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Imagining the Future Human through Design Fiction & Speculative Fiction

This paper is going to focus on the turn towards speculative fiction and design fiction as the driver of innovation and the solution to imagining/crafting the future. This turn to design and the speculative fiction is not a new phenomenon, but I will be focusing on contemporary corporations like Google who are turning to speculative design and design fiction to help guide their future technologies and products. Investigating Google's use of design fiction sheds light on what kind of future Google is invested in or at the very least what future it is interested in. I want to grapple with how speculative fiction is being co-opted by Google and used to engage in world-thinking and world-making. My analysis specifically focuses on Google's internal video *Selfish Ledger* because it gets to the heart of questions of privacy, personal data and futurity. Corporations taking up design fiction is an interesting intervention into conversations of the ethics behind AI, surveillance technologies, as well as the archiving of personal, bodily data. I argue that while speculative fiction is being commodified by large companies, there must be a critical attentiveness to how this imaginative leap has material effects in redesigning the human. The consequences of these imaginative leaps can be traced by the varying technologies that have been or will be produced. There needs to be a nuanced analysis of speculative fiction and design fiction that is both critical and generous. I argue for a critique of speculative fiction and design fiction being taken up by companies because it is an explicitly political practice of world making headed by capitalist media conglomerates - what world are they imagining and what

technologies are they creating to bring their vision of the future to reality? I also argue for a generous reading of speculative fiction because it can be used as a form of visionary activism that importantly asks: who is the future being designed for?

To begin, Tony Dunne and Fiona Raby's book *Speculative Everything*, will be discussed to explain certain tenants of dominant speculative design. They frame speculative design as a tool to create ideas as well as things (Dunne and Raby). Design is a tool that allows possible futures to be speculated. Dunne and Raby place an emphasis that design can be used to explore "what if" questions: it fosters conversations and debates about desired and undesired futures (Dunne and Raby). While these "what if" futures have been deeply explored by Dunne and Raby, what remains unexplored is who the "we" is in their work. Throughout their work "we" is littered and used rather carelessly because they lack an analysis that takes seriously they ways in which race, gender, class and ability get coded into technology and technological imaginaries. Without these critical interventions, Dunne and Raby have reproduced the capitalist, neoliberal and individual models of design they sought to critique, as well as lauded technology devoid of critical awareness – without responsibility and care. A driving force in Dunne and Raby's conception of speculative design is its power to create "free ideas" from "free agents", which increases the success of achieving desirable futures (Dunne and Raby). In this way the agent is the human who is signified by a superficial, decontextualized, existence. They argue that engaging in speculative design allows for reality to become more malleable because it encourages a reevaluation of what is possible and impossible: as these areas become more blurred, innovation becomes more readily materialized. In short, speculative design uses design to materialize and experiment with alternate worldviews and futures.

Dunne and Raby's conception of speculative design is argued as differing from design fiction which has been developed by the founders of Near Future Laboratory. It is necessary to explore the differences because it speaks to a larger pattern of design not actually being radical but instead dangerously reproducing the very systems it is argued to dismantle. Co-founder of Near Future Laboratory, Julian Bleecker, explains in his essay Design Fiction that:

> [...] design fiction is a hybrid, hands-on practice that operates in a murky middle ground between ideas and their materialization, and between science fact and science fiction. Through this practice, one bridges imagination and materialization by modeling, crafting things, telling stories through objects [...] (8).

 Design fiction is founded on the idea that fact and fiction swap properties so continuously and rapidly that attempting to divide them is futile. Bleecker mentions that design fiction is greatly inspired by David A. Kirby's notion of the *diegetic prototype*. Bleecker states that a diegetic prototype, "[...] provides a principle for understanding the ways in which science fact and science fiction always need each other to survive. In many ways, they are mutually dependent, the one using the other to define its own contours" (15). Dunne stated in an interview with journalist Felix Salmon that the difference between speculative design and design fiction is that:

> Design fiction tends to focus more on technology-based video scenarios and stays closer to reality [...] Whereas the kind of speculative design we do tends to focus more on objects for exhibitions that rarely attempt to convince the viewer they are real. They are props for thinking with. Speculative fiction is more critical of the kind of technological narratives put forward by the tech industry (Salmon).

For the purpose of this paper, the supposed difference between design fiction and Dunne and Raby's speculative design is not one of significance because they both replicate dominant modes of Big design. Big design being technology that is designed by neoliberal, capitalist and individual imaginaries that do not take seriously the tangibility of lives and how science and technology have been raced and gendered projects. Arguably, dominant speculative design and

design fiction are iterations of each other, which speaks to a larger critique of how design has been imagined by a select view and because of that is made to benefit a select view. At the very least, this form of dominant speculative design is exclusionary. And in the most extreme, imaginaries that completely write out *design from below* and the people in it.

