially constructed, but the fact remains that certain things are more socially constructed than others. For instance, in the GDP illustration, one may survey "productivity" by inquiring what it stands for in different cultures and their idiosyncratic idioms.

CLA is put forward as a rather recent method in futurology. As has been established above, it is in its prime when invoked as a tool to upsize the vastness of the expanses of metamorphosis for the purposes of designing variant futures, not so much in extrapolations of upcoming events as per se. CLA comprises four tiers, the litany, the social causes, discourse or worldview as well as the mythical and metaphorical both in the sense of godlore and as tropes. The objective of CLA is to pursue the kind of scholarly work that toggles these tiers, rotating from one stratum to another thereby embracing miscellaneous insights. (Inayatullah, 2009, p.5.)

CLA is scarcely engrossed in arraying specific futures in advance, and preoccupies itself instead with deciphering contemporary life as well as its backstory in order to indite potential futures. CLA is therefore antipodean vis-à-vis methods like the breakdown of emergent complications, scenarios and backcasting, and doesn't attend as much to the linear commodiousness of tomorrow, as it does to the upright dimensions of futurology, as far as the sediments of contemplation are concerned. Inayatullah asserts CLA to have been effectively implemented in more than a hundred workshops as well as several dissertations such as this. CLA has evolved from an evaluative instrument for futurological didactics to a practical instrument for administrations, municipalities, companies, advocacy groups as well as other organizations. It has proven fruitful in workshops, where assorted backgrounds and stances to settling issues are personified. (Inayatullah,

2009, p.7.)

CLA clears the way for conceptualizations of salient leanings, which may eventually be honed into scenarios. Rick Slaughter deems it a denominational method that divulges entrenched, paradigmatic alignments behind the scenes of ostensible proceedings (Slaughter, 1997):

”Causal layered analysis ... provides a richer account of what is being studied than the more common empiricist or predictive orientation which merely `skims the surface'. Because mastery of the different layers calls for critical and hermeneutic skills that originate in the humanities, some futures practitioners may find the method challenging at first.”

CLA is best suited for deployment ahead of the effort to contrive outlooks of the upcoming times, since it provides the perpendicular latitude for scenarios that stand for various secondary categories (Inayatullah, 2009, p.1). CLA may be taken to translate into a quest of enacting the poststructural reasoning as something beyond simple ontological scaffolding – as it was originally devised by theorists the likes of Michel Foucault – that is to say as a methodology and recourse to investigate days of yore, today as well as the days to come (Inayatullah, 2009, p.2).

Inayatullah specifically enumerates ten of CLA’s virtues:

1. It enlarges the array of prospective scenarios.
2. In workshop-milieus, it results in the incorporation of the attendants’ multifarious customs of cognizance.
3. CLA addresses itself to and is noteful to individuals in a more far-reaching manner, forasmuch as it encircles also extra-textual strains of idiom, say, artistic aspects, in its trajectories of tomorrow.
4. It pays mind to the personal standings of the attendants, whether they are schismatic or compatible.
5. It relocates the deliberation from what is perfunctory and plain to see, to the domain of the recondite and outlying.
6. CLA enables a wide stretch of refashioning measures for a myriad of agents.
7. It facilitates social practices that might be imbued with unorthodox strata of examination.

8. CLA might result in durable social practices, i.e. genuinely puzzle out matters in lieu of simply ingraining them afresh.
9. It engenders planning that merges the short-, medium- and long run.
10. CLA restores the perpendicular aspect of communal inspection, in other words, the study of planetary value systems supersedes postmodern subjectivism. (Inayatullah, 2009, p.27.)

As I referenced earlier, there are four strata enclosed inside CLA, the first of which goes by the moniker of litany. It involves the quantifiable trajectories, issues that are overstated by and large, and recurrently in the service of political interests (e.g. the inequality subsection 4.2.3.1, and Larry Page and Mark Zuckerberg's bombast about Google and Facebook as avuncular freedom fighters crusading for an ecumenical access to information), mainly mediated by the fourth estate. (Inayatullah, 2009, p.8.)

Besides this, isolated occurrences, matters as well as trajectories that give the impression of disjointedness, are attributed to litany. The upshot of litany is ordinarily a sense of incapacity or mental stupefaction. Sometimes it is also externalized in the demands for intervention directed at someone else. This typifies the conventional plane of futurology that might quickly prompt an apprehensive atmosphere. On the stratum of litany, a futurologist is a technological determinist, who claims that one must stay abreast of the times no matter the social costs. Only by taking the projection for granted and adapting to it, one may avert ruination. (Inayatullah, 2009, p.8.)

The next stratum pertains to the social causes of trajectories, in the areas of e.g. finance, civilization, public affairs as well as former times. (For instance, the World Bank's dictate that poverty reduction must ride roughshod over every other recipe for world improvement found beneath the caption 4.2.3 of the approaching CLA). Here conjectures are constructed on the strength of numerical data. This second-stratum sort of appraisal is a mannerism of bureaucratic establishments and usually printed in leading articles in gazettes or publications just short of scholarly status. (Inayatullah, 2009, p.8.)

In serendipitous circumstances, the temerarious operation may be examined every now and then (for instance WEF highlighting the breakthroughs in the province of stacking data and the reams of

information as well as their usage in the 4.2.3.1 section of the CLA). The stratum of social cause distinguishes itself in yielding methodological elucidation and, by the same token, insights in scholarly scrutiny. The different positions of the body politic as well as other agents and their stakes in the matter are frequently scanned on the aforementioned stratum. The stated figures are routinely oppugned, but the wording of the interrogation fails to gainsay the mindset that ordains how the matter is demarcated. (Inayatullah, 2009, p.8.)

The third, more profound stratum deals with the architecture and the apparatus, and the discourse/worldview buttressing and warranting it (e.g. initially the primogeniture of surveillance capitalism as the firstborn descendant to the crowned heads of the prevailing political orientations, neoliberalism (segment 4.2.1 of the CLA) and meritocracy (4.2.2) and eventually the installation of surveillance capitalism on the strength of B.F. Skinner and Alex Pentland's maxims of redressing the human condition via the conditioning of humans in the 4.2.5 coda of the CLA where individual identity is zoomed in on). The third stratum endeavours to locate unplumbed communal, language-related, traditional-historical fabrics unaffiliated with any fugacious agents. It is of the essence to this stratum to identify the underlying presuppositions at the bottom of the matter and to reconstruct a layout of the dilemma at hand. This is the perfect juncture for perusing which are the ways that sundry architectures of debate (the neoliberal, the meritocratic and the surveillance capitalist to name a few, as they pertain to this thesis) not merely beget or relay the matter – but are the makings of it. The architecture of the debate is entangled in the adumbration of the predicament present. The grounds for the propounding of litanies as well as the factors brought to bear in the cerebration of litany, are investigated on this plane of CLA. (Inayatullah, 2009, p.8.)

The final stratum of CLA takes place on the plane of metaphor or myth. They constitute the unsounded chronicles of cultures, common embodiments, the subliminal world, mainly affective aspects of the matter or the conundrum of an oxymoron (for instance regarding the means of production as private capital, as I shall discuss in this dissertation momentarily, in the CLA of the mythical stratum, 4.1). This tier of CLA supplies a knee-jerk-reaction-degree background to the weltanschauung under the microscope. The parlance is not as emphatic, and devotes more time to conjuring up imaginative illustrations, to impinging on

sentimentality rather than aiming for true telepathy. This is the point of departure for all interrogation. Be that as it may, even interrogation can't transcend all boundaries, as its context must access other contexts, say, the metaphorical one. (Inayatullah, 2009, p.8.)

3.2 The imperfections of CLA

As is the case with all methods, there are some caveats to CLA. It refrains from scrying the future in itself and is at its most behooveful when accompanied by further methods. On top of this, CLA risks a debilitation of functionality, in other words, there is a hazard of immobility in pursuing the alternatives, if immoderate quantities of time are invested in demythologizing issues, and the hours left for orchestrating novel social practices are insufficient. (Inayatullah, 2009, p.28.)

Scholars might get derailed in an exercise of unearthing layer upon layer of meanings instead of homing in on the agents who cultivate commitments to the weltanschauungen in question, as well as the frameworks and ontologies they inhabit. Additionally, there is the drawback that the employment of CLA by a tenderfoot in the field of futurology might stifle her intrinsic initiative, inasmuch as it systematizes actuality rather than giving carte blanche to all manner of futures ideation. To some, CLA is insurmountably intractable. Inayatullah asserts that this applies above all to empiricists, who consider the world from the standing point of a seesaw with wrong at one-, and right at the other end, who obsess over flawless facts sooner than admitting to being situated within the strata of actuality, or postmodern subjectivists, who dismiss the perpendicular fixation of CLA, alleging that established truths are an illusion contrary to the CLA outlook, which seeks to embed realities in variegated ontological settings. (Inayatullah, 2009, p.28.)

The most straightforward way to tackle these reservations of the functionality of CLA is by toggling the strata while simultaneously rotating laterally as one averts getting bogged down by any intellectual or doctrinal dictation of terms (ibid.). CLA pulls out all the stops to uncover openings for its colorful angles of incidence. It refrains from abdicating the empirical or the abstract and weighs in on either side down the road. In the aforementioned vein, CLA, in spite of its inherence to the poststructural

evaluative school, boasts an exceedingly stout leaning towards education through experimentation. CLA is after interchange across its planes. Reciprocation is imperative in this context. One may arrive at kaleidoscopic social conclusions by working one's way multidimensionally across scenarios, and by virtue of the unforeseen evidence-based actualities the discourse, not to mention the metaphors and myths, become more bountiful. (Inayatullah, 2009, p.28.) It is, at any rate, left for the reader to judge, how well the following causal-layered-analysis of surveillance capitalism sidesteps the stumbling blocks outlined above and measures up to the ideals of the method.

4. Causal layered analysis of surveillance capitalism

4.1 The Mythological/Metaphorical stratum

Surveillance capitalism is first and foremost a brand of capitalism. It may be a mutinous offshoot of the market economy on track to disfigure its progenitor (Zuboff, 2019, p.519), but it would be nonviable to account for it from any other footing than the radix of capitalism itself. The arguments in support of this inference shall be introduced presently.

Nick Couldry and Ulises Meijas (2018) situate the current era in an unprecedented juncture of expansionism heavily enmeshed in the historical evolution of the market economy. They opine that the annexation of data recasts people as vassals of wealth in striking neoteric aspects, not unlike Zuboff (2019), and even though the authors style this "data colonialism", they are unmistakably referring to the same phenomenon Zuboff knows as surveillance capitalism. (Couldry & Meijas, 2018.)

As Emile Durkheim has it, the division of labor doesn't occur and intensify as the incarnation of the ever-exacerbating search for profit, but more so as a means of conciliating people to the always-altering stipulations of being that apply at any given moment (Durkheim, 1964, p.275). In Durkheim's reading these stipulations of being represent the exorcist animating all things from the market economy and scientific advancements to the entirety of cultures (Durkheim, 1964, p. 266).

Meanwhile, Zuboff maintains that the logic of the market economy instantiates the aforementioned setup of the stipulations of being, whether it be in a distorted manner or not, according to the exigencies humans encounter whilst they essay to make the most of their time on earth (Zuboff, 2019, p.32). She earmarks entire chapters of her magnum opus to the (Zuboff, 2019, e.g. p.107-112) "neoliberal DNA of surveillance capitalism".

As is evidenced by the writings of Mirowski (2013), Jones (2012), Dardot and Laval (2013), surveillance capitalism isn't the first economic philosophy to exploit emergencies engendered by its predecessor, as neoliberalism in turn usurped the crown from Keynesianism. Keynesianism, on the other hand, was antedated by several branches of

neoclassical economics (Keynes, 1936), and the overall timeline could be extended at least to Ibn Khaldun's *Muqaddimah* in 1377, as far as written economic theory is considered, and even further into the past in terms of practice, as shall shortly be substantiated.

Thereby, the path-dependencies of surveillance capitalism oblige this dissertation to embark on the CLA from the very onset of the market economy. When it comes to the conglomeration of data and its outgrowth of other advantages at the root of surveillance capitalism, even more ancient times must be rummaged through.

Zimbalist (1989, p.6-7) designates "absolute capitalism" as an arrangement, wherein the capital goods – i.e. the extant resources – are privately owned to the hilt and held by an owning class with self-interest, while the better part of the rest of the population are wage earners under their employ and lacking of the capital as well as the product. Hence, the market economy is a composition founded on the exclusive proprietorship of the means of production and their leveraging in the quest after gainings.

For the sake of digesting what the description above implies, one is obliged to pore over the means of production, the resources as well as the inputs. In economics they span each item expended in the chain of events required in order to manufacture the final product – in other words the ultimate commodities and the tertiary sector of the economy. The allocation of contributions to individual inputs destines the tally of final products in compliance with the production function. (Samuelson & Nordhaus, 2006, Glossary of Terms.)

Economics reckons that there exist three elementary means of production: land, labour as well as capital. These assets tend to be labelled capital goods or -services, to uncouple them from "customer utilities". The planetary reserves and feedstock are viewed as ancillary means of production in conventional economics, owing to the fact that it obtains that they emanate from the aforesaid rudimentary capital goods. Land, labour or capital aren't convertible to final products in themselves, even if they constitute the statutory prerequisite for production. Land doesn't contain only the whereabouts of the output, but the aboveground and subterranean planetary reserves into the bargain. In more state-of-the-art writing also human capital – the pool of knowledge of the workforce – has been singled out as a new bracket among the capital goods. (ibid.)

It is most propitious to pitch into the meditation of the complications of

capitalism from this vantage point, because everything that is omitted from the equation of the means of production imparts this and that about what is underscored and what is played down under the order of capitalism, shedding light on the preferences it takes for granted.

No kind of capital is able to circulate in the absence of communication. In this dissertation, language, communication as well as all systems of meaning, are treated as *general relays* that connect the means of production to one another. In electronics, a relay is (The Free Dictionary, circa 2020) "a device that responds to a small current or voltage change by activating switches or other devices in an electric circuit". I contend that communication has been pivotal to the *activation* of the means of production and is all the more so to their *upkeep*.

Communication might be imagined in countless ways, but gesturing (Corballis, 2010; Arbib & Liebal & Pika, 2008) is its most probable prototype, whereas speech, signs, engravings and writing exemplify its later, more intricate and far-reaching modes (Tomassello, 2008). To be sure, not just any sort of communication serves to activate the factors of production or capitals – it must be duly rarefied. Exactly when this genus of communication has sprung up is still nebulous to some extent. Depending on whether any tool whatsoever qualifies as the first product in the world, or if the means of production posit for instance a tradable commodity in order to come alive, not later than in the region of 150 000 years ago – as of the first clues of primeval transaction between remote locations (Watson, 2005) – and perhaps as long as 2,5 million years ago, if the utensil alone suffices (Malaska, 2013, p.14-16), either the human race, its precursors or some tool-making animal species, such as chimpanzees (Boesch & Boesch, 1993) or birds (Chappel & Kacelnik, 2004), mobilized the forces that are recognized today as the means of production.

The sine qua non for this occurrence was communication in one form or another. Even among fauna, the exemplary behaviour passed on to the next generation is, au fond, communication (Hauser & Chomsky & Fitch, 2002).

Ordinarily, the means of production tantamount to the market economy are only employed to describe extant capitals – in this day and age, often even fictitious capitals of the future (e.g. Collins, 2013, p.60) – that lend themselves to being valued on the terms of common currencies, that is, through a general medium of exchange, usually money. The forefront of

scholarly work on the operating principles of capitalism consequently dedicates itself to monetary societies (Harari, 2014, p.341) set apart by two strains of communication-systems restricted to the human race – namely alphabets or syllabaries and mathematics expressed in numbers, which might all be commonly characterized as graphemes. This is patently detectable in the reality that a human being wanting the appreciation of the signification distinguishing the word "trade" from the denominations of other phenomena, or of how units or prices are indicated numerically, is impuissant to partake in capitalism – at least unless there is outside help in possession of these talents at her disposal.

On that account, the established definition of the market economy is – leastways in terms of its self-professed preconditions to its functioning – deficient. The means of production may only ensue and get in touch with one another through their consolidation by virtue of the systems of writing and counting maintained by communities. Without this, the means of production would be at a loss, and capitalism could never be achieved. Even so, this is not as decisive as the backlash the recognition of the ascendancy of communication (McNeill, 1998, p.26) sparks to the tenability of the fundamental assumption of capitalism, i.e., that the capital goods are private by their nature.

Bearing in mind that the means of production essentially eventuate from communication, one cannot intrinsically be the sole proprietor of them any more than a baby can claim to have socialized herself sans the assistance of a single other person. Macionis and Gerber (2011), for instance, aver that exposure to social encounters is vital to the enculturation as well as the sustenance of an individual. Albeit the abecedarian socialization process of especially a newborn child stems from the family (Whitbeck, 1999) and other closest relations, one mustn't forget that all such interaction is conveyed through the *general relays* of communication, derived from times before the speciation of Homo Sapiens.

With regard to capitalism, individuals are impactful above all as market-agents, who equate to the means of production. In light of this, one ought to remain mindful of the previous remark that all actors in the world, who amount to anything at all in the capitalist order of the pursuit of personal interests, owe their every breath to communication as a *general relay*. That is to say that the perks of communication – ergo, the means of production behind the market economy – proceed from a proclivity, whose trademark

not even the entire *human race* conceived of as a single unit, let alone any individual member of it, can claim exclusive ownership of.

The foregoing pedigree chart of capitalism was presented to epitomize the spuriousness of the declaration of independence of the means of production. Under no circumstances should any incidence, whose subsistence is reliant on the socialization process by dint of communication, masquerade as a private process when each of its body functions are the result of a team effort. This is not to say that the market economy would be utterly vacant of individualistic features – but the fact remains that even at their best, they are unfit to transcend the role of mere picturesque cataracts, where the rapids of information collated courtesy of communication rush in a spectacularly splashy fashion.

On the present, metaphorical tier of the causal layered analysis (Inayatullah, 2009, p.11), the market economy acts in its incumbent ethos as the bailiff for the individualist monarchy over the means of production. It pays no heed whatsoever to the rickety foundations its grounded on that echo the baseless Caesarism of the "benevolent" despots across Europe in the 16th and 17th centuries, in their moral extrajudiciality.

In more senses than one, capitalism has, in defiance of its more salutary contemporary trajectories, such as industrialization as well as the evolution of the representative democracies of the present day, been little more than a palace revolution, where the sovereigns' former "divine right" to arrogate collective accomplishments simply changed hands into the "the invisible hand", which now distrains upon the society at large. The overclass has been toppled by an "owning class", which to borrow a notion from William H. McNeill (1998, p.24-25), engages in "modulated macroparasitism", on the progressively *human* capital on a global scale, where the noblesse once phlebotomized its subjects' physical and material capital on a more localized basis.

To draw to a close the examination of the nethermost, mythological, stratum of this CLA of surveillance capitalism, I surmise that the Achilles heel of the market economy boils down to its unwillingness to concede the collective origins of its means of production. Thence, capitalism apports the facilities for pursuing prosperity in a capricious and inept manner, according to its "private proprietorship" -chicanery, which feudalizes intellectual property in a conspicuously similar manner to what the kings and churches of the Medieval period did with real estate. Herein

the market economy, though, is hardly unescorted, seen as for millennia on end, the well-off have concocted untold conjectures to permit their "macroparasitism" – sundry religions as well as philosophical schools of thought to name a few – (McNeill, 1998, p.24-25) and whenever the material or human capital has multiplied due to technology making headway, the windfall has unfailingly been allocated more unevenly than antecedently (Kohler & Smith, 2018).

4.2 The Litany, Social Causes and the Discourse

At this stage it would seem apposite to proceed to the more palpable strata of this causal layered analysis. In the next passages I shall address surveillance capitalism and the latter day of its history from the observation posts of litanies, social causes as well as discourses or weltanschauungen. The rest of the CLA shall be executed in an interleaved manner, since litanies, social causes and discourses manifest themselves so markedly sequenced in the market economy that a standalone treatment of each sphere would obnubilate their collusion as a coterie.

4.2.1 Neoliberalism

Until recently, and in the main, still as of the writing of this thesis, there has persisted and persists a nigh on unanimity that the leading currents of thought of our time are most candidly characterized as "neoliberal" (Azevedo & Jost & Rothmund & Sterling, 2019, p.50). This multifaceted, and fairly caliginous concept, which is purported to account for contemporary capitalism, (Harvey, 2005, p.2) adds up to a "...theory of political economic practices that proposes that human well-being can best be advanced by liberating individual entrepreneurial freedoms and skills within an institutional framework characterized by strong private property rights, free markets, and free trade."

