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CHAPTER 9

Through Google-Colored Glass(es): Design, Emotion, Class, and Wearables as Commodity and Control

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INTRODUCTION: IN THE GOOGLE GAZE

We were trying to learn about social issues around Glass ... we ended up sending signals that it was a finished product, like putting it on a (fashion) runway ... I wish we had done differently. – **Astro Teller, Head of Google X¹**

In April 2104, the research firm Toluna reported that 72% of the public hated Google Glass, a wearable personal information assistant technology, due to privacy concerns based on its capacity for surveillance.² Multiple reports of Google Glass wearers being attacked for wearing the technology in public have made headlines across the United States since Google first launched its exploratory beta to select users in spring, 2013. But what is Google Glass, and why does it engender such emotion among those who both love and hate the technology? In this paper, we discuss the implications of wearable technologies like Google Glass that function as a tool for occupying, commodifying, and profiting from the biological, psychological, and emotional data of its wearers and, critically, from those who fall within its gaze. We also argue that Google Glass has a fundamental design flaw that privileges an imaginary of Whiteness and unbridled exploration and intrusion into the physical and emotional space of others. The dominant narrative of Google Glass, as evinced through its marketing strategy, posits its wearers as “Explorers,” a familiar colonial narrative. This disposition maps onto the current processes of radical gentrification and displacement in many San Francisco neighborhoods, and signals that power, Whiteness, and class elitism are core values in the Google Glass design imaginary. Glass’s recognizable esthetic and outward-facing camera has elicited intense emotional response, particularly when “exploration” has taken place in areas of San Francisco occupied by residents who were finding themselves priced out or evicted from their homes to make way for the techno-elite.

¹ As reported by Alistair Barr for the Wall Street Journal, <http://blogs.wsj.com/digits/2015/05/29/googles-moonshot-chief-says-early-version-of-glass-wasnt-ready/>.

² Matyszczyk (2014, April 8).

Google Glass is a head-mounted, wearable optical technology that promised users to “take pictures, record what you see hands-free, share what you see live, obtain directions, send messages, and ask whatever is on your mind.”³ With a series of Google and third-party applications, Google Glass promised to be a technology that would allow the wearer to scan images, and people, in the user’s line of sight and “Google them,” using the massive data power of Google search engine, to provide more information to the wearer about objects and people captured in the Google Glass gaze. Google marketed it as tool of freedom, with a powerful video depicting a series of experiences that can be captured “hands-free” to foster a greater sense of participation and power over one’s informational and geospatial environment than one can experience holding a smartphone (Figures 9.1 and 9.2).

Utopian discourses of freedom through technology are not new. Critical geography scholars have written extensively about how hierarchies of power are reproduced and enacted through digital technologies (Crampton & Krygier, 2006; Goss, 1995; Harvey, Kwan, & Pavlovskaya, 2005; Noble, 2011; Schuurman, 2000), and they point to the ways in which the informationalization and digitization of everyday life heightens control and surveillance, but also establishes digital enclosures (Andrejevic, 2007) with power-laden boundaries across race, gender, and class. Technological projects are never neutral (Pacey, 1983; Winner, 1986), and Google Glass is not a tool of freedom, despite its marketing discourse.

The most controversial aspect of Google Glass has been its outward-facing camera, allowing users to record things within their field of vision, which the camera then follows. Concerns have ranged from the potential theft of ATM passcodes by passersby wearing Glass, to the illegal infringements of Glass wearers recording copyrighted material in movie theaters, or the potential for cheating in Las Vegas casinos, which have banned wearers. Video resulting from all of these potential uses of the technology could easily be uploaded real-time or streamed to the Internet to be circulated, stored, and owned by Glass wearers, all without the consent of anyone within the gaze of Google Glass. Consistently, critics and news reports have largely leveled critiques at the product as an important site of the fight to resist to hypersurveillance and privacy concerns.⁴

³ See: “What it does,” GLASS, <http://perma.cc/Q5SH-BPWP>

⁴ See: Will Oremus, “‘Don’t be creepy’: Google Glass won’t allow face recognition,” SLATE (2013, June 3), <http://perma.cc/NE2E-QW92>.



Figure 9.1 The Google Glass interface, from the user perspective, as depicted in a Google Glass promotional video. Source: Why brands are already looking at Google Glass, and why Apple should be worried. AdWeek, 2013, February 20. <http://www.adweek.com/news/technology/why-brands-are-already-looking-google-glass-and-why-apple-should-be-worried-147435>.



Figure 9.2 Screenshot of a frame of “How it Feels [through Google Glass]” promotional video. Source: Why brands are already looking at Google Glass, and why Apple should be worried. AdWeek, 2013, February 20. <http://www.adweek.com/news/technology/why-brands-are-already-looking-google-glass-and-why-apple-should-be-worried-147435>.

UNEXAMINED OCCUPATION: SAN FRANCISCO AND THE CRYSTALLIZATION OF GLASS AND CLASS RAGE

Google Glass arrived at a time when Google, headquartered in Mountain View, California, had already incited people feeling the economic and emotional ramifications of the changing landscape of the San Francisco Bay area as the latest tech boom has pushed people out of affordable housing via evictions. Landlords across California, but particularly in San Francisco, have taken great advantage of the Ellis Act⁵ during the most recent techno-boom in housing, allowing them to clear all tenants out of their multiple unit dwellings, often rent-controlled, by claiming that landlord is “going out of business.” This strategy is typically used to convert apartment building into high-priced condominiums. In other cases, landlords cleared out buildings multiple times under the guise of “going out of business” to perpetually increase rents. These practices have made new and existing housing unaffordable for those residents not employed in high-paying sectors such the tech industries or finance. Indeed, Newsweek reported, “In 2005 ... after new technology companies like Google began attracting thousands of high-paid employees to the Bay, the number of Ellis evictions tripled. In 2013, Ellis evictions grew 175% from the year before” (Kloc, 2014).

