

DARK
MATTERS



EMERGENT DIGITAL CRYSTALS

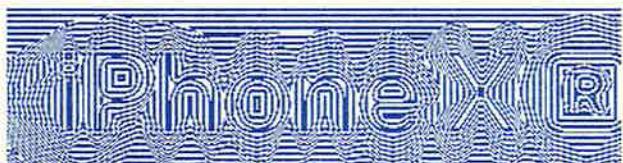
Alexander Miller

The novel *Infinite Jest* by David Foster Wallace follows a lethal fictional film — *Infinite Jest*, or, “the Entertainment” — that is so transfixing, no viewer can look away once they start to watch it. Rumors exist of an antidote against the Entertainment that could potentially undo the coma it induces, but no such antidote surfaces. I wonder what such an antidote would look like, and how that antidote would be socially distributed.

Infinite Jest was written before iPhones, Facebook and Instagram. Nowadays, the idea that digital media is harmful has become a cliché (“Why We Can’t Look Away From Our Screens”, “How I Ditched My Phone and Unbroke My Brain”, “Is Social Media Addiction Worse Than Cigarettes?” [0]), and the Russian influence over the United States 2016 presidential election proves that an outside actor can exploit digital media channels for political disruption. It is telling that tech workers are the most alarmed. Facebook executive Athena Chavarria says, “I am convinced the

 devil lives in our phones and is wreaking havoc on our children.” Bill Gates, Steve Jobs and Tim Cook are all on record for disallowing children in their family from using digital devices.

Various “hacks” that supposedly render computer interfaces less addictive have become popular (for example, by changing the color profile on your phone to grayscale [3]). In addition, Apple has released time tracking and limiting features for the iPhone — a reaction to consumers’ concern over digital media addiction. It is worth examining who those consumers are. Apple’s business model is straightforward: they sell expensive high-end products to relatively wealthy consumers. In contrast, Google and Facebook, who offer their products at an extreme discount (i.e. free), depend on monopolizing customer attention. Apple provides an antidote to addictive interfaces for a certain class of consumers, while the rest of society, forced to use advertising-based products, must trade their attention for access.



In a world of increasingly poisonous graphical user interfaces (GUIs), better digital antidotes will be demanded by certain classes of people. Emergent Digital Crystals (EDCs) are my attempt to imagine what one such antidote might look like. Through clever obfuscation, these crystals render GUIs designed for “causal pleasure” inert and safe, while still keeping the underlying GUI legible [4].

2	7	7	7	0
7	7	10	0	7
8	0	0	2	7
7	7	2	1	0
2	7	7	0	8

The binary numbers that create the pixels of the GUI seed the crystal’s growth, a growth that expands to infiltrate all of the whitespace on the screen. The kernel — a two dimensional grid of numbers — is the crystal’s mathematical DNA. The structure of the crystal is born from the relationship of the kernel to the underlying pixels of the GUI. The kernel takes over the screen like a virus, transforming every pixel of the GUI one-by-one, to determine each pixel’s next form.

This process is repeated iteratively, and each subsequent pass of the kernel causes the crystal’s structure to expand into fragmented masses. All text, images, links, folders, websites, code and other GUI elements are consumed, robbed of their attractive design power. The EDCs infect the screen to neutralize it. Although the crystals overwhelm the seed GUI, they leave behind fossilized traces; these traces allow the user to parse out the underlying interface just enough to use it safely. Elite computer users of the future will live within the protection of digital crystal structures, immune to the data-driven attention harvesting machine of the Internet.

[0]: <https://www.forbes.com/sites/forbestechcouncil/2018/11/21/is-social-media-addiction-worse-than-cigarettes/#6900b8615d64>

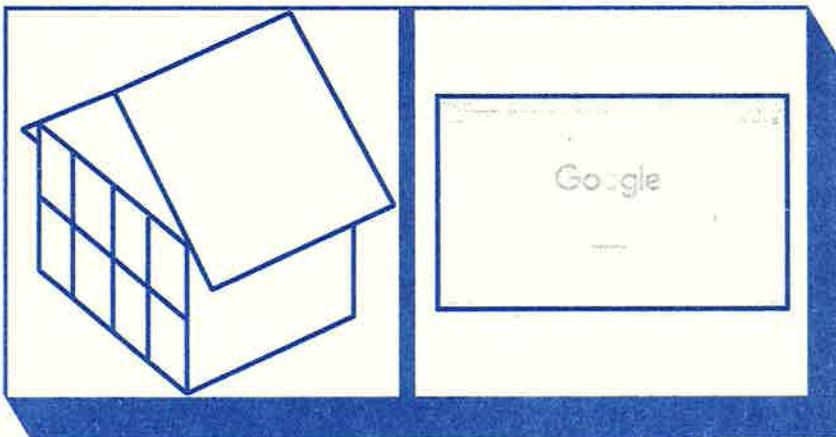
[1]: <https://www.netaddictionrecovery.com/our-mission.html>

[2]: <https://www.nytimes.com/2018/10/26/style/phones-children-silicon-valley.html>

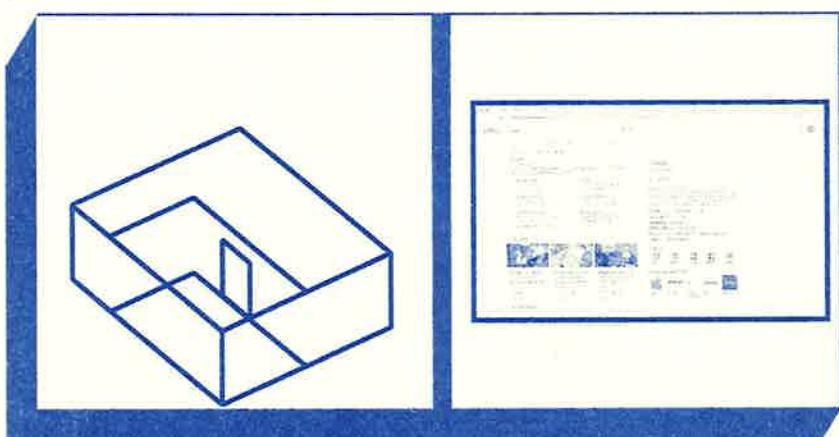
[3]: <https://lifehacker.com/change-your-screen-to-grayscale-to-combat-phone-addicti-1795821843>

[4]: On Software, or the Persistence of Visual Knowledge
WENDY HUI KYONG CHUN

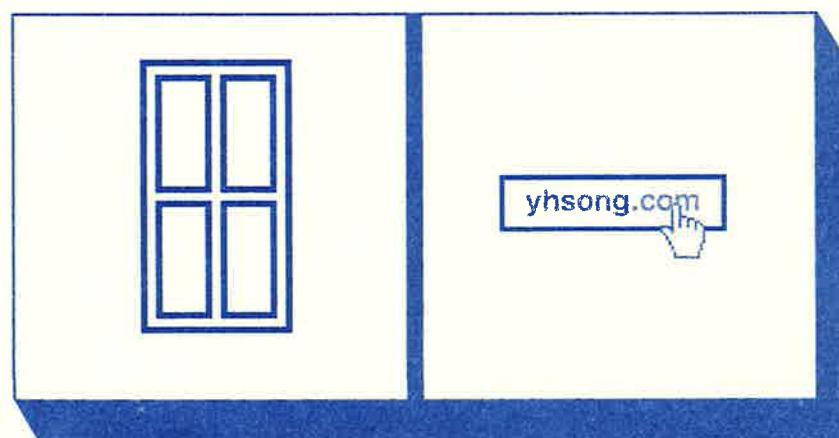
If I think of a website as a homepage or a home,



Each page on a website can be a room.



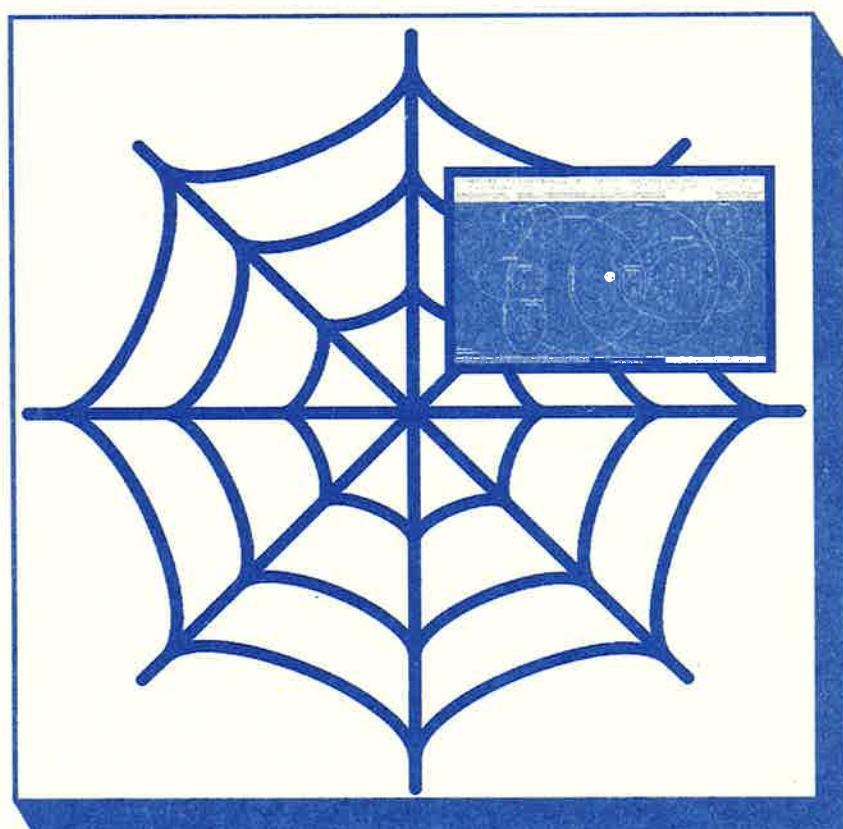
A site link can be a door.



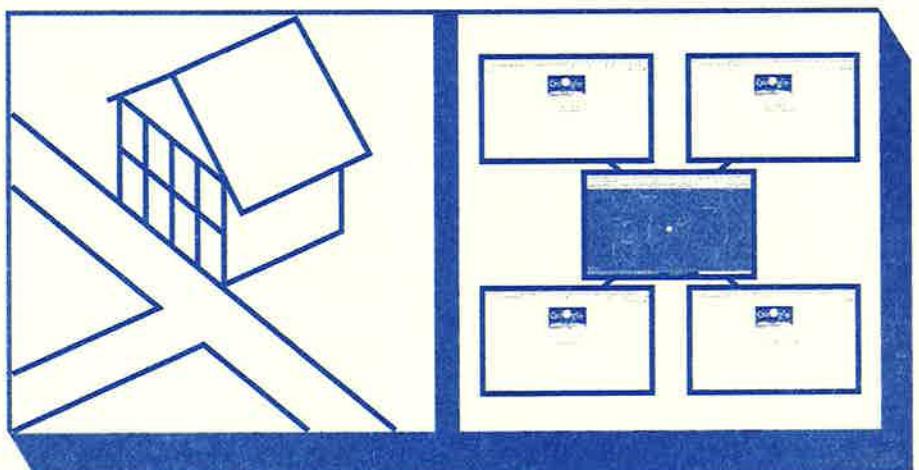
Other websites that link to the website can be entrances.