A critical perspective needs to be applied to capitalist media conglomerates like Alphabet, Google's parent owner, who are imagining and shaping technologies that develop alternatives to reality and being human. This critical perspective is interdisciplinary and pulls from Critical Feminist Studies, Feminist Surveillance Studies, as well as Critical Race and Ethnic Studies. I am pulling from these fields of study and theories because they are all invested in how technology is crafting the human and who gets to be considered human. This critique is intersectional because it looks at how gender, race and class are embedded into technology. This framework does not see unbridled technology as the solution to a better, more just future. If gender, racial and class injustice still exist then why would technology be considered free of these powers of domination? Design fiction is being co-opted by Google and used to engage in world-thinking and world-making, and by analyzing Google's internal video *Selfish Ledger* questions of privacy, personal data and futurity come to the surface. There must remain a critical attentiveness to how this imaginative leap redefines the human.

Selfish Ledger was a video created in 2016 by Nick Foster that was meant to only be circulated internally at Google. Foster is co-founder of Near Future Laboratory, the developers of design fiction, as well as the head of design at X. X, formerly Google X, is a research and development company that was founded in 2010 by Google. X functions as a semi-secret research and development facility - this is particularly concerning considering designers of *Selfish Ledger* are imagining a future and potentially designing future technologies like it

without transparency to the public. The premise of *Selfish Ledger* is that in the near future Google creates this system/ledger that meticulously archives total data collections of its users. This total data collection is intended to help users "achieve personal goals" like eating more healthfully, supporting local businesses, and being more eco-friendly - goals that the video explains are the pillars of Google. This is interesting because in this future Google is marketing innovation as principally a social and political good that works to improve society at the level of the individual. This is certainly reminiscent of many contemporary corporations "green-washing" their brand to appeal to consumers eco-friendly desires. As the user-interface, the connection between the user and the operating system, relationship develops the artificial intelligence (AI) potential becomes exponential. The program is initiated by a very simple step: the user must select goals as mentioned before like eating more healthfully or being eco-friendlier. The AI system begins to archive all of the user's decisions, interests and desires. As the system collects data it simultaneously compiles this data to create a codified user identity. For instance, if a user chooses to be eco-friendlier, then the program makes suggestions to its users on every single interface that is presented. So, if the user is on Amazon and looking at cleaning products then the system will automatically suggest the eco-friendlier option by filtering information. This is unsettling because this Google program *never ceases*. For example, not only would it interact on Amazon but if the user opens the app Uber it will suggest that the user selects Uber Pool because that is eco-friendlier. The ledger's reach is infinitely expansive. It also imagines a future, not much different than today, where most of the internet is centralized by super companies like Alphabet, Apple, Amazon and Microsoft. Personal goals become achieved by transferring personal agency to AI – the *Selfish Ledger* first learns its user and then begins to shape its user. Particularly disturbing is the ease of this transfer of agency because of how

seductively and altruistically it is presented. This transfer of personal agency to AI then becomes

something to be desired, pleasurable even because of its "convenience." This convenience is

only desirable in an imaginary where the height of being human is having buying power. It is

also unsettling that Google's program has the ability to fill in knowledge gaps. For instance, if its

user cannot find a suitable product then the program thinks of a "bespoke solution." This solution

filters through the internet and compiles and crafts a personalized gadget that suits all of its

user's needs. This AI program is aware of taste and aesthetic sensibilities. Once this personalized

object is designed, then the program hopes to take advantage of 3D printing so that it can literally

build into existence the gadget it thought up. Technology is again being praised as innovative

and democratic yet the desire to create "prosumers" (producers and consumers) through 3D

printing is absolutely riddled with capitalist frameworks of citizenship, production and

economics: humans are reduced down to prosumers because under this logic *you are what you*

buy. As stated by Atanasoski and Vora, "In this frame, 3D printing is understood to be

revolutionary because of its potential to democratize the means of production" (18). This trend

toward prosumers is framed as liberating and could potentially lead to an end of capitalism;

however, this post-capitalist imaginary is only liberating for those who have the "capacity" to

make creative capital. Atansoski and Vora state:

> Rifkin, a social theorist and founder of the Foundation on Economic Trends, takes the
> notion that free information and communication are harbingers of a large-scale revolution
> in which we move towards a 'near zero marginal cost' society—one in which 'nearly free
> goods and services' emerge through the optimization of productivity (that is, with the
> development of technologies such as 3D printing when the 'cost of producing an
> additional good or service is nearly zero') (2).

Those who have been deemed unable to gain creative capital, those whose jobs will be

automated, will fall to the wayside in this "near zero marginal cost" society – this is perhaps a

survival of the fittest gone through the *surrogate effect*, which will be discussed in the latter half of the essay.