Google, in particular, has received special ire not only because of perceptions of its presence being responsible for Ellis evictions, but also due to its ubiquitous fleet of luxury buses and their impact on life in the Bay Area. These coaches move San Franciscans who labor at its Mountain View corporate headquarters to and fro every day in private Wi-Fi-enabled, air-conditioned comfort. According to the Master’s thesis of City Planner Alexandra Goldman, rents at apartments near Google Bus stops rose 20% during a period where the average rent increase was 5%. Included in her evidence were Craigslist ads denoting the presence of the Google Bus stops as a perk for apartments located nearby. Apple, eBay, Twitter, Electronic Arts, Facebook, and Yahoo!, among others, also run private bus lines, which have been protested by local residents.⁶

Indeed, Google and many high-tech companies in Silicon Valley have directly contributed to gentrification in previously multiracial neighborhoods in the San Francisco Bay Area. A challenge of gentrification is that it brings new wine bars, vape shops, restaurants, and boutiques to areas that might previously have not had such high-end amenities. But, gentrification has always been a narrative of “improvement” that draws upon a mystique of transforming previously “uninhabitable” places into spaces that can be occupied. Like colonial projects of the past that seek an expansion into new territories and locales, despite there already being inhabitants of those spaces, gentrification is hailed as offering an improvement or reinvestment into neighborhoods that, when occupied by low-income people of color, were seen as not valuable or necessarily productive. As San Francisco is overrun with tech workers, the majority of whom are White and Asian men with lucrative salaries and stock options (Sullivan, 2014), the city

⁵ A detailed description and maps of San Francisco have been collected by anti-eviction activists at <http://www.antievictionmappingproject.net/ellis.html>.

⁶ See: “Protesters block Apple, Google buses in San Francisco area” by Alexei Oreskovic at <http://www.reuters.com/article/2013/12/21/us-techbus-protest-sanfrancisco- idUSBRE9BJ1BC20131221>.

is experiencing “hypergentrification,” a term coined by policy analysts who watched the millionaires produced at local tech giant, Twitter, buy up all the middle-income housing, displacing urban residents (Figure 9.3).⁷

While the private coach services do offer reduced greenhouse gas emissions versus all 4500 riders taking private vehicles, they have also monopolized local public transit bus stops in the MUNI system, initially without remuneration to the city (Goldman, 2013), and are part of a series of other notorious soft benefits at Google that appear egregious to those who do not work in similar tech industry settings.⁸ In short, the Google Bus and the Google employees it ferries back and forth to Silicon Valley have become highly visible symbols of class division in San Francisco. In response, locals have gone so far as to block buses from moving or stopping for pickups, and smashing bus windows.⁹



Figure 9.3 San Francisco activists protest private corporate buses’ use of local public

⁷ See: “Twitter will cause so much gentrification, they invented a new word” by Nitasha Tiku at <http://valleywag.gawker.com/twitter-will-cause-so-much-gentrification-they-invente-1447346147>.

⁸ Of course, these perks are designed, in large part, to keep Google employees working as long as possible; the bus transport with its Wi-Fi turns commuter time into work time. See more on Google perks here: <http://www.businessinsider.com/google-employee-favorite-perks-2013-3?op1/41>.

⁹ See: http://bits.blogs.nytimes.com/2013/12/20/google-bus-vandalized-duringprotest/?_php1/4true&_type1/4blogs&_r1/40.

transportation infrastructure, 2013 December. Source: <http://www.flickr.com/photos/cjmartin/11295749384>—Creative Commons license.

These tensions and negative emotions reflect the growing distrust between the discourses of Google as a company for everyday people, providing seemingly “free” services that improve the quality of our lives while asking for nothing in return. Jay McGregor, writing for *Forbes.com* said, “Google has suffered an image problem since it was accused of providing a backdoor to the National Security Administration (NSA) in Snowden’s documents. Since then it has gone on a campaign to slowly regain the public’s trust in carefully managed bursts of ‘honesty.’”¹⁰

The real-life contradictions, like selling the public out to the NSA, or gentrifying low-income neighborhoods of color, are where the imaginary of Google’s utopian benevolence are made most apparent. Likewise, Google Glass occupies a similarly visible and elitist cultural space: made available only through a limited beta program afforded to the wealthy and connected. While other Google products’ functions of data mining and usage tracking are undertaken on an individual user basis (e.g., in one’s own Gmail account), Google Glass is the visible manifestation of Google’s tracking turned outward onto others, just as Google buses are the outward demonstration of neighborhood occupation and urban colonization. In a rapidly gentrifying and increasingly economically stratified San Francisco, people have reacted with anger and insecurity when finding themselves the unwilling targets of Google Glass’s gaze. In this context, the Glass users have been received in San Francisco and cities like it not only as Glassholes, but as Classholes, too.

GOOGLE GLASS’S PANOPTIC GAZE: SURVEILLANCE AND EMOTION

Michel Foucault’s canonical *Discipline and Punish* (1977), with special emphasis on the notion of Panopticism, provides both a historical basis and an ongoing metaphor for understanding the development and normalization of surveillance, control, and the birth of a prison class; indeed, many digital media scholars have employed this metaphor to describe the nature of the contemporary surveillance state. In his treatment of discipline and punishment within the institution of the prison, Foucault provides evidence for the ways in which control and power were, in that context, mechanized, routinized, and formulated in terms of technological and organizational processes that could be reproduced (architecturally), extended (psychologically, within the prisoner’s psyche), and therefore made ubiquitous. The logical extent of this paradigm has been the dual development of the perpetual criminal/prison class, on the one hand, and the process of normalization of surveillance and permanent shifting of the power relationship in favor of the watcher, on the other.