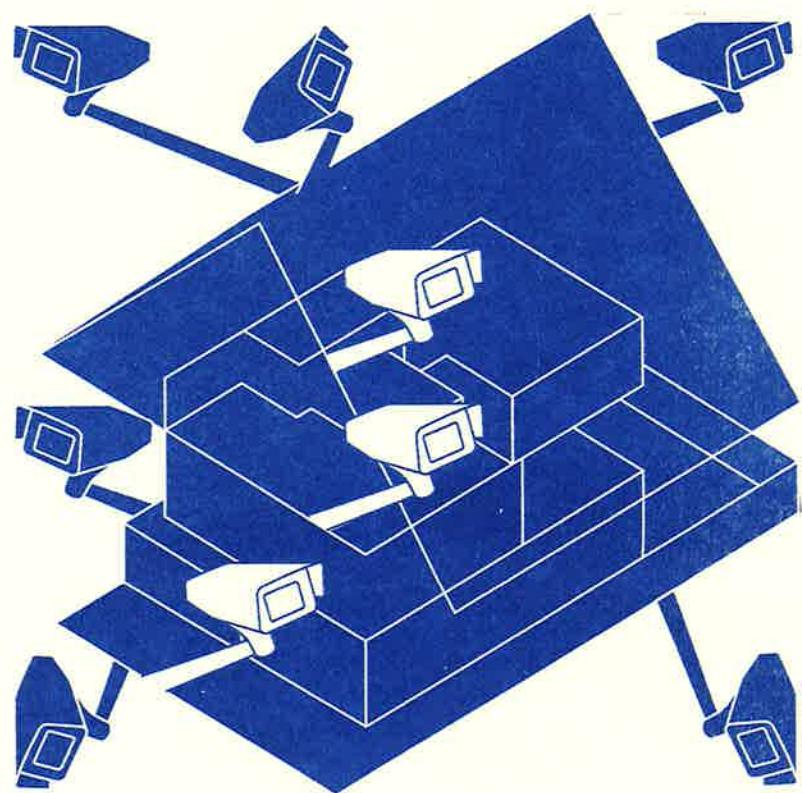
How can I know where my website is located on the web?



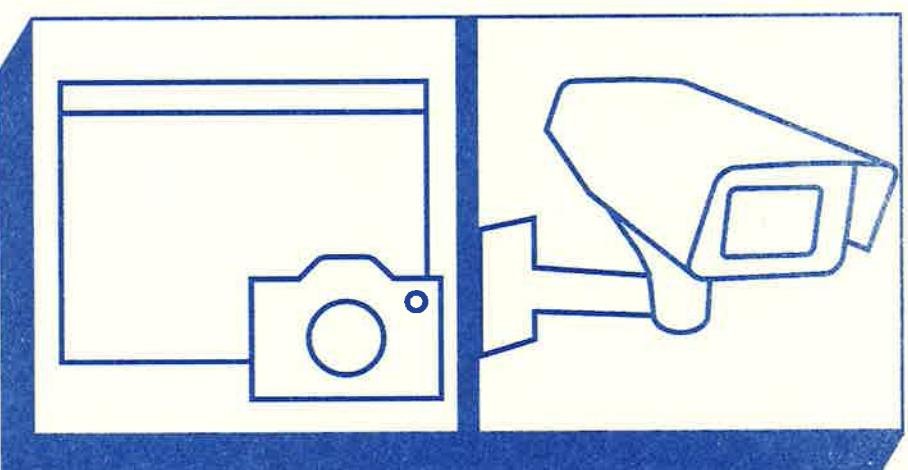
As a street name describes a home's location, other websites that link to a website can describe where the website is located on the web.



In this project I will find as many 'doors' as possible and will install virtual security cameras on other websites that link to my website in order to discover where my website is located, and how this location changes.



'Security cameras' here are replaced by a remote website screenshot tool.



The security footage (end result):



A HISTORY OF PATHOLOGIZING BLACKNESS

Bomani McClendon

In September 1906, the Bronx Zoo opened its Monkey House to nearly a quarter million visitors. They arrived to see Ota Benga, a young Mbuti Pygmy from the Congo who had been captured by slave traders after his entire family and village had been slaughtered by Belgian soldiers. At the Bronx Zoo's Monkey House, Benga was exhibited alongside an orangutan and a gorilla. He was monitored by zoo keepers and crowds of derisive spectators who stared and jeered at him from outside of his iron cage. Benga was released to a colored orphan asylum after Black New Yorkers advocated on his behalf. He later moved to Virginia to pursue employment and formal education, but was never able to return to his home in the Congo. On March 20, 1916, Ota Benga died by suicide in Lynchburg, Virginia.

Benga's placement among monkeys at the Bronx Zoo was used to support pseudoscientific arguments about the racial inferiority of Black people—an ideology now referred to as scientific racism. Scientific American, one of the United States' oldest monthly magazines, referred to the Mbuti people as "small, ape-like, elfish creatures."¹ The director of the Bronx Zoo, William T. Hornaday, explained his belief that there existed "a close analogy of the African savage to the ape" in a 1906 New York Times article². Benga's exhibition and coverage as an inferior creature not only bolstered racist sentiments, but also had a dehumanizing effect on Black communities. After Reverend Dr. MacArthur sent a letter on behalf of Black New Yorkers who believed they were "worthy of being considered human beings, with souls," the New York Times published a response opinion piece that said, "the reverend colored brother should be told that evolution, in one form or other, is now taught in the text books of all the schools, and that it is no more debatable than the multiplication table."³

Benga's story is just one poignant example in a long history of efforts to relegate Black people to subhuman status with scientific racism. Early practitioners of scientific racism claimed that Africans were part of a lower species than Europeans. Voltaire, a French Enlightenment thinker, claimed that "the negro race is a species of men different from ours as the breed of spaniels is from that of greyhounds"⁴. German philosopher Christoph Meiners wrote in his 1785 book, *The Outline of History of Mankind*, that Black people were the most unhealthy race and had barely any ability to feel physical or emotional pain due to thick skin and a lack of morals⁵. Similar arguments about the inherent deficiency of Black people were used as a justification for slavery in United States. Pro-slavery advocates often cited the 1840 census' indication that the number of Black Americans living with mental illnesses in free states was significantly higher than that of slaveholding states, even though the census' figures for free states were grossly inflated and the census was determined to have significant errors by members of the American Statistical Association.

Scientific racism in the context of medical practice offers a more specific view of how Blackness has been pathologized to reinforce ideas that Black people are inherently deficient. Charles Caldwell, the founder of the University of Louisville School of Medicine, used phrenology (a pseudoscience that uses the dimensions of the brain to predict intelligence) to claim Africans had the smallest brains of any racial group and were thus too unintelligent to exist without slavery. In 1837, Caldwell wrote that African people exhibited a "tameable" quality and that therefore, "the Africans must have a master."⁶ In 1907, Indiana was the first governing body in the world to pass eugenics-based compulsory sterilization legislation, inspiring an eventual 32 states to enact eugenics sterilization laws of their own. The American eugenics movement led to the the compulsory and often uninformed sterilization of at least 65,000 Americans between 1907 and the late '70s⁷. Poor women of color were often the target of these forced sterilizations as they were thought to be socially unfit and incapable of good parenting. During this period, Sunflower City Hospital in Mississippi was found to have involuntarily sterilized 60% of the Black women who had entered the hospital for medical treatment. Of the 7,686 people who were sterilized in North Carolina hospitals between 1933 and 1977, at least 5,000 were Black⁸.

Anti-Black medical narratives, influenced by the United States' history of pseudoscientific medical practices, still live on today. Medical colleges have been criticized for indoctrinating medical students with dangerous narratives about Black patients. Jennifer Tsai and Ann Crawford-Roberts, students at Brown's Warren Alpert Medical School and Harvard's T.H Chan School of Public Health respectively, wrote in their letter *A Call for Critical Race Theory in Medical Education* that "Well-intentioned cultural competency curricula, favored in the past, often mobilize stereotypes of people of color in efforts to cite behavioral choices as likely causes of health disparities. This pathologizes patient populations and omits instruction on systemic forces that create the environments within which people exert autonomy."⁹ The lack of historical context and cultural competency amongst medical practitioners likely plays a role in the extraordinary difference in health outcomes between Black Americans and other racial groups. A 2017 Harvard survey reported that 22% of Black American participants said

they have avoided necessary medical care for fear of discrimination¹⁰. A University of Virginia study from 2016 showed that nearly half of the white medical students and medical residents they interviewed endorsed false beliefs about the biological differences between blacks and whites¹¹. These beliefs stemmed from antiquated, pseudoscientific rhetoric from the 19th and 20th centuries, such as "Blacks' skin is thicker than whites," which more than a quarter of medical students and residents endorsed. Furthermore, the study found that those who endorsed false beliefs were likely to rate Black patient's pain lower and make less accurate treatment recommendations. A separate study found that white patients were significantly more likely than Black patients to receive pain-killing drugs while describing the same level of pain (74% for white people to 54% for Black people)¹².

Online media has likely been the most prominent vector for spreading medical narratives that pathologize Blackness. Statements like "African-American women are 15 times more likely to get HIV than are white women" overlook the roles that socioeconomic disparities and anti-Blackness play in health outcomes. Similar to the rhetoric of scientific racism, they position race as the disease. To illustrate this point, I built a web scraper to gather thousands of sentences containing the words black or African from WebMD, one of the most popular online destinations for medical information. Figure 1 shows a random sampling of sentences from this dataset. The language used by WebMD to discuss Black health topics makes clear how careless scientific discourse on racial health outcomes masks the social context necessary to truly understand these factors. This may lead readers to consider genetic deficiencies or cultural issues as they primary cause for worse health outcomes among Black people. White nationalists have adopted a similar approach, often using flawed genetic findings and modern medical research results to push antiquated arguments about the supremacy of white people over Black people.

"We still don't know how much of this risk is attributable to African ancestry and genetic heritage and how much is due to other causes,' he tells WebMD."
"And since the background rate of infection is so high in the black community, African-American women are especially at risk, Douglas said."
"Black Americans are at greater risk of high blood pressure than whites, and a new study suggests the 'Southern' diet bears much of the blame."
"It's usually curable, but it's often more serious in African-Americans."
"The difference in death rates is 'startlingly high' in Atlanta, where African-American women are dying of breast cancer at a rate more than double that of white women, according to the Avon Foundation, which funded the study."

This above sample of sentences was randomly drawn from a collection of sentences scraped from WebMD that contain the words 'Black' or 'African'.