According to Azevedo and his co-authors (2019), neoliberalism is, at its extreme, a doctrine that incriminates its casualties, holds the penurious and them alone answerable for their impecuniousness and thereby grants clemency to the communal, financial as well as public facilities and organizations that do its bidding under the aegis of free-market capitalism. In this vein, neoliberalism is first and foremost an ideology contrived to

warrant the system. As Monbiot (4.15.2016) describes: "The rich persuade themselves that they acquired their wealth through merit, ignoring the advantages – such as education, inheritance and class – that may have helped to secure it."

As has been demonstrated on the foregoing pages, Zuboff herself notes that there is a spiritual connection between neoliberalism and surveillance capitalism (2019, p.495), something that I believe is most exoterically pinned down as its own edition of the apostolic succession (Cross & Livingstone, 2005, article "apostolic succession"), in which the grace of the market economy is transferred by each generation of capitalism through the imposition of the invisible hand to the next. This theorization of current economical trajectories is also backed by writers such as Jamie Bartlett (2018, p.142-143). In the process of the apostolic succession, surveillance capitalism has also assumed *omertà* as one of its articles of faith after the neoliberal tradition – whose exponents are notoriously averse to admit to any ideology other than free-market capitalism and economic growth (Rowden, 7.6.2016).

Surveillance capitalism is a discombobulating shambles of an ideology, forasmuch as it makes the most of the old neoliberal rhetoric while simultaneously headlonging into demolishing the very foundations of free market capitalism under the pretext of an out and out inverse branch of reasoning. The patericon of this latter rationale includes figures such as B.F. Skinner (2002, p.163) and his as unlikely as unwitting yet more impelling reiterator (Zuboff, 2019, p.418), Alex Pentland (2011, p.8, 10). They esteem individual and particularly social suggestibility instead of the libertarian freedom of choice, as the key to reaching the acme of human evolution (Pentland, 2011, p.7; Pentland 2017, p.245; Skinner, 2002, p.275), and are brazenly at odds with everything that the likes of Milton Friedman and Friedrich Hayek held dear.

In effort to retain an air of contiguousness to this CLA, I shall, for the present, zero in on the neoliberal smokescreen of surveillance capitalism which it has fallen back on for the better part of its existence and still dons in a timeserving manner and out of old habits. Despite this, surveillance capitalism has no qualms about jettisoning its neoliberal launch vehicle on its way to a veritable space exploration of inequalities of novel orders of magnitude beyond anything that even the most perfervid laissez-faire partizan could have stargazed. (Zuboff, 2019, p.504-505.)

One of the dimensions, where surveillance capitalism has hitherto stayed true to and made the best use of its neoliberal provenance, is jurisprudence. The part played by neoliberalism during the last fifth of the 20th century up to surveillance capitalism's nidus at Google at the turn of the millennium was conducive in a major way to surveillance capitalism's initial aspirations and its triumphant upholding of its right to the ungoverned turf of the Internet and all the connections it intermediates (Short, 2011, p.633).

Jodi Short (2011) investigated nearly one and a half thousand papers that appeared from 1980 to 2005 in legal periodicals featuring administrative supervision as a topic. Public oversight as the persecution of private entrepreneurship and individual liberties constituted the leitmotif of these writings as might be anticipated with the dominant doctrine of the period equating all state action to undue Byzantinism (Short, 2011) as Friedman and Hayek were wont to do in their work. Instead of the body politic stepping in at any point, businesses would "self-regulate" (Short, 2011) and this had already long been common practice when surveillance capitalism kicked in (Short, 2011; Mirowski, 2013; Zuboff, 2019, p.108).

There is yet more to this story withal, as according to Zuboff, the doctrinal predilection of the predominant legal rationale of the First Amendment in the United States asseverates an intimate coupling of the freedom of expression and property rights (Zuboff, 2019, p.109). In the aforementioned atmosphere, surveillance capitalism has thought up a so called "cyberlibertarianism", characterized by Frank Pasquale as freedom of expression -extremism. The attorney-units on the payrolls of surveillance capitalists such as Google, invoke the First Amendment dicta to keep at bay all types of superintendence or extraneous enforcement whenever confronted with even the slightest attempts from "third parties" such as the state, aimed at curtailing any of the substance lodged on their web-domains let alone the computational calculi in command of the data that the functions of their apparatus engender. (Pasquale, 2017.)

4.2.2 Meritocracy

Having thus instantiated that in these rhetorical respects, the precedent set by neoliberalism served more or less as a linchpin for surveillance

capitalism, I must now peruse the staple selling-point of neoliberalism, namely its claim to meritocracy, inasmuch as it has, in the very least, licensed the escapades of surveillance capitalism by proxy. Revisiting Monbiot (4.15.2016) and modifying him a fraction: "The rich persuade themselves" – and the rest of us – "that they acquired their wealth through merit".

Meritocracy is an operating principle that requires that commercial commodities as well as the parliamentary authority are entrusted to the members of the society by virtue of their capacity and exertion not to mention their feats, lieber than their fortune or socioeconomic status (Dictionary.com, circa 2020). The best corroboration of the role of assumed meritocracy both as a fortification of neoliberalism and as its consort in the regnant ideological royal couple of the world – that is to say, until the surveillance capitalism-dataism loveteam took over – may be discovered in the globalized tertiary education of the present day. Zachary Karabell notes it as the most widespread brand of meritocratic selection. (Karabell, 1999.)

Education, on the other hand, has proven to be a trustworthy index of the bargaining power of an individual later on in the labour market (Collins, 1979). On top of this, it is monumental to the public economies, as a line of business, intrinsically, as well as in the form of a stock of qualified and cultivated human resources at the disposal of everyone else in the country. As a result, employees in possession of academic degrees enjoy a formidable perquisite in their pay and experience a substantially lower chance of losing their jobs in comparison to their non-academic counterparts. (Simkovic, 2013; OECD, 2011.)

Neoliberalism, in turn, gauges its performance first and last by GDP. This obviously does wonders to meritocracy's compatibility with neoliberalism, as it is quite a cinch to trace the most reputable universities of the world to the most economically productive countries. On these grounds, for the purposes of this thesis, meritocracy is customized to also stand for the ideal pertaining to the market economy at large of the "just" distribution of the boons of the interplay of the means of production to each according to their contribution, in other words, merit, by the help of the invisible hand.

Meritocracy and people's confidence in its fulfillment in this extended vein, serve as steadfast stamps of approval for neoliberalism and

capitalism, as they strive towards higher education and economic growth on the other hand steer policies all over the world (Lepenes, 2016; The World Development Report, 2019). It is meritocracy that vouches for neoliberalism, when it vaunts the "equality of opportunity" and the notion that everyone may be their own man as long as there is a constant liberation of more free-market environment for them to roam in. I shall soon adduce some evidence as to why the "inequality of inopportunity" is a closer match when capitalism as a system, be it neoliberal, surveillance, or any sort for that matter, is considered.

In addition to all of the market agents operating gratuitously on systems of communication as *general relays* that cannot be attributed to any individual person, they enjoy an untold amount of other amenities that have been compiled through concerted efforts for millennia on end. Among these belong all manner of innovations, trade-routes and the general infrastructure, construction- or clearing work not to mention any corresponding breakthroughs and quantum leaps that have made humanity what it is today.

As opposed to the interpretation that run-of-the-mill writing of history might induce, the past of humanity is by no means little more than a catwalk of exceptional individuals. Instead, I would contend that its most salient feature is the servitude of the masses in more or less stringent conditions. The first comprehensive democracies of the world are barely over a hundred years old. As late as 1893, New Zealand was the sole self-governing country, where universal suffrage was practiced (Dieter, 2001, p.14). Before this, multitudinous forms of indirect subvention, say, the slave work of the rest of the population or employment relationships akin to it, have, for their part, relieved the resources of the thinkers of bygone days to intellectual work.

According to Joseph Strayer, some manner of feudalism was in place in most of the Eurasian continent including Japan at least at some point within the last 6000 years except for perhaps the last century or so during which it has retreated rather ubiquitously in the area (Strayer, 1965; Strayer, 1970). Peoples in the other parts of the world have experienced grand scale slavery at latest by the Age of Exploration and the Atlantic triangular trade. Even after slavery and serfdom tailed off in dribs and drabs, what superseded them wasn't anything representative of true liberty either. 120 years ago in the United States, the flagship economy of the

world at the time, the majority of industrial labourers toiled a 10-hour workday (or even two hours more in some industries) and yet didn't make more than one or two fifths below the threshold of what was regarded essential to lead a tolerable life. (Library of Congress Country Studies, circa 2020.)

The role of the underprivileged and unsung masses always and everywhere in the maintenance of the basic functions of each society on earth that has gone mostly uncredited throughout history, mustn't be overlooked in favour of the macroparasite masterminds who have appropriated it with impunity for thousands of years, whether they be kings, clerics, scientists, political actors or any public or private figures at that. "... All innovators stand on the shoulders of those, who came before them" (Ford, 2015, s.80), and if the societies that came before them were unjust – as they were roughly all over the world – they stand even more so on the shoulders of all our ancestors collectively.

That is not to say that it would end there, since the subvention has only assumed a more direct quality during the last century, via e.g. the tax-funded social services (McGregor & Campbell & Macy & Cleveland, 1982). More specifically, for instance the network that in due course matured into the World Wide Web, was built up by the state-sponsored DARPA (The Defense Advanced Research Projects Agency). According to Ford (2015, p.76), technologies on track to subvert the labor market - ushered in by Google (Google Investor Relations, 2017 for working personnel vs. profits, the ratio of which is remarkably different to, say, General Motors in its top years), Facebook (Heath, 11.25.2013), Amazon (Ford, 2015, p.231) as well as other similar companies that would certainly meet the criteria of surveillance capitalism - ensue from an aggregate of endeavour that stretches over generations, has encompassed innumerable individuals and been frequently financed by taxpayers. (Ford, 2015, p.266.)

Analogous examples abound in the 20th century. Be that as it may, one must still make note of the fact that the owners of the capital goods have provided some measure of reimbursement for their lucre to their fellow citizens in the shape of their own levies. On the other hand, neoliberalism in particular has played a leading role in the commercialization of public services, whereupon capitalists have managed to cover the costs of taxation at least from 1980s onwards. For instance, from 1990 to 1999, the

private sector received 850 billion worth of denationalizations in exchange for their contributions to the national coffers (Kikeri & Nellis, 2002, p.2). This is more reminiscent of some kind of inside dealing than taxation per se.

Nevertheless, the tax arrangements of e.g. Amazon, the third largest company in the world by market capitalization as of 13.3.2020 (Amazon.com, circa 2020), by virtue of which the corporation banked three quarters of its proceeds in Europe as duty-free (The European Commission, 10.4.2017) as winnings at a lottery, point to the waning of even the vestigial remnants of the willingness of the surveillance capitalists to do their share for the commonweal. Apropos, the business-model of seven of the eight most capitalized enterprises of the globe, Apple, Microsoft, Amazon, Alphabet, Alibaba, Facebook as well as Tencent, (Financial Times 500, 2019), relies heavily on the Internet.

This once again spells trouble in the inequality department, as the "long tail" also known as the L-curve is rife in the corporate cultures of every single company that mainly operates in the Internet (Ford, 2015, p.76-77). The said graph is a dead ringer for a ski-jumping ramp with a disproportionately extended landing hill. It stands for the distribution of profits as well as everything else (subscriptions, viewers, etc. of the users hosted on the website/app/service) as they all pile up to the top in an abysmally one-sided partition endemic to cyberspace, whereas the preponderance of people populating the long tail return empty-handed despite their best efforts to leverage the web to make a living.

While the owners of the platform take their cut from every cent circulating on the long tail, the users are only compensated for the two cents they put in, depending on how they fare. Given that the business in possession of the L-curve reigns over an ample market, even the collection of trifling tributes from the full length of the long tail may well fetch billions of dollars' worth of revenues. (Ford, 2015, p.76-77.) Lines of business prone to digitalization seem to evolve inexorably into such extended versions of Brynjolfsson & McAfee's (2011, Chapter 3. "Creative Destruction: The Economics of Accelerating Technology and Disappearing Jobs, Section 2, Superstars vs Everyone Else") "superstar markets", whose existence they've educed lavish evidence for in the industries of music and competitive sports as well as in the worldwide CEO market. (ibid.)



Image: Longtail.com

The long tail is outstandingly potent for its owner. For those, who, on the other hand, hold only one of the umpteen individual spots that the L-curve is made of, the sources of income up for grabs from their undertakings in the web plummet to a pittance. This might be innocuous enough provided that alternative avenues to subsistence remain open. The quandary here is that when algorithms keep on repurposing entire lines of business, chances are that the principal functions that supply the people their livelihood, will increasingly evanesce. (Ford, 2015, p.76-77; Bartlett, 2018, p.112.)

The platform economy is the abominable pinnacle of the arbitrary feudalization of human capital to the owning class. The elites of the market economy heap vaulting profits from the more collective efforts of humanity than ever in the age of the globalized world and its interconnections, in a manifold more high-yielding manner than the aristocrats before them, and yet they are only slightly more eager to engage in charity in the form of wages and taxes. On top of that, Thomas Piketty (2013) has provided well-rounded documentation of the tendency of interest income to generate better returns than the profit-earning capacities of individuals. This derogates the foundations of meritocracy even further.

In the light of all the above, a re-evaluation of the pledge of allegiance

to meritocracy the market economy pretends to, is in order. On one hand it appears as though the "long tail" of the platform economy is regarded as the most laudable mechanism for resource allocation, forasmuch as capitalism awards the companies implementing it with the most staggering market values. Concurrently, the supposed "platforms" furnished by corporations such as Apple, Google, Amazon, Microsoft and Facebook, are nothing but the latest layers to stacks of sedimentation of similar platforms that have taken shape more or less fortuitously in the wake of the intensification of human collaboration. The initial platform was communication, subsequent ones structures like the economy, the state, science, and to name one of the most recent, the Internet itself, as was demonstrated a few paragraphs ago.

Should the businesses of the aforementioned supreme surveillance capitalists be subjected to the logic of the long tail even in relation to just these five antecedent platforms that first spring to mind, their prerogative to the gross world product churned out by the means of production and particularly human capital would dwindle to a fifth of the percentage that the average user of their own internet-infrastructures nets from her operations. The lion's share, for its part, would go to every living human as a stockholder of these original platforms by descent (even some animal species might be deserving of dividends), bearing in mind that the means of production are genotypically universal and mutual.

Therefore, when it comes to the meritocratic grounds of the market economy, the status-quo as it stands is more resemblant of something that could be designated "the trespasser-takes-it-all", for lack of a better expression. The thousand- or hundredfold (or even tenfold) inequality championed by current capitalism is approximately as well-founded as incentivizing a trespasser for creative kitchen use as she, during her heist, notices a refrigerator filled with various foodstuffs, the pantry well-equipped and cutlery ready at hand. (For the degree of inequality, see, Fuentes Nieva & Galasso, 2014; Brynjolfsson & McAfee, 2011, Chapter 3. "Creative Destruction: The Economics of Accelerating Technology and Disappearing Jobs, Section 2, Superstars vs Everyone Else". According to the former two, the richest one percent of the world, that is, 70-80 million people, are 65 times more affluent than the bottom 50 % of people globally. It is to be expected that the inequality among these 70-80 million people is even worse, as at least in the "superstar markets" of Brynjolfsson

and McAfee, inequality scales up at every decile, which would mean that the 0,1 percent of the world are manifold more affluent than the bulk of these 70-80 million and the 0,01 percent again manifold more affluent than most of the 7-8 million people in the richest permille of the world etc.)

The police have been called, and in anticipation, the trespasser in the aforementioned kitchen prepares tasteful portions by the samples of which she enraptures the law enforcement. To top everything off, the trespasser then vends the repasts to the officers, who have at this point quite forgotten about the arrest. When the victims of the burglary approach the trespasser in hopes of remuneration, she balks at their claims for commissions for her profits and indeed even refuses to clean up the mess of a kitchen she's left behind. The trespasser excuses herself of all allegations on the same grounds: all of this was, after all, her own work.

In this configuration the "kitchen" represents the societal environs, in other words, the system supplying the labour force, organizing its strengths, maintaining the infrastructure as well as facilitating the intellectual competence of its citizens, the language, culture and suchlike prerequisites. The "trespasser" is an innovator, an entrepreneur, an investor, a top-notch employee, practically any individual actor that capitalism erratically rewards on account of her attributes – or at least attributes that she is credited for – being sought-after in the respective day and age.

The "heist" denotes the fact that the trespasser is allowed free rein at a negligible cost (Kikeri & Nellis, 2002, p.2) compared to the potential proceeds in a society, whose structures were mostly in place before the trespasser drew her first breath. The "refridgerator" and "foodstuffs" are composed of general and collective natural resources, the pinpointing, appreciation and harnessing of which has taken tens of thousands of years (Harari, 2014, e.g. p.87, 181). The "well-equipped pantry" stands for precursory discoveries and devices, which the new innovations, services or commodities, exemplified by the "portions/repasts", are derived from.

The "police officers" symbolize the legislators or any other conceivably critical party, and on the other hand the consumers, to whom the "portions" are peddled. "Samples" in turn, could be construed as, for instance, one-month free trials in streaming services. The "commission" would match up to, say, dues for the environmental costs of the enterprise of the "trespasser", or an adequate (for instance long tail -based) collective tithing

of her innovation's revenues. The "victims of the burglary" represent the society at large or even the entire world population, which indirectly constitutes the only reasonable beneficiary with regard to the vast hordes of people, who were the original architects, builders as well as provisioners of the "kitchen", the "refridgerator" and the "cutlery". One's "own work", again, is a reference to the notion central to capitalism that as long as one arrogates possessions simultaneously from as many parties as one can, they start belonging to one.

Lastly, meritocracy is deteriorated by inheritance. Even if a state was achieved, where individual agency might be unstrapped from its *general relays* of communication and its other, later collective platforms, so that it might be independently valued, humanity's long-winded experimentations with monarchy have already made clear that aptitude is rarely hereditary, whether it be passed on along a crown or a fortune (Sandberg, 3.25.2018). Another problem to legacy is that the assets trace their roots back to social conditions with no democracy in sight in only a few generations (Hume, 2016, p. 281 for the establishment of the enfranchisement of women; Zuboff, 2016). In these circumstances, the freedom of competition was a luxury and by no means at the reach of the majority of the society. As has been previously substantiated, all of the cerebral work for the most of the past has invariably leant on a certain degree of class distinction (Strayer, 1965; Strayer, 1970), where others travail to ensure the food supply so that others may invent and manufacture (McNeill, 1998, p. 24-25). I (Sandberg, 3.25.2018) have styled inheritance "inequality with special effects" in an opinion piece in Helsingin Sanomat.

Against the background of all of the above, the pursuit of private prosperity celebrated by capitalism and all its versions, shrinks to a contribution barely comparable to attaching price tags to the end products cranked out by the effort-reserves of historical and current human communities and populations, rather than being grounded on any considerable, individualistic copyright. It is fairly absurd to inscribe so much added value to this function that particular people should be compensated for it hundred- or thousandfold more generously than others (e.g. Mullany, 1.16.2017). By the same token, one may conclude that the capitalist system is not to thank for when it comes to the historical rise of the living standards. Instead it has evolved as a parasitic twin of the expanding human communities and the pooling of human capital thereof.

4.2.3 Inequality on all fronts

Hitherto, this CLA has taken stock of the capitalism-part of surveillance capitalism to emphasize some matters that the market economy never quite got right even anterior to the emergence of its surveillance capitalism edition. The rest of this breakdown is dedicated to what the market economy does plain wrong, and what has brought the surveillance aspect of surveillance capitalism to be. Perhaps the most parlous miscalculation of capitalism is its prioritization of the reduction of poverty over inequality. Among others the World Bank names poverty reduction often in its reports of the global economy – and its growth – as the overriding objective. (e.g. The World Bank World Development Report 2016.)

4.2.3.1 The institutionalization of inequality – Data on the driver seat

If the overall wealth of the world was somehow bound to the extent of the natural resources, it might be desirable for the financial situation of the indigent people in a society to improve even with the increase being proportionally exiguous relative to the well-to-do in the same society. Nevertheless, when there is more currency in circulation than material assets, this equation is no longer valid. Even when debating an economist, one can hardly end up in an altercation about the scarcity of the natural resources of the globe. The financial resources, on the other hand, might also be in some sense finite, but they still outnumber the material and immaterial assets of the world by a landslide (e.g. Graziani, 1990; Collins 60, 2013).