¹⁰ See: “Good guy Google goes on love bombing initiative to win back public trust” by Jay McGregor at <http://www.forbes.com/sites/jaymcgregor/2014/06/05/good-guy-google-goes-on-love-bombing-initiative-to-win-back-public-trust/>.

In contemporary society, the latter has extended beyond the physical confines of the prison such that individuals frequently engage in surveillance—even self-surveillance—without even being aware of it. This process is now almost always enabled by digital technology and extends beyond surveillance cameras in places like shopping malls, street corners, and other public and private spaces alike (Crawford, 1992; Judd, 1995; Koskela, 2000; Shields, 1989) to include panoptic invasions of privacy through documentation (photographic and audio) of people in what might have been previously considered private experiences conducted in public spaces. The ubiquity of making the previously mundane and anonymous experience of living in public spaces is increasingly being diminished through multiple modes of surveillance, facilitated by Internet-based reproduction and dissemination. We see evidence of this in the rise of new social phenomena that include “selfies,” photography, viral videos (with and without the permission of those digitally recorded), and even in calls for body cameras to be put to use by law enforcement after extrajudicial killings of unarmed men, women, and children. Add to this list the constant self-surveillance and digital production of monitoring of one’s emotional and physical health through new technological devices like the Fitbit, the Apple Watch and its Health app, and myriad other similar devices that record, track, analyze, and share what was once considered personal data, or what was once not considered at all.

Foucault (1977) begins his discussion by describing the architecture of the physical Panopticon as envisioned by its creator, Jeremy Bentham. Bentham’s intent was to create a solution allowing for the surveillance and monitoring prisoners with a modicum of staffing and at reduced costs. But there were further benefits to the physical layout he proposed (center tower and cells located on the periphery of a circular building surrounding that tower, disallowing the occupant from seeing anything but the watchtower located in the middle of the space); the individual prisoner, in a Panopticon, “... is seen, but he does not see; he is the object of information, never a subject in communication” (p. 200). Further, Bentham’s Panopticon was intended to create a particular power structure, in which power (of the watcher/guard) would be both “... visible and unverifiable” (p. 201), creating in the prisoner the seemingly paradoxical, and certainly unnerving, sense of both being constantly watched and yet never being able to verify the watching. Because of this lack of verifiability, the prisoner would therefore be forced to assume that he was being watched at all times, and behave accordingly, becoming a party to his own surveillance and control in the process. Meanwhile, the role of the watcher, when filled, would be afforded both anonymity and the practical and efficient interchangeability of workers. This feature would result in the “... automatiz[ing] and disindividualiz[ing of] power” (p. 202) from those meting it out.

This technological intervention (Foucault describes it as a “machine” [p. 202]) disturbed the bidirectional relationship between the seer and the seen, and created a sense of constant, yet unverifiable, surveillance. At the same time, the eighteenth century gave rise to an entire prison class of “... people who were believed to be criminal and seditious as a whole,” (p. 275) coming primarily from the lower social classes (p. 275). There was therefore a symbiotic and circular relationship created among the less privileged social classes of imprisonment, surveillance, and control that was both borne of and reinforced their position in the lower social strata, and that encouraged, if not mandated, an

acquiescence to a paradigm of being watched and of, in turn, self-regulating under the ubiquitous potentiality of surveillance.

While the physical layout of the Panopticon prison has fallen out of favor in contemporary society, its notions and influence endure; although the architecture of the prison may no longer match Bentham's vision, the notions of control and power exerted on individuals through a constant potential for and expectation of surveillance is still key to behavioral management in prisons, as is isolation (a classic example would be the Special Housing Unit of California's notorious "SuperMax" prison, Pelican Bay, or the 43-year solitary confinement of former Black Panther Albert Woodfox in Angola, Louisiana). This practice of self-policing under a paradigm of potential and anonymized surveillance has expanded and spread into everyday life (e.g., the urban closed-caption TV cameras recording the movement and actions of people in the course of their daily lives), and is emblemized through projects like Google Glass, which is rarely framed as a panoptic project, but certainly engenders a similar class distinction as wearers become the watchers, and those without Glass become the watched.

Further, the exponential growth of a prison class made up of persons marked "by a series of brandings" (p. 272), for and by institutionalization and confinement by virtue of their social, racial, or ethnic class or status, lack of educational opportunity, and so on, continues unabated as notions of what can and should be criminalized grow wider and penalties for infractions increase. Panoptic power attempts to reduce emotional expressions and is a racialized, class, and gendered project. Those who are more likely imprisoned and victimized by the gaze of surveillance technologies are poor, often people of color, and women, and never is this more evident than in the ways that digital observations of "the other" are deployed in contemporary United States. Here we see these practices on full display with ever more people passing through the machine of the prison, more and more people therefore acculturated to its surveillance and control, and increasingly fewer people left untouched or outside of the regime of the prison and surveillance culture, able to see, respond to, and resist the demands of the anonymous gaze of Panoptic power.

In the case of Google Glass and facial recognition software, Google executives often argue in the media that these forms of surveillance are technically possible but would not be a feature of the product unless privacy concerns could be protected. But facial recognition technologies, for example, have previously been implemented by law enforcement agencies¹¹ for use in centralized neighborhood surveillance systems (Sarpur, 2014), such as cameras installed on telephone and streetlight poles, and these tend to be located in hypermarginalized, poor communities that are predominantly comprised of non-White people, in programs known by names such as "broken-window" policing (Wilson & Kelling, 1982). Sarpur (2014) documents how government agencies have also relied upon facial recognition and video surveillance systems in border patrols and crossings like the United States Visitor and Immigrant Status Indicator Technology (US-

¹¹ See: Kevin Bonsor and Ryan Johnson, "How facial recognition systems work," *Howstuff-works*, <http://perma.cc/RB53-YF28>.