Further, the turn to speculative fiction and design fiction by Google is fused with a revival of the biological sciences, specifically epigenetics. *Selfish Ledger* specifically mentions that its main source of inspiration is Lamarckian epigenetics. Jean Baptiste Lamarck was a nineteenth century French naturalist that was one the first to theorize about evolution on a grand scale. His work *Philosophie Zoologiq*ue eventually influenced Charles Darwin's concepts of natural selection, survival of the fittest as well as evolution. Lamarck is most known for his Theory of Inheritance of Acquired Characteristics that states that if an organism adapts to survive during its lifetime then those changes are passed to its offspring. According to Lamarck, species adaptation includes non-genetic traits being passed down to succeeding generations. In short, there is an adaptive force inherent in organisms whereby the experiences of an organism alter its internal code. It is interesting to see the ways that technology specifically AI is invested in replicating adaptive evolutionary processes. This is connected to the study of epigenetics which is defined as the study of changes in organisms that are caused by modifying gene expression rather than altering the genetic code itself. Bill Hamilton was a twentieth century evolutionary biologist who concluded that the driving force behind evolution is the gene. Genes will be replicated if it benefits the gene. Hamilton inspired Richard Dawkins' book the *Selfish Gene* which provides a gene-centered perspective of evolution. Dawkins' states that while genes are devoid of motive and will, they could potentially act with volition if they are modified in such a way. Dawkins' also inspired *Selfish Ledger's* investment in mimetics which is the study of cultural and informational transfers through evolutionary models. Mimetics suggest that ideas may be transferred from one person to another and the success of the transfer is dependent on the

salience of the idea. Mimetics has been labeled a pseudoscience but nonetheless Google seems to be interested in reviving this science. *Selfish Ledger* is a homage to Lamarck, Hamilton and Dawkins' work so its stakes in (Lamarckian) epigenetics are clear. Despite Foster's voiceover in the video acknowledging that the study of theories of epigenetics have been widely discredited, he still states that, "Epigenetics are finding new homes in unexpected places" (Foster). Epigenetics are being reanimated in Google's design fiction - why?

Returning to Google's intention of modeling technology as a form of organism that undergoes epigenetic adaptation can be seen as another way of technologists seeking to best nature in order to have unbridled access to life and creation. For instance, Big Design has commodified knowledges like biomimicry. Janine Benyus states:

> Biomimicry is basically taking a design challenge and then finding an ecosystem that has already solved that challenge, and literally trying to emulate what you learn. There are three types of biomimicry - one is copying form and shape, another is copying a process, like photosynthesis in a leaf, and the third is mimicking at an ecosystem's level, like building a nature-inspired city" (brown 47).

Google's *Selfish Ledger* is arguably a commodification of biomimicry in that it was not designed to mimic nature but rather paradoxically mimic nature to overcome nature itself. Benyus mentions a third type of biomimicry which mimics at the level of an ecosystem as exemplified by building a nature-inspired city, which is particularly interesting because Google is currently attempting to create Smart Cities, which will be discussed further on.

Selfish Ledger is a melding of behavioral data, epigenetics, inheritance and mimetics to create "mental leaps" that will supposedly benefit the current generation, future generations as well as the human species as a whole. The bedrock of Google's ledger is Lamarckian user data that includes the archiving of actions, decisions, preferences, movements and relationships for lifetimes. This user data then becomes a ledger that archives information to create codified

versions of humans whose flesh is data and agency transferred to AI. Foster argues that the

ledger serves as a Lamarckian epigenome: constantly mapping data to represent who its user is.

This is particularly disturbing because *Selfish Ledger* equates this detailed compilation of data as

human - this data accurately and holistically represents what it means to be human. Put

differently, the human is conflated to data. Foster states in *Selfish Ledger*:

> User-centered design principles have dominated the world of computing for many decades, but what if we looked at things a little differently? What if the ledger could be given a volition or purpose rather than simply acting as a historical reference? What if we focused on creating a richer ledger by introducing more sources of information? What if we thought of ourselves not as the owners of this information, but as custodians, transient carriers, or caretakers? (Foster)

In this transhumanist and Big Design imaginary, the human at peak potential becomes a

"caretaker" to their own bodily data. Google's program is argued to use Lamarckian user data to

chart a comprehensive behavioral sequencing that allows for new predictions to become

possible. The ledger targets and modifies certain sequences to achieve desired results. The ledger

must be given volition, a focus. The ledger is marketed as the one being given volition under the

agency of its user; however, these volitions are pre-determined by Google and the ledger begins

to shape its user, not the other way around. Arguably, this is a pseudo agency that invites the user

to sacrifice autonomy to "achieve personal goals" sanctioned by Google. And in the same vein,

these personal goals are not restricted to the individual but are archived en masse and then used

to drive humanity towards a certain future. The video also discusses how user data is

multigenerational; user data is collected for a user's lifetime and that information can be passed

down to the next generation and future generations. Foster's voiceover in the video argues that

user data extends beyond the human lifespan, therefore hinting at the immortal aspect of data.

This obsession is in line with the liberal fascination of humans defeating nature, death and

oblivion via technology. The near future that Google designed is invested in the science behind behavioral sequencing, and the potential the ledger has for altering the sequence. For instance, *Selfish Ledger* ends with this statement, "[...] by applying our knowledge of epigenetics, inheritance, and mimetics to this field [user data] we may be able to make mental leaps in our understanding [...] of the [human] species as a whole" (Foster). The ledger is dreamed to be able to develop a species level understanding of global problems of depression, health and poverty. Google's ledger technology can be used to modify behavioral sequencing - modify behaviors that lead to/cause depression and hunger. So, if the ledger is given purpose then it has the supposed potential to predict global human behaviors and eradicate such behavior by altering behavioral sequencing.

