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Domesticity and digital eugenics: design cultures of Silicon Valley

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Abstract | The paper attempts to make sense of the two more recent areas of interest of Silicon Valley's 'gang of four': Amazon, Alphabet, Apple, Facebook. The last few years have seen this group of four turning their attention to the development of 'smart' ecologies with a focus on automation and the development of a 'house of tomorrow'. More recently, reports have emerged of increasing interest in biotechnologies and Synthetic Biology start-ups. Interest in these two areas are commonly interpreted as the logical consequence of the need to find new profitable markets. We suggest, instead, that modification of the human body is central to understanding these corporate actions. We use the notion of eugenics as an interpretative framework to understand these new areas of expansion, suggesting the creation of a hegemonic culture gestated by digital technologies.

KEYWORDS | INTERNET OF THINGS, SMART HOME, SILICON VALLEY, ARCHITECTURE, EUGENICS

1. Introduction

In September 2018, Plant Prefab issued a small press release announcing their new collaboration with Amazon. The company would receive resources from the Alexa's fund, created in 2015 by Amazon as a pot of capital fund investment designed to promote development of Artificial Intelligence research and application as well as Internet of Things and robotics. One use of the Alexa fund is in the form of small grants to groups of graduate students, often in applied sciences and engineering, who develop small applications or devices integrated to Amazon's vision of a 'connected' future. Plant Prefab was an unusual candidate for the Alexa fund. Paul Bernard, a spokesperson for the Alexa's Fund, announced that the partnership would be intended to develop prefabricated units which would leave the assembly line with Alexa-ready IoT devices — a seamless mesh of devices ready to be connected to Amazon's emerging line of Echo units (Gibson, 2018).

Echo was unveiled to the American market in November 2014 and released to the market in the summer of the following year. The device is a plastic cylinder featuring a small array of buttons on its top and a ring of LED lights at its upper rim which make up one of the main interaction strategies with a human user: feedback is represented by the light ring changing colours and dimming patterns in a way that looks suspiciously similar to the interaction of HAL-9000 in *2001 Space Odyssey*. The outer appearance of Echo is the pinnacle of minimal design — there are little cues in its exterior to tell us what it can do. It is also the result of the design culture of Silicon Valley — the product is never finished, it is constantly upgraded. Echo was initially marketed primarily as a speaker, with other functionalities added in through software updates and newer generations of hardware. The one outer feature suggesting its function is the grilled pattern that allows the soundwaves to travel outwards from its speaker arrangement. It also allows the array of seven directional microphones to pick up sounds happening around Echo (Crawford and Joler, 2018).

In the English language, speaker has a few meanings. In the context of Alexa and similar devices, speaker means a piece of equipment used to reproduce sound through the vibration of an acoustic material. An older meaning of the word, however, describes an entity, often human, who is capable of speech. After its initial release, Amazon integrated Echo to Alexa, the Artificial Intelligence (AI) agent responsible for making Echo not only a device that reproduced sound but one that speaks with its human owner. A smart speaker. Shortly after its announcement of collaboration with *Plant Prefab*, Amazon started rolling out its *Experience Centers*, prototype homes installed across the United States to showcase the potential of a truly smart living. The architecture and interior design of these centres are unremarkable beyond the technological cornucopia of sensors and actuators. At the centre of this deep mesh of electronic convenience stands Echo, intended to become the operative system of domestic life.

The digital domesticity of Amazon and other members of the '*Gang of Four*' — Alphabet, Apple, Facebook — is interwoven with tactics to subtly modify the human body to make it more adept at interfacing with machines (Hernan & Ramirez-Figueroa, n.d.). The *Amazon Experience Centers* produced by Plant Prefab are often presented with a series of placards, placed at strategic points of the tour and providing customers with instructions of how to interface with Echo. One of the cards reads '*Just ask "Alexa, movie time'.* Instructions continue further down in a smaller font: '*With this command, Alexa will … turn off the living room lights, turn off the music*'. The cards can be seen as an atmospheric 'user manual': it instructs would-be users on the 'right' way to interface with the AI agent. There is a pragmatic dimension to this — at this point of development, Echo is capable of understanding *these* queries, so users are asked to shape their speech when operating their device.