VISIT) program, or in “voter fraud” projects to screen people out of voter participation. Each of these deployments is primarily targeted by police on Black and Latino bodies in their engagements with the state through border crossing or voting.

Although Google has stated that it would reject facial recognition apps, Sarpu has brought attention to the third party applications, or “Glassware,” that can be installed on Google Glass devices, rendering the company’s declaration that it will not load facial recognition technology in the standard out-of-the-box product¹² mostly irrelevant. This then, is the context within which we analyze Google Glass, and the attendant responses by various members of the public and tech community to reject the project, although these rejections have focused less on racial and class dimensions of surveillance. Yet undeniably, Google Glass has been deployed as a project in service of power elites (those less affected by hypersurveillance), yet the consequences of normalizing the loss of privacy via heightened surveillance, the differing consequences of surveillance on people dependent on race, socio-economic status, and other identity-related factors, and the inability for all to equally access technologies like Glass lead to a disregard for the types of harm that are disproportionately impacting poor people, people of color, and women. These issues should be of paramount concern as the product is being refashioned for greater public acceptance.

EMOTION AND RESISTANCE: THE EMERGENCE OF THE “GLASSHOLE” AND PUBLIC PUSHBACK TO GOOGLE GLASS

A crucial concern about wearers of Google Glass has been the intrusion upon others who do not want to be recorded without their knowledge and permission by its wearers. In many cases, the public has responded, popularly terming those who show up in public spaces wearing the technology as “assholes” who wear Glass, or “Glassholes.” In some cases, the hostility is based on the arguments made by privacy advocates that Glass applications, allow their users to scan, tag, and link people without their knowledge to anything on the Internet (Miller, 2013; Sarpu, 2014), or even record and disseminate private conversations over the web. Other reasons for backlash also include people’s affective response to being targeted by the gaze of an elitist technology not available to all. Whatever the motivation, resistance to Glass has led to various public displays of backlash that have included the banning of the technology from businesses, including restaurants and movie theaters. Artist Julian Oliver created the “Glasshole Free” logo and software¹³ as a free download that can run on a mini-computer like the Raspberry Pi to help establishments communicate disapproval and even emit an alarm to alert the presence of Google Glass nearby (Greenberg, 2014). In addition, the “Google Glass is Banned from these Premises” campaign developed a free script, Aircrack-NG, which can be used to kick Glass wearers off the Wi-Fi network (Figure 9.4).

¹² See: Eric Larson, “Google glass won’t have facial recognition apps yet,” Mashable (2013 June 1), <http://perma.cc/QA65-Y43D>.

¹³ See: http://julianoliver.com/output/log_2014-05-30_20-52.



Google Glass Is Banned On These Premises

stopthecyborgs.org © 2014

Figure 9.4 “Don’t be a Glasshole” project. Source: Julian Oliver.

Google Glass violence has erupted in Seattle, San Francisco, and Paris, with wearers subjected to physical beatings, such as the case of the Professor Steve Mann, the “father of Wearable Computing”¹⁴ from the University of Toronto, who was reportedly physically accosted and thrown out of a McDonald’s in Paris for wearing a Google Glass-like wearable recording device of his own making while on vacation.¹⁵ Mann, a legendary computer engineer, has been working on an augmented reality Digital Eye Glass through his wearable projects that predate Google Glass by nearly 30 years. Mann’s work at the MIT Media Lab, and the founding of the MIT Wearable Computing Project, has been focused on developing what he has coined, “sousveillance,”¹⁶ (Mann, Nolan, & Wellman, 2003), which is making video surveillance a part of the everyday human experience in which all can participate. Mann has intended his sousveillance projects as a mechanism to democratize surveillance, making it accessible to those without the authority to survey from on high. Yet projects like Google Glass, and Mann’s digital eyewear and devices are both far from embraced in the public imaginary, and likely with good reason: these wearables, with their heightened capacity for external surveillance of others, provoke a sense of ambiguity about their use and purpose, and a discomfort with the lack of control that individuals have over those aiming their always-on lenses at them.

Sarpu (2014) has thoroughly detailed the history of privacy protections in the United States through key legal decisions that include a right to anonymity¹⁷ as a fundamental

¹⁴ See: <http://wearcam.org/biowaw.htm>

¹⁵ See: <http://www.forbes.com/sites/andygreenberg/2012/07/17/cyborg-discrimination-scientist-says-mcdonalds-staff-tried-to-pull-off-his-google-glass-like-eyepiece-then-threw-him-out/>.

¹⁶ See: <http://en.wikipedia.org/wiki/Sousveillance>.

¹⁷ See: Daniel J. Solove, *The Future of Reputation: Gossip, Rumor, and Privacy on the Internet* (Yale

aspect of the right to political dissent. Beyond the import of privacy as a protection and the ways in which, at one time for example, Kodak's instant photography was legally ruled to be an invasion of privacy,¹⁸ is the previous legal tendency to protect the public from undue intrusion in the private sphere of life. Ultimately, legal scholars have argued that individuals in the public have “the right to be let alone” and protected from technological encroachment on their private lives, with the exception of those “who ... have renounced the right to live their lives screened from public observation,”¹⁹ (Sarpur, 2014), which generally means, in this contemporary moment, celebrities, politicians, and others who choose a public life—a public life of their choosing, or those who engage in private activity in public spaces. Invasions of privacy are also not protected for those engaging in newsworthy or notable activity that to preclude it from the public would be against the public interest, which Sarpur notes has consistently been upheld by the Supreme Court. Over time, the public has lost considerable ground in the right to privacy in public spaces, and this is an essential feature of the Google paradigm, as often quoted by Google executives who consistently argue that if one has nothing to hide, there should be no concerns about being publicly surveyed.