Google's *Selfish Ledger* is a piece of speculative design but Google technology that is currently being crafted or already in existence mirrors the ideas tested in *Selfish Ledger*. In a very real way, *Selfish Ledger* is a piece of speculative design because it was used to explore what technologies could be created, not just imagined. Google technology is already guiding global change that was seen in *Selfish Ledger*, but some may argue that Google's current technology is vastly different than *Selfish Ledger*. It is important to trace these similarities and the driving force behind these technologies: replacing human agency with technology, specifically technologized user data. Arguably, there are markings of *Selfish Ledger* in the plans of Google's Smart Cities and the newly released Link project. The Canadian government agency Waterfront Toronto has teamed with Sidewalk Labs to build the first Smart City called Quayside. Sidewalk Labs is owned by Google's owner, Alphabet. A statement from Sidewalk Labs Chief Executive Officer (CEO), Daniel L. Doctoroff, stated, "Since its inception, Sidewalk Labs has been conducting a thought experiment with leading urbanists and technologists about what the city of

the future might look like— and scouring the globe for a place to bring it to life." The plan is to make Toronto a global hub for urban innovation by building a twelve-acre city "from the internet up." Sidewalk Labs stated that their vision is, "[…] combining people-centered urban design with cutting-edge technology, we can achieve new standards of sustainability, affordability, mobility, and economic opportunity" (Sidewalks Lab). The new standards of sustainability include reducing energy consumption, landfill waste and carbon emissions. Affordable housing is also a central goal that will be achieved by "radical" building designs that reduce the cost of housing and retail space by making the city friendly to walking and cycling. Mobility will be encouraged by self-driving cars and digital navigation tools that allow for a "point-to-point transit system" that is friendly to pedestrians, cycling, buses and rail options. New mobility designs will reduce transportation costs, increase street safety as well as provide more convenient transportation. Significant to Sidewalks Lab is the reclamation of public spaces aided by open digital infrastructures, which critics have questioned: in what ways can one push back against Smart Cities or LinkNYC since it has taken over public space? How can somebody opt out of public space? (Kofman) Sidewalks Lab is also looking to forge a "close-knit community that uses data to improve city services" (Sidewalks Lab). Sidewalks Lab stated:

> Better data integration, combined with more accessible community hubs that offer a variety of local services, enable a comprehensive approach to social and community services that delivers better outcomes to people at lower cost (Sidewalks Lab).

For instance, better data integration would help make possible universal health care for community members. There are already "investors of innovation" like Cityblock Health Inc, Coord, and Intersection. Coord is a tech company whose goal is to pair up with cities and governments to optimize street mobility by creating a cloud-based platform that integrates all forms of transportation like cycling, busing etc. (Marshall). Journalist of *Wired Magazine*,

Aarian Marshall stated, "For a price, Coord will give the software developers at those companies

access to thorough, local, standardized data on things like tolls, parking, and curb space.

Critically, info can be shared across cities, instead of siloed in provincial departments." Again,

there is a pattern of collecting and archiving data to create a more convenient style of living but

still lingers the question of data privacy and who has access to this data and to what

end/purpose?

Another investor of innovation for Sidewalks Lab is Intersection which is a

technology/urban development company. The summary on their website states:

> At Intersection, we are at the forefront of the smart cities revolution. With award-winning
> products like Link, the largest and fastest free public Wi-Fi network in the world,
> Intersection connects the digital and physical worlds, enhancing people's journeys
> through their cities and offering brands the opportunity to drive more relevant and
> engaging advertising, rooted in real-world location and physical context (Intersection).

One of Intersection's largest project is Link which includes LinkNYC and LinkUK. The Link

project is designed to create free public Wi-Fi, charging ports, free navigation services, weather

updates, targeted consumer marketing, free domestic phone calls, and 911 phone calls for

emergencies through their kiosk technology (Kofman). There are currently 1600 kiosks in New

York City and each is nine and a half feet tall fixed with dual sided screens as well as three

cameras and thirty sensors (Kofman). CityBridge partnered with the city of New York and

Intersection. CityBridge was contracted to install, own, and construct the Link kiosks in

exchange for marketing freedom. Eventually, people using the free Wi-Fi will have their web

activity tracked so that CityBridge can provide targeted marketing based off of what websites

users are on. In essence, this free Wi-Fi does not come without a price because it aggregates

personal data for targeted advertisements and for potentially reasons not listed. While Google,

Sidewalk Lab, Coord, and Intersection state that they have algorithms that render data

anonymous all of the companies provide very vague statements about personal data being aggregated, stored and then sold. Note the traces of Alphabet in these companies – Alphabet is Google's parent company; Sidewalk Lab is owned by Alphabet; CityBridge is owned by Intersection, and Intersection is owned by Alphabet. While the *Selfish Ledger* is not in actual existence, Smart Cities and LinkNYC are both actual projects of Google that are invested in techno-utopic futures that will no doubt change the landscape of human interaction as well as the literal environmental space through optimization.