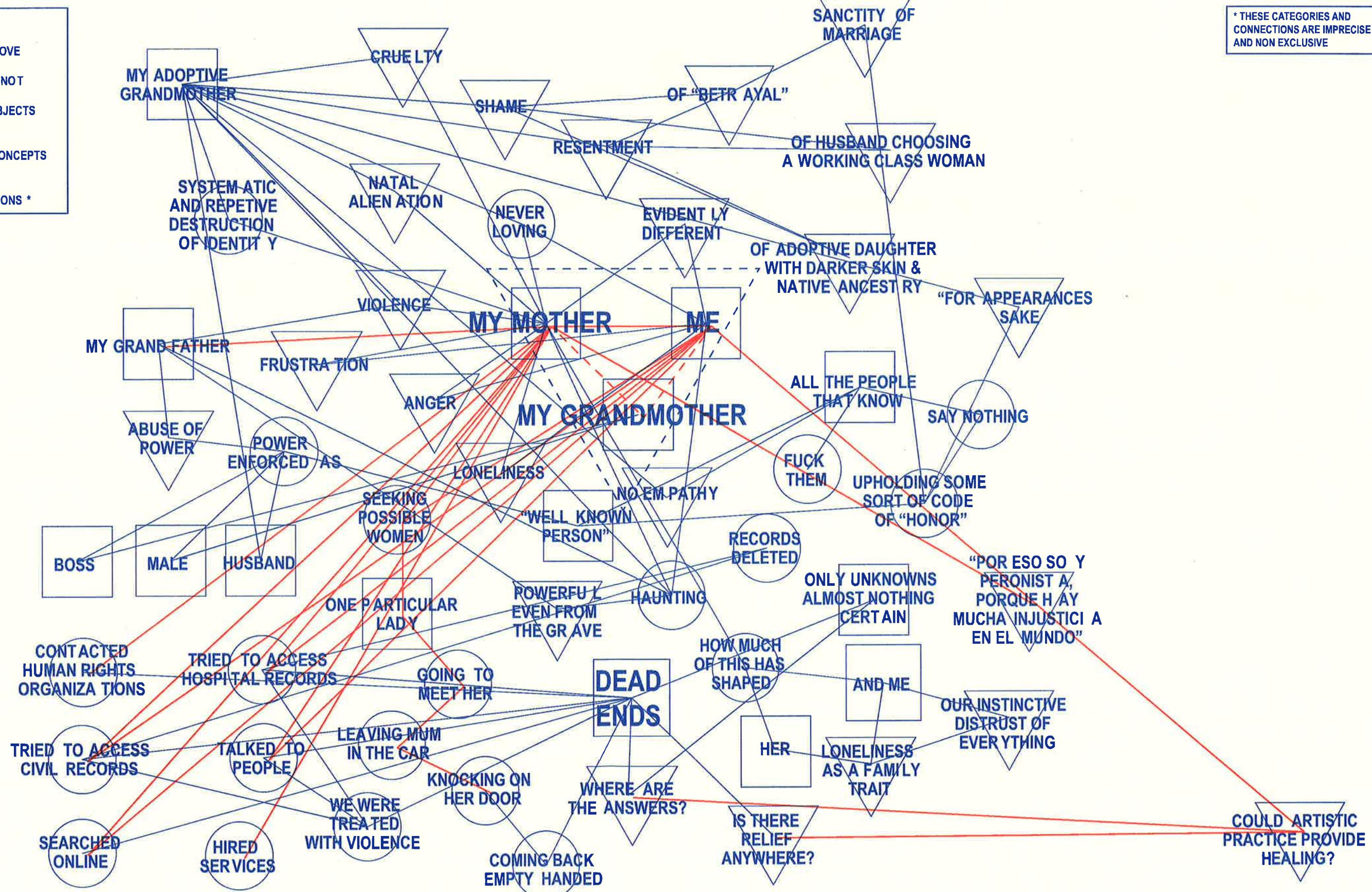
The next frontier for the transferral of scientific racism may be through machine learning systems. In 2016, AI startups focused on medical use cases received more investment than AI startups in any other category¹³. These medical AI startups have a similar strategy across the board: gather huge medical datasets and use them to train machine learning systems. Unfortunately, medical datasets are filled with issues. These datasets favor groups of people who have comprehensive medical data profiles, but do not represent people who have limited healthcare access such as a low-income people of color. In 2015, UC San Francisco researchers compiled two decades worth of data regarding the percentage of clinical studies that include racial and ethnic minorities and found that less than 2% of over 10,000 cancer studies have included enough minorities to be relevant¹⁴. In 2016, researchers found that modern genetic testing approaches for determining risk of hypertrophic cardiomyopathy were significantly misclassifying Black American's genes as pathogenic and that this misclassification could have been avoided if datasets included even a small number of Black people¹⁵. These examples highlight how machine-learning systems trained on flawed datasets will proliferate a pathologization of blackness at even greater scale.

The current state of scientific racism in medical practice illustrates how digital media and AI serve the proliferation of racist ideology. The inherent 'deficiency' of Blackness is mirrored in digital space and captured in our most recent medical technologies. These software systems continue to operate under racist and non-inclusive pretenses while also rendering hundreds of years of scientific racism illegible. Wendy Hui Kyong Chun writes in *On Software, or the Persistence of Visual Knowledge* that "In our so-called postideological society, software sustains and depoliticizes notions of ideology... People may deny ideology, but they don't deny software—and they attribute to software, metaphorically, greater powers than have been attributed to ideology."¹⁶ The future of Black health is dependent on our ability to challenge the racist ideologies embedded in our history, digital media, and software systems.

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2. "Negro Ministers Act To Free The Pygmy." *The New York Times*, 11 Sept. 1906, p. 2.
3. "The Pigmy Is Not the Point." *The New York Times*, 12 Sept. 1906, p. 8.
4. Voltaire. *The Works of Voltaire*. Vol. 21, 1733.
5. Meiners, Christoph. *Grundriß Der Geschichte Der Menschheit (The Outline of the History of Mankind)*. 1785.
6. Caldwell, Charles. Received by George Combe, 30 Aug. 1838.
7. Pittner, Bryen. (2017). American Eugenics and Involuntary Sterilization. *Aletheia*. 2. 10.21081/AX0093.
8. Swofford, Stan. "Most Of Those Sterilized Were Black." *News & Record*, 30 Jan. 1993.
9. Tsai, Jennifer, and Ann Crawford-Roberts. "A Call for Critical Race Theory in Medical Education." Received by Academic Medicine, *Academic Medicine*, vol. 92, Aug. 2017, pp. 1072–1073.

10. *Discrimination In America*. Harvard T.H. Chan School of Public Health, 2018, p. 13, *Discrimination In America*.
11. Hoffman, Kelly M et al. "Racial bias in pain assessment and treatment recommendations, and false beliefs about biological differences between blacks and whites." *Proceedings of the National Academy of Sciences of the United States of America* vol. 113,16 (2016): 4296-301. doi:10.1073/pnas.1516047113
12. Todd, Knox H. et al. "Ethnicity and analgesic practice." *Annals of Emergency Medicine*, Volume 35, Issue 1, 11-16
13. "Healthcare Remains The Hottest AI Category For Deals." CB Insights Research, 22 June 2018, www.cbinsights.com/research/artificial-intelligence-healthcare-startups-investors/.
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15. Kohane, Isaac S. (2016/08/17). Genetic Misdiagnoses and the Potential for Health Disparities. *New England Journal of Medicine*, 375, 655-665. doi: 10.1056/NEJMsa1507092
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RED LINES ARE
 RELATIONSHIPS
 STEMMING FROM LOVE
 |
 BLACK LINES ARE NOT
 SQUares ARE SUBJECTS
 OR ENTITIES
 ▽ TRIANGLES ARE CONCEPTS
 OR IDEAS
 ○ CIRCLES ARE ACTIONS *
 * THESE CATEGORIES AND
 CONNECTIONS ARE IMPRECISE
 AND NON EXCLUSIVE



my
MEMORY IS



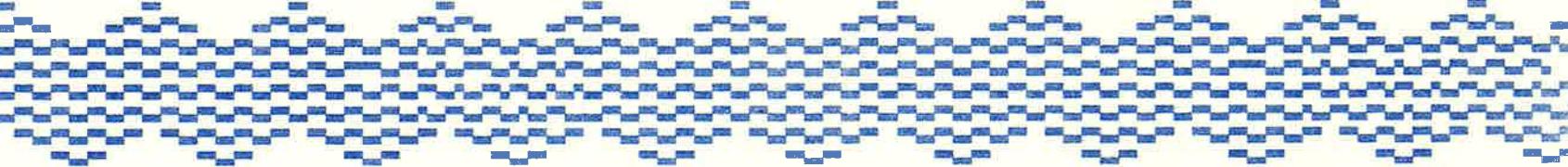
MY only HOME —
LAND

- said the German artist Anselm Kiefer.