A more sinister reading detects the emergence of an *Alexa-speech*, a whole new form of simplified English in which vocabulary and grammar are shaped to the capabilities and current constrains of the technology. Taken to its logical consequence, the Amazon-censored language would change with every new software and firmware upgrade, with new words coming in and out of use depending on the ability of AI agents to detect their patterns and transcribe them to text queries. While this 1984-esque vision can be dismissed as a critical conceit, studies on the effect of AI assistants on human speech invites a different interpretation. A survey by Science Centre Newcastle suggests the majority of users change their speech patterns, specially to 'soften' regional accents (Life, 2018). As argued by Erin Carrie (2018), personal assistants replicate the human biases of the people who design and programme them. The automated speech of these devices is '*without culture, disembodied, hegemonic, and, in a word, white*' (Marino, 2006).

In this paper, we attempt to make sense of the two more recent areas of interest of Silicon Valley's '*gang of four':* Amazon, Alphabet, Apple, Facebook. Having dominated the development of digital technologies in the late twentieth century, the last two decades has seen them turning their attention to the development of 'smart' ecologies towards the '*house of the future*' and, more recently, to biotechnologies start-ups (Chang, 2018; Gibson, 2018; Simonite, 2017; Strengers & Nicholls, 2018). Understood through a financial framework, these recent engagements can be read as a way of diversifying income streams from corporations under increasing pressure to grow. We believe, however, that there is a unifying logic that concerns directly with the human body at actual and metaphorical levels, an ethos to generate a better humankind.

We employ a methodology influenced by feminist studies to analyse the entanglements of these corporations and their development projects and financial interests in smart speakers, personal assistants and biotechnologies. We perform a close reading of promotional material and press releases of smart speakers and personal assistants, confronting it with recent interests in biotechnology start-ups such as Jeff Bezo's engagement with Unity Biotechnology (Terry, 2018); Alphabet's branch in the California Life Company (Tate, 2013);

and Facebook's with AncestryDNA (Schwartz, 2019). We draw inspiration on the work of Christina Cogdell (2010; 2000) linking eugenic ideology with streamline design in twentieth century America. We write this paper within a critical tradition — we believe that the design cultures of Silicon Valley should be analysed beyond prevalent discourses of technocentrism and progress. But we do so as a cartographic exercise (Braidotti, 2011) — we propose instead that reading the tactics of the gang of four through the interpretative framework of the ethos to create a better humankind allows the design community to device their own tactics of resistance and destabilisation of a digital hegemony.

2. Digital Eugenics

Christina Cogdell has linked eugenic ideology with streamline design in twentieth century America, arguing a broad cultural pattern in which ideas and practices of modern design are inextricably linked to those about race and evolution. She performs a historical overview to detect the way that notions about efficiency, hygiene and progress shaped not only the views of scientists and medical professionals who self-identified with the ethos and principles of eugenics, but also in a group of industrial designers and architects loosely grouped around the aesthetics of streamlining: the development of form that follows principles or rationality, efficiency and progress. Eugenic thinking, she argues, operates as a '*a guiding framework within a certain cultural psyche without which the streamlined style in industrial and architectural design would not have resonated with such force'* (Cogdell, 2000, p.194). These designers '*approached products the same way that eugenicists approached bodies*' (Cogdell, 2004, p.4): both could be managed and manipulated to create a better form of humankind.

Although there are visible figures in Silicon Valley that can be somehow linked to eugenic ideals and discourses, such as Paypal founder Peter Thiel, we can also detect a broader design culture that favours ideals of efficiency and progress actualised in the human body. Claudia Dutson has argued that the architecture of Silicon Valley typifies the management practices of its corporations. Through a detailed study that draws on drawing and situated practices, Dutson has created a detailed documentation of the ways that technology companies have used tactics to colonise the geographies they are located in. trying to shape their immediate environment in their own image. The analysis extends to the architecture of campus themselves. Dutson argues that the way that activities are arranged, and the buildings laid out within a complex, respond not only to functional requirements but to a strategy to embody the corporate ethos and elicit affective states in their workers. Elsewhere Dutson analyses the *entrepreneurial subjectivity* of Sillicon Valley, a form of management that arose after the Second World War within West Coast technology companies that shifted an emphasis on top-down hierarchies to self-management (Dutson, 2016). The new emphasis on individuality allowed corporations to stealthy align their objectives to those of their employees, phasing out traditional objectives explicitly formulated around making a profit towards hyperbolic statements of *'"making a difference"*

and "changing the world"" which, Dutson goes on to conclude, incorporate '*an employer's need for personal growth and desire to do meaningful work with a bigger shared goal*'.