When inequality on the planetary scale is allowed to bilge for long enough, individual people might eventually be able to buy out all the natural resources – i.e. the material assets – before the poor, despite their enhanced wages, manage to purchase anything. Inequality outweighs poverty as an issue, since the most affluent people can artificially elevate the price of any product beyond the reach of the disadvantaged. (E.g. Reguly, 2008 for the world food price crises.)

All the more prevalent and facile, though, is to invest sizable sums of money to flummox the underprivileged via the lobbying of politicians,

effective PR (e.g. Glantz, 2000 about the tobacco industry) as well as to market deleterious products and their "healthier" versions simultaneously (Coca-cola and Coca-cola light for instance), not to mention targeting advertisements (Schlee, 2013). With these tools at the disposal of capital, the disadvantaged might be left with less leeway for choices that statistically avail their wellbeing even with a few zeros more on the payslip, than they would on a lower wage level in a state of affairs, where the most opulent economical agents in the society would be incapable of so aggressive a promotion of their wares and such insurmountably emphatic PR.

Inequality is at the heart of the surveillance-side of surveillance capitalism. It agglomerates the issue of the means of production as well as other endowments of advancement by dint of the exorbitantly individualistic proprietorship-principle, to a handful of fingers of the "invisible hand" (Mullany, 1.16.2017). Unlike earlier days, the aforementioned assets and breakthroughs aren't confined to the chiefly corporeal surplus of human or animal muscle power anymore. In lieu, they are progressively more tilted towards human capital and its accumulation with the help of ever more elaborate *general relays* (Harari, 2014, p.417; e.g. Sample, 11.2.2017 for the courting of UK's academics by powerful IT companies; Bartlett, 2018, p.118-119 for the possibility that private AI's might exacerbate inequality). The most groundbreaking of these are the algorithms governed by AI that permit the multiplicative acceleration of mathematic, alphabetic and syllabic communication in a trajectory that converts the world to more digitally readable than ever before (Harari, 26.8.2016; Zuboff, 2019).

This in turn has given rise to an unforeseen blanket currency that money itself is incrementally amalgamating with (Henley, 6.4.2016), namely data (Harari, 26.8.2016). An entirely separate topic of conversation is whether data is, on top of becoming a general-purpose currency, possibly on its way to maturing into some kind of universal solvent or an all-consuming cosmic alkahest (Harari, *ibid.*). According to WEF (2011, p.5, 7), "personalized information will be the new 'oil' of the 21st century". In view of the reality that the online-enterprises featured in the formerly cited catalog of the world's largest corporations by market capitalization, have dislodged oil-companies the likes of Exxon Mobil, Royal Dutch Shell and PetroChina during the last ten years, the juxtaposition would seem

justified. (For a list of the largest corporations by market value from 2009, see e.g. Therborn, 2012, p.215; for the same list a decade later, see FT Global 500, 2019.)

Despite all of this, the communique still reads (Gregory & Stuart, 2013, p.41): "Capitalism is characterized by private ownership of the factors of production. Decision making is decentralized and rests with the owners of the factors of production. Their decision-making is coordinated by the market, which provides the necessary information". Friedrich Hayek, one of the harbingers of the neoliberal school, argued (1945, p.528) that capitalism capacitates "the coordinated utilization of resources based on equally divided knowledge." Hayek regarded this as the lifeline of human freedom (Zuboff, 2019, p.497).

In the twentieth century this sounded a great deal more credible than today. According to Zuboff, BuzzFeed got hold of a Facebook memorandum in 2018 (Zuboff, 2019, p.505). In short, its message could be encapsulated as follows: all traffic on the site is desirable. The product doesn't take responsibility for anything that takes place on its platforms, as it is only concerned with having as many people engaged as attainable. (Mac & Warzel & Kantrowitz, 3.29.2018.)

In the own words of Larry Page (5.15.2013), Google's co-founder alongside Sergey Brin, already in 2013 the ultimate goal of the company was that its "software understands deeply what you're knowledgeable about, what you're not, and how to *organise the world* so that the world can solve important problems." Facebook CEO Mark Zuckerberg exceeds even these high-flying aspirations (Zuboff, 2019, p.402), having declared the consolidation of the world population the under the blue flag of the social media platform its mission statement on several occasions (Zuckerberg 1.29.2015; Zuckerberg, 2.16.2017a; Zuckerberg, 4.19.2017b). Zuckerberg (2.16.2017a; 4.19.2017b) goes as far as to entertaining the eventuality of a "worldwide voting system", overseen and operated by Facebook of course.

Notwithstanding the more temperate verbiage of Google, it has concurrently been marshalling its software onto the streets in the Smart City projects of Columbus, Ohio and Toronto, Canada that represent the second phase of its Street View -campaign completed in the first decade of the new millennium. The Smart Cities are just one more step in the procession of disembarking the online tracking of individuals into the

unfolding actuality of people's lives. Thus, Google too seems keen to assume functions heretofore tended to by societies and their institutions. (Zuboff, 2019, p.227-232.)

Amazon, on the other hand is attempting to specialize in voice capture. Amazon Lex is a utility for incorporating the smarts of its virtual assistant AI, Alexa to other appliances (Amazon Lex, 2.17.2017. They style it a product for establishing communicational convergence between Alexa and any other device via verbal or written expression. The underlying aim is to fashion an unaffiliated habitat for Alexa and render it the utmost ubiquity. (Zuboff, 2019, p.268; MacLaughlin, 11.16.2016; Limp, 7.14.2016.)

Microsoft is not far behind with Cortana, its own intelligent personal assistant, as it is slated for a similar purpose (Zuboff, 2019, p.164-165). What is more, an evaluation by the Electronic Frontier Foundation came to the conclusion that even Microsoft-users, who passed on Cortana, experience unmatched volumes of data trawling. On top of garnering records of the users' verbal, written and tactile stimulation of their respective devices, this includes online haunting and remote measurement of the overall browsing, the software running as well as operating time among other things. (Kalia, 8.17.2016, Forrest, 4.15.2015, Meer, 7.30.2015.)

Zuboff enumerates also other branches of businesses that have more recently been lured in by the prospect of "surveillance revenues" from online service providers such as Verizon and AT&T (Zuboff, 2019, p.166), to toy companies the likes of Genesis Toys and Mattel (Zuboff, 2019, p.266). While it remains uncertain, whether all corporations in the world truly will gravitate towards these "surveillance revenues" accruing from data collection, Zuboff does make a strong case. As a suitable denouement to at least Facebook's surveillance capitalist ambitions, one of its foremost developers (Vance, 10.4.2012) was rather blunt: "We are trying to map out the graph of everything in the world and how it relates to each other."

It would appear that the market forces have at long last clued the most successful capitalists in on the epiphany that was contemplated in the first section of this CLA at the mythological level. The systems of communication and the content they convey certainly are now officially the *general relays* that keep the means of production spinning.

As far as Hayek's equally divided knowledge goes, according to Dragland (5.22.2013), already as early as 2012-2013 nine times more

information was begot in the digital domain than throughout the entire preceding timeline of human life. Most people would lack the computational power to process their Brobdingnagian "equal share" of this data that capitalism postulates, even if they somehow managed to lay their hands on it (Zuboff, 2019, p.187-188).

4.2.4. Democracy and surveillance capitalism - bodies politic as cyborgs

Zuboff designates the contemporary pattern of the market economy as surveillance capitalism that is casting off its neoliberal cradle bit by bit and parting ways with its predecessor (Zuboff, 2019, p.519). On top of commandeering all human goings-on as fuel for its clandestine, profit-oriented intentions of expropriation, clairvoyance as well as merchandising, surveillance capitalism strives to promote the subjugation of all output to its layout of worldwide behavioural calibration. Zuboff additionally itemizes numerous other attributes, but in this context, it suffices to say that we are (Zuboff, 2019, The Definition) dealing with "a rogue mutation of capitalism marked by concentrations of wealth, knowledge and power unprecedented in human history." (Ibid.)

There is no hoarder of applied science and knowhow affiliated with AI that would be more truculent than Google (Zuboff, 2019, p.189). Between 2014-16, it procured nine machine intelligence enterprises, doubly the total of its closest contestant, Apple (MacLaughlin, 11.16.2016; Sullivan, 8.4.2016; MacLaughlin & Sullivan, 1.10.2017). Four fifths of the electronic brains that constitute the nucleus of Google's resounding preeminence as the most vast computer-complex on the planet (Borker, 2.2.2018; Manyika & Chui, 8.13.2014; Metz 4.5.2017a) are characterized as underpinnings, a machinery encompassing tailormade data centers that dwarf multistorey car parks in stature, with a range of fifteen different geographical sites as well as, by 2016, 2.5 million servers on over half of the continents (Data Center Knowledge, 3.16.2017). (Zuboff, 2019, p.188.)

Google's reserves of digitalized information surpass those of any other company (ARK Investment Management, 5.25.2017; Halevy & Norvig & Pereira, 2009) and as data is the only means of upskilling algorithms and AI, Google sits at the best vantage point of all the surveillance capitalist

corporations. What is more, already in 2016, an over 50-fold upswing in the sales of machine intelligence in wares and on the tertiary sector of the economy was banked on to betide before 2025 (Feldman, 8.30.2016). Financiers adjudge Google to be further beyond reach than at any point of time up till now, owing to the fact that it is nonpareil in sporting a fusion of infrastructure magnitude and research. (Zuboff, 2019, p.188.)

Google is but the bellwether in the vanguard of surveillance capitalism, with its agglomeration of big data expertise (Zuboff, 2019, p.189). The five cutting edge IT enterprises in the United States command an ample supply of funds to eclipse their challengers: fledgeling businesses, colleges, boroughs, entrenched concerns on other provinces of the economy as well as entire nations short on money (Metz, 4.18.2017b; Metz 10.22.2017c). By virtue of its sumptuous enlisting endeavours, Google has exponentially reinforced its ranks of AI savants in recent years and emerged as the uppermost supplier of articles to the most distinguished scholarly publications (Zuboff, 2019, p.190).

Under the yoke of surveillance capitalism, the world is on track to becoming so dependent on the big tech in charge of data (Zuboff, 2019, p.187) that reality is at risk of being truncated into a tunnel vision through the lens of Oculus Rift or Google Cardboard. This would render the bodies politic around the globe more akin to something like cyborgs always in need of the newest algorithmic enhancements from their surveillance capitalist programmers. If one were to ask Elon Musk, he would most likely declare that humans might be living in a simulation (Ross, 9.30.2014), but what is more societally perturbing is that the surveillance capitalists are leaving no stone unturned to make room for their simulations to start living in humans. According to Zuboff it is most notably the surveillance capitalists' inimitable faculty to data *processing* that fashions earth-shattering disparities in the domain of erudition and authority. (Zuboff, 2019, p.187.)

The bottom line of this is that the underlying goal of surveillance capitalism is to confiscate the quintessential keystone of the market economy, that is, freedom of choice. Next, to bring this CLA to a close, I shall inspect the imminent peril of the world lapsing into a second generation planned economy, as not just most of the world's information, but the unfolding actuality as well, is increasingly mediated by autocratically presided private intelligence agencies posing as IT-

corporations. This time, though, the blueprint is new and improved, as unlike The Soviet Union, where statistics were distorted to accommodate the impression, surveillance capitalism distorts impressions to accommodate statistics. (For autocracy in the decisioning of surveillance capitalist firms, see. Brin, 2004. The stock of Google was partitioned to binary categories in 2004. The first-rate shares, incongruously known as the B voting stock, rest entirely in the hands of Google's founders, Sergey Brin and Larry Page, and boast a voting coefficient of ten compared to the A stock. According to Zuboff, this exempts the two from duress from their financiers' part. (Zuboff, 2019, p.101-102.) The same is true for an increasing number of other originators of similar tech firms (Zuboff, 2019, p.102; Masulis & Wang & Xie, 2009; Smith, 10.28.2011), and, naturally, Facebook, where the lone master of the voting power is Mark Zuckerberg (Venturebeat, 2.2.2012).)

The sparking plug for surveillance capitalism was an altogether novel species of merchandise, namely speculation on the daily proceedings of human beings (Zuboff 2019, p.96). It was chanced upon by Google at the turn of the millennium, as it detected the online spoor left by individuals exploring the World Wide Web on its search engine (Zuboff, 2019, p.63, 97). Since then, the business model of the company has built upon the unabated augmentation of this "behavioural surplus", and other IT giants have followed suit (Zuboff, 2019, p.68, 71-85, 91, 93).

For the sake of succinctness, I shall once again present only an abbreviation of the workings of surveillance capitalism and trammel my scrutiny to its most grievous facets. The assemblages of electronic brains of surveillance capitalism conglomerates refine the comportment residue of Internet-interactions into a sustained outpouring of insider trading opportunities for marketers. These are packaged as sales articles contrived to prognosticate peoples emotive responses, decisions and actions in advance, according to their browsing practices. Just how the algorithms arrive at these conclusions, is obviously classified to the highest degree. This in turn provides the surveillance capitalists with a valuable disclaimer: they don't vend their data per se, solely the vaticinations that nobody but they are capable of construing from their epoch-making plenty vaults of behavioural surplus. (Zuboff, 2019, p.96.)

The aforementioned sales articles pare down the hazard of operating losses for advertisers, guiding them like short-term time-machines as to

how they should schedule and set their wagers. The rate and reliability of the projection deliverable is the indicator of how well exactly it estimates foolproof outcomes: the better the forecast holds, the slighter the precariousness of the advertisers' investment and the heftier the returns. Google and sundry surveillance capitalists have mastered the craft of a new brand of soothsaying grounded on digitalized information instead of the occult, discarding the sixth sense in favour of statistics of unforeseen magnitudes, in the interest of divining the destinies of their users and auctioning them off to their true patrons, the marketers, to monetize. This is, anyhow, barely the overture to the surveillance venture looming large. (Ibid.)

The sales articles of prognostication end up in an unexampled commercial sphere, where swaps take place entirely in the currency of upcoming actions. According to Zuboff (ibid.): "surveillance capitalism's profits derive primarily from these *behavioral futures markets*." Zuboff goes on to claim that while marketers preponderated the initial stages of this commercial sphere, it is by no means earmarked only to them. She equates the aleatoricity of this product-promotion prevalence to the happenstance that mass production was inaugurated by Ford and his cars. There is a trajectory well on the way that whosoever agent enthusiastic about acquiring data concerning the likelihoods of people's expected demeanour, as well as the best ways of intervening and modulating their upcoming actions, may participate in this game, where the behavioural lot of many a person, crowd, organism and object is prophesied and profited from. (Ibid.)

Peter Pomerantsev sheds some light on the directions, where some of these other "enthusiastic agents" are emerging from. He has painstakingly documented the motley disinformation campaigns of the world's dictators from the Philippines (2019, p.16-27), through Russia (p.32-40) to Mexico (p.70-82) and everywhere in between, interviewing several dauntless contrarians in these countries, who have been victimized by their nations' regimes and their cyber-strategies.

In democracies, on the other hand, this rerouting of people's decisioning has been carried out in a more circumspect manner, but data-driven feedback loops strikingly similar to the procedure of the commercial sphere of speculation on human proceedings, have featured in the electioneering of Barack Obama (Kalthener, 4.13.2017), Hillary Clinton

in 2016 (Allen, 1.9.2017; Codianni 8.25.2015; Goldmacher, 9.7.2016) and Donald Trump in 2016 (Swift, 9.28.2016; Heavy.com, March 2018).

What is more, Google and Facebook have been the go-to-consultancies for the online campaigning of the winners of the last three presidential elections in The United States. Google did it twice for Obama in 2008 (Zuboff, 2019, p.122; Miller, 11.7.2008) and 2012 (Zuboff 2019, p.123; Rutenberg, June 2013) and Facebook in 2016 in Trump's campaign (Baldwin-Philippi, 2017). The fact that these companies have acted and act as the grey eminences for the heads of state of the most powerful country in the world has massive ramifications for their political leverage, particularly as they are also some of the most munificent lobbyists in the world. (Zuboff, 2019, p.124.)

The sway of the surveillance capitalists isn't confined to the United States either. According to Waterson (6.6.2017), the British Labour Party made good use of Facebook in the 2017 general election. They employed an endogenous instrument by the name of "Promote". It pooled Facebook's insights with the party's private elector knowledge base and made it possible for the higher-ups to address regional-level campaigning to the most suggestible voters (Stewart 4.21.2017). Facebook's entanglement in the affairs of state doesn't end there. The result of the Brexit plebiscite in 2016 has also been attributed to the social media giant (Lewis, 7.20.2016).

Google, on the other hand, on top of the two-way street between its "Googlesphere" and the White House (Google Transparency Project, 4.15.2016, Google's orbit seems to be the preferred pilgrimage with nearly 200 employees jumping ships in favour of it by 2016, but more than 60 individuals of Google personnel additionally relocated to administrative offices), is also on the move in the Albion, with just about thirty people career-commuting between the government and the surveillance capitalist company in the years leading to 2018. (Bartlett, 2018, p.138-139.)

These people comprised erstwhile counselors of Tony Blair, as well as Nick Clegg, the past deputy Prime Minister. A handful even did the unthinkable and went "There and back again" (Tolkien, 1937), like the literary figure, Bilbo Baggins to the Lonely Mountain – where Google sits at the summit of surveillance capitalism – not, anyhow, to rob the proverbial dragon of its hoard of gold, or in this case, data, but rather to pay homage and be off their way. (Bartlett, 2018, p.138-139.)

The cases in point cited above demonstrate but the immediate

bargaining mircochips of surveillance capitalists behind the scenes of democratic decisioning. The backhanded weight of big tech on policymaking might be even more astounding. According to Bartlett (2018, p.145-146), the online-logistics provided by their prodigious electronic platforms, bestow the Internet-intensive corporations with second to none prospects to fine-tune and prompt the general discussion discreetly but decisively.

Uber succeeded in turning around the denial of its permission to run its business in London, rallying the city's inhabitants to its defense via email and alerts to its clients stating the ruling would (Uber London, 2017): "deprive you of the choice of a convenient way of getting about town" (Bartlett, 2018, p.146-147). Shortly afterwards, Uber's terms of use (Uber Privacy Policy, 2018) were supplemented with the statement that the service would reserve the right to "inform you about elections, ballots, referenda and other political processes..." that might entail effects to Uber's functioning.

Early on in the last decade, in 2012, the Stop Online Piracy Act was submitted to the Congress in The United States. The audiovisual line of business was widely behind the bill, which had the deracination of copyright infringement in its crosshairs and was directed at Internet-addresses that connected users to websites accommodating unlawful material. Google took issue with this potential piece of lawmaking and availed itself of its standing as the facade of the web at large to make its voice heard. For an entire day, no user on the browser could escape an appeal beneath the company's trademark (Charles, 2012) reading: "Tell Congress - please don't censor the web". Unsurprisingly, nothing ever came of the proposed law. (Bartlett, 2018, p.148.)

When the Soviet Union exerted influence over its borders, there was talk about satellite states. In the light of the previous examples one can only wonder, whether or not the individual surfers of the Internet are now recast as "satellite mates", mobilized through their mobiles to run to the aid at the whim of the surveillance capitalists. This brings us to the terminal arena, where surveillance capitalism is on the offensive, namely the independence of identity.

4.2.5. From the independence of identity to the interdependence of identity

Identity is composed of the properties, notions, character, exterior as well as the idiolect and the distinctive non-verbal communication that constitute an individual human being (the science of the mind) or a crowd of humans (the study of the hive-mind) (Leary & Tangney, 2003). The classification of identity might be viewed as auspicious (Smart, 2011, p.86) or calamitous (James, 2015), and a corroboration shall be momentarily presented in support of both conceptions.

To a certain extent collective identity does unfailingly have the edge of these two departments of identity, as individual identity supervenes on it for its sustenance. Harari elucidates this beautifully, by dovetailing people's innermost urges such as globe-trotting and thrill-seeking with the dernier cri virtues imposed by a syndicate of materialism and romanticism, two of the respective, prevalent operating principles of humanity, which are in turn upheld by social organisms (Harari, 2014, p.128-129). This was no less true in medieval times, despite the fact that not even the faintest fraction of the idea of individualism had ever crossed peoples' minds back then (Harari, 2014, p.128). According to Harari, new ideologies may only be terraformed by ladling from imagination, and like foreign planets that can be made inhabitable solely by terrestrial resources, they shall always in some manner replicate the original structure of subordination they are trying to shed. They have also hitherto been mutable by no other means than the muster and collaboration of several imaginations working together. (Harari, 2014, p.127-132.)