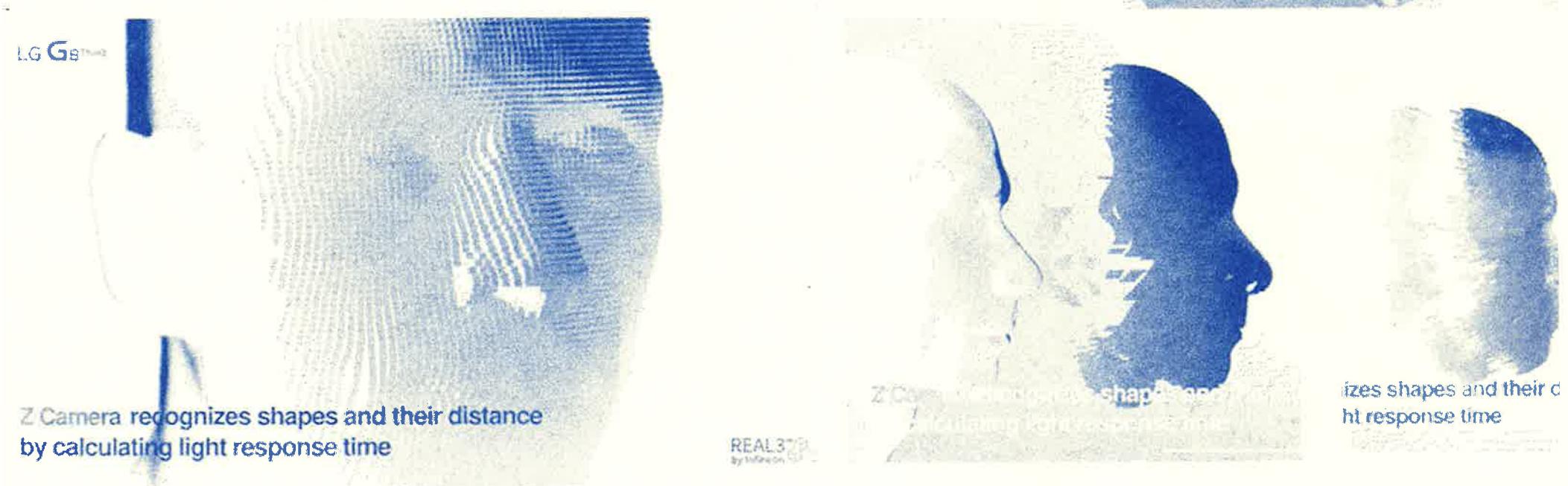
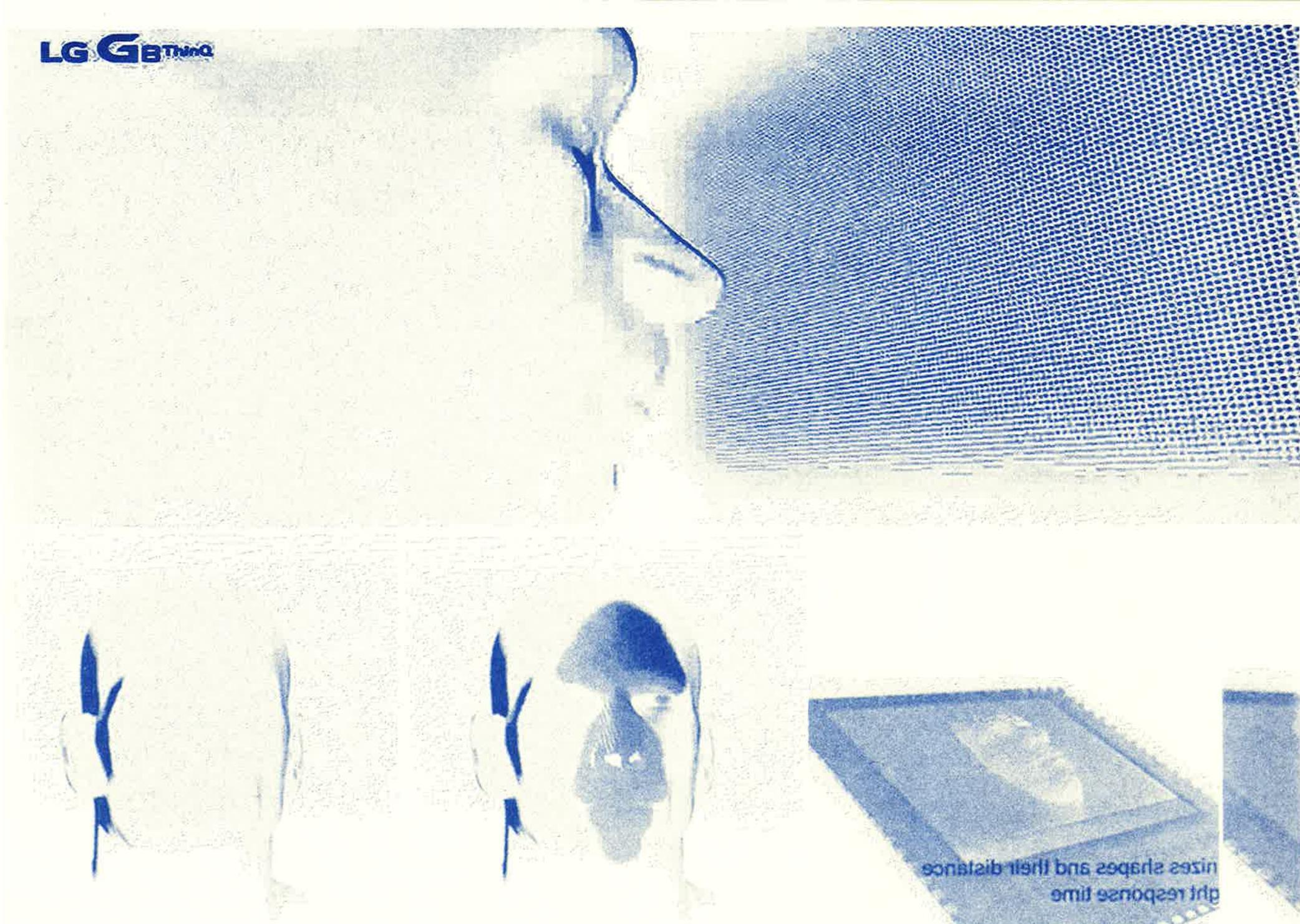
After 4 migrations (in two countries).
I am finding a lot of truth
in this feeling myself.

JUAN MIGUEL MARTÍN
(artist, immigrant)

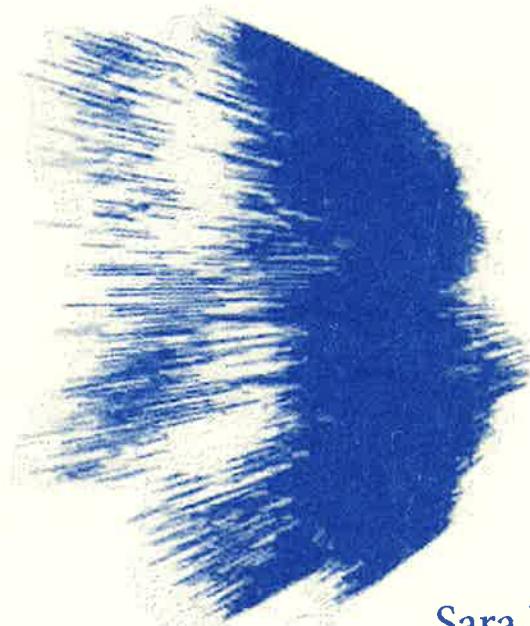
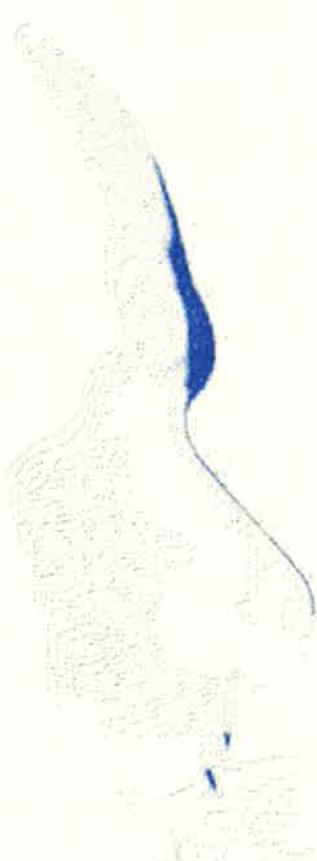
Stefanie Schirmer

1 The computer I never had.
2
3 403 – Forbidden: Access is denied.
4 Access Denied, You don't have permission to access on this server.
5
6 When I was 6 years old, I went with my dad to his workplace. I remember he worked at Nixdorf Computers and in the building there were many escalators that people were riding up and down. The place seemed very important. My dad parked me at his desk. In front of a window you can type letters in - "for play", he said. He was not there. I typed the letter l, repeatedly, until it wrapped around to the next line. I did not understand why this was supposed to be interesting.
7
8 At home, my dad was in his room a lot. Also, he repeatedly talked to my brother about getting a home computer. My brother was three years younger than me and did not engage with the idea at that point.
9
10 # vobis highscreen 1992
11 One day, my dad came home with a giant box. Highscreen. The English word did not make any sense to me but I had taught myself how to read the letters, learning from posters in the trash can in Kindergarten.
12
13 My dad went into his room for about 4 days to set up the computer. It had a "genius" mouse with three buttons. I asked my dad what genius meant. He installed a system called Ergo3 and he showed us how to use it. Then my brother could try it out.
14 Also, I remember MSDOS. It had games like Formula 1 and Fly Swatter and Alley Cat. It was only my turn when my dad and my brother were done. My brothers ears turned red when he played for a while. I remember my parents had a lot of discussions about how to restrict computer time for my brother. Nobody ever talked about having computer time for me, and when I asked for computer time, the matter was brushed aside. My parents enrolled me in a silk painting class to make scarves for my grandma. I kept losing in the games because I did not have as much practice time as my brother had. I think nobody noticed, most of the MSDOS games had no high score. They just thought I was bad at it.
15 I remember when the fly swatter game crashed, you could enter text and the computer always printed "Syntax error". I asked my dad what a syntax error was.
16 There was a big disk drive and a small disk drive.
17
18 # Game Boy, 1989, Paradisa, 1992–1997
19 I was really fascinated with the idea of having my own Game Boy. I knew that at my grandmothers house, I had a piggy bank where Aunt Toni always deposited a fiver every time I visited for me to live large and treat myself". I waited a year until the amount was complete. I secretly calculated the contents of that piggy bank every time, and finally smuggled them back home. Then I took the bus by myself to the city center to go to the toy store.
20 I bought the gameboy but I did not have enough money for games. I brought it home in my bag and hid it in my bed. I played Tetris in my bed and I even got good at it! At that point, I told my brother, and he immediately told my parents.
21 My parents made me return the game boy back to the store and buy pink Legos with the money. In fact, my dad made my mum go with me. Paradisa. I got a lot of Legos for the money. I got a horse stable and a glass hotel with a lady laying by the poolside. It was very boring and I preferred to play with my brother's Ice World lego which had neon transparent elements and many fighters and explorers. They were all male.
22
23 # pacman on atari, 1980; doom on atari, 1993
24 Sometimes, I went to Thomas's house in the neighborhood. He had a chemistry kit which I repeatedly asked my parents for and never got. My brother had several physics and electronics kits, but they were off limits for me. I made friends with Thomas because of the chemistry kit, even though he was very weird.
25 Sometimes, I went to Andreas' house in the neighborhood. He had his own Atari Computer in his room. His sister and I watched him for hours playing Pac-Man and Doom. He never let us play. Later, he let us grind some charcoal for his combustion experiments.
26
27 # windows 3.11 1992, Jean Pütz, 1974 – 2004
28 Then we got Windows 3.11 where programs were started by double clicking icons on the desktop. My dad started telling stories about news groups and the internet, which he was using at work. Some place where people could meet without meeting!
29 I was a teen around the time, and my dad sometimes brought home parts of the internet that he downloaded on a floppy disk at work.
30 My brother was playing games. I was reading about Jean Pütz making natural home remedies which my dad found interesting enough to download.
31 I tried to make some of the home remedies from Jean Pütz but I could never find the complicated ingredients.
32
33 # commander keen 4, 1991
34 My brother also bought his first computer game, it came on six disks, Commander Keen.
35 My parents didn't make him return it, they lent him some money to buy it on the spot on a family shopping trip when he wanted it.
36
37 My brother soon got his own computer in his own room. My dad lent him money again and he got a pretty new model, which my dad also wanted. I still did not have dedicated computer time.
38
39 # my 14th birthday, 1995
40 Later, I went with a friend to an event for girls to learn to make websites. We used netscape navigator and made our own website hosted at the university. I wrote that I like the German band "Die Ärzte" and showed the website to my dad. From then on, my dad sometimes downloaded news about "Die Ärzte" from the internet and brought them home on a floppy disk. By nitpicking about the bands discography, I wrote my first email which my dad relayed, and made my first internet friends.
41 They congratulated me for my 14th birthday, and my dad brought the messages home from work on a floppy disk.
42
43 I went to the computer museum a lot, because it had internet access. I browsed the web for punk music, ska music, photos, stories about live gigs and fan sites. I was very happy when I found punk girls and riot girls online. The computer museum cost 3 bucks entry fee and also had parts of the eniac, a telephone switch and rotary calculators.
44
45 Also, I started hanging out with a university student who I had met on the train. I guess he wanted to date me but I wanted his access to the university computer lab. After getting his login, I never met him again. I was 14.
46
47 Some time after that, we finally got internet at home. All my friends had it already.
48 My dad told me that there are a lot of viruses on the internet but that Windows is very insecure. He went into his room for another 4 days and installed Suse Linux.
49 I had to learn shell commands to use this new system. Also, it came with a thick manual.
50
51 When I was in my senior year of high school, I finally got the oldest computer in the house for my room when my brother and dad got a new model.
52 I turned all the UIs pink and used the computer for my school assignments. I did not have internet even though my room was in the basement next to the main telephone box. My brother had two rooms upstairs and a faster computer with internet. With my own money, I bought a very long cat5 cable to lay the internet back to my room from the upstairs router. My dad and brother and mum regularly unplugged that cable upstairs. After a lot of lamenting and figuring out how to reuse an unused telephone cable's lines, I brought the internet back from upstairs to my room without the cat5 cable.
53
54 At that point, I wrote my finals and moved out for university. I decided to study applied computer science in the natural sciences. I worked in the cancer research institute to simulate the folding of small RNAs that regulate cancer genes. Currently, I'm building a firewall for QubesOS, a secure operating system that is used by hacktivists and journalists. I will continue to use computers for good, and lift up other people.
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LG G8 ThinQ