Dutson has argued how the architecture of building complexes from Apple, Amazon, Google and other incorporate strategies that enable them to surreptitiously influence the experiences, thoughts and feelings of their employees. The repertoire of spatial strategies of power include the use of open plan offices and extend to the more 'innovative' strategies that seem to invert the work/play: lavish interiors, free gourmet meals and 'playful' environments with arcades, bean bags and table football. The expectation is that by creating an environment in which all possible needs and desires are catered for, all distractions will disappear and liberate employees' cognitive capacity to actualise their full potential. By constructing the architecture, Silicon Valley corporations hope to generate a better, more productive version of employee, one that has learnt to assert their personal values at work; to derive positive identification that produces an unlimited revenue to the company (Dutson, 2019).

Although Dutson doesn't explicitly frame her discussion of Silicon Valley architecture through the notion of Eugenics, it is easy to detect the ethos in the will to produce a better sort of human-kind. More explicit evidence of this form of 'digital eugenics' can be found in Silicon Valley's more recent entanglements with biotechnologies. Early in 2017 it was announced that Amazon's CEO, Jeff Bezos, would be investing a significant amount into Unity Biotechnology, a biotechnology start-up poised on reducing the debilitating consequences of aging (Terry, 2018). The company concentrates on removing '*senescents cells'* from the body: a specialised form of cell charged with preventing multiplication of cells into tumorous tissue. The cells have been linked to the development of age-related conditions, including arthritis and kidney diseases. Following some successful trials in rodents, the company hopes to develop products that target and eliminate senescent cells which, it is hoped, might slow down some conditions associated with ageing.

Association with the ideals and principles of eugenics is more overt in DNA services. AncestryDNA, one of Calico's partners, which provides direct-to-costumer genetic testing: a service in which costumers send a tube with their spit to get information about their 'ethnic origins' and 'DNA' tribe. In early 2019 *23andMe* announced a partnership with AirBnB to allow its customers to put together holidays based on their 'ethnic' origin and ancestry. Mahdawi (2019) describes the phenomenon as a form of *DNAdvertising* reflecting on the way Silicon Valley companies seem to increasingly use genetic information, based on DNA, for gratuitous reasons. Spotify has also partnered with Ancestry to offer costumers personalised music playlist based on their genetic makeup. Despite the overtly racial discourse behind this use of DNA to speculate on racial origin, Mahdawi reflects, the companies are careful to phrase their products in terms of genetic populations, DNA tribes, heritage and ancestry. This banalisation, Caulfield (2018) argues, legitimises race and the idea that biological differences are constitutive of personal identity.

3. Accelerationism

In addition of their material entanglements and design tactics, it could be argued that the foundational myth and ethos of Silicon Valley is deeply woven and explicitly informed by eugenics. The giant corporations making up the so-called gang of four have made their fortune by creating and optimising products based on the internet. Their ethos and cultures could be said to be the result of the financial, material and ideological conditions of the 1990s — a decade characterised by the collapse of the Soviet Union, the emergence of the American economic and political model as hegemony, the 'end of history' and a financial boom in the US and UK linked to the strengthening of neoliberal policies. The corporations often identified as the 'gang of four' are of the decade or closely related to its conditions: Google's parent company Alphabet and Amazon, were founded in the 1990 and although the foundation of Apple predates the decade, it found one of its more financially profitable years in the same years. Facebook would only emerge in the market later but based on the conditions created by the technological revolution and mass internet culture that emerged in the same date.