Thus far, there has been a discussion of Big Design turning to the speculative to further liberal capitalist imaginaries. Google is fantasizing the *Selfish Ledger* technology as inherently altruistic, and in this way technological innovation is seen as the automatic solution to improving society where change can only occur at the scale of the individual. This logic is not exclusive to Big Design but is rather a larger systemic issue within design. For instance, Dunne and Raby critique individualistic oriented design, yet their solution to making design democratic is by creating "one million little utopias." One million little utopias where the individual is a "free agent" in that they recognize and act on their "citizen-consumer" power. Here, change can only occur at the level of the individual or in Dunne and Raby's case, at the level of the individual that is placed on a larger scale – one million. I draw from the work of Ruha Benjamin, specifically her article, "Catching Our Breath: Critical Race STS and the Carceral Imagination" to see how notions of technological innovation are typically rooted in overt containment of bodies and imaginaries. Benjamin states, "In interrogating the relationship between innovation and containment, it urges scholars to consider, who and what are fixed in place – classified, corralled, and/or coerced – to enable technoscientific development?" (145). Applying this analysis to *Selfish Ledger* is important because it asks the question: how is the *Selfish Ledger* being

marketed as an altruistic innovation when really it is containing the human through the reanimation of epigenetics? What racial anxieties and fears are shaping the *Selfish Ledger* and Google's technology in general? Is Google's idea of innovation the containment of the human? What human? Is whiteness being fixed in place? Is the human being classified as capitalist and male? Benjamin states, "[...] we can conceptualize race itself as a kind of technology, one that creates parallel social universes and premature death, and which requires routine maintenance and upgrade" (149). Is design part of the maintenance and upgrading of race as technology? She further states, "Technology is not only a metaphor for race, but one of the many conduits by which past forms of inequality are upgraded [...] we must remain attentive to the racial anxieties and fears that shape the design of technoscience" (149). What human is the *Selfish Ledger* upgrading? And further, what is at stake if Google determines how life ought, or ought not, to be lived? How does this shape conceptions of the present human and the future human? Perhaps *Selfish Ledger* is a carceral imaginary because it aims to contain individual bodies through archived data as well as contain visions of the future that imagine the human outside of capitalism. Benjamin asks, "How might we reimagine the relationship between social and biological processes in a way that is non-deterministic, but still take seriously how inequality gets under the skin causing premature death?" This inspires my question: How might inequality be imbedded into bodily data causing the death of the human?

After discussing the *Selfish Ledger* and the technologies Google is currently designing, it is important to situate the archiving of bodily data and the prominence of surveillance historically. Simone Browne's book, *Dark Matters: On the Surveillance of Blackness*, provides a pointed analysis of how surveillance can be traced to times of slavery and how contemporary surveillance practices can be analyzed and hopefully subverted when blackness enters the frame.

She theorizes race, particularly blackness, to show that a realization of the conditions of the historical, present and historically present allows for a more nuanced understanding of contemporary surveillance. An understanding that is alert to the undergirding antiblackness within surveillance technologies. Browne uses the phrase 'historically present' to point to the process whereby time and space become collapsed – a point where history and the present become mirrored reflections. For instance, Browne focuses specifically on how the archive of slavery, slavery itself and the transatlantic slave trade are examples of historical anti-black surveillance, and that this is reflected in the present. It is reflected through racializing surveillance in the present like automated technologies that search for an essential, racialized, truth that can be extracted from bodily data. This mirroring and inversion of time and space thus brings to surface the "historical present" of anti-black surveillance. She traces the facticity of surveillance in black life through multiple spaces and times. For instance, she uses the space of the airport as well as the visualizing of space through art by analyzing the design of the Brooks slave ship, Jeremey Bentham's Panopticon, as well as Internet art. She also pulls from varying times: transatlantic chattel slavery, American revolution and post-9/11. Browne's articulation of privileged invisibility explains how a person can be invisible to surveillance by appearing or being white, stable and masculine. Invisibility is the visibility of whiteness or put differently the absence of blackness. Browne specifically speaks to dark sousveillance as a tactic and space for antisurveillance and countersurveillance during times of slavery, but it can be applied to contemporary times. For instance, a contemporary example of dark sousveillance is when transgender people use black makeup to contour their faces differently in a way that allows them to be indistinguishable from identification technologies. Here marked suspect bodies use the art of shadows and light to digitally recraft their face to render themselves out of sight. Applying

Browne's analysis to the *Selfish Ledger*, who is the unmarked human in this reality? In what ways can methods of dark sousveillance subvert this technology? What role does history have in helping form methods of dark sousveillance? What communities and histories must be listened to and centered when thinking of how to subvert what seems like inescapable surveillance, monitoring and archiving of data in projects like Google's Smart Cities and Link Project?