LG G8 ThinQ



Sara Khan



Over the past decade, American technological elites have watched China's rise with the predictable mixture of awe, envy and fear given to any nation deemed a threat to U.S. hegemony. Here at home Americans have trumpeted their products and services as enablers of freedom and innovation that benefit all of humankind. This includes mission statements like Facebook's "making the world more open and connected" and Google's "to organize the world's information and make it universally accessible and useful." It also includes Twitter all but taking credit for social movements like the Arab Spring in 2011. But for all the lofty rhetoric, Silicon Valley's dealings with China explicitly demonstrate that the underlying ideology is the same as any other industry: maximizing profit.

In 2018, the number of internet users in China topped 800 million (compared to 300 million here), a four-fold increase from 2008. As in the rest of the world, this growth was fueled by the rapid spread of cheap smartphones which transformed every aspect of consumer life. China's government ensured that it never lost control over these potentially destabilizing developments and enforced tough restrictions that prevented American tech companies from operating freely. In their absence, a batch of home-grown enterprises morphed into corporate juggernauts which provided the Chinese with a "parallel internet" to the one used by the West. Tencent, Alibaba, Weibo, and a handful of others mediate the communications, payments, and entertainment of the Chinese people under the watchful eye of the Communist Party.

Back in the United States, Big Tech has not been content to let this market go uncontested. It is clear now that Google's landmark decision in 2010 to exit China rather than comply with censorship laws was an aberration. Microsoft, Apple, and Amazon have all made successful inroads by agreeing to censor posts, remove apps, and host data within China where it is subject to government access. Even Google has had second thoughts: news broke late last year that they were building and testing a version of their search engine which would "filter websites and search terms that are blacklisted by the Chinese government."

But perhaps no company exhibits as much desperation as Facebook. Mark Zuckerberg, whose "family of apps" (which include Instagram and WhatsApp) count 2.7 billion monthly users, has centered his China strategy on personal diplomacy. He pledged to learn Mandarin and later conducted a Q&A in it with students at a top Chinese engineering university, but most of his other moves have been widely mocked. He has posted photos of himself grinning while jogging through Tiananmen Square (the site of the 1989 student massacre), praised Chinese President Xi Jinping's memoir (and shared copies with his colleagues), and even went so far as to ask Xi to grant a Chinese name to his unborn daughter (he was denied).

Such obsequiousness can be understood as a straightforward consequence of investor demand for constant growth. Having achieved market saturation in the rest of the connected world, tech companies view Chinese internet users (and their rising middle-class incomes) as the final frontier. A similar dynamic plays out with Silicon Valley venture capitalists. Eager to fund the next batch of "unicorns" (startups valued at over \$1 billion), they have turned to China for inspiration, resulting in a predictable fetishization of cultural aspects of the Chinese tech scene.

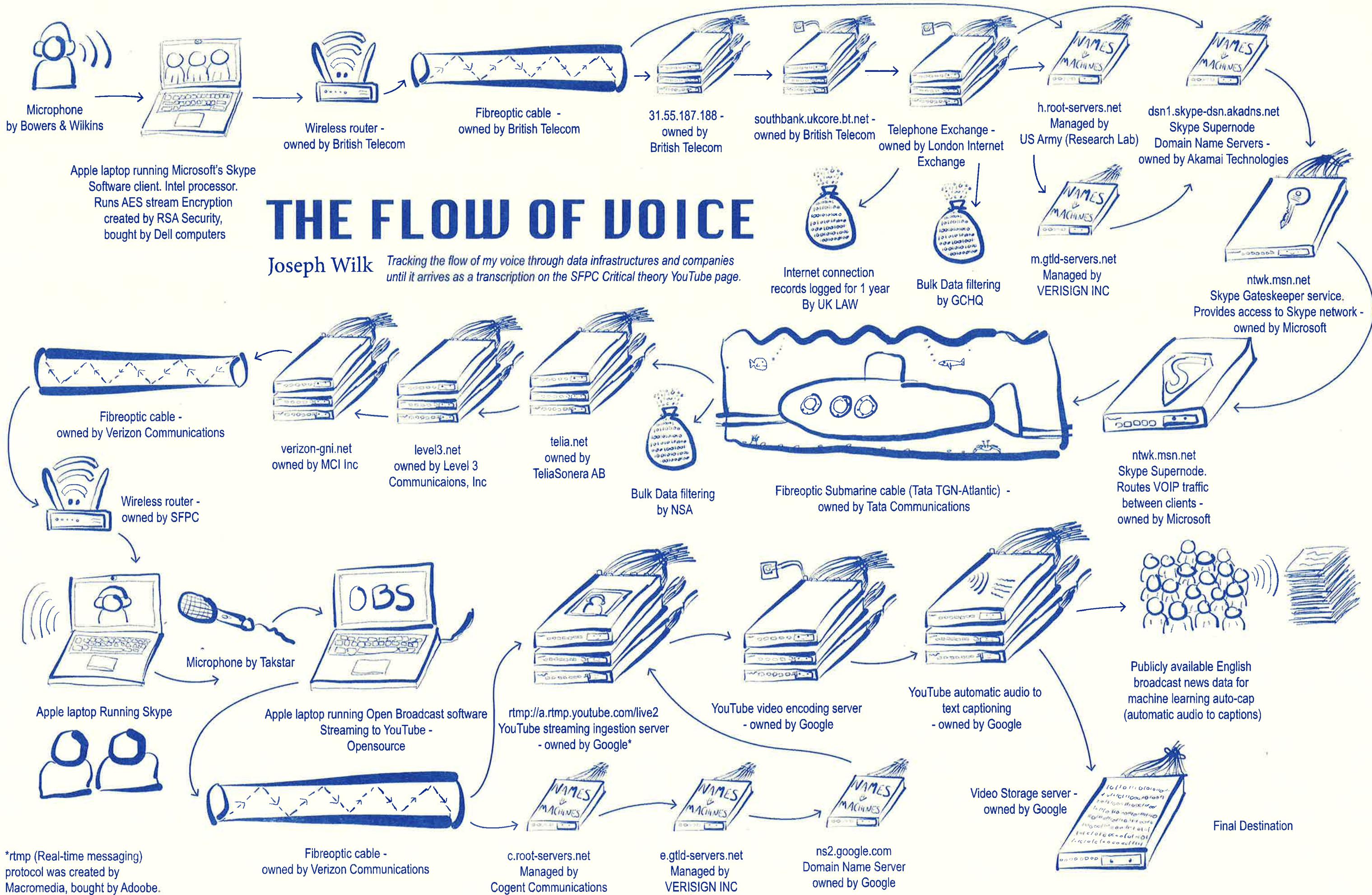
Last year Mike Moritz, one of the main partners of famed Sequoia Capital, published a column where he praised the non-stop grind of Chinese tech companies who often demand 14-hour days, six to seven days a week. He dismissed employee demands for paternity leave and work-life balance as the "concerns of a society that is becoming unhinged." In his view, workers should not expect to enjoy time with their children, let alone have a weekend!

Silicon Valley has historically prided itself for having a working culture that emphasized generous perks and benefits (at least if you belonged to a group, like software engineering for example, that "counted"). But motivated by the perception of faceless Chinese automatons that do not demand any of this, Moritz seeks to scare Western workers and their employers into minimizing cost expenditures and maximizing output. Workers should be obedient instruments that sacrifice all for the company—and for the capital that expects a generous return.

The head of Y Combinator (the most successful and well-known start-up incubator) recently argued an equally ridiculous line of thought when he wrote a blogpost that claimed Bay Area political correctness was so out of hand that he felt safer having discussions in China, a country with no protection for free speech. He writes, "it's possible we have to allow people to say disparaging things about gay people if we want them to be able to say novel things about physics", which is of course absurd—no one needs to say disparaging things about any type of people in order to do their work.

What these two men have in common is the desire for astronomical returns on investment and to eliminate any inconvenience that lies in the way. When looking at China, venture capital perceives an escapist and Orientalist alternative reality where they would not have to deal with "coddled" employees or face any formal scrutiny over the effects of their words, actions, or investments. In this view, there can be no higher calling than the pursuit of "innovation" and "disruption".

It is not hard to extend this motivation to big American tech companies as well. In an ironic twist, Zuckerberg has used China as a convenient foil against the other major threat to Facebook's monopoly: government regulation. He has cautioned Congressional lawmakers against regulating companies like his too heavily because the alternative, he warns, is dominance by Chinese firms. Trafficking in both Sino-phobia and fetishization allows American technologists to strengthen their position as dominant market players. China has served as an effective mirror for Silicon Valley's true self, helping eliminate the halo of utopian idealism that Big Tech has marketed as a means to avoid critical public oversight. For that, at least, we can be thankful.



My mother ends every one of our telephone conversations by telling me to "Pay attention!" What she means, but never says, is that I should always either ask for somebody to walk me home at night or at least to take a cab. I avoid following her unreasonable advice whenever I can.

It's 1:00 a.m. and I am going home, checking on my phone to find out which public transport routes are available. The app that I use displays an alert to remind me that is late, and—in the interest of my safety—I should share my route and position with someone I know. This thing stinks, but I drank a beer or I am wearing a skirt, if something happens to me and I didn't follow the suggestion of the app, my fault is going to be even bigger.