The political and economic conditions of the 1990s not only created the possibility for the gang of four to emerge and flourish, they also gave way to *accelerationism*, a philosophical school of thought that has derived in contemporary aesthetic, political and ideological movements in the far right and left. Although the term means different things to the manifold of groups embracing it, Steven Shaviro (2015) proposes that the best way of defining accelerationism is through science fiction. In *Pop Apocalypse*, Lee Konstantinou (2009) describes a fictional movement of '*Creative Destruction*' inspired by Maxism-Leninism. The followers consider Marx's writers literally, considering its mission to *accelerate* the reach of capitalist markets '*because that's the necessary precondition for a truly socialist revolution*' (Konstantinou quoted by Shaviro, 2015, section 1). Shaviro points out the paradox of the creative destructionst ethos: in practice, its adherents are indistinguishable from the most ardent of capitalists, creating good value for investors and enviable business opportunities. A more succinct summary of the argument is that '*the only way out is the way through*' (Idem) — accelerationists believe that Western governments, and more generally the capitalism is inherently corrupt. The solution is to accelerate the expansion of the economic system and taking it to its extreme, often through shock tactics of creating chaos and confusion.

The origins of accelerationism can be traced to Nick Land and the work of the Cybernetic Culture Research Unit (CCRU) at the University of Warwick in the United Kingdom (Beauchamp, 2019). Their work can be understood as a reinterpretation of the old analogy of technology as a prosthetic extension of the human body first proposed by philosopher Ernest Kapp (1877) and later popularised and extended by Buckminster Fuller (1938, 1971)— suggesting a merging of technology and the human. Land believed that the prevalence of capitalism and networking cultures were intertwined strands which, when combined, produced a profound change of everyday life and the human. Drawing on the writings of

Deleuze and Guattari and Jean-François Lyotard, Land (2018) proposed that as the speed of modern life inevitably accelerated, the individual dissolved and became a new entity merged to its technological limbs.

Although not explicitly related, the argument behind accelerationism can be equated by that of transhumanism, the belief that the advancement of digital technologies inevitably leads to a future beyond the human where consciousness can be uploaded into a machine to achieve eternal life. Although often associated with the work of Raymond Kurzweil, the notion of transhumanism has expanded to different aspects of Silicon Valley thinking and products, animating its entanglements with Amazon's Unity Biotechnology and Google's California Life Company among others.

4. [Atonic] Smart Living

Our use of eugenics in this paper doesn't claim specific links between the people behind the big four and eugenics as a guiding ideology. We believe however that reading their tactics through the interpretative framework of the ethos to create a better humankind allows the design community to device their own tactics of resistance and destabilisation of a digital hegemony.

In his *Being and Event* and *Logic of Worlds* (2007, 2019), Alain Badiou proposes the term of atonic worlds: worlds homogeneous and simple which, in their *sameness,* make it difficult for new conditions to appear and any significant change to take place. Perhaps the best way to visualise atonic worlds and their damaging effect on those who inhabit them is the analogy that Ian Graham Ronald Shaw (2010) draws to the animated film Wall-E. The film reaches its climax when Wall-E, a robot designed to collect and compress rubbish, enters the Axiom, a spaceship designed to provide an artificial living environment to the human population that escaped earth. Shaw proposes that the Axiom is a perfect example of an atonic world: a bland place designed to keep humans entertained and sedate, growing to impossibly obese dimensions in flying chairs which cater to their needs. Wall-E however, *tenses* the world of the Axiom, bringing onboard a small plant that has grown on earth and that should change the directive of the Axiom to head back to Earth and repopulate. Despite the opposition of Auto, the computer controlling the Axiom, the tension generated by Wall-E ensues a series of events that end up with radical change coming about.

The eugenic tactics of the 'gang of four' can be said to generate an atonic world, a 'smart' future of automation and sedate happiness where little happens. Design has, however, the potential to 'tense' this world by interrogating the need and convenience of technologies and generate alternative narratives and visions of the future. Thinking in these terms suggest a new social role of design, central to the debate of how these technologies develop and the way corporations can be brought to account for their actions. Doing so, however, requires work of critical theory to examine the unifying themes and tactics. Understanding the design cultures of this influential group of corporations as digital eugenics provides a way forward

in creating the conditions to challenge and counteract — to tense a world where we speak to Alexa, one in which we are bodies are attuned to the vertiginous speed of capitalism.

