

integrity, learning, goal accomplishment, impulse control, creativity, and the sustenance of intimate enduring relationships. “Implicit in this process is a self that sets goals and standards, is *aware* of its own thoughts and behaviors, and has the capacity to change them,” write Ohio State University professor Dylan Wagner and Dartmouth professor Todd Heatherton in an essay about the centrality of self-awareness to self-determination: “Indeed, some theorists have suggested that the primary purpose of self awareness is to enable self-regulation.” Every threat to human autonomy begins with an assault on awareness, “tearing down our capacity to regulate our thoughts, emotions, and desires.”<sup>22</sup>

The salience of self-awareness as a bulwark against self-regulatory failure is also underscored in the work of two Cambridge University researchers who developed a scale to measure a person’s “susceptibility to persuasion.” They found that the single most important determinant of one’s ability to resist persuasion is what they call “the ability to premeditate.”<sup>23</sup> This means that people who harness self-awareness to think through the consequences of their actions are more disposed to chart their own course and are significantly less vulnerable to persuasion techniques. Self-awareness also figures in the second-highest-ranking factor on their scale: commitment. People who are consciously committed to a course of action or set of principles are less likely to be persuaded to do something that violates that commitment.

We have seen already that democracy threatens surveillance revenues. Facebook’s practices suggest an equally disturbing conclusion: human consciousness itself is a threat to surveillance revenues, as awareness endangers the larger project of behavior modification. Philosophers recognize “self-regulation,” “self-determination,” and “autonomy” as “freedom of will.” The word *autonomy* derives from the Greek and literally means “regulation by the self.” It stands in contrast to *heteronomy*, which means “regulation by others.” The competitive necessity of economies of action means that surveillance capitalists must use all means available to supplant autonomous action with heteronomous action.

In one sense there is nothing remarkable in observing that capitalists would prefer individuals who agree to work and consume in ways that most advantage capital. We need only to consider the ravages of the subprime mortgage industry that helped trigger the great financial crisis of 2008 or the

daily insults to human autonomy at the hands of countless industries from airlines to insurance for plentiful examples of this plain fact.

However, it would be dangerous to nurse the notion that today’s surveillance capitalists simply represent more of the same. This structural requirement of economies of action turns the means of behavioral modification into an engine of growth. At no other time in history have private corporations of unprecedented wealth and power enjoyed the free exercise of economies of action supported by a pervasive global architecture of ubiquitous computational knowledge and control constructed and maintained by all the advanced scientific know-how that money can buy.

Most pointedly, Facebook’s declaration of experimental authority claims surveillance capitalists’ prerogatives over the future course of others’ behavior. In declaring the right to modify human action secretly and for profit, surveillance capitalism effectively exiles us from our own behavior, shifting the locus of control over the future tense from “I will” to “You will.” Each one of us may follow a distinct path, but economies of action ensure that the path is already shaped by surveillance capitalism’s economic imperatives. The struggle for power and control in society is no longer associated with the hidden facts of class and its relationship to production but rather by the hidden facts of automated engineered behavior modification.

## Start Reading here

### III. *Pokémon Go! Do!*

It had been a particularly grueling July afternoon in 2016. David had directed hours of contentious insurance testimony in a dusty New Jersey courtroom, where a power surge the night before had knocked out the building’s fragile air-conditioning system. Then the fitful Friday commute home was cursed by a single car disabled by the heat that turned the once-hopeful flow of traffic into sludge. Finally home, he slid the car into his garage and made a beeline for the side door that opened to the laundry room and kitchen beyond. The cool air hit him like a dive into the ocean, and for the first time all day he took a deep breath. A note on the table said his wife would be back in a few minutes. He gulped down some water, made himself a drink, and climbed the stairs, heading for a long shower.

The doorbell rang just as the warm water hit his aching back muscles. Had she forgotten her key? Shower interrupted, he threw on a tee and shorts and ran downstairs, opening the front door to a couple of teenagers waving their cell phones in his face. "Hey, you've got a Pokémon in your backyard. It's ours! Okay if we go back there and catch it?"

