1 "We Make Them Dance": Surveillance Capitalism, the Rise of Instrumentarian Power, and the Threat to Human Rights

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What Just Happened?

A 2002 review of "wireless telemedicine" stressed the value of home health monitoring for the elderly and the expansion of health services in remote areas. A diagram of the proposed digital architecture for such services featured only three parties: a closed loop that exclusively linked a person at home, her hospital's servers, and her physician (Pattichis et al. 2002, 143–153). Digitalized information about one's body was imagined as deeply "mine": an inalienable extension of self with which one could choose to enrich already close relationships, such as those between a patient and a trusted doctor or elderly parents and their adult children. In just a few years, however, those 2002 schematics faded like an old daguerreotype.

Many studies of health monitoring continue to emphasize its utility for the elderly and other forms of remote care, but the conversation has decisively moved on from its earlier state of grace. Researchers anticipate the fusion of "smart cities" and what's now called "m-health" to produce "smart health," defined as "the provision of health services by using the context-aware network and sensing infrastructure of smart cities" (Solanas et al. 2014, 74–81). Toward that end, there are now reliable sensors for rendering an increasing range of physiological processes as behavioral data, including body temperature, heart rate, brain activity, muscle motion, blood pressure, sweat rate, energy expenditure, and body and limb motion (Intille et al. 2012, 24–31; Mukhopadhyay 2015, 1321–1330). There are sensors that can render audio, visual, and physiological data during postsurgical patient recovery and rehabilitation (Castillejo et al. 2013, 38–49). A flexible, sensored textile patch has been developed that can render breathing,

hand movements, swallowing, and walking as behavioral data (Cheng et al. 2013, 3935–3947). In other applications, "wearable micromachined sensors" provide "accurate biomechanical analysis" as you walk or run, and a "body area network" records and analyzes walking and running "under extreme conditions" (De Rossi and Veltink 2010, 37–43).

These rich data can no longer be imagined as cloistered within the intimate closed loops of family and physician or even an application and its dieters or runners. By 2016, there were more than 100,000 mobile health apps available on the Google Android and Apple iOS platforms, double the number in 2014 (Addonizio 2016). A legal review of mobile health apps concludes that most of them "take the consumers' private information and data without the consumers' permission and . . . do not generally disclose to the user that this information will be sent to advertising companies" (Dehling et al. 2015, 1–26). These conclusions are borne out by a long queue of studies.

One in-depth investigation focused on the collection, processing, and usage activities associated with nine prominent fitness trackers (Hilts et al. 2016). All but two apps transmitted every logged fitness event to the company's servers, which enabled backup and sharing with one's friends but also "data analytics" and distribution to third parties. Among many disturbing findings was the fact that some of the trackers transmitted device identification numbers; others passively and continuously transmitted the user's precise longitude and latitude coordinates. These identifiers "could link fitness and biographical data to a single mobile phone hardware, or single specific fitness wearable. . . ." None of this sensitive information was necessary for the tracker to operate effectively, and most of the privacy policies were opaque at best and allowed data to be "sold or exchanged with third parties." The researchers concluded, "We discovered severe security vulnerabilities, incredibly sensitive geolocation transmissions that serve no apparent benefit to the end user, and . . . policies leaving the door open for the sale of users' fitness data to third parties without express consent of the users."

A comprehensive study of Android-based diabetes apps published in the *Journal of American Medicine* notes that while the US Food and Drug Administration approved the prescription of a range of apps that transmit sensitive health data, the behind-the-scenes practices of these apps are "*understudied*" (italics mine; Blenner et al. 2016, 1051–1052). Researchers examined

211 diabetes apps and randomly sampled 65 of them for close analysis of data-transmission practices. In some of these apps, merely downloading the software automatically "authorized collection and modification of sensitive information." They identified many backstage operations, including apps that modify or delete your information (64 percent), read your phone status and identity (31 percent), gather location data (27 percent), view your Wi-Fi connections (12 percent), and activate your camera in order to access your photos and videos (11 percent). Between 4 and 6 percent of the apps went even further: reading your contact lists, calling phone numbers found in your device, modifying your contacts, reading your call log, and activating your microphone to record your speech.

The research team concluded that privacy policies do not matter. Of the 211 apps in the group, 81 percent did not have privacy policies, but for those that did, "not all of the provisions actually protected privacy." Of those apps *without* privacy policies, 76 percent shared sensitive information with third parties, and of those *with* privacy policies, 79 percent shared your data while only about half admitted doing so in their published disclosures. Indeed, these discoveries suggest that the very notion of a "privacy policy' has become a dangerous euphemism, when such statements are better understood as "surveillance policies."

The coda here is simple: *Once I was mine. Now I am theirs*. In 2002, intimate health and body information was assumed to be the possession of the experiencing *subject*. Now, the same information is assumed to be the possession of the owners of the means by which it is produced. The experiencing subject is transformed into a data *object*. This transformation reflects what might be thought of as a journey through the ontologies, economics, and politics of possession, alerting us to the qualities of existence and power that attend self-possession in contrast to dispossession. The journey from one to the other is not restricted to body information but rather illustrates a pattern that now engulfs every aspect of human experience. We must therefore ask, what is it that determines these states of possession? What happened between 2002 and 2018 to decisively transform the ontological, economic, and political structures of these information flows? This question is aimed at the early twenty-first century, but it is clarified in a useful way with a quick backward glance.

"We've stumbled along for a while, trying to run a new civilization in old ways, but we've got to start to make this world over." It was 1912 when

Thomas Edison laid out his vision for a new industrial civilization in a letter to Henry Ford. Edison worried that industrialism's potential to serve the progress of humanity would be thwarted by the stubborn power of the robber barons and the monopolist economics that ruled their kingdoms. He decried the "wastefulness" and "cruelty" of US capitalism: "Our production, our factory laws, our charities, our relations between capital and labor, our distribution—all wrong, out of gear" (Nevins 1954, 532). Both Edison and Ford understood that the modern industrial civilization for which they harbored such hope was careening toward a darkness marked by industrial enslavement and grinding poverty for the many and prosperity for the very few.

The two quintessentially American inventors agreed that the moral life of industrial civilization would be shaped by the practices of capitalism that rose to dominance in their time and the unbridled power that such practices enjoyed, largely unimpeded by law, regulation, or jurisprudence. They believed that US society, and eventually the world, would have to fashion a new, more rational capitalism in order to avert a future of misery and conflict. A new century had dawned, but the evolution of capitalism, like the churning of civilizations, did not obey the calendar or the clock. It was 1912, and still the nineteenth century's Gilded Age refused to relinquish its claim on the twentieth.

The same can be said of our time. Once more we look to the great structural transformations of the market economy and its novel realizations of capitalism to define our era, and once more we see their promise occluded by the emergence of a new quality of economic power whose effects are revealed in a new kind of enslavement. What happened in the years between 2002 and 2018 was the emergence of a new *surveillance capitalism*, whose mechanisms and operations are only imaginable within the digital milieu (Zuboff 2014, 2015, 2016). Surveillance capitalism produces a new species of economic power that I call *instrumentarianism*. Together, the new capitalism and its unique production of power are as untamed by law as were the capitalism and economic power of the Gilded Age, and they are just as dangerous. Despite the many splendors of the digital milieu, surveillance capitalism and instrumentarian power now inscribe our lives with their unique signature of havoc, challenging human rights in ways that we did not predict and could not anticipate. Many old inequalities are deepened, while wholly new axes of exclusion and domination threaten every

unprotected dimension of human experience. Earlier contests over political rights are renewed, elemental human rights are abrogated, and even the "right to have rights" is under siege (Arendt 2004).

Indeed, when it comes to the digital future and its consequences for human rights, a single point demands our attention: The challenges to human rights that we encounter in the digital era cannot be circumscribed by a specific technology or company, though they may be expressed in technological assemblies, such as algorithms and platforms, or in the practices of a single corporation. Rather, the challenges we face originate in the rapid evolution of *a new economic order* in which wealth is largely derived from surveillance—specifically, *the unilateral dispossession of human experience for the sake of others' profit.* As was the case in the twentieth century, this new economic order seeks to fashion in its likeness human personality, society, civilization, and the frameworks of human rights that bind all three. The sudden development of these conditions of existence means that if we are to claim the future for humanity, then new forms of collective action, resistance, and struggle are required. This chapter aims to contribute to such an undertaking by illuminating this triad: a novel capitalism, its novel form of power, and their novel challenges to elemental human rights that bear upon the production of autonomous action.

What Is Surveillance Capitalism?[1]

Framework

This effort to understand surveillance capitalism begins with the recognition that *we hunt the puppet master, not the puppet.* A first challenge to comprehension is the confusion between surveillance capitalism and the technologies it employs. Surveillance capitalism is not technology; it is a logic that imbues technology and commands it into action. Surveillance capitalism is a market form that is unimaginable outside the digital milieu, but it is not the same as "the digital." As is evident in the evolution of telemedicine, the digital can take many forms depending upon the social and economic logics that direct it into action. It is the capitalism that assigns the price tag of subjugation and helplessness, not the technology. In my view it is vital to understand that surveillance capitalism cannot be reduced to "platforms," "algorithms," "machine intelligence," or any other technological manifestation. While it is impossible to imagine surveillance capitalism

without the affordances of the digital, it is perfectly possible to imagine these technologies and capabilities without surveillance capitalism.