References

Badiou, A. (2007). Being and event. A&C Black.

Badiou, A. (2019). Logics of worlds: Being and event II. Bloomsbury Publishing.

Beauchamp, Z. (2019, November 18). Accelerationism: the obscure idea inspiring white supremacist killers around the world. *Vox*. Retrieved from https://www.vox.com/the-highlight/2019/11/11/20882005/accelerationism-white-supremacy-christchurch

Braidotti, R. (2011). *Nomadic Theory*. Columbia University Press.

Caulfield, T. (2018, March 23). Is direct-to-consumer genetic testing reifying race? *Policy Options*.

Chang, L. (2018). Amazon invites you over to see just how awesome Alexa is. Retrieved July 2, 2019, from https://www.digitaltrends.com/home/amazon-experience-centers/

Cogdell, C. (2010). Eugenic Design: Streamlining America in the 1930s. University of Pennsylvania Press, Incorporated. Retrieved from https://books.google.co.uk/books?id=oJt0BAAAQBAJ

Cogdell, Christina. (2000). The Futurama Recontextualized: Norman Bel Geddes's Eugenic "World of Tomorrow." American Quarterly, 52(2), 193–245. Retrieved from http://www.jstor.org.sheffield.idm.oclc.org/stable/30041837

Crawford, K., & Joler, V. (2018, September 6). Anatomy of an AI System: The Amazon Echo As An Anatomical Map of Human Labor, Data and Planetary Resources. *AI Now Institute and Share Lab*. Retrieved from https://anatomyof.ai/

Dutson, C. (2016). Performativity and Paranoia: Or How to do the "Internet of Things" with words. In N. B. Katie Lloyd Thomas, Thilo Amhoff (Ed.), *Industries of Architecture*. London: Routledge.

Dutson, C. (2019). Architecture of Silicon Valley. In *Designing Time*. London.

Fuller, R. B. (1938). *Nine Chains to the Moon*. Cape.

Fuller, R. B. (1971). *No More Secondhand God: And Other Writings*. Anchor Books.

Gibson, E. (2018). Amazon to develop Alexa-enabled prefab homes.

Hernan, L., & Ramirez-Figueroa, C. (n.d.). *Vague fictions. Echo and the digital domesticity of Silicon Valley*.

Kapp, E. (1877). *Grundlinien einer Philosophie der Tecknik: Zur Entstehungsgeschichte der Cultur aus neuen Gesichtspunkten ...* G. Westermann.

Konstantinou, L. (2009). *Pop Apocalypse: A Possible Satire*. HarperCollins e-books.

Land, N. (2018). *Fanged Noumena: Collected Writings 1987–2007*. Urbanomic/Sequence Press.

Life. (2018). *Research highlights fears technology could eradicate regional accents.* Newcastle Upon Tyne.

Mahdawi, A. (2019, June 4). DNA-based holidays encourage a dangerous flirtation with race. *The Guardian*.

Marino, M. C. (2006). *I, chatbot : the gender and race performativity of conversational agents*. Retrieved from https://www.worldcat.org/title/i-chatbot-the-gender-and-race-performativity-of-conversational-agents/oclc/074906561

Schwartz, O. (2019, April 29). DNA search angels: the Facebook “detectives” who help reunite families. The Guardian.

Shaviro, S. (2015). *No Speed Limit: Three Essays on Accelerationism*. University of Minnesota Press. Retrieved from https://manifold.umn.edu/projects/no-speed-limit

Shaw, I. G. R. (2010). WALL-E’s world: animating Badiou’s philosophy. *Cultural Geographies*, *17*(3), 391–405. https://doi.org/10.1177/1474474010368609

Simonite, T. (2017). Alexa Gives Amazon a Powerful Data Advantage.

Strengers, Y., & Nicholls, L. (2018). Aesthetic pleasures and gendered tech-work in the 21st-century smart home. Media International Australia, 166(1), 70–80. https://doi.org/10.1177/1329878X17737661

Tate, R. (2013, September 19). Dear Google: Shouldn’t You Worry About Your Own Health? Wired.

Terry, M. (2018, September 14). Longevity Company Unity Biotechnology Stocks Soared After CEO Talks to CNBC. Biospace

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