"A what?" He had no idea what they were talking about, but he was about to get educated.

David's doorbell rang four more times that evening: perfect strangers eager for access to his yard and disgruntled when he asked them to leave. Throughout the days and evenings that followed, knots of Pokémon seekers formed on his front lawn, some of them young and others long past that excuse. They held up their phones, pointing and shouting as they scanned his house and garden for the "augmented-reality" creatures. Looking at this small slice of world through their phones, they could see their Pokémon prey but only at the expense of everything else. They could not see a family's home or the boundaries of civility that made it a sanctuary for the man and woman who lived there. Instead, the game seized the house and the world around it, reinterpreting all of it in a vast equivalency of GPS coordinates. Here was a new kind of commercial assertion: a for-profit declaration of eminent domain in which reality is recast as an unbounded expanse of blank spaces to be sweated for others' enrichment. David wondered, *When will this end? What gives them the right? Whom do I call to make this stop?*

Without knowing it, he had been yanked from his shower to join the villagers in Broughton, England, who had taken to their streets in 2009 protesting the invasion of Google's Street View camera cars. Like them, he had been abruptly thrust into contest with surveillance capitalism's economic imperatives, and like them he would soon understand that there was no number to call, no 911 to urgently inform the appropriate authorities that a dreadful mistake had blossomed on his lawn.

Back in 2009, as we saw in Chapter 5, Google Maps product vice president and Street View boss John Hanke ignored the Broughton protestors, insisting that only he and Google knew what was best, not just for Broughton but for all people. Now here was Hanke again at surveillance capitalism's next frontier, this time as the founder of the company behind Pokémon Go, Niantic Labs. Hanke, you may recall, nursed an abiding determination to own the

world by mapping it. He had founded Keyhole, the satellite mapping startup funded by the CIA and later acquired by Google and rechristened as Google Earth. At Google, he was a vice president for Google Maps and a principal in its controversial push to commandeer public and private space through its Street View project.

Hanke recounts that Pokémon Go was born out of Google Maps, which also supplied most of the game's original development team.<sup>24</sup> Indeed, Street View's mystery engineer, Marius Milner, had joined Hanke in this new phase of incursion. By 2010, Hanke had set up his own launch pad, Niantic Labs, inside the Google mother ship. His aim was the development of "parallel reality" games that would track and herd people through the very territories that Street View had so audaciously claimed for its maps. In 2015, following the establishment of the Alphabet corporate structure and well after the development of Pokémon Go, Niantic Labs was formally established as an independent company with \$30 million in funding from Google, Nintendo (the Japanese company that originally hosted Pokémon on its "Game Boy" devices in the late 1990s), and the Pokémon Company.<sup>25</sup>

Hanke had long recognized the power of the game format as a means to achieve economies of action. While still at Google he told an interviewer, "More than 80% of people who own a mobile device claim that they play games on their device... games are often the number 1 or number 2 activity... so for Android as an operative system, but also for Google, we think it's important for us to innovate and to be a leader in... the future of mobile gaming."<sup>26</sup>

It is worth noting that Hanke chose to name his group after a nineteenth-century merchant sailing vessel undone by greed. The *Niantic* had been sold and repurposed for the more lucrative whaling trade when it set sail for San Francisco and the northern Pacific whaling grounds in 1849. The ship's captain made an unplanned stop in Panama to board hundreds of pilgrims bound for the California Gold Rush, all of them eager to pay top dollar for cramped, smelly quarters on the whaler. The captain's avarice proved fatal to the ship's prospects when those passengers infected the ship's crew with gold fever. The sailors abandoned captain and vessel upon docking in San Francisco, heading instead for gold country. Unable to continue the journey, the captain was forced to sell the ship for a pittance, leaving it wedged deep in the

sandy shallows at the foot of Clay and Montgomery streets. In 2016 Hanke took up the quest of that rebellious crew. His Niantic was bound for a new century's gold rush at the frontier of the prediction imperative's next wave of conquest: economies of action.