That technologies are always economic means, not ends in themselves, is not a new point. Max Weber called attention to this "economic orientation," observing that economic ends are always intrinsic to technology's development and deployment. "Economic action" determines objectives, whereas technology provides "appropriate *means*." In Weber's framing, "The fact that what is called the technological development of modern times has been so largely oriented economically to profit-making is one of the fundamental facts of the history of technology" (Weber 1978, 67). In a modern capitalist society, technology is, was, and always will be an expression of the economic objectives that direct it into action. A worthwhile exercise would be to delete the word "technology" from our vocabularies in order to see how quickly capitalism's objectives are exposed.

The primacy of economics over technology is not new, but capitalism has long found it useful to conceal itself within the Trojan horse of technology in order that we might perceive its excesses as the inevitable expression of the machines it employs. Surveillance capitalists are no exception. For example, in 2009 the public first became aware that Google maintains search histories indefinitely. When questioned about these practices, the corporation's former CEO Eric Schmidt explained, ". . . the reality is that search engines including Google do retain this information for some time" (Newman 2009). In truth, search engines do not retain, but surveillance capitalism does. Schmidt's statement is a classic of misdirection that bewilders the public by conflating commercial imperatives and technological necessity. It camouflages the concrete practices of surveillance capitalism and the specific choices that impelled Google's brand of search into action. Most significantly, it makes surveillance capitalism's practices appear to be inevitable, when they are actually meticulously calculated and lavishly funded means to self-dealing commercial ends.

Just as surveillance capitalism is not the same as technology, this new logic of accumulation cannot be reduced to any single corporation or group of corporations. Surveillance capitalism first rooted and flourished at Google and Facebook, then quickly became the default mode for most Internet businesses, startups, and apps. By now surveillance capitalism can no longer be thought of as restricted to individual companies or even to the Internet sector. It has spread across a wide range of products, services, and economic

sectors, including insurance, retail, health care, finance, entertainment, education, transportation, and more, birthing whole new ecosystems of suppliers, producers, customers, market-makers, and market players. Nearly every product or service that begins with the word "smart" or "personalized," every Internet-enabled device, every "digital assistant," operates as a supply-chain interface for the unobstructed flow of behavioral data.

Surveillance capitalism was invented at Google, where its logic and foundational mechanisms were discovered and elaborated between 2001 and 2004 in much the same way that General Motors invented and perfected managerial capitalism a century ago. Google was the pathfinder of surveillance capitalism in thought and practice, the deep pocket for research and development, and the catalyst in experimentation and implementation. As the pioneer of surveillance capitalism, Google launched an unprecedented market operation into the unmapped spaces of the Internet where it faced few impediments from law or competitors, like an invasive species in a landscape free of natural predators. Its leaders drove the systemic coherence of their businesses at a breakneck pace that neither public institutions nor individuals could follow. Indeed, both speed and secrecy were carefully crafted strategies of shock and awe essential to the company's larger ambitions of market dominance (Zuboff, 2019).

Surveillance capitalism originates in history, not in technological inevitability. Google's discovery and pursuit of surveillance capitalism cannot be separated from the unique historical conditions that first motivated the urgent search for a new market form and later nurtured and sheltered its new mechanisms of accumulation. Specifically, the young company faced extreme pressure from its investors in the teeth of the 2001 financial crisis in Silicon Valley. Surveillance capitalism was invented as the solution to this financial emergency. It proved itself a rapid methodology for the translation of investment into revenue and capital. Google also benefitted from historical circumstance, when a national security apparatus galvanized by the attacks of 9/11 was inclined to nurture, mimic, shelter, and appropriate surveillance capitalism's emergent capabilities for the sake of total knowledge and its promise of total certainty. These dynamics comprise a political condition that I call *surveillance exceptionalism*.

The combination of financial success and the politics of surveillance exceptionalism transformed the new logic of accumulation into the default model of information capitalism. Surveillance capitalism migrated to

Facebook with Google-turned-Facebook executive Sheryl Sandberg and later took hold at Microsoft under the leadership of CEO Satya Nadella. Evidence suggests that Amazon has veered toward surveillance capitalism. The lure of surveillance revenue remains a constant challenge to Apple, both as an external threat and as a source of internal debate and conflict. Surveillance capitalism is no longer confined to the competitive dramas of the large Internet companies as competitive intensity eventually drove expansion into the offline world. Its economic imperatives and foundational mechanisms now spread across every economic sector and category of goods and services.

"Laws of Motion"

Borrowed from Newton's laws of inertia, force, and equal and opposite reactions, "laws of motion" is a metaphor that has been used to describe the necessary and predictable features of industrial capitalism (Marx 1992, 91–92; Wood 2002, 76, 93, 125). While surveillance capitalism does not abandon established capitalist "laws" such as competitive production, profit maximization, productivity, and growth, these earlier dynamics now operate in the context of a new logic of accumulation that also introduces its own sui generis laws of motion. Surveillance capitalism is defined by new economic imperatives whose mechanisms and effects cannot be grasped with existing models and assumptions. This is not to say that the old imperatives—a compulsion toward profit maximization along with the intensification of the means of production, growth, and competition—have vanished. Rather, these must now operate through the novel aims and mechanisms of a new market form. Most people credit Google's success to its advertising model. But the discoveries that led to Google's rapid rise in revenue and market capitalization are only incidentally related to advertising. Google's success derives from its ability to predict the future—specifically the future of human behavior.

The Rendition of Experience: Human–Natural Resources

From the start, Google had collected data on users' search-related behavior as a by-product of query activity. Back then, these data logs were treated as waste, not even safely or methodically stored. Eventually, the young company came to understand that these logs could be used to teach and continuously improve its search engine. The problem was this: Serving

users with effective search results "used up" all the value that users created when they inadvertently provided behavioral data. It was a complete and self-contained process in which users were ends in themselves. All the value that users created was reinvested in their experience in the form of improved search, a progression that I have called *the behavioral value reinvestment cycle*. In this interaction, there was nothing "left over," no surplus for Google to turn into capital. As long as the effectiveness of the search engine needed users' behavioral data about as much as users needed search, charging a fee for service was too risky. In 2001 Google was remarkable, but it wasn't yet capitalism—just one of many Internet start-ups that boasted "eyeballs" but no revenue.

The year 2001 brought the dot.com bust and mounting investor pressures at Google. Back then, advertisers selected the search term pages for their displays. Google decided to try and boost ad revenue by applying its already substantial analytical capabilities to the challenge of increasing an ad's relevance to users—and thus its value to advertisers. Operationally, this meant that Google would finally repurpose its growing cache of "useless" behavioral data. Now the data would be used to match ads with keywords, exploiting subtleties that only its access to behavioral data, combined with its analytical capabilities, could reveal.

It's now clear that this shift in the use of behavioral data was an historic turning point. Behavioral data that were once discarded or ignored were rediscovered as what I call *behavioral surplus*: data reserves that are more than what is required for product and service improvements. Google's dramatic success in "matching" ads to pages revealed the transformational value of this behavioral surplus as a means of generating revenue and ultimately turning investment into revenue.

Key to this formula was the fact that this new market exchange was not an exchange with users but rather with companies who understood how to make money from bets on users' future behavior. In this new context, users were no longer ends in themselves. Instead, they became a means to profits in a new *behavioral futures market* in which users are neither buyers nor sellers nor products. Users are instead the *human nature-al* source of free raw material that feeds a new kind of manufacturing process designed to fabricate *prediction products*. These products are calculations that predict what individuals and groups will do now, soon, and later. The more raw materials that are fed into this new machine intelligence–based "means of

production," the more powerful are its prediction products. While these processes were initially aimed at online ad targeting, they are no more restricted to that application than mass production was restricted to the manufacture of automobiles, where it was first applied at scale.

Many of the facts I describe here are well-known, but their significance has not been fully appreciated or adequately theorized. Google and other surveillance platforms are sometimes described as "two-sided" or "multi-sided" markets (Rochet and Tirole 2006, 645–667), but the mechanisms of surveillance capitalism suggest something different. Google had discovered a way to translate its nonmarket interactions with users into surplus raw material for the fabrication of products aimed at genuine market transactions with its real customers: advertisers (Strandburg 2013). The translation of human experience outside the market to behavioral data that circulates inside the market finally enabled Google to convert investment into revenue. The corporation thus created out of thin air and at zero marginal cost an asset class of vital raw materials derived from users' nonmarket online experience. At first those raw materials were simply "found," a by-product of users' search action. Later those assets were hunted aggressively, procured, and accumulated—largely through unilateral operations designed to evade individual awareness and thus bypass individual decision rights—operations that are therefore best summarized as "surveillance."

That behavioral surplus became the defining element of Google's success was well understood by its leaders. Google's former CEO Eric Schmidt credits Hal Varian's early development of the firm's ad auctions with providing the eureka moment that clarified the true nature of Google's business—"All of a sudden, we realized we were in the auction business"—referring to the automated behavioral futures markets deployed in ad targeting (Polanyi 2001, 75–76). Larry Page is credited with a very different and far more insightful answer to the question "What is Google?" Google's first brand manager, Douglas Edwards, recounts a 2001 session with the founders that probed their answers to that precise query. It was Page who ruminated, "If we did have a category, it would be personal information. . . . The places you've seen. Communications. . . . Sensors are really cheap. . . . Storage is cheap. Cameras are cheap. People will generate enormous amounts of data. . . . Everything you've ever heard or seen or experienced will become searchable. Your whole life will be searchable" (Edwards 2011, 291).