While this does cast some doubt upon whether or not anything like a strictly individual identity obtains at all, the fact of the matter is that the bulk of modern global and national institutions as well as organizations are built upon the belief - shared by their populations - that every individual possesses personal agency (Harari, 2018, p.44). A wholesale disillusionment with this article of faith would most likely be succeeded by an equally wholesale disenfranchisement, as the nullification of human autonomy would render it rather otiose to keep the elections going with the voters incapable of self-determination.

Be that as it may, optimal state management is something extremely evasive even to the most skillful specialists, and no single expert or even a

team of experts would level-headedly claim to know how to do it by themselves. In these types of dilemmas, Francis Galton's identification of the sagacity of multitudes yields invaluable insights, especially when there is no better way of tackling the challenge but guesswork, such as gauging the precise heaviness of an ox at a fair (Galton, 1907, 450-451). It would be infelicitous to forfeit the guideline provided by universal suffrage simply on account of the possibility that individual identities don't hold water. One must bear in mind that the aforementioned (Baase, 2007, p.351-357) "wisdom of the crowds" has conferred humanity many a wonderful thing, from democracy to rule of law to the Internet and the list goes on.

Another reason for inquietude over individual identity, albeit somewhat intertwined with the preceding rationale, is that (Weinreich, 1986, p.299):

"A person's identity is defined as the totality of one's self-construal, in which how one construes oneself in the present expresses the continuity between how one construes oneself as one was in the past and *how one construes oneself as one aspires to be in the future*".

Calling to mind the surveillance venture and the speculation on human proceedings, this is where surveillance capitalism comes to its crescendo thus far.

As was previously indicated about money as a currency, capitalism tends to privilege the anticipation of value over value itself (Harari, 2014, p.344-347), and thus it was a matter of course that the new commercial sphere of upcoming human actions would, in turn, culminate in the prioritization of the impending undertakings of humans at the cost of what they are doing and deciding in real time (Zuboff, 2019, p.93). The determination to figure out these behavioural futures, to preempt disinclination, to foster tractability and in general to skew all human goings-on for the benefit of their business and their banking-up of data is the sum and substance of the surveillance capitalists (Zuboff, 2019, p.97). In a very similar fashion to the proliferation of the financial sector at the onset of neoliberalism (Calhoun, 2013, p.168), the surveillance capitalists have arrived at the conclusion that these futures are more remunerative than anything in the real-time-economy. In the following pages, the worldviews at the bottom of this art of crafting self-fulfilling prophecies shall be taken stock of.

Zuboff (2019, p.360-361) credits the theoretical footing of surveillance

capitalism to "radical behaviorism" and its instigator, B.F. Skinner. Skinner made a name for himself with his methodologies and acumen in animal studies (Zuboff, 2019, p.361), where he instituted alternating "schedules of behaviour" in order to trigger minute trends of bodily functions anomalous to the initial spectrum of doings of the examined fauna. Skinner termed this "operant conditioning". These findings accompanied by a later commission with birds in World War II, encouraged Skinner to aim at their universalization to human behaviour. (Ibid.)

According to Zuboff, Skinner drew from Max Meyer (Zuboff, 2019, p.364), who was the first to position people as just one more life-form, whose only deviation from inanimate objects, beasts or larvae was in the department of the intricacy of their biological makeup (Esper, 1967, p.114), when Skinner contended that the more informed humans become of their surroundings, the less illusions of liberty will be left for them to entertain. He went as far as to state that the notion of freedom is merely a genteelism of ignorance. (Zuboff, 2019, p.364.)

Skinner insisted that whenever an individual acts upon anything, she is maneuvering the factors that induce her comportment. This comportment is what calls for assessment and will ultimately need to be explained with factors beyond the person herself (Skinner, 2012, p.228-229). Skinner equated liberty with a chance event, a still at a specific point of history, a defect crying out for rectification into a manifestation of an orderly, foreseeable formula with the help of increased information. The aforementioned defects, in the eyes of the behaviourist, are standing in line for an oncoming appraisal, like embalmed pharaohs in their tombs slated for an eventual weighing of their heart. As long as they "behaved as they should" at the end of the day, the Feather of Maat, the Ancient Egyptian goddess of truth – in this case Skinner's truth –, ought to outbalance them and admit them to a "better hereafter". (Zubof, 2019, p.367.)

In one of Skinner's major works, *Beyond Freedom and Dignity*, the psychologist asserted that the eponymous values are but flamboyant fancies that humans cling to as a safeguard against the raw facts of a balance of power between demeanor and milieu they didn't bargain for (Skinner, 2002, p.19-20). Skinner (2002, p.21, 44, 58) saw them as a mental getaway that is steadily shutting,

"as new evidences of the predictability of human behavior are

discovered. Personal exemption from a complete determinism is revoked as a scientific analysis progresses... the achievements for which a person himself is to be given credit, seem to approach zero... the behavior we admire is therefore the behavior we cannot yet explain." (Ibid.)

Skinner hankered for the fashioning of the mediums and facilities part and parcel to an improved engineering of behavior that according to him is eschewed by the obdurate vassalage of humanity to the paragons of liberty and decorum, fomented by the elites to protect the recognition they enjoy courtesy of their behaviourally esoteric expertise (Zuboff, 2019, p.369).

Recalling my prior treatment of systems of communication as *general relays* and individuals as mere cascades, whom information courses through, provided that behaviour isn't posited to transcend the confines of communication in one manner or another, it doesn't take a huge leap for Skinner's axiom to achieve a rather convenient compresence under one roof with the theory of collective communication as the cornerstone of humanity that this thesis is propped against. It wouldn't even be all that preposterous to construe the denunciation of the mystification of the capacities – or make-believe capacities – of particular people as Skinner excoriating the same (McNeill, 1998, p.24-25) "macroparasitism", that McNeill identified as the vector of the majority of the deliberately inflicted human suffering.

Structuralist sociology wouldn't find itself at odds with Skinner in the slightest measure, as regarding human beings as just another life-form, like Meyer, one of Skinner's authorities on the matter (Esper, 1967), would make it progressively less defensible to keep alive any kinds of hierarchies (Meyer, 1921, p. 402). There isn't much about "radical behaviorism" that would campaign for surveillance capitalism per se. It is the circus of the globalized market-economy, first its previous generation of neoliberal ringmasters and now the surveillance capitalists in turn that hector these psychological – or whatever other branch of science at their disposal – observations and theories into their role as contortionists dislocating all of their main points in order to make money and mesmerize the audience.

The abusive marriage between capitalism and psychology is of an even longer lineage than is archived in Zuboff's work and has involved an earlier maltreated spouse from the discipline. Years anterior to Skinner's rise to fame, there lived a psychoanalyst, who first introduced humanity at

large to the concept of the subliminal (Wollheim, 1971, p.157-176). That person was Sigmund Freud.

In a highly praised documentary-series from 2002, titled *The Century of The Self*, film-producers Adam Curtis and Lucy Kelsall outline how Freud's breakthroughs in the study of the subconscious were initially shanghaied to the service of American enterprise and brought to the United States by his nephew, Edward Bernays, who introduced big business to the prospect of menticide via market forces.

Edward Bernays was the originator of the privatization of propaganda, commonly known as PR, which was devised in the aftermath of World War I. Bernays would help himself to his uncle's sapience on the human psyche and procure it on behalf of harnessing crowd psychology as an instrument of advertising. Bernays enticed American business to pander to the intuition of their customers in order to give rise to cravings with no basis in exigency by methodically associating assembly-line sales articles to their instinctive yearnings. (Curtis & Kelsall, 17.3.2002a; Curtis & Kelsall, 24.3.2002b.)

To achieve this, Bernays would pull out all the stops, from socialite countenance as well as ostentatious public relations shenanigans to sexing up the automobile. But this wasn't all. In the wake of the totalitarian atrocities of World War II, statesmen became more inclined to believe that Freud was onto something and that impulsive urges and trepidations were at the core of Nazi Germany. Thus, the public affairs potential of Bernays' novel species of social engineering as a means of rendering populations cheerful and amenable, was discovered. (Ibid.)

According to Curtis and Kelsall, Bernays and the daughter of Freud, Anna, furnished Washington, commercial enterprise as well as the Central Intelligence Agency (which later on became a frequent contributor to the amplification of surveillance capitalism, as evidenced by Zuboff (2019, p.112-121)), with their perspectives. Thereupon these visions were employed by the three recipient parties to cultivate practices to preside over and steer the psyche of American citizens. (Curtis & Kelsall, 3.24.2002b.)

Nonetheless, it took until the 1960s for the truly individualized identity to emerge. This might well have been the moment of parturition of the expenditure-as-self-expression conception of identity that has come to direct the modern world, as was illustrated in one of the previous

references to Harari's work (2014, p.128-129).

Psychotherapist Wilhelm Reich advocated the position that the innermost feelings shouldn't be suppressed but emancipated instead. His theories translated into a popular campaign essaying to engender revolutionary humans, liberated from the cognitive compliance that the public and the private sector had in cahoots inculcated into the brain of the population. Personal development activism proliferated across the United States and led to the overpowering emanation of the self manifest in one's market activity. (Curtis & Kelsall, 31.3.2002c)

Private enterprise quickly jumped upon this and made it their mission to embolden the consumers' in their identification of themselves as one-of-a-kind -personas and then promoted products as the makings of those very personas. To accomplish this, the companies turned to focus groups, a kind of applied form of psychoanalysis, though not intended to pinpoint and alleviate quiescent tensions within the subject, but to detect vulnerabilities and to coordinate precision strikes on them. (Curtis & Kelsall, 3.31.2002c; Curtis & Kelsall, 4.7.2002d.)

The last episode of the documentary-series already lays out the scenery for surveillance capitalism. At the neoliberal transubstantiation of the economy and the financial sector in the late 1970s and 1980s, the political left found itself in dire need of reinventing itself in the United States and Britain. Curtis and Kelsall chronicle how the parties on the left in both countries found themselves resorting to focus groups to bounce back. Some of the ground-breaking studies on the profiling of demographics that has since experienced an outsized arms race in customized campaigning, as was demonstrated above, was conducted in Stanford University, the court college of Silicon Valley. (Curtis & Kelsall, 4.7.2002d.)

Decades later, the assortative mating of Google, originally a Stanford local, and CIA, who have had a presence there since 1999 (Marshall, 11.17.2002), and their recurring romantic entanglements involving "intimate secrets", would pave the way to the company's supremacy among the surveillance capitalists. It would concurrently beg the question, whether or not the "Silicon" in "Silicon Valley", ought to include the letter 'e' at the end after all, considering how very abreast the corporate enterprise and the national counterintelligence agency have progressed in their transgressions against people's privacy. (Zuboff, 2019, p.112-121.)

Before all that, the American and the British left made it their business

to model their approach to questions of the state according to the voters' underlying compulsions, not unlike the market economy taught itself to proceed with its merchandising. This *modus operandi* was eventually also adopted by the press, where the around-the-clock tidings loop and sensationalism debuted at latest almost 40 years ago (Nichols, 2017, p.151).

The public figures were under the impression that they had merely figured out a more direct and improved incarnation of democracy that sincerely resonated with the voters deep down. What this in actuality boiled down to was gimmicks like the head of government-to-be, Tony Blair finding good use for the said body part engaged in an exhibition match of head tennis with Kevin Keegan (Sports News, 4.20.2010). The fact that the methods that sparked the focus groups were first and foremost intended to rein in on the population, not to set it free, escaped the politicians. (Curtis & Kelsall, 4.7.2002d.)

As one reimagines the 20th century in light of Curtis and Kelsall's documentary project, one can't help but view it as an era, during the course of which the overriding trajectory was the ceaseless bolstering of this miscreation of individual identity as a biography written on receipts and ballot papers and little else, and mostly *ghost-written* by others even at that. With this trend well on the way by the time Skinner came up with "radical behaviourism", should one really be that dumbfounded at the fact that he was so pertinaciously disinterested in this "self", whose cardinal reference point was rarely allowed to stray beyond consumption?

Therefore I conclude that one of the reasons surveillance capitalism is advancing in such meteoric fashion on the battleground of the inner man, is because the identity that is being engulfed has spent the better part of the last century in the vacuum-packaging of materialism, and can thus be now safely metabolized by surveillance capitalism. In this sense, one can grasp not only surveillance capitalism but the last hundred or so years of the free market as an implacable quest of intensive farming the subconscious at the cost of aware decisioning. Ever since its divulgence, individual introspection has been the mortal foe of the market economy and the fact that surveillance capitalism aims at evicting it from the human psyche altogether is merely the logical corollary of a sustained effort that spans at least a century.

If the powers that be deliberately warped the views of these

psychologists, why, then, should they shoulder any of the responsibility? This is a cautionary tale to every scientist engaged in the exercise of demythologizing concepts, and it applies to this dissertation by the same token. The reduction of everything that holds daily life together whether it is carried out on the strength of numbers, as has been attempted at least since Galileo Galilei and the physical environment (Tegmark, 2017, p.289) as "a book written in the language of mathematics", or linguistics or anything in between, isn't something that may simply be executed and then left lying about without any compensatory explanations or theories. History is a feuilleton and regardless of how many pre-existing portrayals of the "way of the world" are proven false, there will invariably be someone ready to write the following chapter.

Inasmuch as a compelling deconstruction – be it however studious – is solely performed to efface the preeminent ethos from peoples' minds, and then handed over to the public and particularly the elites to trespass on, it is more than likely that it will aggravate issues instead of solving them. The rebooting of belief systems or the writing off of all extant stories that humanity is based on, which both absolute structuralism and uncompromising atomism strive for, don't by themselves meet the requirements of an ideology supplying a set of principles to abide by. There is no reason to go through the trouble of laying bare the magic lantern of the prevailing philosophy if one doesn't have something else and preferably better in mind to capture the collective imagination. (Inayatullah, 2009, p.28.) There is by definition a spur of some sort to each stripe of reductionism known to man. To recognize this doesn't render the deconstruction unscientific. On the contrary, it is only when the scholar withholds her motivations instead of letting them show and leaving the reader adequate guideposts about them that the reinterpretation is watered down and becomes analytically bootless or even unsafe.

This kind of "customizable" deconstructions pave the way for any self-seeking ideologists to make the most of them. In the subsequent section, to wrap up this perusal of surveillance capitalism, I recount how Skinner's ideal of egalitarianism through the refinement of the mediums and facilities to choreograph desirable comportment around the clock and everywhere on the planet is being completed in the form of a travesty, with algorithms and machine-learning functioning as the pacemakers for billions of people, who think they are "following their heart", but not

everyone. While Skinner envisaged cosmopolitan noesis springing from the relinquishment of personal autonomy, what he didn't realize was that there was no law to dictate that the information would end up within the reach of everybody. According to Zuboff (2019, p.375): "The knowledge that now displaces our freedom is proprietary. The lost knowledge is *theirs* (the surveillance capitalists'), but the lost freedom belongs solely to *us*."

Alex Pentland, the director of the Human Dynamics Lab in MIT's Media Lab, is the node around whom, as Zuboff has it, the academic, administrative, cosmopolitan, and business-world hegemonies of surveillance capitalism converge (Zuboff, 2019, p.416-417). He is the odd practical visionary, who in conjunction with his undergraduates as well as other associates, has put forward a vehemently pronounced, studied and promulgated philosophy of the orchestrated order synchronically with churning out plenteous engineering creations as well as pragmatic patents (Zuboff, 2019, p.416).

Pentland rounds out Skinner, bringing his notion of the collective to fruition by dint of intensified information technology, comprehensive computational orchestration, enhanced calculability, an extensive ideology, several revered collaborators, established credibility and openhanded sponsorship not to mention a network of affiliates at the apex of the business world. On top of this, Pentland has hitherto escaped the unbridled counterblast, ethical rejection and the sheer acrimony that Skinner brought upon himself when he espoused the same position. (Zuboff, 2019, p.418.)

Pentland outlines his agenda as cultivating collective coordination that would function more or less like the algorithmic logic of computers, applying the details gleaned from the comportment residue to assess the "appropriateness" of every move people make according to the formulas figured out, and stepping in whenever it is of the essence to "amend" any incompatible conduct. Pentland (Berman, 5.16.2016) cautions that "if people aren't interacting correctly and information isn't spreading correctly, people make bad decisions." He adds that "...What you are trying to do is make a human-machine symbiote, where humans understand more about the network of interactions because of the computers, and the computers are able to understand more about how humans work." (Ibid.)

This is quite possibly the closest one can get to an exact obverse of Gerd Leonhard's admonition in the introduction of this thesis, as Pentland revels in the same algorithmic overturning of algorithms in decision-making

that he takes objection to (Leonhard, 2016, p.23-24).

Without making explicit reference to it, Pentland nonetheless campaigns on behalf of the surveillance venture (Zuboff, 2019, p.426-427), designating it an endeavour to craft a "nervous system for humanity". As he is wont to do, Pentland once again appears oblivious to the fact that a more benevolent breed of such a "nervous system" has already been adumbrated as early as 2003 by Marshall Brain in a novel called *Manna* (Tegmark, 2017, p.174-176), and with the witty name of *Vertebrane* into the bargain. The key difference is that Brain doesn't harbour any fantasies in his prose of the capitalist logic of accumulation bringing about a better tomorrow (Brain, 2003, Chapters 1-4). Instead, the *Vertebrane* system originates in a parallel society, characterized by a universal entitlement to all the assets and advantages of computerization and everything they entail (Brain, 2003, Chapters 5-7).

The orchestrated order of surveillance capitalism has nothing to do with the volition that the market economy and liberalism at least claim to espouse. Pentland goes for broke to outdo even behavioural economics. To him, the philosophy of the fallibility of man is more than just something to look down upon, it is the veritable basis for the obliteration of personhood altogether. The independent identity commonly considered the stronghold of human development (Zuboff, 2019, p.522-525) is pigeonholed as a menace to public prosperity. Meanwhile, "milieu control" (Bandura, 1982), infamous to psychologists for its tendency to engender adherence and submission, is venerated as the topmost ideal, because it is the perfect resort to smother the incalculable impact of independent mentation as well as ethical considerations. (Zuboff, 2019, p.444.)

The "natural science of the collective" -modus operandi to fostering combined efforts, according to Pentland, is stimulation via the Internet communities, his modification of Skinner's social engineering. By the help of this stimulation (Pentland, 2014, p.69), Pentland describes: "we focus on changing the connections between people rather than focusing on getting people individually to change their behavior... We can leverage those exchanges to generate social pressure for change." (Ibid.)

Facebook's social transmission testing discloses the company's effective command of the wherewithal to wangle human compassion and interpersonal bonds by the means of adjustment tactics the likes of grooming and insinuation (Zuboff, 2019, p.436). A case in point would be

the 61-million-participant voting pilot conducted by the social media juggernaut, which Pentland regards as an attestation of the fact that collective compulsion may be forcefully implemented in internet communities, particularly within groups characterized by keen relations. (Pentland, 2014, p.152) "The knowledge that our face-to-face friends had already voted generated enough social pressure that it convinced people to vote." On the strength of such an understanding, and with it broadening day by day, the surveillance capitalists, who act as the "moderators" of this milieu control, can initiate the "proper stimulants". (Zuboff, 2019, p.436.)

These moderators are the exclusive group in the interest of which the entire surveillance venture is actualized. They micromanage irksome aberrations that are stigmatized as seepage from an out-of-date past of a lack of information confused with liberty. The moderators adjust their surveillance capitalist procedures to preventively reroute such erroneous comportment back in line with the congruous resonance and maximal efficiency for the benefit of the proprietors of the engines that run the calculations, who compensate the moderators for the translation and enforcement of their criterion. (Zuboff, 2019, p.435.)

The difference between Skinner and Pentland boils down to the fact that the former was devoid of a story powerful enough to effectuate his visions, while fictional elements pullulate the social reductionism of the latter. In light of the development of surveillance capitalism, Skinner's act of passively taking the dominant value system – humanism – to pieces, demonstrates negligence on the order of publishing the formula of a chemical weapon in leaflets and "smelling the trouble" only after its already "in the wind".