There needs to remain a critique of existing capitalist labor structures when discussing Google's *Selfish Ledger*/technology to show how capitalist structures are reproduced and fused with racialized future imaginations of the human. What is desired in a liberal capitalist imaginary is the prototypical neoliberal subject: a prideful and diligent worker, stable citizen-consumer, and member of a white heteropatriarchal family. Throughout this analysis scholars such as Neda Atanasoski, Kalindi Vora, Silvia Federici, Kathi Weeks, and Walidah Imarisha will be centered to articulate the relationships between capitalism, race, technology, futurity and the human.

The first half of this essay is dedicated to discussing the turn to the speculative and how what is imagined has a material hold on what technologies are being created. The technology itself has been the focus thus far but now the analysis becomes centered on what imaginary fuels and makes possible Google's speculative design and actual technologies. Put simply, how is the human being recrafted through techno-utopic imaginaries and what logics make this imagination possible as well as desirable? While technology is central to the conversation, so is labor. The future human cannot be disentangled from race as technology or labor as a racializing process that simultaneously genders bodies. Many techno-utopic imaginaries, Rifkin's concept of a "zero marginal cost" society included, are tethered to ideas of a post-labor and post-capitalist society. Both societies are imagined to be possible only through technological innovation. Atanasoski and Vora state:

Rifkin's book raises questions about how the Internet of Things (IoT) can lead to the end of capitalism as we know it. The IoT might portend the first "smart infrastructure revolution," […] "Big Data, advanced analytics, algorithms, Artificial Intelligence (AI), and robotics are replacing human labor […] leading to the very real prospect of liberating hundreds of millions of people from work in the market economy". While some might regard this vision of technological replacements for humans that substitute "intelligent technology" for mass wage labor as a future dystopia, Rifkin sees such technologies as enabling the uncoupling of human productivity from employment, thus freeing humans for the "evolving social economy" embedded in a "Collaborative Commons" organized by social networks and open-source programming. [T]he infrastructure revolution, marking a break from the first (18th century) and second (early 20th century) industrial revolutions, emancipates human creativity from the drudgery of waged work (2-3).

Technology is fantasized to automate all forms of dirty menial work so that certain free agents will have unlimited time to create and design. This was also present in Dunne and Raby's *Speculative Everything* where they hoped that design could be democratized, and everybody could design freely: design life outside of capitalism. Too often, these democratic ideas of technology and design are entrenched with capitalist ideals and predicated on notions of deserving and undeserving. There are those who deserve to be freed from menial labor and there are those who are underserving – those who will be written out of the future.

Within conceptions of humans as free agents who need to be unshackled from labor by liberating technology is the obsessive tracking of time. Capitalism has structured reality through time. Reality is time tethered to work meaning that labor becomes understood as time. There is time before work, at work and after work. In work/capitalist societies there is no longer a division of before, at, and after work because work becomes seamlessly woven into every compartment of life to the point where life equals work. In this way, capitalism inspires a self-disciplining by which the self is controlled by the constant and reflexive management of time. Cox and Federici state:

Work appears as one compartment of life, which takes place only in certain areas. The time we consume in the social factory, preparing ourselves for work, or going to work,

restoring our 'muscles, nerves, bones and brains' with quick snacks, quick sex, movies, etc., all this appears as leisure, free time, individual choice (9).

Freeing people up to design more, structures time outside of work as "free time": the opportunity to labor more to become a better more efficient capitalist. This side effect of capitalism makes it seem like time does exist outside of capitalist work, yet time cannot be disentangled from work under capitalist logics because time can only be broken into three categories: preparing for work, working and recovering from work only to do more work. In this way, capitalist time has refashioned actual bodies leading to the rise of what I call "health capitalism." Health capitalism being the altering of diet to improve brain and body capacity to prepare for work, work and recover rapidly to do more work. Vitamins and medicines like nootropics, Brain Dust and Adderall are all digestible manifestations of laboring for capitalism. It fits into the imaginary of a work society where the body must extend beyond normative capacities to hold the burden of more work. The health and green revolution that is currently underway is packaged as liberating yet divested from capitalism when really these movements are lauded under capitalist ideals or are only made possible through the burdens of capitalism.

To help grapple with labor relations I draw from Kathi Weeks' essay, "The Problem with Work", where she troubles the relationship between work and individuals by interrogating the perceived axiomatic structures of waged and unwaged life. Broadly, she discusses how in a work society, being *willing to live for work* is made possible, as well as pervasive, by the neoliberal state whose goal is to produce subjects who are bred in the imaginary of liberalism vís-a-vís individualization, privatization, and the financialization of everyday life. The systematic processes of individualization and privatization are products of a liberal imaginary that work to create stable subjects who are responsible and self-enterprising. The neoliberal state is a regime of authority that fashions bodies into stable subjects, so they can be recognizable and therefore

controlled – the dream laborer. This fashioning of subjects is a form of biopolitics that is invested in positing work as the only viable condition in which a subject can exist. It is simultaneously invested in reproducing the heteropatriarchal nuclear family because that means more access to unwaged labor as well as a continuous flow of laborers. Weeks states, "The social role of waged work has been so naturalized as to seem necessary and inevitable, something that might be tinkered with but never escaped" (7). Big Design and techno-utopias have stolen any imagination outside of capitalism. Capitalism will be tinkered with by technology to automate labor forces but capitalism itself will never be escaped. Weeks states:

> Work produces not just economic goods and services but also social and political subjects. […] the wage relation generates not just income and capital, but disciplined individuals, governable subjects, worthy citizens, and responsible family members (8).