Page's vision perfectly reflects the history of capitalism as a process of taking things that live outside the market sphere and declaring their new life as market commodities. In historian Karl Polanyi's 1944 grand narrative of the "great transformation" to a self-regulating market economy, he described the origins of this translation process in three astonishing and crucial mental inventions that he called "commodity fictions." The first was that human life could be subordinated to market dynamics and reborn as "labor" to be bought and sold. The second was that nature could be translated into the market and reborn as "land" or "real estate." The third was that exchange could be reborn as "money" (Polanyi 2001, 75–76). Nearly eighty years earlier, Karl Marx had described the taking of lands and natural resources as the original "big bang" that ignited modern capital formation, calling it "primitive accumulation" (Marx 1992).

Page grasped that human experience would be Google's virgin wood—that it could be extracted at no extra cost online and at a low marginal cost out in the real world, where "sensors are really cheap," thus producing a surplus as the basis of a wholly new class of market exchange. Surveillance capitalism originates in this act of *digital dispossession*, operationalized in the *rendition* of human experience as behavioral data. This is the lever that moved Google's world and shifted it toward profit, changing the trajectory of information capitalism as it claimed undefended human experience for a market dynamic that would encounter no impediment in the lawless spaces of the Internet.

The significance of behavioral surplus was lost in euphemism, both at Google and throughout the Internet industry, with labels like "digital exhaust," "digital breadcrumbs," and so on.[2] These euphemisms for behavioral surplus operate as ideological filters in exactly the same way that the earliest maps of the North American continent labeled whole regions with terms like "heathens," "infidels," "idolaters," "primitives," "vassals," or "rebels." On the strength of those labels, native peoples, their places and claims, were erased from the invaders' moral and legal equations, legitimating their acts of taking and breaking in the name of Church and Monarchy.

In the case of surveillance capitalism, camouflage and other methodologies of secrecy aim to prevent interruption of critical supply-chain operations that begin with the rendition of human experience and end with the delivery of behavioral data to machine intelligence–based production

systems. These operations of secrecy by design turn us into exiles from our own behavior, denied access to or control over knowledge derived from our experience. Knowledge and power rest with surveillance capital, for which we are merely "human natural" resources. We are the native peoples, now, whose tacit claims to self-determination have vanished from the maps of our own lives.

To be sure, there are always sound business reasons for hiding the location of your gold mine. In Google's case, an explicit "hiding strategy" accrued to its competitive advantage, but there were other, more pressing reasons for concealment and obfuscation (Levy 2011, 69). Douglas Edwards writes compellingly about the corporation's culture of secrecy: According to his account, Larry Page and Sergey Brin were "hawks," insisting on aggressive data capture and retention. "Larry opposed any path that would reveal our technological secrets or stir the privacy pot and endanger our ability to gather data." Page wanted to avoid arousing users' curiosity by minimizing their exposure to any clues about the reach of the firm's data operations. He questioned the prudence of the electronic scroll in the reception lobby that displays a continuous stream of search queries, and he "tried to kill" the annual Google Zeitgeist conference that summarizes the year's trends in search terms (Edwards 2011, 340–345).

What might the response have been back then if the public were told that Google's magic derived from its exclusive capabilities in unilateral surveillance of online behavior and methods specifically designed to override awareness and thus individual decision rights? Secrecy was required in order to protect operations designed to be undetectable because they took things from users without asking and employed those illegitimately claimed resources to work in the service of others' purposes.

That Google was able to choose secrecy is itself testament to the success of its own claims and an illustration of the difference between "decision rights" and "privacy." Decision rights confer the power to choose whether to keep something secret or to share it. One can choose the degree of privacy or transparency for each situation. US Supreme Court Justice William O. Douglas articulated this view of privacy in 1967: "Privacy involves the choice of the individual to disclose or to reveal what he believes, what he thinks, what he possesses" (Douglas 1967; Farahany 2012). Surveillance capitalism laid claim to these decision rights.

The typical complaint is that privacy is eroded, but that is misleading. In the larger societal pattern, privacy is not eroded but redistributed, as decision rights over privacy are claimed for surveillance capital. Instead of many people having the right to decide how and what they will disclose, these rights are concentrated within the domain of surveillance capitalism. Google discovered this necessary element of the new logic of accumulation: it must declare its rights to take the information upon which its success depends. The extraordinary financial power of surveillance capitalism's hidden inventions was only revealed when Google went public in 2004. At that time it became clear that on the strength of its secrets, the firm's revenue had increased 3,590 percent in less than four years.

Today's owners of surveillance capital have thus declared a fourth fictional commodity expropriated from the experiential realities of human beings whose bodies, thoughts, and feelings are as blameless as nature's once plentiful meadows and forests before they fell to the market dynamic. In this new logic, *human experience is subjugated to surveillance capitalism's market mechanisms and rendered as "behavior."* Behavior is reduced to data, ready to take their place in a numberless queue that feeds the machines for fabrication into predictions and eventual exchange in behavioral futures markets. The experiencing individual is not essential to this market action, except as the source of raw material.

The summary of these developments is that the behavioral surplus upon which Google's fortune rests can be considered as *surveillance assets*. These assets are critical raw materials in the pursuit of *surveillance customers* for the sake of *surveillance revenues* and their translation into *surveillance capital*. The entire logic of this capital accumulation is most accurately understood as *surveillance capitalism,* which is the foundational framework of a surveillance-based economic order: a *surveillance economy.* The big pattern here is one of subordination and hierarchy, in which earlier reciprocities between the firm and its users are subordinated to the derivative project of behavioral surplus captured for others' market aims. Individual "users" are not the subjects of value realization. Nor are they, as some have insisted, "the product" in the sales process. Instead, they are the objects from which raw materials are extracted and expropriated for Google's prediction factories: they are the means to others' ends. This is how in our lifetimes we observe capitalism shifting under our gaze: once profits from

products and services, then profits from financial speculation, and now profits from surveillance.

The Extraction Imperative: Economies of Scale

The accumulation of behavioral surplus is the master motion of surveillance capitalism from which key economic imperatives can be induced. The quality of prediction products depends upon volume inputs to machine processes. Volume surplus is thus a competitive requirement. This dynamic establishes the *extraction imperative*, which expresses the necessity of *economies of scale in surplus accumulation* and depends upon automated systems that relentlessly track, hunt, and induce more behavioral surplus. These systems, which began in the online environment and later spread to the "real" world, constitute an *extraction architecture* that has evolved in the direction of ubiquity, just as Larry Page anticipated in 2001 and as the evolution of digital "health" information amply demonstrates. Under the lash of the extraction imperative, the once simple closed loops have been transformed into a global, sensate, computational, connected architecture of behavioral surplus capture and analysis, fulfilling computer scientist Mark Weiser's 1999 vision of "ubiquitous computing" memorialized in two legendary sentences: "The most profound technologies are those that disappear. They weave themselves into the fabric of everyday life until they are indistinguishable from it" (Weiser 1999).

The Prediction Imperative: Economies of Scope

Surveillance profits awakened intense competition over the revenues that flow from behavioral futures markets. In this second phase of competitive intensity, the volume of surplus became a necessary but insufficient condition for success. Even the most sophisticated process of converting behavioral surplus into products that accurately forecast the future is only as good as the raw material available for processing. In the race for higher degrees of certainty, it became clear that the best predictions would have to approximate observation. The next threshold was defined by the quality, not just the quantity, of behavioral surplus. These pressures led to a search for new supplies of surplus that would more reliably foretell the future. This marks a critical turning point in the trial-and-error elaboration of surveillance

capitalism and crystallizes a second economic imperative—the *prediction imperative*—as the expression of these competitive forces. The prediction imperative drives the diversification of extraction architectures to accommodate, first, economies of scope in surplus accumulation and, later, economies of action.

The shift toward economies of scope represents a new set of aims: behavioral surplus must be vast, but it must also be varied. These variations have been developed along two dimensions. The first is the *extension* of extraction operations from the virtual world into the "real" world of embodied human experience. Surveillance capitalists understood that their future wealth would depend upon new supply routes that extend to real life on the roads, among the trees, throughout the cities. Extension wants your bloodstream and your bed, your breakfast conversation, your commute, your run, your refrigerator, your parking space, your living room, your pancreas.

Economies of scope also proceed along a second *depth* dimension. The idea here is that more predictive, and therefore more lucrative, behavioral surplus can be plumbed from intimate patterns of the self. These supply operations are aimed at your personality, moods, and emotions; your lies and vulnerabilities. (For a detailed discussion, see Zuboff 2019, chapters 8 and 9.) Emergent rendition techniques are trained on successive levels of intimacy where new supplies can be automatically captured and flattened into a tidal flow of data points that proceed toward manufactured certainty.

As the prediction imperative drives deeper into the self, the value of its surplus becomes irresistible, and the competitive pressures to corner lucrative sources of supply escalate. It is no longer a matter of surveillance capital wringing surplus from what I search, buy, and browse. Surveillance capital wants more than my body's coordinates in time and space. Now it violates the inner sanctum, as machines and their algorithms decide the meaning of my sighs, blinks, and utterances; the pattern of my breathing and the movements of my eyes; my jaw muscles; the hitch in my voice; and the exclamation points in a Facebook post that I offered in innocence and hope.