Hanke's Pokémon Go launched in July 2016 as a different answer to the question confronting the engineers and scientists shaping the surveillance capitalist project: how can human behavior be actuated quickly and at scale, while driving it toward guaranteed outcomes? At its zenith in the summer of 2016, Pokémon Go was a surveillance capitalist's dream come true, fusing scale, scope, and actuation; yielding continuous sources of behavioral surplus; and providing fresh data to elaborate the mapping of interior, exterior, public, and private spaces. Most important, it provided a living laboratory for telestimulation at scale as the game's owners learned how to automatically condition and herd collective behavior, directing it toward real-time constellations of behavioral futures markets, with all of this accomplished just beyond the rim of individual awareness. In Hanke's approach, economies of action would be achieved through the dynamics of a game.

Niantic designed the new game to be "played" in the real world, not on a screen. The idea is that players should be "going outside" for "adventures on foot" in the open spaces of cities, towns, and suburbs.<sup>27</sup> The game relies on "augmented reality" and is structured like a treasure hunt. Once you download the app from Niantic, you use GPS and your smartphone camera to hunt virtual creatures called Pokémon. The figures appear on your smartphone screen as if they are located beside you in your real-life surroundings: an unsuspecting man's backyard, a city street, a pizzeria, a park, a drugstore. Captured Pokémon are rewarded with game currencies, candies, and stardust, and are employed to battle other users. The ultimate goal is to capture a comprehensive array of the 151 Pokémon, but along the way players earn "experience points," rising to successive levels of expertise. At level five, players can join one of three teams to battle Pokémon at designated sites referred to as "gyms."

The ramp-up had begun years earlier with Ingress, Niantic's first mobile game designed for real-world play. Released in 2012, Ingress was a precursor and test bed for the capabilities and methods that would define Pokémon Go. The game drove its users through their cities and towns to find and control designated "portals" and capture "territory" as the game masters relied on

GPS to track users' movements and map the territories through which they roamed.

Hanke reflected on what he and his team had learned from Ingress. Most important was the Niantic team's "surprise" as they observed how much "the behavior of the players changes."<sup>28</sup> Hanke grasped that the seeds of behavior modification were planted in the game's rules and social dynamic: "If you want to turn the world into your game board, the places you want people to interact with have to have certain characteristics... There should be a reason for the player to go there... The game is enabling them and nudging you to have those interactions."<sup>29</sup> One user whose Ingress name was "Spottiswoode" provides an example: "As I cycle home, I stop near a location I'd scouted out previously, one with a weak enemy portal. I attack, using built-up XM ("exotic matter") to destroy the enemy infrastructure... On Ingress's built-in chat client, a player called Igashu praises my handiwork. 'Good job, Spottiswoode,' he says. I feel proud and move on, plotting my next assault upon the enemy's portals."<sup>30</sup> According to Hanke, Pokémon Go would be designed to leverage what the team now understood as the key sources of motivation that induce players to change their behavior: a social gaming community based on real-world action.<sup>31</sup>

All games circumscribe behavior with rules, rewarding some forms of action and punishing others, and Niantic is not the first to employ the structure of a game as a means of effecting behavior change in its players. Indeed, "gamification" as an approach to behavioral engineering is a subject of intense interest that has produced a robust academic and popular literature.<sup>32</sup> According to Wharton professor Kevin Werbach, games include three tiers of action. At the highest level are the "dynamics" that drive the motivational energy of the game. These can be emotions aroused by competition or frustration, a compelling narrative, a structure of progression that creates the experience of development toward a higher goal, or relationships that produce feelings such as team spirit or aggression. Next are the "mechanics." These are the procedural building blocks that drive the action and also build engagement. For example, a game may be structured as a competition or a solo challenge, as turn taking and cooperation, as transactions and winner take all, as team sport or individual conquest. Finally, there are the game "components" that operationalize the mechanics. These are the most-visible aspects

of a game: points to represent progress, quests laid out as predefined challenges, “badges” to represent achievements, “leader boards” to visually display all players’ progress, “boss fights” to mark the culmination of a level, and so forth.<sup>33</sup>