The “nothing to hide” position, however, is flawed on multiple levels, as noted legal scholar Daniel Solove (2007) has effectively argued. Google's CEO, Eric Schmidt, is famous for saying, “If you have something that you don't want anyone to know, maybe you shouldn't be doing it in the first place”²⁰ as a way of undermining the many individuals who have levied complaints about how they are misrepresented by Google. Noble (2013a) has also brought attention to the ways in which the public, particularly marginalized groups like women and girls of color, are unable to effect any change in the ways in which they are misrepresented and sexually objectified in Google's search engine results. This is due, in part, because the public is generally unaware of the ways in which search results appear in Google, and they have little understanding of the multiple layers of bias, curation, and content moderation that are deployed to keep some kinds of information open and available in digital media platforms. It is also not widely understood that content moderation practices often work in the service of large corporations, with little regard for the impact on individuals, as Roberts (2016) has extensively researched. Google has effectively worked to convince the public that issues like invasion of privacy and inaccurate information in its search engine results would not be a problem for anyone unless they are doing something that they would need to hide. In fact, with few exceptions like the public backlash against Google Glass, Google is erroneously seen as a public good (Vaidhyanathan, 2011). Solove has often disputed Google executives' position by denaturalizing the notion that privacy should be of no concern to those who do no wrong. Solove rhetorically engages critics who argue that

University Press, London, 2007), pp. 139–140.

¹⁸ See: Samuel D. Warren and Louis D. Brandeis, “The right to privacy,” 4HARV.L.REV.193 (1890).

¹⁹ See footnote 18.

²⁰ See: <http://www.onthemediamedia.org/story/260644-if-youve-got-nothing-hide-youve-got-nothing-fear/>.

Google and the proliferation of information about us on the Internet is not invading our privacy with a series of questions that underscore the importance of privacy:

So my response to the “If you have nothing to hide ...” argument is simply, I don't need to justify my position. You need to justify yours. Come back with a warrant. I don't have anything to hide. But I don't have anything I feel like showing you, either. If you have nothing to hide, then you don't have a life. Show me yours and I'll show you mine. It's not about having anything to hide, it's about things not being anyone else's business. Bottom line, Joe Stalin would [have] loved it. Why should anyone have to say more?

(Solove, 2011)

Solove's key points focus on protecting the rights of the public and individuals from a reframing of privacy that desensitizes us from recognizing how important privacy is to our quality of life, and to our ability to ensure a democracy free from governmental surveillance.

Surveillance, of course, is largely misunderstood when it comes to Google and its role as privatized information gatherer for the United States government. Nafeez Ahmed recently wrote a two-part investigative journalism piece for medium.com in which he details the ways in which Google emerged as a project funded by the Central Intelligence Agency.²¹ The role of Google as an arm of the state in privatizing and monitoring public information through the data mining of users in its products like Gmail, Maps, and search history, is problematic due to its embedded relationship with the NSA. Ahmed is one of many raising legitimate concerns for the public about Google's private and secret relationship with the NSA, which is only on the periphery of public emotion and outcry against the corporation. Ahmed opens the second part of his expose' on Google with the following:

Mass surveillance is about control. Its promulgators may well claim, and even believe, that it is about control for the greater good, a control that is needed to keep a cap on disorder, to be fully vigilant to the next threat. But in a context of rampant political corruption, widening economic inequalities, and escalating resource stress due to climate change and energy volatility, mass surveillance can become a tool of power to merely perpetuate itself, at the public's expense

(Ahmed, 2015)

What is most crucial about Ahmed's detailing of the corporate sector's increasing influence on the normalization of mass surveillance, which includes the socialization of the public to engage in panoptic behavior, is that it is the only constitutional and legal way to circumvent laws that protect the public from illegal surveillance. On the heels of evidence provided by former government contractor Edward Snowden about the unparalleled mass surveillance program of the United States government against its own

²¹ See: “Why Google made the NSA: Inside the secret network behind mass surveillance, endless war, and Skynet” at <https://medium.com/insurge-intelligence/why-google-made-the-nsa-2a80584c9c1>.

citizens, public outrage is far less visible, particularly in comparison to the public reaction to Google Glass. Using techniques such as privatization, contracting, and deregulation, corporate contractors have taken on the process of creating, managing, storing, and disseminating (or hiding, in some cases) vast amounts of information. Indeed, the recent “Top Secret” report in the *Washington Post*²² reveals that there are now over 2000 private firms engaged in data analysis for the purposes of national security alone, with little, if any, public redress available to learn more or understand what these firms do.

The foreshadowing of these threats to democracy was articulated by Herbert Schiller in his 1996 work, *Information Inequalities*, which focused on the great shift in power and control from state to private actors, resulting in a massive consolidation of power in the corporate sector, particularly over the control and dissemination of communication and information. Nearly 20 years old, this essay draws out the peculiarity of this new power structure and highlights the disturbing characteristics of that shift, including the crystallization of the already-underway processes (in the United States and, by extension, abroad, wherever the transnational influence of these companies reaches) such media conglomeration, leaving important informational functions, vital to a vibrant democracy, in the hands of a relatively elite few with considerable neoliberal agendas of their own.

The results of the shift from state to private hands have immense and critically important ramifications, Schiller convincingly argues. One major arena of this transformation occurs in the context of an increase in the technologically facilitated disappearance of some information (such as the case of that at the federal level in the context of changing administrations), and the lack of transparency and accountability under new privatized paradigms where private corporations stand in for the government/state.