There are many glosses that divert attention from the logic of these operations and their economic origins: "ambient computing," "ubiquitous computing," and the "Internet of Things" are but a few examples. The labels differ, but they share a consistent vision: the everywhere, always-on instrumentation, datafication, connection, communication, and computation

of all things, animate and inanimate, and all processes—natural, human, physiological, chemical, machine, administrative, vehicular, financial . . . This new architecture provides the means through which human experience is continuously rendered—from phones, cars, streets, homes, shops, bodies, trees, buildings, airports, and cities—and translated to the digital realm where it finds a new market life.

The Prediction Imperative: Economies of Action

The capital requirements of these automated architectures are justified by the lure of surveillance revenues, continuously ratcheting up the competitive intensity of the prediction imperative. Just as scale became necessary but insufficient for higher quality predictions, the demands of the prediction imperative eventually encountered the limitations of economies of scope. While behavioral surplus must be vast and varied, surveillance capitalists gradually came to understand that the surest way to predict behavior is to intervene at its source and shape it. The processes invented to achieve this goal are what I call *economies of action*.

Economies of scale and scope are well-known industrial logics, but economies of action are distinct to surveillance capitalism and its digital milieu. In order to achieve these economies, machine processes are configured to intervene in the state of play in the real world among real people and things. These interventions are designed to augment prediction products in order that they approximate certainty by "tuning," "herding," and conditioning the behavior of individuals, groups, and populations. These economies of action apply techniques that are as varied as inserting a specific phrase into your Facebook news feed, timing the appearance of a BUY button on your phone with the rise of your endorphins at the end of a run, shutting down your car engine when an insurance payment is late, or employing population-scale behavioral microtargeting drawn from Facebook profiles. Indeed, the notorious manipulations of the data firm Cambridge Analytica, which scandalized the world in 2018, simply appropriated the means and methods that are now both standard and necessary operations in the surveillance capitalism arsenal (Zuboff 2019, 295–330).

As the prediction imperative gathers force, it gradually becomes clear that economies of scale and scope were the first phases of a more ambitious project. Economies of action mean that ubiquitous machine architectures must be able *to know* as well as *to do*. What began as an extraction

architecture now doubles as an *execution architecture* through which hidden economic objectives are imposed upon the vast and varied field of behavior. As surveillance capitalism's imperatives and the material infrastructures that perform extraction and execution operations begin to function as a coherent whole, they produce a twenty-first-century *means of behavioral modification* to which the means of production is subordinated as merely one part of this larger whole.

The means of behavioral modification does not aim to compel conformity to or compliance with social norms, as has been the case with earlier applications of the behaviorist paradigm. Rather, this new complex aims to produce behavior that reliably, definitively, and certainly leads to predicted commercial results for surveillance customers. The research director of Gartner, the respected business advisory and research firm, makes the point unambiguously when he observes that mastery of the "Internet of Things" will serve as "a key enabler in the transformation of business models from 'guaranteed levels of performance' to '*guaranteed outcomes*'" (italics mine; Pettey 2016). This is an extraordinary statement, because there can be no such guarantees in the absence of the power to make it so. The wider complex of "the means of behavioral modification" is the expression of this gathering power. The prospect of businesses competing on the promise of guaranteed outcomes enabled by a global digital architecture alerts us to the force of the prediction imperative, which now demands that surveillance capitalists make the future for the sake of predicting it.

Surveillance capitalists' interests have shifted from using automated machine processes to know about your behavior to using machine processes to shape your behavior according to their interests. Given the conditions of increasing ubiquity, it has become difficult, if not impossible, to escape this web. Under this regime, ubiquitous computing is not just a knowing machine; it is an actuating machine designed to produce more certainty *about* us and *for* them. The nearly two-decade trajectory since the collection and analysis of health data was conceived as a simple closed loop has taken us from automating information flows about behavior to *automating behavior.* Just as industrial capitalism was driven to the continuous intensification of the means of production, so surveillance capitalists are now locked in a cycle of *continuous intensification of the means of behavioral modification*. While it is possible to imagine something like a ubiquitous, connected, sensate computational architecture without surveillance

capitalism, the means of behavioral modification depend entirely on this pervasive networked architecture.

Economies of scale and scope ignored privacy norms and laws, relying on weak legitimation processes like "sadistic contracts" and meaningless mechanisms of notice and consent to accumulate decision rights in the surveillance capitalist domain (Bakos, et al. 2014; Becher and Zarsky 2015; Kar 2013; Kim 2013; Preston 2015; Radin 2012). But economies of action go further. These new systems and procedures take direct aim at individual autonomy, systematically replacing self-determined action with a range of hidden operations designed to shape behavior at the source. Economies of action are constructed through systematic experimentation that began with apparent banalities like the A/B testing of web-page design elements and eventually progressed to more complex undertakings. One example is the secret manipulation of social contagion demonstrated in Facebook's vast experiments in shaping social behavior, about which the corporation's researchers concluded, "Emotional states can be transferred to others via emotional contagion, leading people to experience the same emotions without their awareness. . . . Online messages influence our experience of emotions, which may affect a variety of offline behaviors" (Kramer, Guillory, and Hancock 2014). Another is the population-scale social herding experiments popularized by the Google-incubated augmented reality application of Niantic Labs' Pokémon Go, in which innocent players are herded to eat, drink, and purchase in the restaurants, bars, fast-food joints, and shops that pay to play in the company's behavioral futures markets (see the discussion in Zuboff 2019).

Ultimately behavioral modification capabilities are institutionalized in "innovative" commercial practices in which individuals fund their own domination. One finds digital tuning, herding, and conditioning embedded in such varied practices as the insurance industry's embrace of "behavioral underwriting," the gamification of retailing, the remote-control operations of automotive telematics, or the "personalized services" of so-called "digital assistants" such as Amazon's "Alexa," Google's "Google Assistant," and Microsoft's "Cortana." What they share is the explicit aim to produce planned behavioral outcomes with methods of behavioral modification that operate through unprecedented and proprietary digital architectures, while carefully circumventing the awareness of human targets.

The conflation of economic imperatives and behavior modification at scale locates the surveillance capitalist project squarely in the paradigm of radical behaviorism associated with B. F. Skinner, which draws upon formulations in early theoretical physics, especially the philosophical work of Max Planck (2007a, 2007b). Following Planck, radical behaviorism insists on the reduction of human experience to observable, measurable behavior purged of inwardness, thus establishing psychological science as the objective study of behaving objects comparable to the research paradigms of the natural sciences. Max Meyer, a student of Planck's and the early-twentieth-century experimental psychologist most admired by Skinner, called this approach "the psychology of the Other-One" (Skinner 1991, 4–6; see also Meyer 1921). Human behavior would yield to scientific inquiry only if psychologists learned to view humans as "others," a "viewpoint of observation" considered an absolute requirement for an "objective science of human behaviour" (Meyer 1912, 371). Central to this new viewpoint was Meyer's insistence that the human being should be regarded as an "organism among organisms," distinguishable from a lettuce, a moose, or an inchworm only in degree of complexity (Esper 1967, 114; Meyer 1912, 1921).

Skinner embraced Meyer's "viewpoint of observation," which led to his discovery of the principles of "operant conditioning" in which a carefully designed "schedule of reinforcements" is imposed on the animal in order to shape specific behavioral patterns by amplifying some actions at the expense of others. While Skinner focused his work on mice and pigeons, the epistemology of radical behaviorism enabled easy generalizations across species (Blanshard 1967; Meyer 1912, 1921; Skinner 1976, 1991, 2002, 2012; Wozniak 1997). Even the complexities of human reasoning, choice, problem-solving, and reflection render themselves to the viewpoint of the Other-One:

> When a man controls himself, chooses a course of action, thinks out the solution to a problem, or strives toward an increase in self-knowledge, he is behaving. He controls himself precisely as he would control the behavior of anyone else—through the manipulation of variables of which behavior is a function. His behavior in so doing is a proper object of analysis, and eventually it must be accounted for with variables lying outside the individual himself. (Skinner 2012, 228–229)

It was Skinner who first imagined a ubiquitous "technology of behavior" that would enable the application of operant conditioning across entire

human populations. He argued that "the field of human behavior" would never achieve scientific status without "instruments and methods" as powerful as those available to physicists and biologists (Skinner 2002, 4–5). Such instruments would finally illuminate the laws of human action, enabling scientists to shape and predict behavior.

There would be challenges. New technologies of behavior would have to continually push the envelope of the public–private divide in order to access all the data relevant to behavioral prediction and control. Like today's surveillance capitalists, Skinner was confident that the slow drip of technological invention would eventually push privacy to the margins of human experience, where it would join "freedom," "autonomy," and other troublesome illusions. All of these would be replaced by the viewpoint of the Other-One embodied in new instruments and methods:

> The line between public and private is not fixed. The boundary shifts with every discovery of a technique for making private events public. Behavior which is of such small magnitude that it is not ordinarily observed may be amplified. Covert verbal behavior may be detected in slight movements of the speech apparatus. . . . The problem of privacy may, therefore, eventually be solved by technical advances . . . we are still faced with events which occur at the private level and which are important to the organism without instrumental amplification. How the organism reacts to these events will remain an important question, even though the events may some day be made accessible to everyone. (Skinner 2012, 282)

Skinner's technologies of behavior have finally come to life as a market project. The conflation of economic orientation, the means of behavioral modification, and the digital architectures and devices that are its medium are now a taken-for-granted feature of the surveillance capitalist milieu. This theme and the necessity of its concealment are reiterated throughout the interviews that I conducted with data scientists and software engineers between 2012 and 2015 as one element of a larger study of surveillance capitalism.[3] The means of behavioral modification are the subject of creative elaboration, experimentation, and application, but always outside the awareness of its human targets. For example, the chief data scientist for a national drugstore chain described how his company designs automated digital reinforcers to subtly tune customers' behaviors: "You can make people do things with this technology. Even if it's just 5% of people, you've made 5% of people do an action they otherwise wouldn't have done, so to

some extent there is an element of the user's loss of self-control." A software engineer specializing in the Internet of Things explained his company's approach to conditioning: "The goal of everything we do is to change people's actual behavior at scale . . . we can capture their behaviors and identify good and bad. Then we develop 'treatments' or 'data pellets' that select good behaviors." Another recounted the operational mechanisms of herding: "We can engineer the context around a particular behavior and force change that way. . . . *We are learning how to write the music, and then we let the music make them dance.*"

How do they get away with it? Dozens of surveys conducted since 2008 attest to substantial majorities in the United States, the EU, and around the world that reject the premises and practices of surveillance capitalism, yet it persists, succeeds, and dominates. In other work I have detailed sixteen factors that enabled this new logic of accumulation to root and flourish (Zuboff 2019), and here I want to underscore two of these.