As the final statement of this CLA, I feel a juxtaposition is in order. When Freud's findings were preyed upon in the aftermath of World War I, it sparked something that Adam Curtis and Lucy Kelsall baptized as "the Century of the Self". Looking at the situation as it stands, I argue that unless surveillance capitalism is decisively forestalled, the twenty-first century could go down in history as "the Century of the Self-Destruction".

5. Conclusions

When I studied for my admission into the Social and Public Policy branch of the Faculty of Social Sciences of the University of Helsinki six years ago, our entrance examination was on Goran Therborn's *The World: A Beginner's Guide*. In what was at that time one of the most interesting sections of the book for me, Therborn (2012, p.321) considered what an "optimal course of life" in the 21st century would look like.

The trajectory described by Therborn included a sheltered nativity and a liberal upbringing in Northwestern Europe, a Finnish type of public schooling (relatively) detached from one's socioeconomic status and not built on exorbitant swotting. This would be succeeded by an equally indulgent early adulthood in Northwestern Europe, travelling around the globe and a degree in one of England's leading universities to cap it off. One would proceed with unforgettable nuptials somewhere in Asia with a partner hailing from a different part of the world. An East-Asian or Indian megalopolis would furnish the most fulfilling middle age. From there, a serene retirement in a comfortably interlinked location such as Geneva or Vancouver would follow and finally Scandinavia is presented as the best bet for geriatric care. (Ibid.)

The most distinctive feature of this fantasy biography was the profound latitude of the eventualities present. Inasmuch as I am now writing my Master's thesis for the selfsame degree I started with Therborn's work, I think it should be only appropriate that I pause for an instant to reflect upon his ideal by means of another vision of the course of life in the 21st century, where we move from maximizing personal utility to maximizing personal futility.

In the worst-case scenario, under the circumstances of surveillance capitalism in the 21st century, if we embark on the timeline a tad earlier than Therborn, a new human life could be set in motion by such an insipid event as a feeding-bottle-, or diaper-manufacturer purchasing ad-space and the projection deliverables from companies such as Google and Facebook, effectively "booking the demand" for its products. Facebook would then proceed to pelt the parents of this charter-baby separately with baby-fever-inducing social pressure in its own services with Google chiming in later via skewing their search results in favour of starting a family and underlining the acuteness of this need by prioritizing alerting scientific – or

pseudoscientific, if nothing else is at hand – findings on the downturn of fertility and potency very shortly after the extant age of the father and the mother.

Facebook could also employ the couple's relatives and friends as its stunt men, goading and egging them on by their own ad-content to direct all conversations with the parents toward this topic and to express their anxieties over whether there will ever be a better time for the two of them to have a baby than immediately. When all of this inveigling eventually does its work and the baby is conceived, Google (and others depending on which companies are featured in the smart home of the parents) stand watch as voyeurists during the procedure. The biometric accessories that metastasize on behalf of the surveillance capitalists on the skin of the mother and the father, sound out the signal for a successful insemination so that Facebook may automatically create a fetus-profile and add it to the Family Group. Later on, the ultras will provide the first profile picture for this new life and the surveillance capitalists shall derive its interests and personality from its genetics (ferreted out via the wearables of the parents) and all its recorded kicks in the belly, making note if prenatal care is not taken during the gestation.

After one is born, one's first memory of warmth shall be the heat (Velkova, 2016, p.1) of the "screenhouse effect" of the domotics and the Internet of Things of one's smart home. One will be handed an iPad or a phone before one speaks a word, and thus one will learn one's native language from advertisements. One shall spend more of one's childhood in the virtual world than in the physical realm, and thereby be more in touch with computer interfaces than the factual surroundings or other people. Somewhere along the line one will have the choice of augmenting one's reality with either Oculus Rift or Google Cardboard.

One will not be schooled at any point, instead one will be the curriculum (Harari, 26.8.2016). It shall truly be life-long learning, as the algorithms are educated on one's every move and it will be perfectly inconsequential to the outcome whether it happens in Oxford or any other venue on the globe. One might make some holiday trips to destinations that the advertisers deem fit, but nowhere where they can't cash in on it, so if one is looking for some peace and quiet away from one's everyday interactions and connectability, one can forget it. One may nevertheless find consolation in the knowledge that one's data will get that Rockstar life

and tour the world for the foreseeable future, even long after one is dead.

One might entertain romantic relationships with people on the side, but one's true significant other shall be Siri, Cortana or Alexa (because perish the thought that someone would rather go with a male or genderless partner) - and the terrifying father-in-law either Apple, Microsoft or Amazon, and they all certainly represent the selfsame Silicon Valley monoculture.

When and *if* one reaches a working age in this system, there is absolutely nothing one will be able to contribute to the economy, as the algorithms that one has hitherto trained on all of the valuable information about one, have sapped one of all that one could possibly have to offer, even such intelligence that would be impossible for one to access on one's own.

Soon, one's intelligent personal assistant (or phone-wife) will start counting the days on one's lifetimetable (according to state-of-the-art biometric prognostics) and narrating one the rest of one's life in the imperative form, as one shall find increasingly that there is scarcely anything left to do, but to follow its orders and live out the behavioral futures one was always destined for. One's gravestone might as well read "So and So, 2000-2075 -Brought to you by Google and co."

This is what I would call the New Psionics (Psi, from psyche and the suffix from electronics) of surveillance capitalism. The diegesis above is not an irrevocable trajectory, it is proffered merely to illuminate what the future might look like if the blank check of surveillance capitalism to go about its business isn't abrogated. Ere any tactics for that can be formulated, anyhow, a summary of what has been learned from the CLA is in order.

The major takeaway from the causal-layered-analysis of surveillance capitalism is that the connectible devices and appliances that run riot in the daily lives of humans all over the planet are moonlighting as the fifth column of big tech to turn those same lives into walkthroughs for anybody who invests in marketing space on their platforms.

In an ultimate tour de force of gamification (Robson & Plangger & Kietzmann, 2015), surveillance capitalism is transferring the world into a video game adaptation of itself. All of its efforts are directed at converting societies into PlayStations, where the "plot" is alterable only to those in possession of a controller (a big data company). In effect this dictates that

for surveillance capitalism to succeed, individual humans must cease to be the point-of-view-characters of their life, and become a supporting cast of supernumeraries with a quantified total of responses, not unlike the computer-controlled characters of open world console games, who can never be provoked or acted upon by anybody or anything other than the "player" or events induced by her. (Zuboff, 2019, p.339-340.)

Here we have the true danger of "humans living in a simulation" – the authorship of which Bostrom, Musk and their ilk are misguidedly attributing to alien civilizations – live and in living colour, only not run by a hidden extraterrestrial intelligence or civilization, but by another breed of superintendents, namely the all-knowing narrators of our lives, the surveillance capitalists. Meanwhile, the vast bulk of humanity is scheduled to morph into something more and more akin to a canvas or "green screen" upon which anything and everything may be superimposed, which is there only for the sake of "authenticity" as long as the "gamers" suffer it.

Some of the salient reasons why surveillance capitalism is making such strides towards the aforementioned goal so rapidly were retraced to neoliberalism and its attendant tenets of meritocracy and individualism and particularly their purposeful misappropriation. The former two abraded the defense lines of nations and cultures as the latter, in its consumerism-incarnation, picked personality and originality to pieces and then whirlpooled the detritus into great garbage patches of disposable identities. They are now the biggest particles left afloat to buoy humanity (Zuboff, 2019, p.470-474) on the vast ocean of information, whose level rises in tandem with the "global swarming" of data in the ever more extensive online apiaries of its keepers, the surveillance capitalists.

With all of this laid bare, there persists a momentous issue of distinction. In defiance of all the minutiae discerning surveillance capitalism that Zuboff assiduously inventories – which this treatise is a far cry from doing justice to – some of Zuboff's reviewers (Morozov, 2.4.2019; DiBella, 11.10.2019) struggle to see how this phenomenon deviates from classical capitalism. This is rather bemusing in the face of the fact that one of the most iteratively surfacing observations in the CLA was that surveillance capitalism oversteps even the high on nonexistent rules of the market economy every chance it gets. One could by all odds argue that each variant of capitalism walks out on Adam Smith's principles somewhere along the line in practice, but like was learnt from Pentland's insights and

Facebook and Google's strategies, surveillance capitalism doesn't even stay true to the market economy in theory.

To get at gist of what is wrong with Morozov and DiBella's critique, I shall recapitulate the specific junctures, where the heteroclitic attributes of surveillance capitalism come to play against the background of some of the remarks of these commentators. Morozov takes issue with the ascription of words such as "appropriation" to the data-reaping measures of the likes of Google and Facebook. After all, he insists, the surveillance capitalists' sharing in on one's knowledge doesn't deprive one of that piece of information. Case in point: Morozov will continue to delight in the taste of avocados even if that detail of his life now also enriches the behavioral surplus vaults of the surveillance capitalists. (Morozov, 2.4.2019.)

Surveillance capitalism would be more veraciously typified by an illustration where somebody, say, derived enjoyment and self-realization from their work as a linguist making use of Google Translator in their renditions, and in an unsuspecting joint effort with millions of their similarly behaving colleagues equipped an algorithm with more insights to their art than any of them could individually acquire in the process. While the service doesn't technically remove the abilities of its users, it renders them worthless in a roughly similar manner that hyperinflation (which could in this case be dubbed "cyberinflation") does to banknotes. If someone else may "print" people's individual capacities into applications and disseminate them around the globe no end, this language-savvy as a quality of any particular person shall soon be null and void. (Tegmark, 2017, p.90.)

Harkening back to the CLA, evidence emerged of the L-curve creating situations just like the above, where informatics tend to provide platforms with the means to duplicate their services in profusion and inundate the market (Brynjolfsson & McAfee, 2011, Chapter 3. "Creative Destruction: The Economics of Accelerating Technology and Disappearing Jobs, Section 2, Superstars vs Everyone Else"). On top of this, the robotization that this fuels overrides the traditional concepts of comparative advantage and opportunity cost (Ford, 2015, p. 74-75).

Morozov further questions whether it was the logic of surveillance capitalism or an older monopolizing predilection that urged Google to purchase north of 200 enterprises in the 21st century and Facebook to absorb over seventy. According to Morozov, the pursuit of behavioral

surplus in itself doesn't explain, why Facebook would for instance buy out Instagram. This claim fails to heed the inaugural discovery of the CLA: information – mediated by the *general relays* of communication – precedes the means of production and powers them. Forasmuch as the surveillance capitalists are alive to this reality, their goals go beyond the capital goods, and as was analyzed wall-to-wall, digitalized intelligence of people's daily functions appears to outvalue all traditional currencies. Thus, one can conclude that Instagram indeed changed hands first and foremost due to surveillance capitalism.

DiBella, on the other hand, maintains that Marxist concepts of the market economy might suffice to account for the motives of surveillance capitalism. He contends that the reorientation of human deportment has been common practice for hundreds of years with corporations intervening in people's lives in the shape of company towns, private currencies, anti-union violence and the coerced cheerfulness expected from employees in customer service. (DiBella, 11.10. 2019.)

The difference between Zuboff's theory and that of Marx is that to the latter the market economy represents a conflict over capital, whereas to the former, it is a conflict over the ownership of information. These are two entirely different things, as the singularity of the inequality of information is incisively perorated in the following excerpt from Harari (8.26.2016):

"As I enter the Amazon virtual store, a message pops up and tells me: 'I know which books you liked in the past. People with similar tastes also tend to love this or that new book.' This is just the beginning. Devices such as Amazon's Kindle are able constantly to collect data on their users while they are reading books. Your Kindle can monitor which parts of a book you read quickly, and which slowly; on which page you took a break, and on which sentence you abandoned the book, never to pick it up again. If Kindle was to be upgraded with face recognition software and biometric sensors, it would know how each sentence influenced your heart rate and blood pressure. It would know what made you laugh, what made you sad, what made you angry. Soon, books will read you while you are reading them. And whereas you quickly forget most of what you read, computer programs need never forget. Such data should eventually enable Amazon to choose books for you with uncanny precision. It will also allow Amazon to know exactly who you are, and how to press your emotional buttons."

To address this by the name of "capitalism as usual" is approximately as scientifically idoneous as to define a computer as a "device powered by electricity" and deny all more punctilious descriptions. If there is anything

wrong with the terminology pertaining to surveillance capitalism, it is definitely not down to whether or not it classifies as an unprecedented form of capitalism, but whether it even constitutes capitalism anymore.

In fact, the closest existing vignette of what full-blown surveillance capitalism might eventually turn out like, can be found in the present system of China. While even the foremost surveillance capitalist, Google, is still experimenting with its live-broadcasts of human proceedings in cities, continental China boasts at least quadruple the total of all the CCTV cameras in America, with 200 million units (Mozur, 7.8.2018), while other approximations extend to half a billion (Maximal Productions, 2019). This video-tracking is estimated to increase threefold during this calendar year. The country is assisted in this "Skynet" -project by some of its most sizable corporations, such as Huawei, that construct the infrastructure of China's "Safe Cities". They span 40 countries and 230 specific locations all over the world. In China, these apparatuses can be used for instance to display the image of a lawbreaker live on massive billboards for everyone to see, and to cross-check material between CCTVs to allow for facial recognition of the same people from numerous angles in case they can't be immediately identified. (Maximal Productions, 2019.)

Zuboff (2019, p.468) herself notes that for instance Facebook's "like" and "follow", or Youtube's "views" and "subscriptions" are but the pharisaic cousin of China's "social credit" -system, where private corporations keep the score on people's offings instead of the Communist Party. The CLA told us that power is not only centralized in the share-structures of surveillance capitalists, but also in the societies they steer academically, politically, economically, and eventually, ideologically as well. When this is strung together with the world conquest -visions of both Zuckerberg and Page, and the fact that adulterated group psychology is to be exercised as the ordnance when they establish their Internet-empires in the hitherto offline reality, one has one's work cut out for one in pinning down how exactly these goals diverge from Xi Jinping's domestic and foreign policy.

Capitalism has gone full circle and is at this rate sooner conceding the means of production that now quite literally operate on systems of communication exclusively into the invisible hands of surveillance capitalists than conceding the collective theory of evolution of the *general relays* that provide the propulsion to the market economy.

In its fixation to this aition that enjoins everyone to believe in the individual proprietorship of the capital goods, the market economy has reached a deadlock originally against its neoliberal - and now its surveillance capitalist interpretation. Because capitalism still clings to the privacy of the means of production, it finds itself at a loss whenever it ought to harbour any mutuality, even that adhering to democracy or noesis itself, the very mandates of capitalism's world hegemony.

On the metaphorical stratum of the CLA, I deduced that as far as the market economy is concerned, all that matters stems from the means of production. Therefore, if they are preferably individually owned, then the case for anything else being something other than private starts wearing severely thin. Neoliberalism and surveillance capitalism have generalized this "Golden Rule" (in the sense of "he who has the gold makes the rules" as it is understood in the Merchant Prince strategy video game (Holistic Inc., 1994)) to every dimension of society and corralled ever greater clusters of human cooperation, lastly in politics and science, to private possession. Simultaneously, surveillance capitalism is repackaging the 'Golden Rule' of capitalism as a "code of conduct" (as in a programming-protocol of behaviour) of something completely unheard-of.

The issue here when it comes to the market economy is that surveillance capitalism ends up serrying the means of production under one roof (or a few roofs) in Silicon Valley just like communism more openly does. The only difference is that not even formal democracy is present on the upper echelons of the corporate cultures of the surveillance capitalists. As the CLA imparted, instead of meritocracy, the world is left with something more akin to conglo-meratocracy.

Thus, in an outlandish turn of events, the Western world has embarked on a surveillance venture, which can't help but be conceptualized as a thoughtless foray to replicate the Chinese system of reining in on the population in a highly personalized manner. This is not the market-economy leading the world by example. Instead it takes after its communist contestant, echoing the Japanese counter-modernization when the Land of the Rising Sun was confronted by the Occidental onslaught in the 19th century (Therborn, 2012, p.105). The country aggressively adopted the economic, political and social systems of its most direful rival-states from the Western world in the hopes of "beating them in their own game" (ibid.). It is no secret how flagitiously those aspirations were

stymied in 1945.

Extending this line of thought a smidgen further, it's worth sedulous forethought, which side is more likely to have the edge in a deathmatch of grand-scale human homogenization: the historically selfless China (Therborn, 2012, p.29) or the individuality-pestered Occident, where the sense of identity, albeit a version of it that has little to do with independent thinking, is stronger and simultaneously more shambolic than ever (Pomerantsev, 2019, p.208-226).

If surveillance capitalism is allowed to have its way, it is not at all out of the question that the future laid out before humanity could turn out to be a case of "all roads lead to communism". Either the Chinese system proves superior as it was better equipped for the surveillance venture to begin with or then the surveillance capitalists beat the country to it, completing Jingping's mission on their own on their way. Regardless of which one of these alternatives should betide, not a single sincere adherent of capitalism or communism ought to be pleased at the outcome: surveillance capitalism, analogously to "communist" China, takes the worst aspects of the market economy and the planned economy and brews a mixture of them that makes Huxley and Orwell's dystopias look like an endearing old couple in comparison.

The toll that surveillance capitalism could take on the character of Homo Sapiens is also outsized. Zuboff proposes a juxtaposition between the yoking of nature and the unecological excesses at the cost of the environment courtesy of industrial capitalism and the currently unfolding yoking of "human nature" and the inhuman presuming upon people's mental resources courtesy of surveillance capitalism. (Zuboff, 2019, p.515.)

The ending of the CLA revealed that surveillance capitalism is at odds with our very sentience as evidenced by Bernays and Pentland's doctrines. Leonhard's unrest over androrithmic reasoning becoming acculturated into algorithmic problem-solving is actualizing at an alarming rate, case in point: the electioneering in the US and Britain also touched upon under the rubric 4.2.4 of "Democracy and surveillance capitalism – bodies politic as cyborgs". This coupled with the improvements in biotechnology as well as genetic modification (Harari, 2017), contributes to an unsettling likelihood of a sweeping loss of diversity within our species. And "within" encompasses more than simply the human psyche here: according to King

and Lively (2012), maximal genetic diversity is the chalk horse on the microbiological level as well, so maybe some of the foundations for human "enhancement" Bostrom helped build would at the end of the day be better suited to feature on his list of existential risks.

This treatise is bound to the externalized evolution of humanity, as the datum of my CLA were the *general relays* of systems of communication, after the exponential elaboration of which Homo Sapiens no longer had to wait for their genetics in order to mutate (Harari, 2014, p.37). It would have been tremendously fascinating to incorporate an investigation of the prospective biological fallout of the surveillance venture.

Surveillance capitalism is extensively embedded to the web-enabling of the physical world by the Internet of Things and wireless electronic accessories such as smart watches or rings. This trajectory of blurring the line between what is offline and what is online about the physical world is also the propellant for the aggravation of the saturation of everyday life by electromagnetic emissions. While it is still up in the air, whether there lie long-term ramifications detrimental to human health behind wireless devices and networks, some of the evidence insinuates that their radioactivity makes people more susceptible to at least a few selective stripes of cancer (WHO, 2011). This is patently something that ought to be scrupulously studied further as Google and China mobilize 5G and 6G networks in their Smart/Safe Cities (Zuboff, 2019, p.227-232; Lopez, 4.6.2020; Maximal Productions, 2019).

Since the Smart Cities constitute perhaps the most palpable avatar of surveillance capitalism in the material plane, I feel it is most fitting to round off this overview of its repercussions by contrasting them to the bafflingly mantic insights of an urban scholar's writings from over a century ago, i.e., those of Georg Simmel. As early as 1900, he noticed that money had evolved into the most "nonpartisan" instrument of gauging human relations; the mastery of cash was the topmost indicator of the faculty of the self to perpetuate its being in the common social context of time and space. To Simmel, money was the ratable abstraction, effective thanks to its aptitude to encompass people's tangible bonds of mutuality. If one substitutes currency with data here, this is a fairly spot-on description of humanity in its death throes under the assault of surveillance capitalism. (Simmel, 1903, p.12.)

In Simmel's understanding money dealt exclusively with those aspects

of life shared by everyone, and to him that stood for the reduction of these features to their face value which narrowed down the entirety of our attributes and personality to a cleanly numeric plane of existence (ibid.). What is more, according to Simmel the entirety of sympathetic connections among people relied on their originality, while noetic proclivities treated people like ciphers, i.e. like particles, that as such are colourless and intriguing only provided that they bring something dispassionately discernible to the table. (Ibid.)