Adding to the complexity, corporations are afforded protections as individuals, and work to promote a sense of their marketing and communications and individual self-expression. Attempts at control or censorship of individual expression were once seen as only possible by the state, leaving corporations unencumbered from the burdened perception that they have any power or ability to intrude upon the individual. “Where once there was justified fear of government control and censorship of speech, today there is a new form of censorship, structurally pervasive, grounded in private concentrated control of the media, and generally undetectable in a direct and personal sense” (Schiller, 1996, p. 45). Schiller elaborates on the ways in which, “Corporate speech has become the dominant discourse ... While the corporate voice booms across the land, individual expression, at best, trickles through tiny constricted public circuits. This has allowed the effective right to free speech to be transferred from individuals to billion dollar companies which, in effect, monopolize public communication” (p. 45). Schiller, as the environment in which the national information infrastructure has been eroded, cites privatization, deregulation, and the expansion of market relationships. It is in this context that new digital devices, including technologies of surveillance, are being designed and normalized in the interests of corporate profits over public interests, and the erosion of rights, like that of privacy,

²² See: “Top secret America: A Washington Post investigation” at <http://projects.washingtonpost.com/top-secret-america/>.

are fomented.

We argue that the most impactful and wide-reaching of these intrusive corporate projects include the products and services of Google, whose products are designed and predicated upon the ability to maximize data collection on its users through acculturating technologies like Gmail, the Android platform, and a host of automated and wearable technologies of the future.

WEARABLE CONTROL

With your permission you give [Google] more information about you, about your friends, and [Google] can improve the quality of searches. [Google doesn't] need you to type at all. We know where you are. We know where you've been. We can more or less know what you're thinking about. —Eric Schmidt, former Google CEO²³

In May 2013, the United States congressional members of the Bi-Partisan Privacy Caucus met to explore privacy concerns for the public, particularly with facial recognition software that could be used in Google Glass. The congressional committee issued a letter to Larry Page, CEO of Google, inquiring about the privacy implications of the project, and posing several questions to the company, the first of which reflected the general sentiments of the committee:

In 2010, it was discovered that Google was collecting information across the globe from unencrypted wireless networks.²⁴ This practice caused multiple investigations into the company along with consumers left perplexed.²⁵ Google just recently agreed to pay \$7 million to settle charges with 38 states for the collection of data from unprotected Wi-Fi networks without permission.²⁶ Google also admitted that they did not adequately protect the privacy of consumers and "tightened up" their systems to address the issue.²⁷ While we are thankful that Google acknowledged that there was an issue and took responsible measures to address it, we would like to know how Google plans to prevent Google Glass from unintentionally collecting data about the user/non-user without consent?

By the time the subcommittee had responded, it was in the context of a series of criticisms and clarifications that legal scholars like Schwartz and Solove were already making about the importance of understanding how privacy should be understood and framed within societies increasingly dominated by surveillance technologies, which included everything from Google Glass to drones, and educational privacy in student data collection (Shwartz & Solove, 2012; Solove, 2011). Their memorandum regarding

²³ See: Derek Thompson, Google's CEO: "The laws are written by lobbyists," The Atlantic (2010, October 1), <http://perma.cc/A3PN-3XFT>.

²⁴ A. Schatz and A. Efrati (2010, November 2). FCC investigating Google data collection. Wall Street Journal. <http://www.wsj.com/articles/SB10001424052748704804504575606831614327598>

²⁵ See footnote 24.

²⁶ B. Sasso. "Google pays \$7 million to settle Wi-Fi snooping charges," The Hill (2013, March 12), <http://perma.cc/KS6U-KE8W>

²⁷ See footnote 26.

privacy and American Law Institute projects²⁸ specifically addressed the intentional emotional harm and impact of those affected by invasions of privacy. By the writing of this chapter, U.S. law has not caught up with the rapid proliferation of surveillance technologies, as the lines between emotional harm as a result of invasions of privacy through social media and Internet reproduction and distribution of photos, videos, and information and the loss of rights to privacy in public continue to blur.

ANALYZING CLASS THROUGH GLASS

Unlike Google’s characteristic approach to launching products for “free” or inexpensively, Sergey Brin, one of Google’s founders, engaged a formula directly out of the tastemaker product launch playbook for high-end goods: he seeded Glass with the White American social and cultural elite. Google’s marketing team developed a Google Glass Explorers program that allowed the public to test the product and provide feedback to the design team for \$1500. At that price point, only those with the disposable income or adequate resources were able to become Glass Explorers. As a result of its price for participation, Google Glass was marketed as a high-end luxury item, its arrival showcased on the runway at a New York Fashion Week launch by designer Diane von Furstenberg (Figure 9.5).



Figure 9.5 From left, Sergey Brin, cofounder of Google; Diane von Furstenberg, an early adopter of Google Glass, and Yvan Mispelaere. Credit: Frazer Harrison/Getty Images for Mercedes-Benz. Source: New York Times.

The blogosphere responded to Google Glass with *White Men Wearing Google Glass*, a Tumblr dedicated to joking about another technology development serving the interests of white men (Figure 9.6).

The commentary, as evinced in its photo posting of Prince Charles of Great Britain wearing Glass along with the caption, “In its favor, if Google Glass didn’t exist, all these

²⁸ See:

https://law.duke.edu/sites/default/files/images/centers/judicialstudies/Reworking_Info_Privacy_Law.pdf.