The first is *dependency*. Surveillance capitalism now controls many of the operations that are essential for social participation. Early on, the free services of Google, Facebook, and other applications appealed to the latent needs of second-modernity individuals seeking resources for effective life in an increasingly hostile institutional environment (Beck and Beck-Gernsheim 2002; Zuboff and Maxmin 2002). Once bitten, the apple was irresistible. A 2010 BBC poll found that 79 percent of people in twenty-six countries considered Internet access to be a fundamental human right (BBC 2010). Six years later, in 2016, the United Nations Human Rights Council would adopt specific language on the importance of Internet access. In the United States, many people call the emergency services number, 911, on those rare occasions when Facebook is down (LA Times 2014). Most people find it difficult to withdraw from these utilities, and many ponder if it is even possible (Alter 2017; Andreassen et al. 2012; Casale and Fioravanti 2015; Cheng and Li 2014; Dreifus 2017; Griffiths, Kuss, and Demetrovics 2014; Schou Andreassen, and Pallesen 2014).

As surveillance capitalism spread across the Internet, the means of social participation became coextensive with the means of behavioral modification, eroding the choice mechanisms that adhere to the private realm—exit, voice, and loyalty. There can be no exit from processes that we cannot detect and upon which we must depend for the effectiveness of daily life.

Users are not customers and thus far lack institutionalized means of collective action that would establish reliable channels for voice. Loyalty is an empty suit, as continued participation is better explained in terms of helplessness, resignation, and the foreclosure of alternatives.

Next I turn to the second key answer to the question "How do they get away with it?" That answer is *power*.

The Rise of Instrumentarian Power

The internal pressures exerted by surveillance capitalism's economic imperatives produce the compulsion to "make them dance." First, production is subordinated to extraction, and then the means of production is subordinated to the means of behavioral modification. Finally, what is produced is the guarantee of outcomes, or at least the ever-improving approximation to such guarantees. These guarantees have value, but in the novel logic of surveillance capitalism, their value is a function of markets that bear no organic reciprocities with their populations, now repurposed as the source of unlimited raw material supplies. This analysis brings us to the edge of a new terrain, but no further. I have suggested that there can be no *guarantee* of outcomes without the power to make it so. In order to proceed, it is necessary to answer the question, *what is this new power to "make them dance"?* The answer offers a glimpse into the dark heart of surveillance capitalism as a usurper of rights and a civilizational force.

The first key point is that there is no historical precedent for the quality of power that now confronts us. It is, I argue, an unprecedented species of power that emerges in the unprecedented digital milieu of surveillance capitalism and its unprecedented economic logic founded on the dispossession of human behavior as the new source of capital accumulation. Any encounter with the unprecedented is itself a genuine intellectual and existential challenge, and this fact itself merits our attention. That which is unprecedented is necessarily unrecognizable, tacitly interpreted through the lens of familiar categories. This mental operation renders invisible precisely those dimensions of experience for which there are no established mental sets. A classic example is the notion of the "horseless carriage" to which people reverted when confronted with the unprecedented facts of the automobile. Existing lenses illuminate the familiar and obscure the original by turning the unprecedented into an extension of the past. The sociology of

the unprecedented multiplies this effect. Once the abnormal is normalized, habituation and psychic numbing make contest even more unlikely (Baehr 2002; Lifton 2010; Slovic et al. 2011; van Der Kolk and Saporta 1991).

In the years during and immediately following World War II, scholars confronted these barriers of cognition, imagination, and language as they tried to name and grasp another unprecedented configuration of power, what would come to be known as "totalitarianism." In the early phases of this effort, critics appropriated the horseless-carriage language of "imperialism" as the only framework at hand with which to articulate and resist the new power's murderous threats. With a few important exceptions, it was only after the Nazi defeat that the program of naming began in earnest.

That confrontation with the unprecedented is reflected in the moving accounts of the first scholars determined to lift the veil on their era's gruesome truths. The systematic accretion of violence and complicity that engulfed whole populations at extreme velocity invoked a kind of bewilderment that ended in paralysis, even for many of the greatest minds of the twentieth century. Harvard political scientist Carl Friedrich was among the first scholars of totalitarianism to address this experience of improbability writing in 1954: "Virtually no one before 1914 anticipated the course of development which has overtaken Western civilization since then . . . none of the outstanding scholars in history, law, and the social sciences discerned what was ahead . . . which culminated in totalitarianism. To this failure to foresee corresponds a difficulty in comprehending" (Friedrich 1954, 1–2).

Nearly every intellectual who turned to this project in the period immediately following the war cites the feeling of astonishment at the suddenness with which, as Friedrich put it, totalitarianism had "burst upon mankind . . . unexpected and unannounced" (Friedrich 1954, 1). Its manifestations were so novel and unanticipated, so shocking, rapid, and unparalleled, that all of it eluded language, challenging every tradition, norm, value, and legitimate form of action. Hannah Arendt described the defeat of Nazi Germany as "the first chance to try to tell and to understand what had happened . . . still in grief and sorrow and . . . a tendency to lament, but no longer in speechless outrage and impotent horror" (Arendt 2004, 387). Later, historian Robert Conquest would document the similar failure of journalists, scholars, and Western governments in reckoning the full weight of Soviet totalitarianism's monstrous achievements. The most salient reason for this failure, he observed, was that the actual facts were so "improbable" that it

was difficult even for specialists to grasp their truth. "Plenty of information was available contradicting the official picture," wrote Conquest. "The Stalin epoch is replete with what appear as improbabilities to minds unfitted to deal with the phenomena" (Conquest 2008, 486).

Ultimately, a courageous body of scholarship would evolve to meet the challenge of comprehension. It yielded different models and schools of thought, each with distinct emphasis and insights, but these shared common purpose in the work of naming. "Totalitarianism has discovered a means of dominating and terrorizing human beings from within," wrote Arendt, the German-born philosopher who would spend the six years after World War II writing her extraordinary study of totalitarian power, published in 1951 as *The Origins of Totalitarianism* (Arendt 2004, 431). Arendt's was a detailed disclosure and a pioneering attempt to theorize what had just occurred. "Comprehension," she said, is the necessary response to the "truly radical nature of Evil" disclosed by totalitarianism. "It means . . . examining and bearing consciously the burden which our century has placed on us—neither denying its existence nor submitting meekly to its weight." Totalitarianism was bent on the "destruction of humanity" and "the essence of man," but, she insisted, "to turn our backs on the destructive forces of the century is of little avail" (Arendt 2004, xxvii). Essential here was the deletion of all ties and sources of meaning other than "the movement": "Total loyalty—the psychological basis for domination—can be expected only from the completely isolated human being who, without any other social ties to family, friends, comrades, or even mere acquaintances, derives his sense of having a place in the world only from his belonging to a movement, his membership in the party" (Arendt 2004, 429).

Midcentury scholars such as Friedrich, Adorno, Gurian, Brzezinski, and Aron added to these themes, recognizing totalitarianism's insistence on domination of the human soul (Adorno 1966, 1985, 1991; Aron 1968; Friedrich 1954, 1956). The Russian-born political scientist Waldemar Gurian, who escaped Nazi Germany in 1939, argued that totalitarianism functioned as a "secularized political religion" that requires "absolute obedience" and demands "active acclamation" (Gurian 1954, 119–129). Political scientists Carl Friedrich and Zbigniew Brzezinski emphasized totalitarianism's reliance on terror to drive and sustain "human remolding," "re-educative measures," and "extensive revisions" of self and psyche (Friedrich and Brzezinski 1956, 130–133). Activist and theorist Franz Neumann's courageous analysis

of National Socialism from 1933 to 1944 also elevated terror to the highest-order principle of action. Neumann described the Third Reich's subordination of the means of production to the "means of violence," as the Nazis asserted authority over property and production, both through the expropriation of Jewish assets and through the party's command and control of key industries (Neumann and Hayes 2009, 470–76, 632–634).