The latter represented precisely the fashion in which a person regarded his vendor, client as well as attendant and ever so often the people he was thrust into mandatory liaison with. The aforementioned affiliations were in open quarrel with the essence of the more minute orbit, within which an unavoidable intelligence about personal traits brought about, by a tantamount unavoidability, an affectional shading in behaviour, a scope transcending simple impartial evaluations of assignments accomplished and charges disbursed. (Ibid.)

Although money in itself was never quite up to the task of accounting for every facial expression and each idiosyncratic characteristic of the world population, now that it is "brought up to the *code*" by virtue of digitalized information, the compartment residue and the surveillance venture, it just might get there and anon at that. This can't be brought to a halt until it is conscientiously contemplated how to troubleshoot our social systems against the surveillance capitalism malware. Hence the last few pages of this thesis are earmarked to tentative suggestions on how to throw down the gauntlet to surveillance capitalism.

5.1 What can be done to stave off surveillance capitalism? Collective techniques of virtual self-defense

Before any move can be made to counter surveillance capitalism, one issue needs to be rectified: the surveillance capitalists' prevarication with respect to their data canvassing must be pulled the plug on. One avenue to achieve this was already alluded to in the CLA. Bearing in mind that platforms such as Google and Facebook function first and foremost as Internet-infrastructures that charge their commission for their usage as per the precept of the long tail curve, the states around the world should take notes

and follow suit, as their melange of substructures outnumbers the online platforms of the surveillance capitalists without a hitch.

In a certain, rather paltry, sense, taxation is its own version of a platform revenue generation model of public amenities, such as education, road networks, safety etc. as it stands. The logical step to bring it up to date would be for countries to start treating all their national property, including its most elementary components such as the language, the literacy granted to inhabitants, the very environment occupied as a landscape, like surveillance capitalists treat ad-space on their sites. This would mean charging businesses for every single operation on these platforms - Google would pay a percentage of their profits to the respective governments every time it translates a word between two languages for instance. Amazon couldn't transport its products without being billed separately by every country for infrastructure utilization on the way to their destinations. Even the overflight of any public airspace would warrant a royalty. This should obviously also extend to all expenditure of natural resources incurred by any kind of private enterprise.

To protect individual people and accountable entrepreneurship from bankruptcy in this regime, these "state platforms" ought to be complimentary for any non-monetizing use such as art, science, teaching, charity, civic engagement and daily use by citizens and offer to alleviate the levies of those companies that give full access to their data and comply with the national cyber-ethics in their information processing. This could be elaborated to a dual-model consisting of a hundred percent data-tax, entailing the exhaustive sharing of every bit of digitalized information generated by the business with the state, and a significantly lower pecuniary imposition. I shall shortly expound the nature of the cyber-ethics as well as the reasoning for why levies on data and in the currency of data are so imperative.

These usage-fee-type levies of the national heritage as a platform might lead to a reappraisal of the tenability of the "long tail" at the corporate cultures of the surveillance capitalists, which could bring about at least three potential outcomes preferable to the current situation. Firstly, the surveillance capitalists could find themselves rueing the day they opted out of the good old traditional taxes, and might thus be more suasive to return to the negotiating table in the hopes of coming up with some sort of compromise between the former levies and the novel ones.

Secondly, it is possible that the surveillance capitalists' concerns over their public image would force them to acquiesce to at least the data-tax. At the end of the day, like Morozov observed, data can easily be duplicated - to give it out is only a matter of copying it, without any party ever losing any of it in the process - barring a solar storm or some other type of electromagnetic calamity. In the course of the CLA I recited, in Google and Facebook's owners' very words, their pledges to unify the information of the planet. On top of this, neither of these corporations is short on gasconade relating to the democratization of information and opening the world to knowledge in their mission statements. To refuse sharing data in the countries they operate and to go back on these promises when push comes to shove would expose them as outright mountebanks. That is still probably the safest bet of these three directions, and the expected retaliation of surveillance capitalism. Nonetheless, this result would render immense credibility to the following stages of the reinstatement of the state in the online environment.

Over half a millennium ago, in an undertaking subsidized by the Portuguese Crown, Cristopher Columbus captained the first Europeans to a foreign continent, which came to be misrepresented by "The Old World" as no man's land. Perhaps even more importantly than that, he happened upon a no man's sea spanning tracts that dwarfed the entire landmass of the globe. In the space of two short centuries, a maritime brand of brigandage of an unexampled scope surfaced, overpowering the oceans of the world. Its frontrunners wrote their "pirate code" and instituted "articles of agreement" (Fox, 2013) quite as arbitrary and only shorter and simpler than those of the surveillance capitalists' "privacy policies".

While surveillance capitalists vociferously repudiate any ties to online piracy and overawe their users with abysmal copyright disclaimers, charging them with all the responsibility with regard to their browsing (Zuboff, 2019, p.49), Google and its compatriots have in fact utterly immersed themselves in offline and online piracy. This can be readily detected in the two platforms that are for instance Google's main selling points: Youtube and Wikipedia (Alexa Internet, 2020). The first is practically an almost omnipresent user-based video library that runs on spare-time-donations and the second a flatly honorary labor of love of its pro bono providers of content. Google is the glamourized realtor that bootlegs altruistic activity as a business opportunity for someone else even

when its intervention is utterly uninvited (as in the case of Wikipedia). Facebook on the other hand is even more barren when it comes to original material, and thus the social media-juggernaut engages in its own strain of "friendraising" and "face-to-face -marketing" in order to function as the virtual estate agent of everybody's personal space, once again unsolicited and without disclosing the details of its vendue of user-content.

The aforementioned is, nevertheless, but the veneer of the "piracy policies" of the surveillance capitalists. Much in the fashion of the historical sea rovers, the only area, where the surveillance capitalists display a whit of actual ingenuity is in the audacity of their freeloading. Never before have any specific parties managed to infringe on as many common goods simultaneously. Similarly to their pirate counterparts, the surveillance capitalists had neither part nor lot even in the discovery of the principal scene of their crime: the Internet was a public project just like the European world colonization by sea.

The online world was and is but an extension of the offline acquisitions and practices transferred into digital form not unlike how naval architecture and navigation hinged on insights garnered through centuries on "terra firma" before the charting of the oceans of the globe. The surveillance capitalists, analogously to pirates, simply seized on the moment of this opening occasioned by others. Everything up to their artillery itself was pilfered: the breakthroughs that permitted the contemporary customization of ads that the market-economy enjoys, trace their roots to the psychological observations made by Sigmund Freud as well as state propaganda.

Once again this is perfectly in line with the maritime marauders of three to four hundred years ago, who commandeered their ships and cannons instead of constructing them themselves. Indeed, in the absence of social institutions and ventures such as state- and church archives and reporting and cartography, pirates would have been up the creek in such simple matters as finding their way to the whereabouts of the riches they coveted. And finally, they weren't so much as the patentees to their rudimentary lust for gold as it in essence wasn't all that far removed from mercantilism – a theory that became ensconced all over Europe at the wake of the Age of Exploration – exercised on one ship. In this selfsame vein, the surveillance capitalists pirated everything they now possess, from the *general relays* of language and mathematics to the very subject matter that has burgeoned in

the World Wide Web.

In the footsteps of their buccaneering antecedents, the surveillance capitalists proceeded to make their own laws in the no man's cyberspace to license their spoils and secure their supply. There is plenty and to spare in terms of a vindication for a foursquare state crackdown on the grounds of the piracy-argument in case surveillance capitalism both balks at the data-tax and withholds what is due to the national platforms. If the surveillance capitalists continue to exact their "ungoverned turf" in the Internet, then by all means, states should show them what it entails. Let them be excommunicated from all the realms of judicial power and forfeit their rights to any protection of the law in the offline reality. Their data centers could be impounded, their power supplies shut down, their headquarters raided.

Nations ought to also earnestly cogitate on the possibility of the reinstatement of *the letter of marque and reprisal*, only this time not directed at foreign countries but foreign corporations. Traditional armaments are not cut out for a skirmish with the surveillance capitalists in their natural habitat of cyberspace any more than a ground force was up to the task of engaging the seafaring pirates of the Age of Sail. In the past, corsairs or privateers were appointed to solve this problem. This time, at any rate, states would be shrewder to enlist *publiceers*. They would constitute a new class of military force, an army - or fleet - of hackers and hacktivists. These units should be expressly tutored and primed to tackle surveillance capitalism in the web and retrieve the digitalized information that users have been unduly divested of to its rightful proprietors or even to outright expunge it, if nothing else can be done. States might subsequently fuse the booty of these publiceers in order to eventually outdata the surveillance capitalists.

How could any of the above be arrived at? This is hardly an ill-founded question. The prerequisite for any workable course of action is to acknowledge that the societal dynamo for the 21st century as far as the state is concerned are not the means of production, but information. Instead of – or maybe rather concurrently with – increasing their GDP's (insomuch as this doesn't clash with the overriding objectives of allaying inequality and the environmental degradation), countries shall need to expand and enhance their algorithms as they represent the impedance of their information in relation to that of the surveillance capitalists. Nations

need to call into play all the reserves of useful knowledge they possess, digitalize them and stoke up their own algorithms with them.

Simultaneously they must cease to trust any of this data to private companies without diligent background checks and stop the contracting out of their essential functions to surveillance capitalists or any other private agents at that.

Within the European Union, the General Data Protection Regulation (GDPR) has been extolled by Bartlett (2018, p.222), FitzGerald and Madigan (5.26.2016) and the Global Data Hub (November 2016) as a possible means of curbing immoderate commercial reconnaissance. Even more importantly, it comprises a section of "data portability", which allows all Europeans to request the digitalized information pertaining to them that corporations possess. If people do this separately, the results are likely to be negligible, but if this article was revisited and made the default setting, and the state, or an NGO with an adequately numerous member base set up data trusts, where personal data could be pooled to rival the information inventories of the surveillance capitalists, the potential would be epoch-making in all respects.

Keep in mind that GDPR not only affords this possibility of laying claim to the digitalized information on every European held by Google or Facebook, but also every piece of one's personal data that any company in the world controls. Instead of having what Google has, governments and civic activists could wind up with what every surveillance capitalist on the globe together knows about Europeans. The aforementioned would represent one of the smoothest ways to level the playing field at least in Europe – and it could lead the rest of the world by example in this.

Furthermore, Bartlett (2018, p.211-228) enumerates a host of plausible and interesting governmental approaches to this problem on a more particularized basis. They include supervisory authorities that would probe the algorithms in use in the society in similar ways that a building is inspected to assure it is constructed according to the regulatory guidelines, and administrations fashioning variants of platforms in demand such as Uber or Netflix (*ibid.*) (In Finland a few examples of such "national platforms" already exist, namely the public bicycle scheme and the streaming service Yle Areena).

On an institutional and less straightforward plane of intervention states should incorporate a "Technocratic Oath" reminiscent of physicians'

Hippocratic Oath to the entirety of syllabuses and schooling dealing with information technology in order to foster a moral code to computer science. It ought to consist of collectively approved ethical standards as rules of thumb to data processing and proffer the impetus to a shake-up from within with regard to the information-capturing policies of the present day. (Hellbing et al, 2017.)

As the final remark of this dissertation, I want to underscore just one more issue that can't be stressed enough: the collective is the sole unit sufficient to confront and potentially obviate surveillance capitalism. It is ineradicable to individual efforts. I, for instance, did my utmost to prudently vet every single decision in respect of my browsing as I changed computer earlier this year: I quit Google as a search engine, I dropped my Facebook online time to a few minutes a week, I denied Microsoft any access to my surfing of the web and I even rejected Cortana much to her displeasure.

All of this worked brilliantly for me and I prided myself on it – until the COVID-19 outbreak took the entire world by storm and left us no other means to socialize but the online dimension. And there I was, running back to Facebook, and not only there, but Skype and other videoconferencing tools as well that are, manifestly, private utilities now. There is no telling, how long the current global state of emergency shall be in force, but it is a rather impervious illation that the situation is, *ceteris paribus*, buncce to surveillance capitalism. If COVID-19 rages on for as long as the Spanish flu did a century ago (Johnson & Mueller, 2002), these special arrangements shall most likely stay in effect at least on a periodical basis for over one and a half year still. The human timeline knows no test cases of countries being so contingent on a selective strain of enterprises mediating the majority of the day to day functions of societies for this extensive a duration.

Needless to say, the state of affairs also opens up contrasting prospects. As late as in the fall of 2019 it seemed that the best the public sectors in most of the world's countries could hope for was a sedate retrenchment to make way for commercialization. The pandemic has energized the states in at least much of Scandinavia and Central- and Eastern-Europe to take actions in ways that only the eldest people alive have born witness to in the measures resorted to during and after World War II. If the world somehow weathers this storm globally and pulls through the microbiological

visitation with the minimal or even a bearable death toll, there shall certainly crop up an occasion worthy of the century teeming with iconoclastic momentum to reshuffle our entire value system from capitalism and consumerism to the logging of the rainforests, inequality and even globalization.

This is very likely the ultimate coup de grace to neoliberalism, considering that it has already reigned for longer than Keynesianism ever did. Rubbing its hands behind the throne of its sickness-stricken ideological sire, surveillance capitalism is lurking all set to take over and drawing up its inaugural for its quite literal *Coronation* as the virus does its work.

Reflecting upon everything that has come down the pike throughout the course of this thesis, I recognize the above as an eminently liable eventuality. Even so, I stoutly subscribe to the belief that after a hundred (or more) years of the market-economy dynasty, one can conclude that an inveterate disease that has nothing to do with the contemporary pandemic, runs in the ideological family of capitalism. I stoutly subscribe to the belief that after a century of theoretical terrorism against the essence of Homo Sapiens, humanity deserves more than surveillance capitalism. Humanity deserves a royal housecleaning of ideological monarchies and above all, humanity deserves something fresh.

6. Sources

Ahqvist, Toni (2012): *Ihminen, yhteiskunta ja evolutionaarinen tulevaisuus: kolme näkökulmaa Mika Mannermaan ajatteluun* In Osmo Kuusi (ed.). *Jokuveli valvoo-ubiikkiyhteiskunnan mahdollisuudet* (pp. 21-37). Tampere: Tulevaisuudentutkimuksen Seura.

Alexa Internet (2019). The top 500 sites on the web. Retrieved 4.22.2020 from <https://www.alexa.com/topsites>.

Allen, Nick (1.9.2017). How Hillary Clinton's digital strategy helped lead to her election defeat (Article on a Website). *The Telegraph*. Retrieved 4.24.2020 from <https://www.telegraph.co.uk/news/2017/01/09/hillary-clintons-digital-strategy-helped-lead-election-defeat/>.

Amazon (2020). Amazon.com Cap. *YCHARTS*. Retrieved 4.24.2020 from https://ycharts.com/companies/AMZN/market_cap.

Amazon Lex (2.17.2017). Build Conversation Bots. *Amazon Web Services*. Retrieved 4.24.2020 from <https://aws.amazon.com/lex>.

Anderson, Ross (9.30.2014). Exodus, Elon Musk Argues That We must put a million people on Mars if we are to ensure that humanity has a future. *Aeon "The Elon Musk Interview on Mars Colonization"*. Retrieved 19.3.2020 from <https://aeon.co/essays/elon-musk-puts-his-case-for-a-multi-planet-civilisation>.

Arbib Michael A., Liebal K., Pika S. (December 2008). Primate vocalization, gesture, and the evolution of human language. *Current Anthropology*, 49 (6), pp.1053–63, discussion pp.1063–76.

Armstrong, Stuart & Sandberg, Anders & Bostrom, Nick (6.6.2012). Thinking Inside the Box:Controlling and Using an Oracle AI. *Minds and Machines*, 22, pp.299–324.

ARK Investment Management (5.25.2017). Google: The Full Stack AI Company. *Seeking Alpha*. Retrieved 4.24.2020 from <https://seekingalpha.com/article/4076671-google-full-stack-ai-company>.

Azevedo, Flavio; John T. Jost; Tobias Rothmund; Joanna Sterling (2019). Neoliberal Ideology and the Justification of Inequality in Capitalist Societies: Why Social and Economic Dimensions of Ideology Are Intertwined. *Journal of Social Issues*, 75(1), pp.49-88.

Baase, Sara (2007). *A Gift of Fire: Social, Legal, and Ethical Issues for Computing and the Internet*. (3rd edition). New Jersey: Prentice Hall.

Bailey J. (2014 July). Enframing the Flesh, Heidegger, Transhumanism and the Body

as a 'Standing Reserve.'. *Journal of The Evolution & Technology* (Weblog), 24(2), pp.44-62, Retrieved 4.24.2020 from <http://jetpress.org/v24/bailey.htm>.

Baldwin-Philippi, J. (2017). The myths of data-driven campaigning. *Political Communication*, 34(4), pp. 627-633.

Bandura, A. (July 1982). The psychology of chance encounters and life paths. *American Psychologist*, 37(7), pp.747-755.

Bartlett, Jamie, (2018). *The People vs Tech: How the internet is killing democracy (and how we can save it)*. London: Ebury Press.

Berman, Alison, E. (5.16.2016). MIT's Sandy Pentland: Big Data Can Be a Profoundly Humanizing Force in Industry. *Singularity Hub*. Retrieved 4.24.2020 from <https://singularityhub.com/2016/05/16/mits-sandy-pentland-big-data-can-be-a-profoundly-humanizing-force-in-industry/>.

Bloom, Howard (2001) *Global Brain: The Evolution of Mass Mind from the Big Bang to the 21st Century*. New Jersey, USA: Hoboken, Wiley.

Boesch, C.; Boesch, H. (1993). Diversity of tool use and tool-making in wild chimpanzees. In Berthelet, A.; Chavaillon, J. (eds.). *The use of tools by human and non-human primates* (pp.158–187). England: Oxford University Press.

Borker, Paul (2.2.2018). What is Hyperscale?. *Digital Reality*. Retrieved 4.24.2020 from <https://www.digitalreality.com/blog/what-is-hyperscale>.

Bostrom, Nick (March 2002). Existential Risks: Analyzing Human Extinction Scenarios and Related Hazards. *Journal of Evolution and Technology*, 9 (First version: 2001).

Bostrom, Nick (April 2003a). Are You Living in a Computer Simulation?. *Philosophical Quarterly*, 53(211), pp.243–255.

Bostrom, Nick (2003b). Human Genetic Enhancements: A Transhumanist Perspective. *Journal of Value Inquiry*, 37(4), pp. 493–506.

Bostrom, Nick (2005). In Defence of Posthuman Dignity. *Bioethics*. 19 (3), pp.202–214.

Bostrom, Nick (2006a). What is a Singleton? *Linguistic and Philosophical Investigations*, 5(2), pp. 48–54.

Bostrom, Nick (8.26.2006b). Quantity of experience: brain-duplication and degrees of consciousness. *Minds & Machines*, 16, pp.185–200.

Bostrom, Nick, (10.25.2006c). HOW LONG BEFORE SUPERINTELLIGENCE?. *Linguistic and Philosophical Investigations*, 5(1), pp. 11-30. (Originally published in *Int. Jour. of Future Studies*, 1998).

Bostrom, Nick (May 2012). THE SUPERINTELLIGENT WILL: MOTIVATION AND INSTRUMENTAL RATIONALITY IN ADVANCED ARTIFICIAL AGENTS. *Minds and Machines*, 22 (2), pp.71–85.

Bostrom, Nick (2016): *Superintelligence*. United Kingdom: Oxford University Press.

Bostrom, Nick & Youdowski, Eliezer (2011). THE ETHICS OF ARTIFICIAL INTELLIGENCE. In William Ramsey and Keith Frankish (eds.). Draft for *Cambridge Handbook of Artificial Intelligence* (pp.316-334).

Brockman, Greg & Sutskever, Ilya, (12.11.2015). Introducing OpenAI (blog). *OpenAI*. Retrieved 4.24.2020 from <https://openai.com/blog/introducing-openai/>.

Brain, Marshall (2003). *Manna*. Raleigh, North Carolina: BYG Publishing, Inc.. Retrieved 4.24.2020 from <http://marshallbrain.com/manna.htm>.

Brill, Thomas, M & Munoz, Laura & Miller, Richard, J. (2019). Siri, Alexa and other digital assistants: a study of customer satisfaction with artificial intelligence applications. *Journal of Marketing Management*, 35 (15-16), pp.1401-1436.

Brin, Sergey (2004). 2004 Founders' IPO Letter. *Google*. Retrieved 4.24.2020 from <https://abc.xyz/investor/founders-letters/2004>.