Most research on games concludes that these structures can be effective at motivating action, and researchers generally predict that games will increasingly be used as the methodology of choice to change individual behavior.<sup>34</sup> In practice, this has meant that the power of games to change behavior is shamelessly instrumentalized as gamification spreads to thousands of situations in which a company merely wants to tune, herd, and condition the behavior of its customers or employees toward its own objectives. Typically, this involves importing a few components, such as reward points and levels of advancement, in order to engineer behaviors that serve the company’s immediate interests, with programs such as customer loyalty schemes or internal sales competitions. One analyst compiled a survey of more than ninety such “gamification cases,” complete with return-on-investment statistics.<sup>35</sup> Ian Bogost, a professor of interactive computing at Georgia Tech and a digital culture observer, insists that these systems should be called “exploitationware” rather than games because their sole aim is behavior manipulation and modification.<sup>36</sup>

Pokémon Go takes these capabilities in a wholly new direction, running game players through the real world, but not for the sake of the game they think they are playing. Hanke’s unique genius is to point the game’s behavior-modification efforts toward a target that occupies an unexplored zone beyond the boundaries of players’ awareness. It aims to shape behavior in an even larger game of surveillance capitalism.

Pokémon Go was first unveiled to the *Wall Street Journal* in September 2015, shortly after Niantic’s spin-off from Google. The game masters told the reporter that the game would not include ads. Instead, revenues would accrue from “microtransactions,” presumably in-game purchases of virtual paraphernalia, although Niantic “declined to say” exactly what would be for sale. Niantic also promised a location-tracking bracelet that “vibrates and lights up” when a person approaches a Pokémon. It was clear that Pokémon Go would at least be a fresh source of surplus for refining and expanding the maps upon which the game depended.<sup>37</sup>

Released in the US, Australia, and New Zealand on July 6, 2016, Pokémon Go became the most downloaded and highest-grossing app in the US within only a week, quickly achieving as many active Android users as Twitter. More than 60 percent of the app’s downloads were in daily use, and by July 8 that translated into a daily average of about 43.5 minutes per user.<sup>38</sup> With Niantic’s servers groaning under the strain, the game’s European rollout was delayed until July 13. By that time, however, Niantic had proved the value of its approach to economies of action, demonstrating unprecedented effectiveness in traversing that last tortured mile to guaranteed outcomes.

The unprecedented pattern was faintly discernible within days of the game’s launch. A Virginia bar offered a discount to a Pokémon Go team; a tea shop in San Francisco offered a “buy one get one free” to the game’s players.<sup>39</sup> The owner of a pizza bar in Queens, New York, paid about \$10 for “Lure Modules,” a bit of virtual game paraphernalia intended to attract Pokémon to a specific location, successfully producing virtual creatures on bar stools and in bathroom stalls. During the first weekend of game play, the bar’s food and drink sales shot up by 30 percent and later were reported to be 70 percent above average. Bloomberg reporters gushed that the game had achieved the retailers’ elusive dream of using location tracking to drive foot traffic: “It’s easy to imagine a developer selling ads within the game world to local merchants, or even auctioning off the promise to turn specific shops and restaurants into destinations for players.”<sup>40</sup> Hanke hinted to the *New York Times* that these real-world, real-time markets had been the plan all along. “Niantic has cut deals like that for Ingress,” the paper reported, “and Mr. Hanke said the company would announce sponsored locations for Pokémon Go in the future.”<sup>41</sup>

The future came quickly. Within a week the basic elements of surveillance capitalism’s logic of accumulation were in place and were heralded as brilliant. As Hanke explained, “The game relies on a lot of modern cell phone and data technology to power the augmented reality, but that traffic generated by the game also changes what happens in the real world.”<sup>42</sup> By July 12, the *Financial Times* exulted that “speculation has surged over the game’s future power as a cash cow to retailers and other cravers of footfall.” Nintendo shares were up 52 percent, adding \$10.2 billion to its market capitalization.<sup>43</sup>

Earlier promises that the game would not serve ads turned out to be a technical claim that required careful parsing. In fact, the surveillance-based

logic of online advertising had not disappeared. Rather, it had morphed into its physical-world mirror image, just as Sidewalk Labs' Dan Doctoroff had imagined for the "Google city," a precise extension of the methods and purposes honed in the online world but now amplified in "reality" under pressure from the prediction imperative (see Chapter 7).