Totalitarianism was bent on the purification of the human species through the dual mechanisms of genocide and the "engineering of the soul." In this way totalitarian regimes could achieve their fantastical aim of "the People-as-one," as Claude Lefort describes it. "Social unanimity corresponds to inner unanimity, held in place by hatred activated toward the 'enemies of the people'" (Lefort 1986, 297–298). But to command populations right down to their souls requires unimaginable effort, which was one reason why totalitarianism was unimaginable. It measures success at the cellular level, penetrating to the quick, where it subverts and commands each unspoken yearning in pursuit of the genocidal vision that historian Richard Shorten calls "the experiment in reshaping humanity" (Shorten 2012, 50). Each individual inner life must be claimed and transformed by the perpetual threat of terror: punishment without crime. This craftwork requires the detailed orchestration of isolation, anxiety, fear, persuasion, fantasy, longing, inspiration, torture, dread, and surveillance. Arendt describes the relentless process of "atomization" and fusion in which terror destroys the ordinary human bonds of law, norms, trust, and affection, "which provide the living space for the freedom of the individual" (Arendt 1994, 343).

Arendt's project of naming was embedded in a larger wave of postwar reform determined to inoculate civilization from the genocidal impulse and institutionalized in the 1948 Universal Declaration of Human Rights (UDHR), beginning with the assertion, "All human beings are born free and equal in dignity and rights." As Michael Ignatieff has argued, the UDHR founded a "judicial revolution," establishing a global juridical framework of human rights that both ignited and legitimated the justice demands of colonial subjects, civil rights groups, and other movements originating in exclusion and oppression (Ignatieff 2001; see also Franck 2000).

Now a new surveillance-based economic order casts us adrift in a different dark sea of original and thus difficult-to-discern dangers, where the abrogation of human rights does not always or easily correspond to the historical development of human rights and its established juridical

frameworks. And just as the scholars of totalitarianism once looked to nineteenth-century imperialism to explain the violence of their time, it is we who now reach for the familiar vernaculars of twentieth-century power like lifesaving driftwood. Invariably we look to the specter of totalitarianism as the lens through which to interpret today's threats. The result is that Google, Facebook, and the larger field of commercial surveillance are frequently criticized as "Big Brother" or "digital totalitarianism" (Blakely 2014; Borowicz 2014; Doctorow 2017; Economist 2004; Hirsh 2015; Menell 2013; Schulz 2016; Sorell and Draper 2012). I admire those who have stood against the incursions of commercial surveillance, but I also suggest that the equation of its new power with totalitarianism and the Orwellian trope impedes our understanding as well as our ability to resist, neutralize, and ultimately vanquish its potency. Instead, we need to grasp the specific inner logic of a conspicuously twenty-first-century conjuring of power to which the past offers no adequate compass. Its aims are in many ways just as ambitious as those of totalitarianism, but they are also utterly and profoundly distinct. The work of naming a strange form of power unprecedented in the human experience must begin anew for the sake of effective resistance and the creative power to insist on a future of our own making.

As to the new species of power, I have suggested that it is best understood as *instrumentarianism*, defined as *the instrumentation and instrumentalization of behavior for the purposes of modification, prediction, monetization and control*. In this formulation, "instrumentation" refers to the ubiquitous, sensate, computational, actuating global architecture that renders, monitors, computes, and modifies human behavior. Surveillance capitalism is the puppet master that imposes its will through the vast capabilities of this connected puppet to produce instrumentarian power, replacing the engineering of souls with the engineering of behavior. There is no brother here of any kind, big or little, evil or good—no family ties, however grim. Instead, this new global apparatus is better understood as a *Big Other* that encodes the viewpoint of the Other-One as a pervasive presence, finally bringing Skinner's longed for "technology of behavior" to life. "Instrumentalization" denotes the social relations that orient the puppet masters to human experience, as surveillance capital overrides long-standing reciprocities of market democracy, wielding its machines to transform us into the means to others' market ends. Although he did not name it, Mark Weiser, the visionary of ubiquitous computing, foresaw the immensity of instrumentarian

power as a totalizing societal project. He did so in a way that suggests both its utter lack of precedent and the danger of confounding it with what has gone before: "Hundreds of computers in every room, all capable of sensing people near them and linked by high-speed networks, have the potential to make totalitarianism up to now seem like sheerest anarchy" (Weiser 1999, 89). In fact, all those computers are not the means to a digital hypertotalitarianism. They are, as I think Weiser sensed, the foundation of an unprecedented power that can reshape society in unprecedented ways. If instrumentarian power can make totalitarianism look like anarchy, then what might it have in store for us?

While all power yearns toward totality, instrumentarian power's specific purposes and methods are not only distinct from totalitarianism but they are in many ways its *precise opposite*. Surveillance capitalists have no interest in murder or the reformation of our souls. Instrumentarian power, therefore, has no principle to instruct. There is no training or transformation for spiritual salvation, no ideology against which to judge our actions. It does not demand possession of each person from the inside out. It has no interest in exterminating or disfiguring our bodies and minds in the name of pure devotion. Totalitarianism was a political project that converged with economics to overwhelm society. Instrumentarianism is a market project that converges with the digital to achieve its own unique brand of social domination. Totalitarianism operated through the means of violence, but instrumentarian power operates through the means of behavioral modification. And this is where our focus must shift. What passes for social relations and economic exchange now occurs across the medium of this robotized veil of abstraction.

Instrumentarianism's specific "viewpoint of observation" was forged in the controversial intellectual domain of "radical behaviorism." Thanks to Big Other's capabilities, instrumentarian power reduces human experience to measurable, observable behavior, while remaining steadfastly indifferent to the meaning of that experience. It is profoundly, infinitely, and, following its behaviorist origins, *radically* indifferent to our meanings and motives. This epistemology of *radical indifference* produces *observation without witness*. Instead of an intimate violent political religion, Big Other's way of knowing us yields the remote but inescapable presence of impenetrably complex systems and the interests that author them, carrying individuals on a fast-moving current to the fulfillment of others' ends. Big Other has

no interest in soiling itself with our excretions, but it may aggressively hunt data on the behavior of our blood and shit. It has no appetite for our grief, pain, or terror, although it welcomes the behavioral surplus that leaches from our anguish.

Trained on measurable action, Big Other cares only about observing what we do and ensuring that we do it in ways that are *accessible* to its ever-evolving operations of rendition, reinforcement, calculation, and monetization. Instrumentarianism's radical indifference is operationalized in Big Other's dehumanized methods of evaluation that produce *equivalence without equality* by reducing individuals to the lowest common denominator of sameness—an organism among organisms.

In the execution of economies of action, Big Other simulates the behaviorists' "vortex of stimuli," transforming "natural selection" into the "unnatural selection" of variation and reinforcement authored by market players and the competition for surveillance revenues. We may confuse Big Other with the behaviorist god of the vortex, but only because it effectively conceals the machinations of surveillance capitalism that are the wizard behind the digital curtain. The gentle seductive voice crafted on the yonder side of this veil—*Google, is that you?*—gently herds us along the path that coughs up the maximum of behavioral surplus and the closest approximation to certainty.

Instrumentarian Power Thrives in Lawless Space

Instrumentarianism is not murderous, but it is as startling, incomprehensible, and new to the human story as totalitarianism was to its witnesses and victims. Thanks to Big Other's capabilities to know and to do, instrumentarian power aims for a condition of *certainty without terror* in the form of "guaranteed outcomes." In pursuit of this certainty, the locus of economic power shifts from ownership of the means of production to ownership of the means of behavioral modification. Instrumentarian power produces endlessly accruing knowledge and control for surveillance capitalists and diminished self-determination for its populations who now fund their own domination as targets of extraction and modification.

The paradox is that because instrumentarianism does not claim our bodies for some grotesque regime of pain and murder, we are prone to undervalue its effects and lower our guard. Instead of death, torture, reeducation,

or conversion, instrumentarianism effectively expels us from our own behavior. It severs our insides from our outsides, our subjectivity and interiority from our observable actions. Otherized behavior takes on a life of its own that delivers our actions now, soon, and later to surveillance capitalism's aims and interests.

Under the regime of instrumentarian power, the mental agency and self-possession of autonomous human action are gradually submerged beneath a new kind of automaticity: a lived routine of stimulus–response–reinforcement that operates outside of awareness and is aggregated as statistical phenomena: the comings and goings of mere organisms. Our conformity is irrelevant to instrumentarianism's success. There is no need for mass submission to social norms, no loss of self to the collective induced by terror and compulsion, no inducements of acceptance and belonging as a reward for bending to the group. All of that is superseded by a market-based digital order that thrives within things and bodies, transforming volition into reinforcement and action into conditioned response.

Using Polanyi's lens, we have seen that surveillance capitalism annexes human experience to the market dynamic so that it is reborn as behavior: the fourth "fictional commodity." However, Polanyi's first three fictional commodities—land, labor, and money—were eventually subjected to law. Although these laws have been imperfect, the institutions of labor law, environmental law, and banking law provided regulatory frameworks intended to defend society (and nature, life, and exchange) from the worst excesses of raw capitalism's destructive power. Surveillance capitalism's translation of human experience into market commodities has thus far faced no such impediments.

In earlier work I detail the historical conditions and forms of corporate action that enabled surveillance capitalism's successful pursuit and sustenance of lawless space (Zuboff 2019). While a reprise of those arguments exceeds the space of this chapter, two conditions float above them all, and they merit emphasis. The first reverts to the sociology of the unprecedented, as the original action of instrumentarian power works its will before it can be adequately understood, thus enjoying a substantial lag in social evolution and the eventual production of law. This problem is already evident in the commoditization of human experience, which does not easily correspond to established legal frameworks, such as those that concern privacy rights or anticompetitive corporate practices. For example, laws that pertain

to "data ownership" or "data protection" overlook what is original in this latest "original sin," namely, the assertion that human experience is free for unilateral (and secret) rendition into behavioral data in the first place.