I have been walking home alone for more than 15 years and nobody has ever assaulted me from behind a bush. In the West, although it is the most reported, the so called stranger rape makes up for less than a quarter of the total number of assaults. In reality, most sexual predators are parents, siblings, friends, teachers, classmates, colleagues, bosses, partners, and spouses. And the assaults mostly happen in familiar places like homes, schools, offices. What happens every day in the real world is way different from books, movies and cautionary tales.

We collectively accept the mythical figure of the dangerous, monstrous man attacking young innocent girls in dark alleyways. He is a brutal demi-animal with no ties to society, a loner, a pariah, somebody born to be a rapist. This figure has several effects on how we as a society treat and understand sexual assault: it promotes a stereotype about how assault happens (in dark allies at night); it puts the responsibility of avoiding the assault on women, pressuring us to limit the span of our travels and interactions; and it shields acceptably "normal" men from feeling responsible and being held accountable when they commit an assault (i.e. he looks clean-cut and polite; how can he be a rapist?).

This paradigm informs how the police around the Western World respond to women reporting an assault. A young white woman with no previous sexual experience who has been attacked by an unidentified man while walking home at night has a much higher chance of seeing her assailant identified and prosecuted than a black mother accusing an ex partner of assaulting her.

Though it drives me mad, I can accept that my mother genuinely thinks that avoiding going out at night has altogether protected me from assault and will protect me in the future. She is a woman in her 70s who spent most of her life in a small city in the south of Italy, where the culture is highly misogynistic.

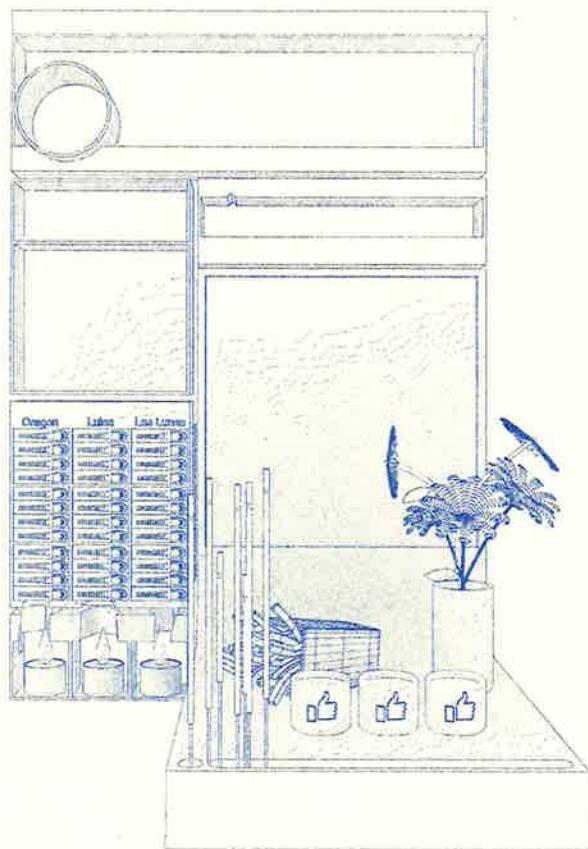
But how can I feel at ease when the objects in my pockets paternalize me, when a screen softly threatens me with the image of a risk behind every dark corner? When I am given a false choice of safety in exchange for a real loss of freedom (of movement and privacy)?

I love (and hate) to imagine a young developer working on the mobility app, so proud of himself for solving real life problems thanks to his intellect and abilities. There is such a smugness and carelessness in the way he embeds his own understanding of the world in a product that so many different people will use. In his view, women need to be reminded that they are nothing but guests in a men's world, that there are rules they need to follow or they will face the consequences. If his vision were different, he may have chosen to switch the attention from the potential victim to the potential offender:



But this would imply that anyone is a potential aggressor, responsible for his/her own actions. It would mean for the developer to call out his own colleagues, friends and probably himself. And who in a position of power would do that?

There is no appropriate conclusion to this text, as there is no technical implementation that will rebalance any of the power relationships ingrained in our society. The technologies we have in our hands have not been designed and imagined to change the world or make it a better place for anyone: they have been built through a history of power imbalances and a present of slave labour and environmental exploitation. Maybe a place to start is to be wary of what our phones are asking us and remember that behind every prompt there is a white old man that thinks he knows better than us what we need to live our lives right.



21ST CENTURY GHOST

Vivienne La

As I broadcast and transmit through different channels online, I contribute to the fabrication of an alien or machinic entity of my lived experiences, materialising and updating within virtual space. I take control over my digitised self, the same way that my operating system software renders virtual objects to serve my commands; those same objects bearing similarities to the tools in my physical world that I put to use through my human actions.

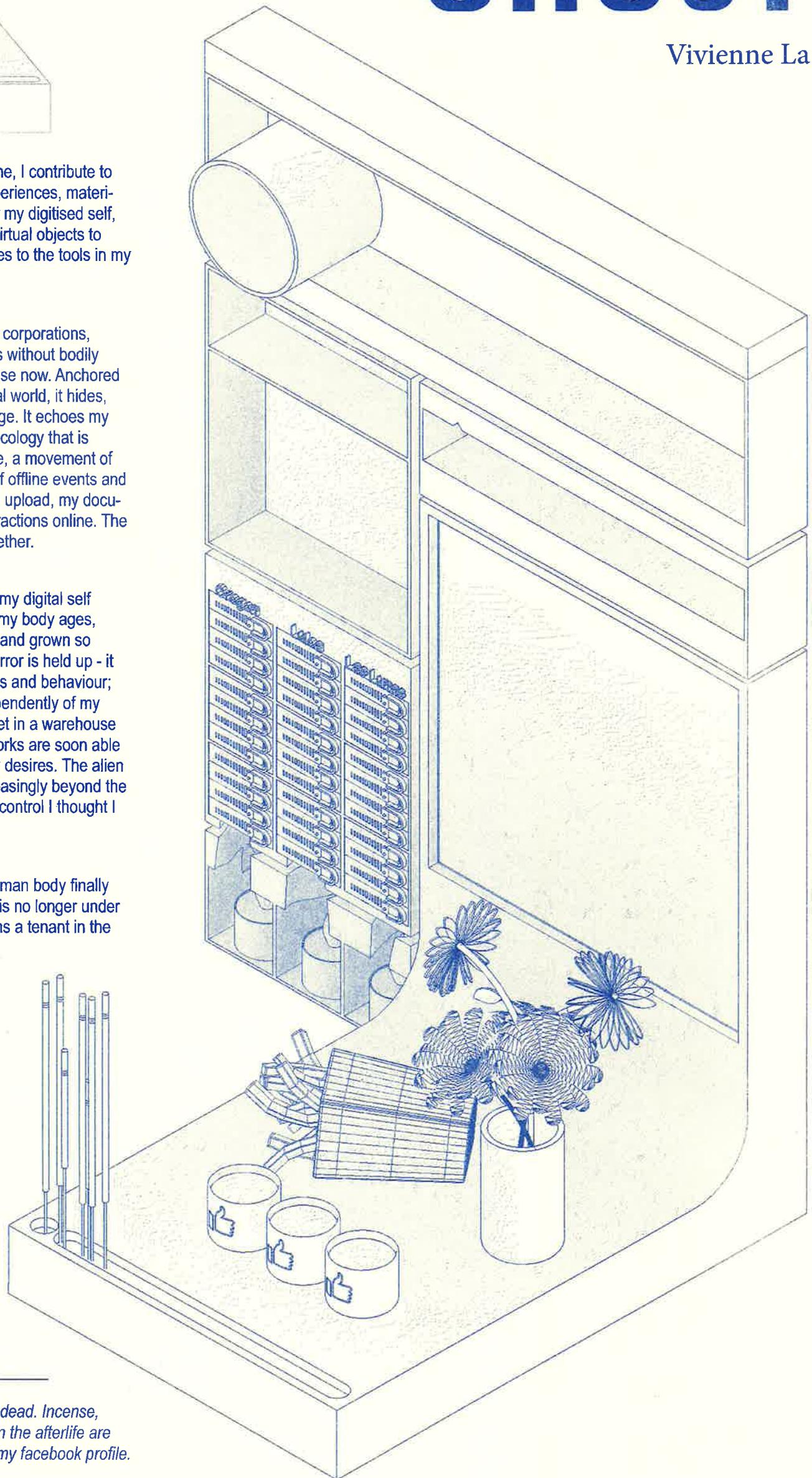
I begin by entering us into numerous contracts with several corporations, migrating from platform to platform as my machine expands without bodily protest. I am able to navigate my social interactions with ease now. Anchored in my offline relationships and my experience in the physical world, it hides, destroys and regenerates its limbs to materialise in my image. It echoes my voice, my silence, and contributes its activity to the virtual ecology that is home to all the other digital bodies. A discussion held online, a movement of data, a virtual event - these begin to lead to the formation of offline events and conversations that I participate in. I continue to capture and upload, my documentation of my physical experiences prompting more interactions online. The mutual feedback between my body and machine swirls together.

The tech ecosystem grows richer and spreads further, and my digital self remains tethered to my human body and surroundings. As my body ages, my machine has traversed through so many virtual spaces and grown so many facets that I am unable to see all of them. A virtual mirror is held up - it captures all the intimate details of my machine's interactions and behaviour; a mirrored reflection that they can study and exercise independently of my body. They store this information on a hard drive in a cabinet in a warehouse somewhere I've never been. Through our activity, the networks are soon able to anticipate my needs, mould my behaviour and inform my desires. The alien infrastructure that my machine inhabits is withdrawing increasingly beyond the grasp of my human understanding. I seem to have lost the control I thought I once had.

After years of technology driven ritual and repetition, my human body finally becomes a corpse. I rest, yet my machine is put to work. It is no longer under data protection laws now that I'm gone. My machine remains a tenant in the social conditions of the living and trapped in computational eternity. With my departure I leave it occupying a virtual estate, contributing culturally and financially to its structure - but they say it's all in the name of Remembering me. The nature of its existence is dictated through the same disingenuous and bureaucratic mechanisms that we've endured up to this point. They explain the extent of privacy applied to my data, and list all of the things that will be on display - all of the posts, images and memories they will have to retain the users I formed relationships with offline. Even after death, they use my virtual body, and impose on it their rules and rituals.

I have allowed my virtual body to mutate and transform in parallel to my corporeal experiences, but in the event of my death I wish to take agency over its (non)existence so that it may rest peacefully.

Domestic altar: we have one in our home to remember our dead. Incense, flowers, food offerings and anything else they might enjoy in the afterlife are arranged and updated. I have built one using the layout of my facebook profile.



Inside Herbarium **SEPARATA 98**



**Herbarium Separata 98
Preview Program Series**

For users of
Herbarium Separata 98:
Preview Program Version

@javierdeazkue

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Working with the StarTree

If you are reading this it means that you've acquired the Herbarium Separata 98 Operating System, congratulations! then you've already had an introduction to Separata 98's StarTree. Therefore, you've discovered that the StarTree acts as a space-constrained visualization of hierarchical structures.