By July 13, Hanke admitted to the *Financial Times* that in addition to "in-app payments" for game kit, "there is a second component to our business model at Niantic, which is the concept of *sponsored locations*." He explained that this new revenue stream had always been in the plan, noting that companies will "pay us to be locations within the virtual game board—the premise being that it is an inducement that drives foot traffic." These sponsors, Hanke explained, would be charged on a "cost per visit" basis, similar to the "cost per click" used in Google's search advertising.<sup>44</sup>

The notion of "sponsored locations" is a euphemism for Niantic's behavioral futures markets, ground zero in Hanke's new gold rush. The elements and dynamics of the game, combined with its novel augmented-reality technology, operate to herd populations of game players through the real-world monetization checkpoints constituted by the game's actual customers: the entities who pay to play on the real-world game board, lured by the promise of guaranteed outcomes.

For a while it seemed that everyone was making money. Niantic inked a deal with McDonald's to drive game users to its 30,000 Japanese outlets. A British mall owner commissioned "recharging teams" to roam his malls with portable rechargers for game users. Starbucks announced that it would "join in with the fun," with 12,000 of its US stores becoming official "Pokéstops" or "gyms," along with a new "Pokémon Go Frappuccino... the perfect treat for any Pokémon trainer on the go." Another deal with Sprint would convert 10,500 Sprint retail and service outlets into Pokémon hubs. The music streaming company Spotify reported a tripling of Pokémon-related music sales. A UK insurance company offered special coverage for mobile phones, warning, "Don't let accidental damage get in the way of catching them all." Disney admitted that it was disappointed with its own strategies for "the blending of physical and digital to create new kinds of connected play experiences" and planned to transform its mammoth toy business "in a direction similar to Pokémon Go."<sup>45</sup>

The zeal for Pokémon Go gradually diminished, but the impact of Hanke's accomplishments is indelible. "We've only just scratched the surface," Hanke told a crowd of fans.<sup>46</sup> The game had demonstrated that it was possible to achieve economies of action on a global scale while simultaneously directing specific individual actions toward precise local market opportunities where high bidders enjoy an ever-closer approximation of guaranteed outcomes.

Niantic's distinctive accomplishment was to manage gamification as a way to guarantee outcomes for its actual customers: companies participating in the behavioral futures markets that it establishes and hosts. Hanke's game proved that surveillance capitalism could operate in the real world much as it does in the virtual one, using its unilateral knowledge (scale and scope) to shape your behavior now (action) in order to more accurately predict your behavior later. The logical inference is that real-world revenues will increase in proportion to the company's ability to match persons with locations, just as Google learned to wield surplus as a means of targeting online ads to specific individuals.

These requirements suggest that Niantic would conduct its operations in ways that establish substantial surplus supply chains aimed at scale and scope. Indeed, the company's "surveillance policy" signals its demand for behavioral data in excess of what is reasonable for effective game operations. Just six days after the game's release in July 2016, *BuzzFeed* reporter Joseph Bernstein advised Pokémon users to check how much data the app was collecting from their phones. According to his analysis, "Like most apps that work with the GPS in your smartphone, Pokémon Go can tell a lot of things about you based on your movement as you play: where you go, when you went there, how you got there, how long you stayed, and who else was there. And, like many developers who build those apps, Niantic keeps that information." Whereas other location-based apps might collect similar data, Bernstein concluded that "Pokémon Go's incredibly granular, block-by-block map data, combined with its surging popularity, may soon make it one of, if not the most, detailed location-based social graphs ever compiled."<sup>47</sup>