A second condition that has enabled the pursuit and protection of lawless operational spaces derives from surveillance capitalism's historical and material origins as both American born and "born digital." On both counts, surveillance capital has benefitted from the antiregulatory zeitgeist of US neoliberal economic policy and political ideology (Cohen 2016; Hoofnagle 2017; Short 2011). In this respect surveillance capitalists have enjoyed a political windfall, not unlike the Gilded Age titans who exploited the absence of industry regulation in their time to claim undefended territory for their own interests, declare the righteousness of their self-authorizing prerogatives, and defend their brand of raw capitalism from democracy (Nasaw 2005). Imbued with the conviction that "the state had neither right nor reason to interfere in the workings of the economy," Gilded Age millionaires joined forces to defend the "rights of capital" and limit the role of elected representatives in setting policy or developing legislation (Nasaw 2005, 124–125). There was no need for law, they argued, when one had the "law of evolution," the "laws of capital," and the "laws of industrial society." John Rockefeller insisted that his outsized oil fortune was the result of "the natural law of trade development." Jay Gould, when questioned by Congress on the need for federal regulation of railroad rates, replied that "the laws of supply and demand, production and consumption" already regulate rates (Nasaw 2005, 132).

Gilded Age business elites determined that the most effective way to protect the original sin of that economic era was, as historian David Nasaw puts it, "to circumscribe democracy." They did this by lavishly funding their own political candidates as well as through the careful honing and aggressive dissemination of an ideological attack on the very notion of democracy's right to interfere in the economic realm (Friedman 2004, 14–28; Nasaw 2005, 146, 148).

A similar determination to conduct surveillance capitalism free of democratic oversight dominates Google's short but remarkable history. Its ability to discern, construct, and stake its claim to the unregulated territories of the Internet not yet subject to law and, in the United States at least, free from constitutional constraints, was essential to its frictionless accumulation of surplus as the means to its frictionless accumulation of power and capital.

Eric Schmidt and Jared Cohen celebrate their claim to operational spaces beyond the reach of political institutions on the very first page of their book on the digital age: "The online world is not truly bound by terrestrial laws . . . it's the world's largest ungoverned space" (Schmidt and Cohen 2014).

Surveillance capitalists are impelled to pursue lawlessness by the logic of their own creation. Google and Facebook vigorously lobby to kill online privacy protection, limit regulations, weaken or block privacy-enhancing legislation, and thwart every attempt to circumscribe their practices because such laws threaten the flow of behavioral surplus (Dougherty 2016; Google Transparency Project 2016, 2017; Mullins and Nicas 2017; Shaban 2017a, 2017b; Statista 2017; Taplin 2017). Schmidt, Brin, and Page have ardently defended their right to freedom from law even as Google grew to become what is arguably the world's most powerful corporation (Khosla 2004). Their efforts have been marked by a few consistent themes: that technology companies such as Google move faster than the state's ability to understand or follow; that any attempts to intervene or constrain are therefore fated to be ill-conceived and inept; that regulation is always a negative force that impedes innovation and progress; and that lawlessness is the necessary context for innovation (Cunningham 2011; Gobry 2011; Jenkins 2010; Yarow 2013).

Many hopes today are pinned on the new body of EU regulation known as the General Data Protection Regulation (GDPR), which became enforceable in May 2018. In time the world will learn if the GDPR can move out in front of Big Other, successfully challenging the legitimacy of surveillance capitalism, its means of behavioral modification, and its production of instrumentarian power. Scholars and specialists debate the implications of the sweeping new regulations, some arguing the inevitability of decisive change, and others arguing the likelihood of continuity over dramatic reversals of practice (Keller 2017; Mayer-Schönberger and Padova 2016; Rossi 2016; Wachter 2017; Zarsky 2017). The only possible answer is that everything will depend upon how European societies interpret the new regulatory regime in legislation and in the courts. It will not be the wording of the regulations but rather popular movements on the ground that shape these interpretations. Just as a century ago workers joined in collective action to tip the scales of power, today's "users" will have to mobilize in new ways that assert society's rejection of an economic order based on

the dispossession of human experience as a means to the prediction and control of human behavior for others' profit.

As a result of its successful pursuit of lawlessness and in the absence of the typical mechanisms of private governance associated with exit, voice, and loyalty, surveillance capitalism has wielded its instrumentarian power to bypass older distinctions between market and world, market and society, market and home, or market and person. Instrumentarianism opens these borderlands to profit seeking, as market operations fill the void where democratic institutions should be. It is already clear that instrumentarian power produces specific contests over the constitutionally established rights of citizens. For example, when US scholars and jurists assess the ways in which digital capabilities challenge Fourth Amendment doctrine, the focus is typically on the relationship between individuals and the state. It is of course vital that Fourth Amendment protections reflect the realities of twenty-first-century data production and dispossession (Brennan-Marquez and Henderson 2017; Gray 2017a, 2017b; Kerr 2005, 531–585; Wydra et al. 2017). The problem is that even expanded protections from state surveillance do not shield users from the assaults of instrumentarian power animated by surveillance capitalism's private economic imperatives (Daskal 2015; Kerr 2005).

Legal scholarship is just beginning to reckon with these new facts. Fourth Amendment scholar Andrew Guthrie Ferguson concludes, "If billions of sensors filled with personal data fall outside of Fourth Amendment protections, a large-scale surveillance network will exist without constitutional limits" (Ferguson 2015, 879–880). Dutch scholars make a similar case for the inadequacy of Dutch law as it trails behind Big Other, no longer able to effectively assert the sanctity of the home from the invasive action of either industry or the state. "The walls no longer shield the individual effectively from the outside in the pursuing of . . . personal life without intrusion . . ." (Van Dongen and Timan 2017).

These and other contests over the extension of juridical rights to surveillance capitalism's market domain point us toward an even deeper crisis of human rights, delivering us head-on to Hannah Arendt's meta-formulation of the "right to have rights." Arendt's assertion peels away juridical achievements—she refers to these as the "Rights of Man"—revealing the a priori grounds upon which the very possibility of juridical rights rests. It is here on the ground of what I shall refer to as "elemental human rights" that

I propose to consider the implications of surveillance capitalism and its instrumentarian power for the prospects of human freedom.[4]

Instrumentarian Power as a Coup from Above

For Arendt, the "right to have rights" stands in contrast to juridical rights as indelible, "Man, it turns out, can lose all so-called Rights of Man without losing his essential quality as man, his human dignity" (Arendt 2004, 377). This is because the "right to have rights" equates to the "right of every individual to belong to humanity," and it "should be guaranteed by humanity itself" (Arendt 2004, 379). What does this belonging signify? For Arendt it means, above all, the possibility of effective life through voice and action, possibilities that are given in the elemental condition of inclusion in the human community. To belong to humanity is to belong to a world in which one can choose one's actions and exercise one's voice in ways that effectively further the aims of one's own life and the life of one's group.

How does the elemental condition of belonging to humanity translate into a "right to have rights"? Arendt argues that this conversion from elemental condition to explicit right arises only in the confrontation with a threat to the condition of inclusion:

> We became aware of the existence of a "right to have rights" (and that means to live in a framework where one is judged by one's actions and opinions) and a right to belong to some kind of organized community, only when millions of people emerged who had lost and could not regain these rights because of the new global political situation. . . . Not the loss of specific rights, then, but the loss of a community willing and able to guarantee any rights whatsoever, has been the calamity which has befallen ever-increasing numbers of people. Only the loss of a polity itself expels him from humanity. (Arendt 2004, 376–377)

Only exclusion from humanity itself, and thus exclusion from the elemental freedoms of voice and action, can abrogate the "right to have rights." "The fundamental deprivation of human rights is manifested first and above all in the deprivation of a place in the world which makes opinions significant and actions effective" (Arendt 2004, 376).

In this Arendt foreshadows the linguistic philosopher John Searle's "pragmatic considerations of the formulation of rights" (Searle 2010, 194–195). Searle argues that elemental conditions of existence are crystallized as formal human rights only at that moment in history when they

come under systematic threat. So, for example, the ability to speak is an elemental condition. The concept of "freedom of speech" as a formal juridical right emerged only when society evolved to a degree of political complexity that the freedom to speak came under threat. Searle observes that speech is not more central to human life than breathing or being able to move one's body. No one has declared a "right to breathe" or a "right to bodily movement" because these elemental conditions have not come under attack and therefore do not require formal protection. What counts as a basic right, Searle argues, is both "historically contingent" and "pragmatic" (Searle 2010, 194–195).

It is not surprising then, that Arendt wrestled with the elemental human conditions of inclusion, voice, and action at a time when totalitarianism forced many philosophers and social theorists to question the structure of human freedom (Adorno 2008; Arendt 1983; Sartre 1957, 1992). Were there elemental constituents of human freedom that remain ineradicable, even in the teeth of "no escape" from a totalizing power? For the Arendt of *Origins* "action" was an indelible manifestation of freedom. Of those deprived of human rights under totalitarianism she wrote, "They are deprived, not of the right to freedom, but of the right to action" (Arendt 2004, 376).

It was a theme that she would elaborate throughout her life: action *initiates*. It asserts beginnings that diverge from established lines of force. Action inserts itself into the already composed human world to make something new. "To act . . . means to take an initiative, to begin . . . to set something into motion" (Arendt 1998, 176–177). Arendt observes that every beginning, seen from the perspective of the framework that it interrupts, is a miracle. The capacity for performing such miracles is uniquely human. "What usually remains intact in the epochs of petrification and foreordained doom is the faculty of freedom itself, the sheer capacity to begin, which animates and inspires all human activities and is the hidden source . . . of all great and beautiful things" (Arendt 1993, 169).