Brynjolfsson, Eric & McAfee, Andrew (2011). *Race against the machine: How the digital revolution is accelerating innovation, driving productivity, and irreversibly transforming employment and the economy*. Massachusetts, United States: Digital Frontier Press Lexington.

Calhoun, Craig (2014). Mikä Uhkaa Kapitalismia Nyt? (transl. K. Sivenius). In Wallerstein et al. (eds.), *Onko Kapitalismilla Tulevaisuutta?* (pp.168-209). Finland: Gaudeamus Helsinki University Press & Osuuskunta Vastapaino.

Chalmers, David (2010). The singularity: a philosophical analysis. *Journal of Consciousness Studies*, 17 (9–10), pp.7–65.

Chappel, Jackie & Kacelnik, Alex (2004). Selection of tool diameter by New Caledonian crows *Corvus moneduloides*. *Springer Nature, Animal Cognition*, 7, pp.121-127.

Charles, Gary (circa 2012). Please don't censor the web. Retrieved 4.24.2020 from <https://gsocial.media/please-dont-censor-the-web-stop-sopa/>.

Clifford, Catherine (7.24.2017). Mark Zuckerberg: Elon Musk's doomsday AI predictions are 'pretty irresponsible'. *CNBC*. Retrieved 4.24.2020 from <https://www.cnn.com/2017/07/24/mark-zuckerberg-elon-musks-doomsday-ai-predictions-are-irresponsible.html>.

Codianni, Ashley (8.25.2015). Inside Hillary Clinton's Digital Operation. *CNN Politics*. Retrieved 4.24.2020 from <https://edition.cnn.com/2015/08/25/politics/hillary-clinton-2016-digital/index.html>.

Coleman, S., & Luccia, F. (1980). Gravitational effects on and of vacuum decay. *Physical Review, D* (21), pp.3305-3315.

Collins, Randall (1979). *The Credential Society: An Historical Sociology of Education and Stratification*. New York: Academic Press.

Collins, Randall (2014) Keskiluokan Työn Loppu: Pakotietä Ei Ole (Transl. K. Sivenius). In Wallerstein et al. (eds.), *Onko Kapitalismilla Tulevaisuutta?* (pp. 50-90). Finland: Gaudeamus Helsinki University Press & Osuuskunta Vastapaino.

Corballis, Michael (1.11.2010). The gestural origins of language. *WIREs Cognitive Science*, 1(1), 2-7.

Couldry, Nick and Mejias, Ulises (2018). Data colonialism: rethinking big data's relation to the contemporary subject. *Television and New Media*. 20(4), pp.336-349.

Courtois Stéphane (ed.), Werth, Nicolas; Panné, Jean-Louis; Paczkowski, Andrzej; Bartosek, Karel; Margolin, Jean-Louis (October 1999). *The Black Book of Communism Crimes, Terror, Repression* (transl. J. Murphy). United States: Harvard University Press.

Cross, F., L., Livingstone, E., A. (editors) (2005). *The Oxford Dictionary of the Christian Church* (3rd edition). United Kingdom: Oxford University Press.

Curtis, Adam, Kelsall, Lucy (producers), Curtis (Director) (3.17.2002a). *The Century of the Self - Happiness Machines* (television broadcast). United Kingdom: BBC.

Curtis, Adam, Kelsall, Lucy (producers), Curtis (Director) (3.24.2002b). *The Century of the Self - The Engineering of Consent* (television broadcast). United Kingdom: BBC.

Curtis, Adam, Kelsall, Lucy (producers), Curtis (Director) (3.31.2002c). *The Century of the Self - There is a Policeman Inside All Our Heads: He Must Be Destroyed* (television broadcast). United Kingdom: BBC.

Curtis, Adam, Kelsall, Lucy (producers), Curtis (Director)(4.7.2002d). *The Century of the Self - Eight People Sipping Wine in Kettering* (television broadcast). United Kingdom: BBC.

Dardot, Pierre & Laval Christian (2013). *The New Way of the World: On Neoliberal Society*. Brooklyn: Verso.

Data Center Knowledge (3.16.2017). How Many Servers Does Google Have?. *Informa PLC*. Retrieved 4.24.2020 from <https://www.datacenterknowledge.com/archives/2017/03/16/google-data-center-faq>.

Dator, James (November 5-7, 2002). Theories, Methods and Approaches to Teaching Futures Studies: A backward glance. Keynote Speech held in Tamkang University International Conference on Teaching Futures Studies, Taipei City, Taiwan.

Dator, James (2003). Teaching Futures Studies: Some lessons learned. *Journal of Futures Studies*, 7(3), 1-6.

DiBella, Sam. (11.10.2019). Book Review: The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power by Shoshana Zuboff. *LSE US Center*. Retrieved 4.24.2020 from <https://blogs.lse.ac.uk/usappblog/2019/11/10/book-review-the-age-of-surveillance-capitalism-the-fight-for-a-human-future-at-the-new-frontier-of-power-by-shoshana-zuboff/>.

Dictionary.com (circa. 2020). Meritocracy. Retrieved 4.21.2020 from <https://www.dictionary.com/browse/meritocracy>.

Dragland, Åse (5.22.2013). Big Data for better or worse. *SINTEF*. Retrieved 4.26.2020 from <https://www.sintef.no/en/latest-news/big-data-for-better-or-worse/>.

DuBravac, Shawn (2015). *Digital Destiny: How the New Age of Data Will Transform the Way We Work, Live, and Communicate*. Washington D.C: Regnery Publishing.

Dunne, Gavin (10.27.2013). The New Black Gold (Song on Youtube). *Miracleofsound* (Youtube-channel). Retrieved 4.25.2020 from <https://www.youtube.com/watch?v=w-CoE46ZsD0>.

Durkheim, Emile (1964). *The Division of Labor in Society*. New York: Free Press.

Dvorsky, George (9.13.2017). Alarming Study Indicates Why Certain Bacteria Are More Resistant to Drugs in Space. *Gizmodo*. Retrieved 4.24.2020 from <https://gizmodo.com/alarming-study-indicates-why-certain-bacteria-are-more-1805666249>.

Eidos Interactive & Square Enix (2003-2016). *Deus Ex -Franchise* (videogame series). London: Eidos Interactive.

Esper, Erwin (1967). Max Meyer in America. *Journal of the History of the Behavioral Sciences*, 3(2), pp.107-131.

Ewalt, David M. (12.14.2016). The World's Most Powerful People. *Forbes*. Retrieved 4.24.2020 from <https://www.forbes.com/sites/davidewalt/2016/12/14/the-worlds-most-powerful-people-2016/#26ec03f2368d>.

Feldman, Michael (8.30.2016). Market for Artificial Intelligence Projected to Hit \$36 Billion by 2025. *Top500*. Retrieved 4.24.2020 <https://www.top500.org/news/market-for-artificial-intelligence-projected-to-hit-36-billion-by-2025>.

Financial Times (2019). Global 500.

FitzGerald, McCann & Madigan, Ruairí (5.26.2016). GDPR and the Internet of Things: 5 Things You Need To Know. *Lexology*. Retrieved 4.24.2020 from <http://www.lexology.com/library/detail.aspx?g=ba0b0d12-bae3-4e93-b832-85c15620b877>.

Foreign Policy (2015). The 2015 Global Thinkers. Retrieved 4.24.2020 from <https://2015globalthinkers.foreignpolicy.com/#!gt-full-list>.

Forrest, Conner (4.15.2015). Windows 10 Violates Your Privacy by Default, Here's How You Can Protect Yourself. *TechRepublic*. Retrieved 4.24.2020 from <http://www.therepublic.com/article/windows-10-violates-your-privacy-by-default-heres-how-you-can-protect-yourself>.

Foucault, Michel (1973). *The Order of Things: An Archaeology of the Human Sciences*. New York, Vintage Books, 1973. (Inayatullah cites Michael Shapiro as the intermediary between CLA and Foucault, therefore, I include the source here: Shapiro, Michael (1992). *Reading the Postmodern Polity: Political Theory as Textual Practice*. Minneapolis, University of Minnesota Press.)

Fox, Edward, Theophilus (May 2013). *'Piratical Schemes and Contracts': Pirate Articles and their Society, 1660-1730* (Open Research Exeter). University of Exeter, Centre for Maritime Historical Studies. Retrieved 4.24.2020 <https://ore.exeter.ac.uk/repository/bitstream/handle/10871/14872/FoxE.pdf>.

Frankel, Rebecca (11.30.2009). *The FP Top 100 Global Thinkers*. *Foreign Policy*. Retrieved 4.24.2020 from https://web.archive.org/web/20141021111122/http://www.foreignpolicy.com/articles/2009/11/30/the_fp_top_100_global_thinkers?page=0,30.

Fuentes Nieva, R. and Galasso, N. (2014). *Working for the Few - Political Capture and Economic Inequality*(Oxfam Briefing Paper 178). Oxfam Great Britain.

Galton, Francis (3.7.1907). Vox Populi. *Nature*, 1949(75), pp. 450-451.

Galtung, Johan (1981a) Social Cosmology and the Concept of Peace. *Journal of Peace Research*, 18(2), pp.183-199.

Galtung, Johan (1981b). Western Civilization: Anatomy and Pathology. *Alternatives*, 7(2), pp.145-169.

Geraci, Robert M. (4.6.2011). The Cult of Kurzweil: Will Robots Save Our Souls?. *USC Religion Dispatches*. Retrieved 4.24.2020 from <https://religiondispatches.org/the-cult-of-kurzweil-will-robots-save-our-souls/>.

Global Data Hub (November 2016). Understanding Consent Under the GDPR. Retrieved 4.24.2020 from <https://globaldatahub.taylorwessing.com/article/understanding-consent-under-the-gdpr..>

Goldmacher, Shane (9.7.2016). Hillary Clinton's "Invisible Guiding Hand". *Politico*. Retrieved 4.24.2020 from <https://www.politico.com/magazine/story/2016/09/hillary-clinton-data-campaign-elan-kriegel-214215>.

Google Investor Relations Press Release (website) (circa 2017). Retrieved 4.24.2020 from https://abc.xyz/investor/static/pdf/2017Q4_alphabet_earnings_release.pdf?

cache=33ec3b1.

Google Transparency Project (4.15.2016). Google's Revolving Door Explorer (US). Retrieved 4.24.2020 from <https://www.techtransparencyproject.org/googles-revolving-door-explorer-us>.

Graziani, Augusto (1990). The Theory of the Monetary Circuit. *Economies et Societes*, 24(6), pp.7-36.

Halevy, Alon & Norvig, Peter & Pereira Fernando (March-April 2009). The Unreasonable Effectiveness of Data," *Intelligent Systems. IEEE Intelligent Systems*, 24(2), pp. 8-12.

Harari, Yuval Noah (2014). *Sapiens: A Brief History of Humankind*. New York City: Harper.

Harari, Yuval Noah (8.26.2016). Yuval Noah Harari on big data, Google and the end of free will. *Financial Times*. Retrieved 4.24.2020 from <https://www.ft.com/content/50bb4830-6a4c-11e6-ae5b-a7cc5dd5a28c>.

Harari, Yuval Noah (2017). *Homo Deus: Huomisen lyhyt Historia* (transl. J. Iso-Markku). Helsinki: Bazar Kustannus Oy.

Harari, Yuval Noah (2018). *21 Lessons for the 21st Century*. Great Britain: Jonathan Cape Clays Ltd Elcograf S.p.A.

Hauser, Marc D.; Chomsky, Noam; Fitch, W. Tecumseh (22 November 2002). The Faculty of Language: What Is It, Who Has It, and How Did It Evolve?. *Science. American Association for the Advancement of Science*, 298(5598), pp. 1569–1579.

Hayek, Friedrich (September 1945). The use of Knowledge in Society. *The American Economic Review*, 35(4), pp. 519-530.

Heath, Nick (11.25.2013). "Let's try and Not Have a Human Do It", How one Facebook Techie Can Run 20,000 Servers. *ZDNet*. Retrieved 4.24.2020 <http://www.zdnet.com/lets-try-and-not-have-a-human-do-it-how-one-facebook-techie-can-run-20000-servers-7000023524>.

Heavy.com (March 2018). "With up to 5000 data points on over 230 Million Aamerican voters, we build your custom target audience, then use this crucial information to engage, persuade, and motivate them to at." Retrieved 4.24.2020 <https://heavy.com/news/2018/03/cambridge-analytica-trump-facebook-analytics-mercet/>.

Hellbing, Dirk; Frey, Bruno, S.; Gigerenzer, Gerd; Hafen, Ernst; Michael Hagner; Hofstetter, Yvonne; van den Hoven, Jeroen; Zicari, Roberto, V.; Zwitte, Andrej (February 2017). Will Democracy Survive Big Data and Artificial Intelligence?. In Hellbing (ed.). *Towards Digital Enlightenment*. (pp. 73-98)

Henley, Jon (4.6.2016). Sweden leads the race to become cashless society. *The Guardian*. Retrieved 4.26.2020 from <https://www.theguardian.com/business/2016/jun/04/sweden-cashless-society-cards-phone-apps-leading-europe>.

Hidalgo, César (2015). *Why Information Grows: The Evolution of Order, From Atoms to Economies*. New York, Basic Books.

Hoffmann, D. L., Standish, C. D., García-Diez, M., Pettitt P. B., Milton J. A., Zilhão J.,... Pike A. W. G. (2018). U-Th dating of carbonate crusts reveals Neandertal origin of Iberian cave art. *Science. American Association for Advanced for the Advancement of Science (AAAS)*, 359(6378), pp.912–915.

Holistic Design Inc. (1994). *Merchant Prince* (strategy videogame). United States: Quantum Quality Productions.

Hume, Leslie (2016). *The National Union of Women's Suffrage Societies 1897–1914*. Great Britain: Routledge.

Inayatullah, Sohail (2007). *Questioning the Future: Futures Studies, Action Learning and Organizational Transformation* (3rd edition) Chapter 2. Tamsui, Taiwan: Tamkang University Press.

Inayatullah, Sohail (2009). *Causal Layered Analysis: An Integrative and Transformative Theory and Method*. In Jerome Glenn and Theodore Gordon (eds.). *Futures Research Methodology* (Version 3.0). Washington D.C, The Millennium Project. Retrieved 4.22.2020 from <http://www.metafuture.org/wp-content/uploads/2016/01/Causal-Layered-Analysis-FRM-version-3-2009.pdf>.

James, Paul (2015). Despite the Terrors of Typologies: The Importance of Understanding Categories of Difference and Identity. *Interventions: International Journal of Postcolonial Studies*, 17 (2), pp.174–195.

Johnson P. & Mueller J. (2002). Updating the accounts: global mortality of the 1918-1920 'Spanish' influenza pandemic. *Bulletin of the History of Medicine*, 76(1), pp.105-115.

Jolly, Karen Louise, Raudvere, Catharina & Peters, Edward(eds.) (2002). *Witchcraft and magic in Europe: the Middle Ages*. London: Athlone Press.

Jones, Daniel Stedman (2012). *Masters of the Universe: Hayek, Friedman and the Birth of Neoliberal Politics*. Princeton NJ: Princeton University Press.

Kalia, Amul (8.17.2016). With Windows 10, Microsoft Blatantly Disregards User Choice and Privacy: A Deep Dive. *Electronic Frontier Foundation*. Retrieved 4.24.2020 <https://www.eff.org/deeplinks/2016/08/windows-10-microsoft-blatantly-disregards-user-choice-and-privacy-deep-dive>.

Kaltheuner, Frederike (4.13.2017). Cambridge Analytica Explained: Data and Elections. *Medium*. Retrieved, 4.24.2020 www.medium.com/privacy-international.

Karabell, Zachary (1999). *What's College For? The Struggle To Define American Higher Education*. New York: Basic Books.

Kelly, Kevin (2010). *What Technology Wants*. New York: Viking Press.

Khaldun, Ibn (2015). *The Muqaddimah: An Introduction to History* (Abridged Edition), (transl. F. Rosenthal). New Jersey: Princeton University Press.

Keynes, John Maynard (1936). *The General Theory of Employment, Interest and Money*. United Kingdom: Palgrave Macmillan.

Kikeri, Sunita & Nellis, John (June 2002). *Privatization in Competitive Sectors: The Record to Date* (World Bank Policy Research Paper No.2860). The World Bank.

King, K., C. & Lively, C., M., (October 2012). Does genetic diversity limit disease spread in natural host populations?. *Heredity, Edinb*, 109(4), pp.199–203.

Kohler Timothy, A & Smith, Michael E. (Editors) (2018). *Ten Thousand Years of Inequality: The archeology of Wealth Differences* (Amerind Studies on Archaeology). Arizona: University of Arizona Press.

Kurzweil, Ray (2005): *The Singularity is Near: When Humans Transcend Biology*. United States: Viking.

Leary, M. R.; Tangney, J. P. (2003). *Handbook of self and identity*. New York: Guilford Press.

Lem, Stanislaw (2017). *The Futurological Congress* (transl. M. Kandel). United Kingdom: Penguin Random House. (Originally published in 1974)

Leonhard, Gerd (2016). *Technology vs. Humanity: The coming clash between man and machine*. United Kingdom and United States of America: Fast Future Publishing Ltd.

Lepenies, Philipp (2016). *The Power of a Single Number: A Political History of GDP*. New York: Columbia University Press.

Lewis, Helen (7.20.2016). How Jeremy Corbyn won Facebook. *New Statesman*, Retrieved 4.24.2016 from <https://www.newstatesman.com/politics/uk/2016/07/how-jeremy-corbyn-won-facebook>.

Library of Congress Country Studies (circa 2020). United States History – The Struggles of Labor. Retrieved 4.24.2020 from <http://countrystudies.us/united-states/history-82.htm>.

Limp, Dave (7.14.2016). Dave Limp, Exec Behind Amazon's Alexa. *Fortune*. Retrieved 4.24.2020 from <https://fortune.com/2016/07/14/amazon-alexa-david-limp-transcript/>.

London School of Economics (circa.2020). Department of Social Policy: About us. (Introduction on Website). Retrieved 25.4.2020 from <http://www.lse.ac.uk/social-policy/about-us>.

Longtail.com (2020). Retrieved 4.25.2020 from longtail.com.

Lopez, Maribel (4.6.2020). 5G The Next Battleground for Microsoft and Google. *Forbes*. Retrieved 17.5 from <https://www.forbes.com/sites/maribellopez/2020/04/06/5g-the-next-battleground-for-microsoft-and-google/>.

Mac, Ryan, Warzel, Charlie & Kantrowitz Alex (3.29.2018). Growth at Any Cost: Top Facebook Executive Defended Data Collection in 2016 Memo - and Warned That Facebook Could Get People Killed. *Buzzfeed*. Retrieved 4.24.2016 https://www.buzzfeed.com/ryanmac/growth-at-any-cost-top-facebook-executive-defended-data?utm_term=.stWyyGQnb#.cnkEEaN0v.

Macionis, John J. & Gerber, Linda M. (2011). *Sociology* (7th Canadian Edition). Toronto: Pearson Prentice Hall.

MacLaughlin, Kevin (11.6.2016). Bezos Ordered Alexa App Push. *Information*. Retrieved 4.24.2020 from <https://www.theinformation.com/bezos-ordered-alexa-app-push>.

MacLaughlin, Kevin & Sullivan, Mike (1.10.2017). Google's Relentless AI Appetite. *Information*. Retrieved 4.24.2020 <https://www.theinformation.com/googles-relentless-ai-appetite>.

MacMillan (2007). *English Dictionary For Advanced Learners* (2nd Edition). Oxford: MacMillan Education. (Original work published in 2002)

Magalhães, João Pedro de (March-April 2003). Winning the War Against Aging. *The Futurist*, 37(2), 48-50.

Malaska, Pentti (2013): Tulevaisuustietoisuudesta ja tulevaisuudesta tietämisestä. In Osmo Kuusi, Timo Bergman & Hazel Salminen (eds.). *Miten tutkimme tulevaisuuksia?* (pp. 14-22) Tampere: Tulevaisuudentutkimuksen seura ry, Acta Futura Fennica.

Manyika, James & Chui, Michael (8.13.2014). Digital Era Brings Hyperscale Challenges. *Financial Times*. Retrieved 4.24.2020 from <http://www.ft.com/intl/cms/s/0/f30051b2-1e36-11e4-bb68-00144feabdc0.html?siteedition=intl#axzz3JjXPNno5>.