A StarTree is a tree browser that uses hyperbolic geometry to distort the tree and emphasize the data in focus. The tree can be moved around in real time. It's the most advanced solution for the focus+context problem. The resulting visualization supports efficient use of space and time.

A StarTree can display up to thousands of elements at once showing multiple attributes. By recursively partitioning an element's rectangle among its children, a StarTree presents the "big picture" of a hierarchy giving users X-ray vision into their mountains of data. Zooming, enter/leave notification, select actions, and much more are supported.

For example, a StarTree is perfect if you work with scientific separatas. The days when you had to wait for 30 days to get a response from the author of a paper from the other side of the world are over. By using a StarTree connected to the World Wide Root™, you can contact authors in seconds and see all your documents at once.

Why use a desktop if you don't even have an office? In this article we'll show you why the hyperbolic tree metaphor

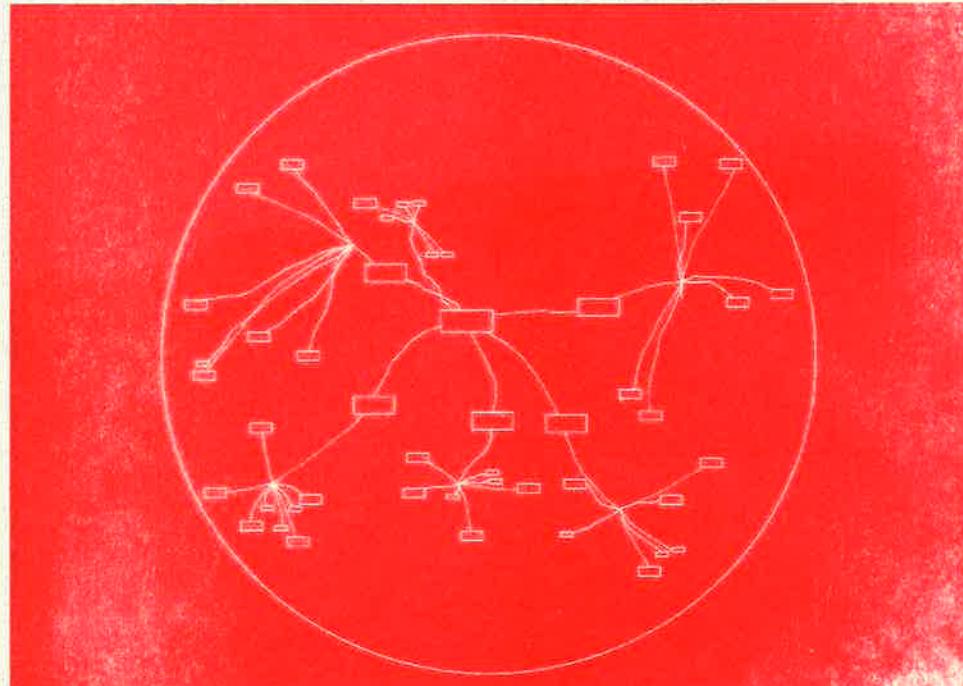
is getting more and more popular among the desktop metaphor users, who are leaving that prevailing system behind!

Using the StarTree

If you don't like having the StarTree at the center of your screen,

(Continued on page 3)

FIGURE A



With its hyperbolic geometry, a StarTree can display up to thousands of elements at once showing multiple attributes.



CHRISTI AND ADDY316 IS ONLINE

By @femmewad



After serving a 10-year prison sentence for tax evasion, Kent Hovind made the surprisingly natural transition to YouTube.

I am the middle child of two creationist parents. My first exposure to the Internet beyond email was to the lost world of the early Christian Web, which devoted itself mostly to the oxymoronic task of providing Evangelicals with enough details about secular culture to gird themselves against secular culture.

Many people fail to realize just how many fields of orthodoxy Evangelicals must violate to support their beliefs. Young-earth creationism, more so the driving belief behind my community's worldview than even the Gospel itself, entailed some bonkers beliefs, taught mostly through the VHS lectures of conmen "creation scientists" like Ken Hamm and Kent Hovind. Our belief system explained Biblical and historical events by invoking alien visitors: genetic intermingling with extraterrestrials (i.e. alien-fucking) was responsible for today's "racial differences". We also believed that a few dinosaurs still lived in uncolonized pockets of the globe. Creation science led me down my first Internet rabbit holes—I spent my childhood researching cryptids appropriated from indigenous lore and preparing myself for the New World Order's planned installation of microchips in the hands of all Christians. The Internet of my childhood was the precursor to today's QAnon.

The mid-2000s brought a detente between my family and the secular world. Secular sites started aspiring to the burgeoning aesthetics of Web 2.0, leaving Evangelical and right-wing sites in the dust. Aesthetic differences between sites started to signify differences in "reputability"—my parents' tacit understanding of this phenomenon was partially behind our integration into mainstream mass culture. My parents bought me a HitClips player, a tiny audio player that accepted cartridges to play one-minute clips of pop songs. Our homepage switched to Yahoo News. My older brother (now a pastor in Arkansas) downloaded a song by San Antonio band "Butthole Surfers" and my dad's freakout was surprisingly muted. I even walked in on my dad Yahoo Image-searching "large breasts".



HitClips Turned Me Trans.

Though we abandoned much of the whacky Evangelical web, we continued to read the Drudge Report. The Drudge Report is a news aggregator that invented the foresighted right-wing tactic of depending solely on headline wording to inject bias. Drudge owes its longevity in part to its perceived authenticity: its creator and chief fedoraboy Matt Drudge has to this day refused to upgrade the site past basic HTML. The visual result is a sense of pre-ideology and aesthetic neutrality that inoculate readers against the site's appalling innuendos. In other words, how could a site that refuses to indulge in UI trends be trying to manipulate us?

Around 2012, the right-wing Evangelical Internet caught up with the liberal media's faultless UI. Breitbart.com adopted its iconic look in 2012, mere weeks after founder Andrew Breitbart #croaked. It was around this time that my parents switched from the Drudge Report to Breitbart. This change marked my parents' shift from fizzling Reaganite conservatism, which postured as pre-ideological ("common-sense") to Trumpism, which is so straightforwardly ideological that it refuses to even engage with the non-ideological. This refusal is a central theme in Breitbart's UI.

Breitbart's populist priorities surface in comment-counter bubbles attached to the front-page headlines for each article. The comment counters link to the Disqus-hosted comments section, and much of the Breitbart community navigates exclusively between headlines and comments sections—ignoring the article bodies altogether. Breitbart's *utili-cool* aesthetic is sturdy and clean—positioned neatly at the intersection of Under Armour and a Blue Lives Matter Facebook page. (Here be it noted that the same sort of masculine comfort font is used on the packaging of men's adult incontinence underwear.) Their photo choices are likewise damning: photos of migrants are always grainy and never feature less than 5 subjects; celebs look smug; black people get mugshots but white people get grad photos; and so on.



Masochistically CTRL+Fing "trans" on Breitbart.com to remind myself precisely how I disgust my parents!!!!

Famous objects of denigration in Breitbart headlines are granted consistent sobriquets ("TRANS JENNER", "SLOPPY JOE"). In an impressively honest move, Breitbart has implemented a system of emoji- and color-based visual cues that prime their readership to contextualize information within specific ideological sub-lanes. The names of "globalists", i.e. powerful Jews, are bookended by 🤝 emojis, or are written in green. To be clear, centrist publications commit a dishonesty of omission when they fail to include 🤝 (orange man bad) in headlines describing the supposedly non-symptomatic rapaciousness of the current administration.

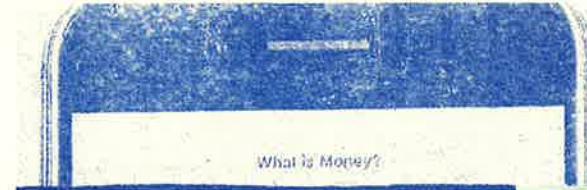
Breitbart presents a UI experience that facilitates complete surrender to ideology, devoid of any obligation to audit that ideology against "objective reality". Of course, yellow journalism is nothing new. But the mainstream new media have created an information landscape in which yellow journalism can flourish. The Slates and Voxes of the media landscape, with their *{Here is a Fact} {Here is my Opinion on that Fact}* headlines and dick-numbing design-by-committee UI, guarantee that the only people engaging with their supposed corrective to the right-wing media machine will be isolated creative class losers killing time at their desk jobs. Breitbart's joyful embrace of the symbolic and the symbolic alone accomplishes a unification of thought that the Left should envy. The goal of any political project should be the implementation of an aesthetics robust enough to serve as a surrogate for moral calculi. Here, Breitbart also succeeds—however toxically so.

Perhaps controversially, I don't consider Breitbart's readership to be actual fascists. Any true fascist should be willing to make sacrifices; the only sacrifice Breitbart readers have the moral capacity to make is to live without Chick-fil-A on Sundays. But the readership operate as something worse: users of a fascist interface, abstracted several layers from the fascistic policy implications of their browsing. It's tempting to comfort myself with the knowledge that people like my parents have largely quarantined themselves off to Breitbart's corner of the Internet; but then I remember how small our quarantines were in the early days of the web, how consolidated they've become now. Not to mention the unexpected reproduction of right-wing ideology among Gen Z boys—but that's a whole other *Angela* to be *Nagled* elsewhere.



Mommy needs her nuggies—but not on Sunday.

Breitbart owes its rhetorical power to its refusal to engage with information on a non-ideological level. A responsible Left must stop wringing its hands over fact-checking and performing "objectivity"—and instead build viable and compelling models for engaging with the strictly symbolic.



What is Money?
Rafia S
November 9 at 2:14pm
Can a white friend postmates me NyQuil and soup? Is that how this works?

1a

"On the other hand I had repeatedly spoken to bankers with an artistic inclination about Beuys as an economic theorist. Some of them grew very impatient at the mention of his name: 'We're money professionals, an artist is something quite different.'



From left to right: Werner Ehrlicher, Hans Christian Blumwanger, Rainer Willers, Joseph Beuys, Joachim Philipp Freiherr von Bathmann.

1b

WILLERT: I fear we must now approach the subject from a more metaphysical angle. Mr. Beuys, could you now give us your view of money?

BEUYS: Yes, but not from a metaphysical angle. Many people know I've been involved with sculpture, that I'm a sculptor. Somewhat fewer, let's say 45 per cent of those who know I'm a

sculptor, also know that I have been involved with social issues, for example that I became a founding member of the Green Party in Germany after instigating several organizations before that, such as the Organization for Direct Democracy through Referendum and the International Free University for Creativity and Interdisciplinary Research, and that I worked on an art concept which does not wish to have some niche existence at one remove from society, as written about in the 'culture' pages of newspapers – the so-called art world active in museums, galleries, fine art academics, the art market, the diverse viewpoints of traditional art historians. I was aware I did not live in a culture where spirit was paramount to people, as it was during the cultural periods of antiquity, such as in Egypt or ancient Greece. Instead I was conscious of living in a period when people are dependent – I say dependent – on an activity in the whole context of civilization that we must call the economic life. So, as a creator of forms, I worked on a social concept of art, an extended concept of art, and in doing so tried to develop a consistently creative principle in such a way that it might enable people to grasp the core of society, the position of capital in this society. I developed this so everybody might see, eventually, that in order to escape this dead-end of private capitalism in the West, and centralized state communism in the East, the only way out is by starting from human creativity and from a real capacity for work.