Key to our discussion is Arendt's insistence that "this insertion is not forced upon us by necessity. . . . It may be stimulated by the presence of others whose company we may wish to join, but it is never conditioned by them; its impulse springs from the beginning which came into the world when we were born and to which we respond by beginning something new on our own initiative" (Arendt 1993, 177). She explores this "impulse" in her extensive examination of "will," which she characterizes as the "organ

for the future" in the same way that memory is the mental organ for the past. When we recall the past, we see only objects, but the view to the future brings "projects" that are latent in our will but have not yet come to be. Will is the organ with which we summon our futures into existence as we project ourselves into the future tense, make promises, and close the gap between present and future by fulfilling those promises as we translate the latent into the real.

These initiatives could have been "left undone" but for the inward freedom to project our commitments into the future and impose our will to see them through. It is not only that we make new beginnings, but also that these beginnings would not come into existence in the absence of our willing to undertake them. In this way, the future remains contingent on our will to create it and must therefore be understood as intrinsically unpredictable. Will is the human counterpoint to the fear of uncertainty that suffocates original action: "A will that is not free is a contradiction in terms" (Arendt 1978, 13–14).

These elemental manifestations of human self-determination, Arendt argues, derive from the capacity "to dispose of the future as though it were the present." Will is the means by which we annex the future tense, transforming it into a territory for deliberation, choice, promises, and the initiation of new beginnings in the fulfillment of those promises. This is how we manage the inescapable uncertainty of existence and achieve, as individuals and as communities, some "limited independence from the incalculability of the future." Arendt thus describes promises as "islands of predictability" and "guideposts of reliability" in an "ocean of uncertainty." They are, she argues, the only alternative to a different kind of "mastery" that relies on "domination of one's self and rule over others" when the lust for certainty produces the impulse "to cover the whole ground of the future and to map out a path secured in all directions" (Arendt 1998, 243–247). In this way human action as an elemental source of freedom expresses a dynamic biography born in the inwardness of will in order to flourish in the embrace of a human community where wills are joined to produce effective life, promising and keeping promises in shared purpose.

We have seen that the "right to have rights" is crystallized only in the historical moment when inclusion in humanity comes under threat. But what of action's birthplace in the elemental functions of human will and its annexation of the future? Arendt's metaphor of will asserts the inalienable

status of this elemental inward capacity. What happens when the uniquely human capacity to dispose of the future as though it were the present—the right to count the future as one's field of action—is threatened with suppression or extinction? Following Arendt's and Searle's logic, such a threat demands the translation of this elemental condition of human freedom into a right, that it might be recognized as fundamental to effective life and accorded the protection of the political community.

This elemental condition in which we annex the future to the present as the field of autonomous action is what I have called *the right to the future tense* (Zuboff 2019). It asserts the inalienable capacity to will the future into existence through the force of one's own choice and commitment, and it recognizes this capacity as a baseline condition of effective human life. In claiming the future as a potential field of self-determined action, the right to the future tense asserts the unbroken biography of will and action that founds Arendt's "right to have rights." The right to the future tense and the "right to have rights" are twinborn. Expressed in action and guaranteed by inclusion in the human group, the "right to have rights" already presupposes the future tense as the ground on which the inner organ of the will is made manifest in the shared reality of the human community. Each is essential to the meaning and manifestation of the other, joined in the biographical arc of birth and adulthood. If the right to the future tense is abrogated, the miracle of human action is subordinated to others' plans that favor others' certainty. In the absence of the right to the future tense, the "right to have rights" is shorn of its origins in will and drifts into memory, a token of earlier unpredictable times.

I suggest that we now face the moment in history when the elemental condition in which we claim the future for autonomous action is threatened by the laws of motion of a new economic order in which wealth derives from the predictability of human behavior. The competitive dynamics of this new order require economies of action that operate to configure human behavior in ways that facilitate predictability. These operations grow more muscular with the escalation of competitive intensity, driving the evolution of predictability toward certainty. They are made manifest in a ubiquitous digital architecture of behavior modification owned and operated by surveillance capital outside of meaningful legal boundaries, indecipherable, and largely hidden. Motive and means combine to produce a new instrumentarian power that supplants freedom as the crucible of human action

for the sake of guaranteed outcomes and the competitive advantages that they confer in markets that trade in the future of human behavior.

Instrumentarian power employs the logic of radical behaviorism to exile persons from their own behavior, reducing action to measurable behavior and severing interior meaning from observable performance. In this process, the human person is reduced to an organism among organisms. This constitutes a bloodless methodology through which not only are persons excluded from humanity but, for the sake of others' market success, humanity itself is excluded from the calculative knowledge that shapes the future. These new information territories are private and privileged, known only to the machines, their priests, and the market participants who pay to play in these new market spaces. Although it is obviously the case that we are excluded because the knowledge thus accumulated is not for us, the demands of economies of action suggest an even deeper structural basis for exclusion: *the ability to evade individual awareness, and therefore individual will, is an essential condition for the efficient exercise of instrumentarian power and its economic objectives*. Autonomous human action is costly friction that threatens surveillance revenues. In this way a new form of domination and its maps of a certain future override the right to the future tense.

Instrumentarian power does not simply destroy elemental rights; it usurps them. Such processes of expropriation were first evident in the transfer of decision rights over personal information from individuals to surveillance capitalists. The competitive demand for economies of action and the elaboration of the means of behavioral modification extends the pattern of expropriation to the elemental right to the future tense, which is the right to count the future as one's field of action, to initiate beginnings, and thus, to borrow from Machado, to make the road as you go (Machado 2003).

For this reason surveillance capitalism and its instrumentarian power are best described as a market-driven coup from above—not a *coup d'état* in the classic sense but rather a *coup de gens*: an overthrow of the people concealed in the technological Trojan horse that is Big Other. Instead of unpredictable human actors, the organism among organisms is manipulated for the sake of others' certainty at the expense of the arc of autonomous action that begins with the inner organ of free will and is completed in the mutual elaboration of a human community that guarantees the right to manifest one's will in action. Instrumentarian power is the hammer that suppresses human freedom in favor of others' market certainty. First to be extinguished

in this coup is the pure impulse to initiate action that constructs social life as a miracle of unpredictable beginnings and distinguishes human beings as those who are born to replicate the natal miracle in original action. Arendt anticipated the possibility of this threat to human freedom at the hands of a behaviorist project elevated by global capital to world-historic power. She feared that the "last stage of the laboring society" would reduce its members to "automatic functioning," forced to acquiesce "in a dazed, 'tranquilized,' functional type of behavior":

> The trouble with modern theories of behaviorism is not that they are wrong but that they could become true, that they actually are the best possible conceptualization of certain obvious trends in modern society. It is quite conceivable that the modern age—which began with such an unprecedented and promising outburst of human activity—may end in the deadliest, most sterile passivity history has ever known. (Arendt 1998, 322)

Now it is the surveillance capitalists who enjoy the right to the future tense and who claim the "right to have rights" over the fields of action and knowledge. Instrumentarian power accomplishes the dispossession of human experience as an economic imperative, decisively prosecuting the redistribution of elemental human rights from individuals to capital. Surveillance capitalism's economic imperatives cannot be satisfied without these incursions into social and political territories that extend far beyond the traditional boundaries of private capital. In this way surveillance capitalism and its instrumentarian power are revealed as a profoundly antidemocratic constellation. They do not simply evade democratic oversight, but rather they undermine the foundations of such oversight for the sake of guaranteed outcomes. Surveillance capitalists accumulate not only surveillance assets and capital but also the elemental right to action, which is to say, freedom.

Just as industrial civilization flourished at the expense of nature and now threatens to cost us the earth, surveillance capitalism and its unprecedented instrumentarian power will thrive at the expense of human nature and threaten to cost us our humanity. The industrial legacy of climate chaos fills us with dismay, remorse, and fear. As surveillance capitalism founds a new economic order, what fresh legacy of damage and regret will be mourned by future generations? By the time you read these words, the reach of this new order will have grown, as more sectors, firms, start-ups, app developers, and investors mobilize around this one plausible version of information capitalism. This mobilization and the resistance it engenders

will define a key battleground at the new frontier of power where elemental human rights will be contested in the name of humanity and the future. Who will write the music? Who will dance?

Notes

1. For readers who seek more detail, surveillance capitalism, its production of instrumentarian power, and many of its rights implications are fully analyzed in *The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power* (Zuboff 2019).

2. A typical example is this statement from the *Economist*: "Google exploits information that is a by-product of user interactions, or data exhaust, which is automatically recycled to improve the service or create an entirely new product." "Clicking for Gold," *Economist*, February 25, 2010, http://www.economist.com/node/15557431.

3. Between 2012 and 2015 I interviewed fifty-two data scientists from nineteen different companies with a combined 586 years of experience in high technology corporations and start-ups, primarily in Silicon Valley. These interviews were conducted as I developed my "ground truth" understanding of surveillance capitalism and its material infrastructure.

4. I mean to introduce here a distinction between "elemental" and "fundamental" human rights. For example, "equality under the law" is a fundamental right. In contrast, "breathing" or "moving one's arms" are elemental rights. Such rights are given under the condition of being alive and are rarely formalized as fundamental or juridical rights unless they come under direct threat of prohibition.

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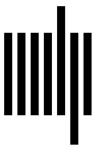

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