The industry news site *TechCrunch* raised similar concerns regarding the game's data-collection practices, questioning "the long list of permissions the app requires." Those permissions included the camera, yes, but also

permission to “read your contacts” and “find accounts on device.” Niantic’s “surveillance policy” notes that it may share “aggregated information and non-identifying information with third parties for research and analysis, demographic profiling, and other similar purposes.” *TechCrunch* noted the game’s “precise location tracking” and “ability to perform audio fingerprinting” through its access to your camera and microphone, concluding, “So it’s prudent to expect some of your location data to end up in Google’s hands.”<sup>48</sup> The Electronic Privacy Information Center noted in a letter of complaint to the Federal Trade Commission that Niantic had failed to provide compelling reasons for the “scope” of the information that it routinely gathers from users’ phones and Google profiles. Nor had it set limits on how long it would retain, use, or share location data. As the letter concluded, “There is no evidence that Niantic’s collection and retention of location data is necessary to the function of the game or otherwise provides a benefit to consumers that outweighs the privacy and safety harms it creates.”<sup>49</sup>

By mid-July 2016, Niantic received a letter from US Senator Al Franken querying the company’s privacy practices.<sup>50</sup> Niantic’s late-August response is instructive, a marvel of misdirection and secrecy that focuses on the game’s mechanics and discloses nothing about its business model or the more comprehensive logic of accumulation behind the model: “Pokémon Go has already been praised by public health officials, teachers, mental health workers, parents, park officials, and ordinary citizens around the world as an app that promotes healthy play and discovery.” Though acknowledging the range of data it collects as a condition of play—location services, photos, media, files, camera, contacts, and network provider data—Niantic insists that data are used “to provide and improve” its services. However, it does not acknowledge that its services operate on two levels: game services for players and prediction services for Niantic’s customers. The company concedes that it uses third-party services, including Google’s, to “collect and interpret data,” but it is careful to sidestep the aims of those analyses.<sup>51</sup>

The seven-page letter mentions “sponsored locations” only once, noting that sponsors receive reports about visits and game actions. There is no reference to “cost per visit” or the surplus that will be required to drive that metric, in the same way that Google’s “cost per click” depended upon behavioral

surplus drawn from online activity. Niantic’s self-presentation carefully conceals its objectives in the design and development of economies of action that drive real-world, real-time behavior toward Niantic’s behavioral futures markets.

The genius of Pokémon Go was to transform the game you see into a higher-order game of surveillance capitalism, a game about a game. The players who took the city as their board, roaming its parks and pizzerias, unwittingly constituted a wholly different kind of human game board for this second and more consequential game. The players in this other *real* game could not be found in the clot of enthusiasts waving their phones at the edge of David’s lawn. In the real game, prediction products take the form of protocols that impose forms of telestimulation intended to prod and herd people across real-world terrains to spend their real-world money in the real-world commercial establishments of Niantic’s flesh-and-blood behavioral futures markets.

Niantic itself is like a tiny probe rising from the immensity of Google’s mapping capabilities, surplus flows, means of production, and vast server farms as it constructs and tests the prototype of a global means of behavior modification owned and operated by surveillance capitalism. Niantic discovered that in the rapture of engaging competitive social play, the dreaded friction of individual will voluntarily gives way to game protocols that set the conditions for “natural selection.” In this way the game automatically elicits and breeds the specific behaviors sought by the high rollers in Niantic’s behavioral futures markets. With this second game board in motion, the players in the real game vie for proximity to the wake of cash that follows each smiling member of the herd.

In the end we recognize that the probe was designed to explore the next frontier: the means of behavioral modification. The game about the game is, in fact, an experimental facsimile of surveillance capitalism’s design for our future. It follows the prediction imperative to its logical conclusion, in which data about us in scale and scope combine with actuation mechanisms that align our behavior with a new market cosmos. All the flows of surplus from all the spaces, all the things, all the bodies, all the laughter, and all the tears are finally aimed at this triumph of certain outcomes and the revenue that it can unleash.