Silicon Valley guys would be having affairs or buying unsuitable motorbikes,” could be a dig at Google executives who both have had very public affairs and divorces (Bilton, 2015) and are experimenting



Figure 9.6 Prince Charles of Great Britain wearing Google Glass. Source: <http://whitemenwearinggoogleglass.tumblr.com/>.

with things like autonomous motorcycles.²⁹ But the context of “Google Glass on White Men” is situated by the ways in which surveillance technologies are rooted in celebration the freedoms afforded White Americans, and the ultimate role that surveillance technologies have provided in the protection of property for the wealthy (Blakely & Snyder, 1997; Flusty, 1994) who have historically been, and contemporarily are, White men. The normalization of surveillance of “the other” by White Americans, in particular, is a product of the ways in which White property, White interests, and even Whiteness itself, can and should be protected at all costs (Harris, 1995). Surveillance technologies like Google Glass, on the faces of White men in the case of the Tumblr, are illustrative of the ways in which Whiteness and panoptic control over “the other” are not only normalized, but celebrated uncritically in popular culture and in the launch of the product to the public.

SURVEYING EMOTIONS AND SPACE THROUGH DESIGN

While tremendous attention has been focused on facial recognition and surveillance, a small company called Emotient.com has developed a Google Glass application that captures users’ emotions and relays them back to advertisers in real-time.³⁰ Emotient’s

²⁹ E. Ackerman, “Google wants option to test autonomous motorcycles and trucks in California,” <http://spectrum.ieee.org/cars-that-think/transportation/self-driving/google-autonomous-motorcycles-and-trucks-in-california>.

³⁰ See: <http://www.fastcompany.com/3027342/fast-feed/this-google-glass-app-will-detect-your-emotions-then-relay-them-back-to-retailers>.

software scans changes in facial expressions and mood, with the goal of helping retailers understand how consumers are responding to new campaigns and offers. The company alleges that through emotion tracking it can help medical practitioners intervene sooner and save money and time in protracted medical recovery from surgeries due to mental health crises like depression. But investment in emotion-recognition software is about refining advertising impact, and given Google's current profit model and status as the world's largest advertising agency, it is logical to read Google's investment in Emotient.com as directly related to their ability to better serve up ads to consumers, particularly through software that can better improve its click-through rates (Nissenbaum and Introna, 2004; Noble, 2013b).³¹ But what are the ethics of commodifying consumer emotions? Currently, Emotient says it aggregates users' data and anonymizes it before communicating back to its advertiser clients and so there are no privacy issues for individual users.³²

The politics and ethics of commodification of biodata, which we argue includes emotion-recognition, has become an important consideration to digital media and information scholars. Bronwyn Parry's (2004) research on the convergence of technical, social, and regulatory interests governing trade and speculation on biodata is an extensive analysis of the ways that surveillance is manifest at the level of genes and other biomarkers. Concerns over the politics of biodata have been raised in new lawsuits over the ownership of embryonic cells and reproductive matter, including the emergence of markets for genetically designed babies (Roberts, 2011). In the United States, the National Science and Technology Council established a subcommittee to investigate protections for the public in the collection of biodata, which is largely considered to be very private data, or "Personally Identifiable Information" that is legally protected and carries criminal penalties for infringements (Sarpur, 2014). Biodata is a complicated new frontier of data collection and surveillance, however, on the Internet. In this realm, legal protections with regard to the use of bioidentity markers are murky. As new products are flooding the marketplace—from the aforementioned Fitbit³³ exercise monitors and Apple Watch, to medical devices. Google Glass was, and is, uniquely positioned to benefit from the commodification of biodata through its vertical and horizontal business partnerships that are perfecting emotional and biodata surveillance as a site for the expansion of capital. Users are beginning to recognize these intrusions, particularly in the use of facial recognition software used by companies like Google and Facebook, and are unhappy and responding negatively to what they perceive as invasions of privacy (Aguado, 2012; Sarpur, 2014).

Understanding emotionality, however, in the context of the design of surveillance technologies requires a nuanced reading of space, both real and imagined. Space and

³¹ Google's advertising program, AdWords, generates profits for the company by encouraging consumers to click on ads, or websites that appear to be informational, even when they are advertisements. It also serves up ads and links that are part of their vertical and horizontal business holdings, which is known as Google Bias.

³² See footnote 31.

³³ <https://www.fitbit.com>.

spatiality of life has been theorized as an important site of social life and conflict (Harvey, 1973; Koskela, 2000; Lefebvre, 1991; Massey, 1994; Rose, 1993; Soja, 1996). Koskela (2000) has extensively theorized the ways in which surveillance is changing the nature of space, understandings of private versus public space, and its contestations, which she characterizes in three distinct and overlapping ways: space as a container, power-space, and emotional space). Although her work is primarily focused on surveillance cameras in public spaces, rather than on individual wearers of technologies like Google Glass, her insights about the design of these artifacts are important and relevant:

What is characteristic of surveillance design is its paradoxicality: forms are at the same time transparent and opaque. While everything (and everyone) under surveillance is becoming more visible, the forces (and potential helpers) behind this surveillance are becoming less so.

(Koskela, 2000, p. 250)

On the one hand, the design of wearable technologies like Glass is made completely visible, on the face of the user; but paradoxically, it is the unknown ways in which the Google gaze is enveloping everything and everyone in its line of sight, and in service of what, and for whom, at what cost? Google's fundamental business model is based on commodifying the gaze, or "pay-per-gaze" advertising (Sorg, 2013). Space, then, and the lack of an ability to defend it from encroachment, is a social construct that is laden with power relations—a concept similarly embraced by information and technology scholars who argue that technological spaces, like cyberspace, as socially constructed and exist in service of White male power (Brock, 2011, 2009; Daniels, 2012; Kendall, 2002; Kettrey & Laster, 2014; Noble, 2013a).