If the subject is not properly generated as a disciplined individual, governable subject, worthy citizen, and responsible family member then the subject becomes reified into a category of inherent insufficiency. This process and reification occur on a systematic level yet has the guise of self-determination and freedom. It is the potency of this deeply intricate mechanism of work that constantly produces narratives of the inescapability of work that makes it challenging to unlearn the systematic logic that the neoliberal political imaginary bolsters.

The neoliberal political imaginary posits the *will to live for work* as the only condition in which bodies are allowed to live. The axiom of work and family occurring on an individual and natural level rather than on a social institutional level acts as a barrier that invisiblizes, naturalizes, and genders family and work on a systematic level. While capitalism is made to seem inescapable, the potential to shift the conditions of possibility can be found in Weeks' post-work imagination. The post-work imagination does not simply render visible how much time and energy work absorbs from lives, but it takes seriously the deconstruction of an imagination that is

fueled by the cohorts of liberalism: individualization, privatization, and the financialization of everyday life. The opportunity to rethink social and political imaginaries through a post-work analysis holds the potential to invigorate an imaginary where there is not a demand to be *willing to live for work*. Arguably, this is vastly different from techno-utopic imaginings of post-work societies that automate labor to only free people who are "worthy" and "capable" of building creative capital while casting aside others who have been deemed outpaced by automation.

      I turn to Atanasoski and Vora work, "Surrogate Humanity: Posthuman Networks and the (Racialized Obsolescence of Labor)," to critique race as a technology of capitalism that becomes shrouded in progress narratives and new imaginings of the human. Atanasoski and Vora's work articulates how historical forms of domination and power including race, gender, class and sexuality get built into technologies that are seemingly non-human. Central to their work is the critique of the axiom that technology is the solution to the world's problems (labor, race, etc.) and that technology creates the conditions for freedom. Atanasoski and Vora state:

> "The collapsing of the human into the thing […] the maximizing of life potential through data and making service 'automatic' is racial and racializing even as (and precisely because) this process seemingly removes actual laboring human bodies through surrogate technologies" (20).

Race as technology: where race itself escapes representation only to be found in the very structures of the technology. Put differently, while surrogate technologies may not be markedly raced or have humanoid forms they can hold designs of racialized understandings of humans literally programmed/embedded into their core. There is the supposed absence of race in representation, yet race is the main technology that divides people into labor sectors. In short, race as technology sometimes escapes the representation of race itself. As stated by Atanasoski and Vora, "[…] the processes through which racialized, gendered, and sexualized spheres of life and labor are seemingly elided by technological surrogates, even as these spheres are replicated

in emergent modes of work, violence, and economies of desire" (3). Liberating technologies are only made possible by the literal material of black and brown bodily data that is always and already obscured. As stated by Atanasoski and Vora, "[The surrogate effect] produces a version of the posthuman that in fact replicated capitalist and imperial racial and gender paradigms of value and valuelessness" (13). In a very real sense the "posthuman" is not post at all but is rather differently inhabiting space and time through technology as the human.

Race seems to be erased in "enchanted objects" and surrogate humans, but this is a markedly racializing project because these technologies are only meant to "free" certain humans (read white liberal heteropatriarchal) from monotonous labor while those who have historically not had access to the category human (read black, brown, queer) are even more relegated to the margins. For instance, think of Google employees stationed in Silicon Valley compared to those working in the Global South. The Silicon Valley Google employees have access to a version of Smart Cities where technology is the foundation of the city. Everything is centralized: work, dry cleaning, places to eat, and everything is within biking distance – much like the model for Smart Cities. This can be problematic because it fosters a constant work environment where everything is at reach so that employees never need to leave work. With that being said, it is wholly different than the conditions of outsourced Google employees who do not typically have access to the technologies that they are helping build or maintain. Not to mention they do not have access to universal health care through Google or access to all the resources that are provided in the Silicon Valley headquarters. This renders them unable to access the technologies that were only made possible by their bodies and labor. This capitalist and liberal imaginary is quite clear about what kind of human is capable of producing creative capital and what kind of human is only capable of menial labor that can be automated. One would be remiss not to pick up on how

this is an iteration of the "primitive racialized Other versus civilized White" trope made new by the surrogate effect. Put simply, historically marginalized people are seen as obsolete creatures that have no place in the future: they have been bested by the surrogate human.