Margolin, Jean-Louis & Werth, Nicolas (11.14.1997). Communisme: retour à l'histoire [Communism: Return to the history]. *Le Monde (in French)*. Retrieved 4.24.2020 https://www.lemonde.fr/archives/article/1997/11/14/communisme-retour-a-l-histoire_3810094_1819218.html.

Marshall, Matt (11.17.2002). Spying on Startups. *Mercury News*.

Masulis, Ronald W.; Wang; Cong; Xie, Fei (2008). Agency Problems at Dual-Class Companies. *Journal of Finance*, 64(4) 1697-1727.

Matyszczyk, C. (10.1.2015). Google Exec: 'With Robots in Our Brains, We'll Be Godlike' (Weblog). Retrieved 4.24.2020, <http://www.cnet.com/news/google-exec-with-robots-in-our-brains-well-be-godlike>.

Maximal Productions (producer); Romain Besnainou (director) (2019). *Qui a peur de Huawei?* (Who Is Afraid of Huawei?) (documentary). France: Maximal Productions & France Télévisions. Retrieved 4.24.2020 from <https://arena.yle.fi/1-50425448>.

McGregor Jr. Eugene B.; Campbell Alan K.; Macy Anthony Itua; Cleveland Harlan (June–August 1982). Symposium: The Public Service as Institution. *Public Administration Review*, 42(4), 304–320.

McNeill, William H. (1998). *Plagues and Peoples*. Garden City, New York: Anchor Press/Doubleday. (Original work published 1976)

McNicoll, Arion (10.3.2013). How Google's Calico Aims to Fight Aging and "Solve Death". *CNN*. Retrieved 5.18.2020 from <https://edition.cnn.com/2013/10/03/tech/innovation/google-calico-aging-death/index.html>.

Meer, Alec (7.30.2015). Windows 10 is Spying on You: Here's How to Stop It (blog). *Rock, Paper, Shotgun*. Retrieved 4.24.2020 from <https://rockpapershotgun.com/2015/07/30/windows-10-privacy-settings>.

Merriam-Webster (circa 2020). Focus Group. Retrieved 3.27.2020 from <https://www.merriam-webster.com/dictionary/focus%20group>.

Merriam-Webster (circa 2020). Hadron. Retrieved 5.18.2020 from <https://www.merriam-webster.com/dictionary/hadron>.

Merriam Webster (circa 2020). Collider. Retrieved 5.18.2020 from <https://www.merriam-webster.com/dictionary/collider>.

Merriam Webster (circa 2020). Omertà. Retrieved 5.18.2020 from <https://www.merriam-webster.com/dictionary/omerta>.

Metz, Cade (4.5.2017a). Building an AI Chip Saved Google from Building a Dozen New Data Centers. *Wired*. Retrieved 4.24.2020 from <https://www.wired.com/2017/04>.

Metz, Cade (4.18.2017b). Artificial Intelligence is the New Black. *Paysa Blog*. Retrieved 4.26.2020 from <https://www.paysa.com/blog/2017/04/17/artificial-intelligence-is-the-new-black>.

Metz, Cade (10.22.2017c). Tech Giants Are Paying Huge Salaries for Scarce AI Talent. *New York Times*. Retrieved 4.26.2020 from <http://www.nytimes.com/2017/10/22/technology/artificial-intelligence-experts-salaries.html>.

Meyer, Max, Friedrich (1921). *Psychology of the Other-One*. Missouri: Missouri Book Company.

Miller, Cain Claire (11.7.2008) How Obama's Internet Campaign Changed Politics. *New York Times*. Retrieved 4.24.2020 http://bits.blogs.nytimes.com/2008/11/07/how-obamas-internet-campaign-changed-politics/?_f=0.

Mirowski, Philip (2013). *Never let a Serious Crisis Go to Waste: How Neoliberalism Survived the Financial Meltdown*. London: Verso.

Monbiot G. (15.4.2016). Neoliberalism—The ideology at the root of all our problems. *The Guardian*. Retrieved 4.25.2020 from <https://www.theguardian.com/books/2016/apr/15/neoliberalism-ideology-problem-george-monbiot>.

Morozov, Evgeny (2.4.2019). Capitalism's New Clothes. *The Baffler*. Retrieved 4.24.2020 from <https://thebaffler.com/latest/capitalisms-new-clothes-morozov>.

Mozur, Paul (7.8.2018). Inside China's Dystopian Dreams AI, Shame and Lots of Cameras. *The New York Times* Retrieved 4.24.2020 from <https://www.nytimes.com/2018/07/08/business/china-surveillance-technology.html>.
Muehlhauser, Luke & Bostrom, Nick (2014). WHY WE NEED FRIENDLY AI. *Think*, 13(36), pp. 41-47.

Mullany, Gerry (16.1.2017). "World's 8 Richest Have as Much Wealth as Bottom Half of Global Population". *The New York Times*. Retrieved 4.26.2020 from <https://www.nytimes.com/2017/01/16/world/eight-richest-wealth-oxfam.html>.

NASA (10.29.2015). *NASA'S EFFORTS TO MANAGE HEALTH AND HUMAN PERFORMANCE RISKS FOR SPACE EXPLORATION* (Report No. IG-16-003). NASA Office of Inspector General Office of Audits.

New York Times (10.22.2017). Tech Giants Are Paying Huge Salaries for Scarce A.I. Talent. Retrieved 4.24.2020 from <https://www.nytimes.com/2017/10/22/technology/artificial-intelligence-experts-salaries.html>.

Nichols, Tom (2017). *The Death of Expertise: The Campaign against Established Knowledge and Why It Matters*. New York, United States of America: Oxford University Press.

Niiniluoto, Ilkka (2013). Tulevaisuudentutkimus – tiedettä vai taidetta. In Osmo Kuusi, Timo Bergman & Hazel Salminen (eds.). *Miten tutkimme tulevaisuuksia?* (pp. 23-30). Tampere: Tulevaisuudentutkimuksen seura ry, Acta Futura Fennica.

Nohlen, Dieter (2001). *Elections in Asia and the Pacific: South East Asia, East Asia, and the South Pacific*. United Kingdom: Oxford University Press.

OECD (2011). *Education at a Glance* (OECD Indicators). OECD Publishing. Retrieved 4.24.2020 from https://read.oecd-ilibrary.org/education/education-at-a-glance-2011_eag-2011-en#page4.

Page, Larry (5.15.2013). 2013 Google I/O. Retrieved 4.24.2020 from <http://www.pcworld.com/article/2038841/hello-larry-googles-page-on-negativity-laws-and-competitors.html>.

Pasquale, Frank A. (11.10.2017). *The automated Public Sphere* (Legal Studies research paper 2017-31). University of Maryland.

Pentland Alex (October 2011). Society's Nervous System: Building Effective Government, Energy and Public Health Systems. *MIT open access articles*. Retrieved 4.24.2020 from <http://dspace.mit.edu/handle/1721.1/66256>.

Pentland, Alex (2014). *Social Physics: How Good Ideas Spread—the Lessons from a New Science*. London, United Kingdom: Penguin.

Pentland, Alex (12.23.2017). Alex Pentland Homepage. *Endor.com*. Retrieved 4.24.2020 from <http://www.endor.com/careers>; "Endor-Social Physics," <http://www.endor.com/social-physics>.

Perrault, Gilles (ed.) (1998): *Le Livre Noir du Capitalisme*. Montreuil: Le Temps des cerises.

Petrella, Kristin (2009). *A Crucial Juncture: The Paracosmic Approach to the Private Worlds of Lewis Carroll and the Brontës*. Syracuse University Honors Program Capstone Projects. 430.

Petroff, Alanna (7.25.2017). Elon Musk says Mark Zuckerberg's understanding of AI is 'Limited'. *CNN Business*. Retrieved 4.25.2020 <https://money.cnn.com/2017/07/25/technology/elon-musk-mark-zuckerberg-ai-artificial-intelligence/index.html>

Piketty, Thomas (2013). *Le Capital au XXI^e siècle* (Capital in the 21st Century). Paris, France Éditions du Seuil.

Pomerantsev, Peter (2019). *This is Not Propaganda: Adventures in the War Against Reality*. London, United Kingdom: Faber & Faber Limited Bloomsbury House.

Public Broadcasting Service (2004). Who Made America (Internet-listing). Retrieved 4.25.2020 from https://www.pbs.org/wgbh/theymadeamerica/whomade/innovators_hi.html.

Robson, K., Plangger, K., Kietzmann, J., McCarthy, I. & Pitt, L. (2015). Is it all a game? Understanding the principles of gamification. *Business Horizons*. 58 (4), pp.411–420.

Rooney, Bridgette V., Crucian, Brian E., Pierson, Duane L., Laudenslager, Mark L. and

Mehta, Satish K. (2.7.2019). Herpes Virus Reactivation in Astronauts During Spaceflight and Its Application on Earth. *Frontiers in microbiology*, 10(16) 1-7.

Rowden, Rick (7.6.2016). The IMF Confronts Its N-Word. *Foreign Policy*. Retrieved 4.24.2020 from <https://foreignpolicy.com/2016/07/06/the-imf-confronts-its-n-word-neoliberalism/>.

Rutenberg, Jim (June 2013). Data You Can Believe In: The Obama Campaign's Digital Masterminds Cash In. *New York Times*. Retrieved 4.24.2020 from <https://www.nytimes.com/2013/06/23/magazine/the-obama-campaigns-digital-masterminds-cash-in.html>.

Sandberg, Roy (3.25.2018). Koko perintöjärjestelmä tulisi lakkauttaa (We ought to abolish inheritance altogether). *Helsingin Sanomat*. Retrieved 4.22.2020 from <https://theworldnews.net/fi-news/koko-perintojarjestelma-tulisi-lakkauttaa>.

Sample, Ian (11.2.2017). "Big Tech Firms" AI Hiring Frenzy Leads to Brain Drain at UK Universities. *Guardian*. Retrieved 4.24.2020 from <http://www.theguardian.com/science/2017/nov/02/big-tech-firms-google-ai-hiring-frenzy-brain-drain-uk-universities>.

Samuelson Paul, A. & Nordhaus, William D. (2006). *Economics* (18th International edition). New York City: Tata McGraw Hill.

Sarkar, P.R. (1978). *Idea and Ideology* (fifth edition). Calcutta, Ananda Marga Publications.

Schlee, Christian (2013). *Targeted Advertising Technologies in the ICT Space: A Use Case Driven Analysis*. Germany: Springer Vieweg.

Schulman, Carl & Bostrom Nick (2012). How Hard is Artificial Intelligence? Evolutionary Arguments and Selection Effects. *Journal of Consciousness Studies*, 19(7-8) pp.103-130.

Shanahan, Murray (2015). *The Technological Singularity*. United States:MIT Press.

Short, Jodi L. (1.12.2011). *The Paranoid Style in Regulatory Reform* (Georgetown Public Law and Legal Theory Research Paper No. 11-10). Georgetown University Law Center. Retrieved 4.24.2020 from <https://poseidon01.ssrn.com/delivery.php?ID=238095091112120120068105068093116098030039095010089032081004093111028069125072031004017022101106058025050115029074077082120084118072059069019103086081012022089095005030060091126119091121096083110065097084113002005089031107076110067005100029105116121&EXT=pdf>.

Simkovic, Michael (9.5.2013). Risk-Based Student Loans. *Washington and Lee Law Review*, 70(1), pp.527.

Simmel, Georg (1903). *The Metropolis and Mental Life*. In Philip Kasinitz (ed.). *Metropolis: Center and Symbol of Our Time* (pp. 30–45). New York University Press, New York.

Simmel, Georg (1991) *The Philosophy of Money*. London: Routledge. (Original work published 1900)

Skinner, B. F. (2002) *Beyond Freedom & Dignity*. Indianapolis: Indianapolis & Hackett. (Original work published in 1971)

Skinner B.F. (1965) *Science and Human Behavior*. United States: Free Press.

Slaughter, Richard (1997). Developing and Applying Strategic Foresight. *The ABN Report*, 5(10), pp. 7-15.

Smart, Julie (2011). *Disability Across the Developmental Life Span: For the Rehabilitation Counselor*. New York: Springer Publishing Company.

Smith, Randall (10.28.2011). One Share, One Vote?. *Wall Street Journal*. Retrieved 4.24.2020 from <https://www.wsj.com/articles/SB10001424052970203911804576653591322367506>.

SpaceX (2020). Elon Musk. Retrieved 4.25.2020 from <https://www.spacex.com/elon-musk>.

Sports News Youtube Channel (4.20.2010). *The best of politicians playing sport*(Youtube-video). Retrieved 4.24.2020 from <https://www.youtube.com/watch?v=N56olABXudA>.

Stark, Francis R. (1897) *The Abolition of Privateering and the Declaration of Paris*. *Studies in History, Economics and Public Law*, 8(3), pp.231-383.

Stewart, Heather (4.21.2017). Labour Takes to the streets and social media to reach voters. *The Guardian*. Retrieved 4.24.2020 from <https://www.theguardian.com/politics/2017/apr/21/labour-takes-to-the-streets-and-social-media-to-reach-voters>.

Stone, Hal & Stone, Sidra (1989) *Embracing Our Selves: The Voice Dialogue Manual*. Novato, CA: New World Library. (For a specific take on how their work relates to CLA, see Inayatullah, Sohail (2008). Six Pillars: Futures thinking for transforming. *Foresight*, 10(1), pp.4-21.)

Strange, Adario (11.5.2016). Elon Musk thinks universal income is answer to automation taking human jobs. *Mashable.com*. Retrieved 4.3.2020 from <https://mashable.com/2016/11/05/elon-musk-universal-basic-income/?europe=true>.

Strayer, Joseph R. (1965) *Feudalism*. New Jersey: Princeton University Press.

Strayer, Joseph R. (1970) *On the Medieval Origins of the Modern State*. New Jersey: Princeton University Press.

Sullivan, Mark (4.8.2016). The Real Reasons That Amazon's Alexa May Become the Go-To AI for the Home. *Fast Company*. Retrieved 4.24.2020 from <https://www.fastcompany.com/3058721/app-economy/the-real-reasons-that-amazons-alexa-may-become-the-go-to-ai-for-the-home>.

Suny, Ronald Grigor (2007). Russian Terror/ism and Revisionist Historiography. *Australian Journal of Politics & History*, 53(1) pp.5–19.

Suter, Amandeep (11.1.2018). Elon Musk, the Tech Genius and His Visions for the Future. *TechStory*. Retrieved 4.25.2020 from <https://techstory.in/elon-musk-tech-genius/>.

Sutherland, John (5.9.2006). The Ideas Interview: Nick Bostrom. *The Guardian*. Retrieved 4.25.2020 from <https://www.theguardian.com/science/2006/may/09/academicexperts.genetics>.

Swift, James (9.28.2016) Interview/ Alexander Nix. *Contagious*, Retrieved 4.24.2020 from <https://www.contagious.com/news-and-views/interview-alexander-nix>.

Tegmark, Max (2017). *Life 3.0 Being human in the Age of Artificial intelligence*. United Kingdom: Penguin Books Ltd.

The European Commission (10.4.2017). *State aid: Commission finds Luxembourg gave illegal tax benefits to Amazon worth around €250 million* (Press release). Brussels. Retrieved 4.25.2020 from https://ec.europa.eu/commission/presscorner/detail/en/IP_17_3701.

The Free Dictionary by Farlex (circa 2020). Relay. Retrieved 4.3.2020 from <https://www.thefreedictionary.com/relay>.

Therborn, Goran (2012). *Maailma: Aloittelijan Opas* (transl. N. Vilokkinen). Finland: Bookwell Oy Jyväskylä.

Tolkien, John, Ronald, Reuel (1937). *The Hobbit: There and Back Again*. United Kingdom: George Allen & Unwin.

Tomassello, M. (2008). *The origins of communication*. Cambridge, MA: MIT Press.

Uber London (2017). Save Your Uber in London (Internet-petition). Retrieved 4.24.2020 from <https://www.change.org/p/save-your-uber-in-london-saveyouruber>.
Uber Privacy Policy (circa 2018). Retrieved 28.2.2020 from <https://www.uber.com/legal/fi/document/?country=united-states&lang=en&name=privacy-notice>.

Vance, Ashlee (10.4.2012) Facebook: The Making of 1 Billion Users. *Bloomberg.com*. Retrieved 4.24.2020 from

<https://www.bloomberg.com/news/articles/2012-10-04/facebook-the-making-of-1-billion-users>.

Velkova, Julia (12.1.2016). Data that warms: Waste heat, infrastructural convergence and the computation traffic commodity. *Big Data & Society, July-December 2016*, pp.1-10.

VentureBeat (2.2.2012). *Power Play: How Zuckerberg Wrested Control of Facebook from His Shareholders* (blog). Retrieved 4.24.2020 <https://venturebeat.com/2012/02/01/zuck-power-play>.

Waterson, Jim (6.6.2017). Here's How Labour Ran an Under-The-Radar Dark Ads Campaign During The General Election. *Buzzfeed*. Retrieved 4.24.2020 from <https://www.buzzfeed.com/jimwaterson/heres-how-labour-ran-an-under-the-radar-dark-ads-campaign>.

Watson, Peter (2005). *Ideas: A History of Thought and Invention from Fire to Freud*. New York: HarperCollins Publishers.

Weinreich, Peter (1986). The operationalisation of identity theory in racial and ethnic relations. In Rex, John; Mason, David (eds.). *Theories of Race and Ethnic Relations. Comparative Ethnic and Race Relations* (pp. 299-320). United Kingdom: Cambridge University Press.

Whitbeck, Les B. (1999). Primary Socialization Theory: It All Begins with the Family. *Substance Use & Misuse, 34*(7), pp.1025–1032.

Williams, William F. (2013). *Encyclopedia of Pseudoscience: From Alien Abductions to Zone Therapy*. New York, The United States: Routledge Taylor & Francis Group.

Wollheim, Richard (1971). *Freud*. London, Fontana Press.

World Bank (2019). *World Development Report 2019: The Changing Nature of Work*. Washington, DC: World Bank. Retrieved 4.24.2020 from <http://documents.worldbank.org/curated/en/816281518818814423/pdf/2019-WDR-Report.pdf>.

World Economic Forum (January 2011). *Personal Data: The Emergence of a New Asset Class*. Cologny-Geneva Switzerland. Retrieved 4.24.2020 from *Report* http://www3.weforum.org/docs/WEF_ITTC_PersonalDataNewAsset_Report_2011.pdf.

World Health Organization (5.31.2011). *IARC CLASSIFIES RADIOFREQUENCY ELECTROMAGNETIC FIELDS AS POSSIBLY CARCINOGENIC TO HUMANS*. Geneva Switzerland. Retrieved 4.24.2020 from https://www.iarc.fr/wp-content/uploads/2018/07/pr208_E.pdf.

Zimbalist, Andrew S. (1989): *Comparing Economic Systems: A Political-Economic Approach*. San Diego: Harcourt Brace Jovanovic.

Zuboff, Shoshana (March 2015). Big Other: Surveillance Capitalism and the Prospects of an Information Civilization. *Journal of Information Technology*, 30 (1) pp.75-89.

Zuboff, Shoshana (3.5.2016). Google as a Fortune Teller: The Secrets of Surveillance Capitalism. *Frankfurter Allgemeine Zeitung*. Retrieved 4.24.2020 from <https://www.faz.net/aktuell/feuilleton/debatten/the-digital-debate/shoshana-zuboff-secrets-of-surveillance-capitalism-14103616.html?printPagedArticle=true>.

Zuboff, Shoshana (2019). *The Age of Surveillance Capitalism: The Fight for a Human Future At The New Frontier Of Power*. United States of America: Public Affairs Hachette Book Group.

Zuckerberg, Mark (1.29.2015). Facebook's (FB) CEO Mark Zuckerberg on Q4 2014 Results - Earnings Call Transcript. *Seeking Alpha*. Retrieved 4.24.2020 from <https://seekingalpha.com/article/2860966-facebooks-fb-ceo-mark-zuckerberg-on-q4-2014-results-earnings-call-transcript>.

Zuckerberg Mark (2.16.2017a). Building a Global Community. *Facebook*. Retrieved 4.24.2020 from <https://www.facebook.com/notes/mark-zuckerberg/building-global-community/10154544292806634>.

Zuckerberg, Mark (4.19.2017b). Facebook CEO Mark Zuckerberg's Keynote at F8 2017 Conference (Full Transcript). Retrieved 4.24.2020 from <https://singjupost.com/facebook-ceo-mark-zuckerbergs-keynote-at-f8-2017-conference-full-transcript>.