Who is contained in the surveyed space is important, and technology is rapidly shifting the landscape, prompting greater need to understand how power is exercised through the defining and erosions of space through racialized and gendered practices. For example, those who often control surveillance policy and technology design are men, and, through gendered labor, the interests and concerns of women are often excluded. This is apparent in practices like revenge porn,³⁴ and the ways that explicit footage of women has been taken without consent in restrooms, changing rooms, topless beaches where women are significantly more likely to be sexually surveyed as objects of a male photographic or video gaze (Koskela, 2000). Wajcman (1991) extensively discusses the "masculine culture" of technological practices and designs, and details the ways that technologies work to the benefit of men, and how gendered power relations are often reproduced through technological practices.

Surveillance is fundamentally intertwined with emotion. Koskela (2000) emphasizes the ways in which power and emotions are inevitably enmeshed, and how emotional space "is a space 'below the threshold at which visibility begins'" (de Certeau, 1984, p. 93, quoted in Gregory, 1994, p. 301). She writes, "the variety of feelings surveillance evokes

³⁴ See: Dr. Mary Anne Franks, "Criminalizing revenge porn: a quick guide" at <http://www.endrevengeporn.org/guide-to-legislation/>.

is enormous: those being watched may feel guilty for no reason, embarrassed or uneasy, irritated or angry, or fearful; they may also feel secure and safe” (Koskela, 2000, p. 257). Because emotionality is often a feminized concept (Rose, 1993), it is generally disregarded in the realm of technology’s masculine culture, thus, as Koskela argues, emotion is an undervalued experience. In many ways, it is those who are more likely to be surveyed who are responding with intense emotion to projects like Google Glass, because the social experience of being seen and watched, or recognized and searched through a search engine in real-time, renders people more vulnerable than the watcher.

CONCLUSION: THE FUTURE OF GLASS

The brief life of Google Glass eventually ended with the retirement of the project after resounding public backlash, although Google Glass 2.0 is currently under development and scheduled for a potential rerelease in the next year.³⁵ Eyewear giant Luxottica recently announced to its shareholders that the project is reemerging as a more fashionable product that consumers will enjoy.³⁶ The Wall Street Journal reported, “Glass chief Ivy Ross in January said the updated gadget will be cheaper and have longer battery life, improved sound quality, and a better display. Google is also trying to tackle the social stigma of Glass by pairing the device with more familiar types of eyewear.”³⁷ In many ways, Glass is an important technological artifact that underscores the important interplay between emotions, technology, and design. The company is taking on these challenges in order to redeploy.

Unlike many of its previous sociotechnical triumphs, Google Glass was not a resounding success for the company. Rather than propel the product, its exclusivity actually seemed to contribute to hostilities that non-Glass users visited upon those who wore the technology in public. The non-Glass public rejected Glass both on the grounds of its technological (read: surveillance) capabilities, and their lack of power to control how Glass was being used upon them, as well as on larger social grounds, based on the class divisions that Google Glass came to represent in already highly stratified areas such as San Francisco and Seattle, two cities where the economic gulf between technology haves and have-nots only seems to continue to grow.

In the field of robotics (among others), the notion of the “Uncanny Valley” describes the point at which a human’s positive emotional response to a robotic entity (Mori, 2012) dissipates once the humanness of that entity surpasses a certain point of likeness.³⁸ In

³⁵ See: “Google Glass lives! version two coming soon” by Eric Mack.
<http://www.forbes.com/sites/ericmack/2015/04/24/google-glass-version-2-0-coming-soon-says-eyewear-giant-luxottica/>.

³⁶ See footnote 35.

³⁷ See: “Italian eyewear maker Luxottica working on new version of Google Glass, CEO Says” by Manuela Mesco at: <http://blogs.wsj.com/digits/2015/04/24/italian-eyewear-maker-luxottica-working-on-new-version-of-google-glass-ceo-says/>.

³⁸ See: English translated article and interview with Mori at:
<http://spectrum.ieee.org/autoton/robotics/humanoids/the-uncanny-valley>.

other words, human positive affect dips precipitously (the “valley” in question) once the robotic entity becomes too human. The Uncanny Valley concept, therefore, has huge implications for technological design. Perhaps the Google Glass experiment has discovered a new sort of Uncanny Valley, this time, in relation to wearable technology and our own comfort with self- and external technosurveillance. At a time when countless scholars and critics have questioned at what point people would resist the mass trade-off of personal information autonomy for the technological convenience and romance of sophisticated gadgetry, Google Glass seemed to have found itself in that very precipitous dip, the site at which the public rejected its convenience and techno thrills—vociferously and, sometimes, even violently.

Importantly, in the case of Glass, the gaze of the machine was turned toward those who were not Glass-enabled. Does the Uncanny Valley for wearables find its tipping point where the surveillance of the device turns outward? How would Glass have been received had its camera and general, highly distinctive design been less obvious to those within its gaze (see Luxottica’s project as described above)? Or was the limited rollout of Glass into markets that were already engaged in deep economic and class-based rifts (due in no small part to the effect of technohubs on the cities nearby), part of its demise? Very few trade and popular press articles have focused on the failure of Glass along these dimensions, and yet the surveillance and class-based aspects of Google Glass are fundamental to an accurate rendering of the product’s trajectory and the public’s emotional response to this product. In this chapter, we offer this alternate view: one which foregrounds dimensions of surveillance and economics, class and resistance, in the face of unending rollouts of new wearable products designed to integrate seamlessly with everyday life—for those, of course, who can afford them. Ultimately, we believe more nuanced, intersectional analyses of power along race, class, and gender must be at the forefront of future research on wearable technologies. Our goal is to raise important critiques of the commodification of emotions, and the expansion of the surveillance state vis-à-vis Google’s increasing and unrivaled information empire, the longstanding social costs of which have yet to be fully articulated.

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