Thus far, there has been a discussion and critique of a being *willing to live for work* capitalist neoliberal imaginary and I briefly discussed Weeks' post-work imaginary, but I now want to focus on the subversive power of Afrofuturism and visionary fiction. Imarisha argues that all activism is speculative fiction. Central to visionary fiction is the important question: who is the future being designed for? Imarisha argues that speculative work is not simply fanciful writing but that it absolutely contends with racial and gendered injustices. She looks to speculative fiction to help build community, justice and liberation all through a collective decolonial activism. The speculative is centered as a decolonial tool that makes alternative worlds and realities imaginable and tangible. The speculative must always be situated from below, from the real lives of black, brown, differently abled, and queer people because without doing so increases the chances of inequality being embedded into future imaginaries. Imarisha states in an interview with journalist, Kristian Williams:

> When we talk about a world without prisons; a world without police violence; a world where everyone has food, clothing, shelter, quality education; a world free of white supremacy, patriarchy, capitalism, heterosexism; we are talking about a world that doesn't currently exist. But collectively dreaming up one that does means we can begin building it into existence (Williams)

Imarisha argues that visionary fiction is a way to decolonize our collective imaginations - this act of subversion is what combats a white supremacist hetero-patriarchal capitalist system (Williams). Imarisha states, "[...] decolonization of the imagination is the most dangerous and subversive decolonization process of all" (Williams). Decolonization of the imagination is important because it reframes what practical justice is available.

In a similar vein, lawyer and activist, Rasheedah Phillips, uses Afrofuturism to help access justice for black communities. Her work is very much a material example of Imarisha's visionary fiction. Phillips looks at time to resituate justice. Arguably, her redesigning of time is an act of visionary fiction because it fuses time and law to imagine an alternative reality: one where black people have access to liberation. Phillips states:

> The linear time scale was very much developed alongside of institutions of imperialism and oppression and colonialism and slavery. What Afrofuturism does is it opens up time on different scales to allow people who have been typically denied access to the future, to gain access to the future. And to regain access to their own histories and origins. At this origin level [...] you can create something new and different" (Ωv ση, Στ γη).

This opening up of time on different scales allows liberation to be possible. This is a form of decolonizing an imperial imagination by subverting Western linear time. Phillips in this way shows how Afrofuturism/visionary fiction can be applied to the U.S.'s legal system to gain liberation and justice for historically marginalized communities.

This paper has investigated the turn towards speculative fiction as the driver of technology and the solution to imagining/crafting future worlds. Contemporary corporations like Google are turning to speculative design and design fiction to help guide their future technologies and products. Capitalism has warped time to be seen as an opportunity to maximize every minute for profit – the height of being human is to constantly work. I especially want to call attention to how technology has become so imbedded into our flesh, minds, bodies, politics, consciousness and life that the transfer of agency, humanity and responsibility to technology, particularly AI, becomes incredibly seamless and understood as desirable. As articulated by Simone Browne, technologies typically uphold existing inequalities, and because of that it is crucial to critique this transfer of agency as well as the welcoming of further surveillance technologies. My analysis focused on Google's internal video *Selfish Ledger* because it gets to

the heart of questions of personal data, futurity and the human. Corporations taking up design

fiction is an interesting intervention into conversations of the ethics behind AI, surveillance

technologies, as well as the archiving of personal, bodily data. I argue that while speculative

fiction and design fiction are being co-opted by large companies, there must remain a critical

attentiveness to how this imaginative and mental leap will redesign the human. Material effects

that can be seen in Google's existing technologies that produce a homogenized global culture

and human. I argue for a critique of design fiction being taken up by companies because it is an

explicitly political practice of world-making headed by capitalist media conglomerates - what

world are they imagining and what technologies are they creating to bring their vision of the

future to reality? How does this change what it means to be human in a digitalized era? How is

the human being imagined in design fiction? I argue that speculative fiction can also be

powerful, subversive and radical by challenging and moving beyond gender, race, class and

sexuality domination. Speculative fiction can be used as a form of visionary activism that

importantly asks: who is the future being designed for? How can liberation be achieved in the

present and future through collective imagination and community-oriented activism? In tension

with Big Design and techno-utopic imaginaries are activists using visionary fiction, the

speculative, and Afrofuturism to help subvert white hetero-patriarchal capitalist reality in order

to help build new realities where liberation is possible. Technologies that are being thought up

currently are posited as already existing, but it is important to realize capitalist liberal fantasies of

the future are not inevitable. They can be critiqued, or all together left behind in Afrofuturist and

visionary fiction imaginings. As articulated by Weeks, capitalism and capitalist structures are

understood as forms of domination that can be tinkered with but never fully escaped. Too often

radical activism becomes subsumed by the neoliberal process whereby differences enfold in

sameness—into a shared space and time (Atanasoski and Vora 16). With that being said, perhaps the tinkering must take place in Afrofuturist and visionary fictions so that there can actually be a world without capitalism, prisons, hunger, racism, and heteropatriarchy – a space and time not shared. As questioned by Sylvia Wynter, what comes after Man? Arguably, technocratic imaginaries are thinking to life a Man3. Importantly, what becomes possible when Wynter's question is asked within visionary fictions and Afrofuturist imaginaries?