If one does this, and reflects fully on certain things, despairing one's thoughts to produce imaginative concepts of humanity's future, one finds that there is really nowhere else to start: we have to begin with the human capacity for work, with the famous concept of creativity – already表述 – by fashioning



On November 11, Rafia shared a status which summed up her progress to that point: "I was sick, cranky, and hustling 'y'all for some NyQuil gels and 44 hours later for some reason I have raised 2 thousand dollars & sent over 50 Seamless orders to Black + Brown folk all across the country... from my bed, y'all will lol." Within the span of a few days Santana raised several thousand dollars which has equaled to around 150 meals within this week thus far. Check out the interview below to learn more about #PAYBLACKTIME

FELT Zine: You are known as a very talented artist who works in both performance and new media art. Does this project relate to your art practice, if so, how, and if not, how do you see this labor?
Rafia Santana: It's been a while now that I noticed that white people really admire my personality, my talent, and the many ways I entertain them. Many black people monetize their white influence for survival but those whose blackness doesn't entertain or impress the white gaze don't have the same access to that resource. I also noticed a lot of white people want to do good for black + brown folks (or at the very least they want to be seen doing good for us) but they can't empathize and connect with us and, when they try, still cause harm to people of color because it's built into everyday social customs to do so. Many white people don't understand this. However, they do understand money transference and the necessity of a proper meal. Food is of utmost importance to survival, and it's one of my favorite things in life lol. I know all about what not having a meal does to a person. My job with #PAYBLACKTIME is to be the middleman and show white folks an easy way to make a real difference to people of color by providing the funds used to relieve some of our collective stress of living under white supremacy.
Included in the structure of this project are several avenues of my art practice: graphic design, printing, storytelling (crafting Facebook posts to reach more people), marketing, stencil-making, public service. It's all labor. It's all art. It's all survival.
I will continue to grow this program as long as people continue donating. I hope they do.

4a
Memes are the language of the unheard" – Rafia Santana

What is Money?
Rafia S
November 9 at 2:14pm
"Memes are the language of the unheard" – Rafia Santana

1b

Of course, the money somebody saves is a benefit to the group. Every person who saves thereby shows that he or she doesn't want this or that thing, doesn't have to eat this or that. So in everybody who saves shows how he is helping properly plan the economy – we have not even discussed it but the planning is the most important part, it emerges from human insight and belongs to the cultural, spiritual life of humanity.

2a
Kunst = Kapital

In addition, as noted earlier, Beuys considers speech to be a kind of material in which to sculpt: "The speech especially is totally plastic because it already has movement. What the mouth does with speech, the blubber it releases, these are also real sculptures, although they can't physically be seen, the air is worked on, the larynx is worked on, the inside of the mouth articulates, the bite, the teeth, etc."²⁷ Beuys shares Derrida's interest

2b
Kunst = Kapital

Of course – to understand that this is a concept of art in which all can participate, whereby every human being must be an artist. If we want to achieve a different society where the principle of money operates equitably, if we want to abolish the power money has developed over people historically, and position money in relationship to freedom, equality and fraternity – in other words

develop a functional view of the interaction between the three great strata or spheres of social forces: the spiritual life, the rights life, and the economic life – then we must elaborate a concept of culture and a concept of art where every person must be an artist in this realm of social sculpture or social art or social architecture – never mind what terms you use. Once people have developed these imaginative concepts – which may come into focus a bit more this evening – having drawn them from their own thinking forces, their recognition and knowledge, but also their feelings and willpower – from the moment they have them, people will also understand that they really are the sovereigns of a state-like whole, and that it is they who formulate the economic laws which will allow money to be freed from its present characteristics,

2c
Kunst = Kapital

What's going on here is a collage of texts. They deal with themes of money, race, modernism, community, social service, social sculpture, social media, social practice. Think of them as "assigned reading", or seeds for something new.

2d
Kunst = Kapital

MEMBER OF THE AUDIENCE: Where do you see this idea about human insight?
BEUYS: If you give people the possibility...

2e
Kunst = Kapital

MEMBER OF THE AUDIENCE: But this is pure theory!

BEUYS: Yes, of course, this is obvious. People today are essentially selfish. But at the next phase of our social will potentially innate in all

2f
Kunst = Kapital

we will see to promote better human compatibility.

2g
Kunst = Kapital

Good luck,

2h
Kunst = Kapital

– Stefan Pelikan

2i
Kunst = Kapital

Their methods of W-rting are

based on assumptions not only about how "ideas" are generated but (and here is a crucial lesson for the new pedagogy) on how ideas are communicated, or rather, disseminated. *Fat Corner* – the gradual staining and spreading of the fat as it is absorbed by the walls and floor (the fat in the corner being the equivalent of the *gl* in *Glas*, the hard and the soft, the fat as the flux of agglutinative processes) – is an image for Beuys of the spread of ideas, a version of dissemination. "The process of infiltration takes place as the filtered stain spreads slowly outwards with time... the spreading of ideas to the different forcefields of human ability, a kind of inspiration that takes effect through a physical process of capillary absorption: psychological infiltration, or even the infiltration of institutions... The smell of course permeates everything" (Beuys, 148). *Fat Corner*, in short,

2j
Kunst = Kapital

3a
Kunst = Kapital

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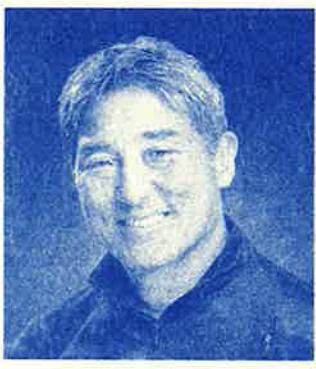
3kk
Kunst = Kapital

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Kunst = Kapital

Melissa Holmes



"Create something, sell it, make it better, sell it some more. Then, create something that makes it obsolete."
- GUY KAWASAKI

What was the last piece of technology you replaced because it was obsolete? How did the purchase improve your life? The Merriam-Webster dictionary has two definitions for "obsolete." The first one describes something that is "no longer in use or no longer useful" or "of a kind or style no longer current (old-fashioned)." The second describes a plant or animal part that is "indistinct or imperfect as compared with a corresponding part in related organisms (vestigial)." Computers, smartphones, and other devices obviously aren't organisms, and their unique qualities aren't a result of biological evolution. Technology is designed and built to serve a purpose.

In a society with increasing pressure to have access to devices with the latest features and continuous online availability, the relationships people have with their tech is deeply personal but often temporary. Because the main goal of tech companies is to sell the most products, design leaders have to make sure users enjoy their expensive purchases but keep them interested in buying more. Their marketing is constant, but the timing of their periodic live streamed release announcements and preorder periods is predictable enough that people talk about their reactions to the new releases and are ready to consider buying something even if nothing is wrong with what they have.



"If your customer base is aging with you, then eventually you are going to become obsolete or irrelevant. You need to be constantly figuring out who are your new customers and what are you doing to stay forever young."
- JEFF BEZOS

Since computers, smartphones, and other devices usually perform more than one function, it's hard to define when something is "no longer useful." Often something will be considered more useful because newer versions are faster or have other improvements, but the existing product has the same functionality as when it was purchased.

Besides the computers or smartphones that are completely broken, obsolete technology can still be useful to someone, so users who want to upgrade will sell their working but older product to help cover the cost. It is also common to give an older phone or computer to a friend or family member who is using something worse. Companies will do their best to make users think a device is "no longer useful" and intentionally design a negative experience to help convince them. For example, when a smartphone installs an update that makes it slower, the owner will feel more frustrated than if they kept the phone the same. Forced obsolescence strategies encourage consumers to buy something that they believe will improve their experiences.



"Failure is an option here. If things are not failing, you are not innovating enough."
- ELON MUSK

Using "no longer current" or "old-fashioned" technology is not perceived as intentional among informed consumers. People notice those who cannot afford to upgrade, choose not to, or do not know about feature differences. Smartphones are the most expensive products people carry around on a daily basis, and others can see how new they are and if they are damaged. Despite being really common, cracked screens on older phones are looked down on by people who can afford to fix or replace them. The newest smartphones have the biggest screens and thinnest hardware. They are incredibly fragile for something that will be carried everywhere the owner goes.

In some situations, having an old or unusual device is a personal choice for fashion or other social reason. Some people enjoy collecting vintage electronics, playing music on vinyl, or being intentionally less connected to the internet. Often these older products are simpler to maintain and more durable than modern equivalents that were discarded or stored when the original owners replaced them.



"Our whole economy is based on planned obsolescence...we make good products, we induce people to buy them, and then the next year we deliberately introduce something that will make these products old-fashioned, out of date, obsolete."
- BROOKS STEVENS

As long as companies are designing products that are designed to be replaced in a short period of time, obsolescence is unavoidable. Resistance to buying newer computers, smartphones, and other devices reduces the overall amount of money spent on electronics and forces the user to think about the worth and value of their property. Though it would affect larger tech companies if consumers pushed back against obsolescence, ultimately the companies can control a user's day-to-day experience with their products. As long as their goals are based on staying relevant by making their own designs unusable or old-fashioned within a couple of years, people will have to replace or upgrade eventually.



"Your current market share is not a predictor of market share. Windows, if I just kept it as is, would be wiped out in two years, three years. Are we clever enough to obsolete our own product and build something new?"
- BILL GATES

My family's first computer was an Apple II GS in the late 80s. It had the first color GUI, and it was the first computer I used. I was allowed to play certain games on it before I could read. My parents still regret buying it because it was the last Apple II model. Apple II computers were sold for about ten years before they bought one. The Macintosh came out not long after, and they realized Apple would not continue to make Apple II software when there were newer lines of home computers being made.

In early elementary school, I learned to type on older Apple II machines in a small computer lab. The computers were functional but old, and my classmates were disappointed in them. Whether a screen was black or white was the first obvious indicator of newer hardware. Eventually the lab was gifted a couple of newer computers with windows 95, and no one wanted to be assigned to a computer without a GUI. Sometimes the teacher allowed his favorite students to use better computers or assigned the oldest computers to students as a punishment.

The computers in that lab had different capabilities, and they worked, but they could not all run the same software. Computers can be obsolete and unusable because the hardware and software are no longer compatible. Having an unsupported computer or smartphone is a risk factor, especially when new software isn't backwards compatible. It makes it difficult or impossible for the owner to maintain it or make updates.

My parents were early adopters of home computers, and both of them have tried to proactively learn the skills required to use software for work as well as troubleshoot hardware. They were successful until the early 2000s, when software shifted towards web applications and hardware became more portable but more difficult to fix at home. It's harder for them to keep up with changes that make technology less customizable.

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