

## WEEK 10 | DIGITAL PATHOLOGY, PT. 3

*There are three basic steps to handling information: input, processing, and output. . . some creepy information systems suck up information about us as their input and process it, often to our detriment. Yet the creepiest technologies may be the ones that output their data, directly into our bodies and our minds.*

–Thomas Keenan

### EXPOSED

Technology has stolen from us. It has removed our incentive to learn—to learn new skills, to study new subjects. Machines can do virtually everything for us, and any piece of information we need is just a quick internet search away. It has transformed us into passive recipients of frivolous and mind-numbing media. Digital technologies have stolen something from us: our privacy.

Probably all of us have had the experience. We are talking about a certain subject, and only a minute later we are shocked to see ads pop up on our smartphone browser about the very subject we were just discussing—almost as if someone was listening to us. We notice that what we were just googling in one browser window is not popping up as an ad in our social media feed on a separate window. Clearly, our online activity is being monitored, despite the fact most of us have never knowingly given consent for it to be monitored, nor are we very aware of it.

Andrew Keen provides some shocking statistics: in every minute of every day in 2014, “3 billion Internet users in the world sent 204 million emails. Uploaded 72 hours of new YouTube videos, made over 4 million Google searches, shared 2,460,000 pieces of Facebook content, downloaded 48,000 Apple apps, spent \$83,000 on Amazon, tweeted 277,000 messages, and posted 216,000 new Instagram photos.”<sup>1</sup> That was in 2014; undoubtedly, in the eight years since, those numbers have only dramatically increased.

Have you ever wondered how tech companies make a profit? Google, Facebook, Twitter—none of them manufacture or sell products, and none of them charge fees to use their platforms. How, then, have these companies become some of the most profitable, and their CEOs some of the richest men, in the world? Because they do sell a product: you. Who you are, your online profile, is the product they sell. Craig Gay writes,

The irony is that central “Second Machine age” entities like Google and Facebook are becoming so hypervaluable precisely because of all the information we are providing them about ourselves—for free. As Andrew Keen comments in *The Internet Is Not the Answer*, all of us who use Google’s search services or post on

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<sup>1</sup> Keen, *The Internet is Not the Answer*, 13-14.

Facebook are effectively working for these firms without being compensated. Their commercial viability hinges on capturing, packaging, and selling the data generated by our online lives, our so-called digital exhaust. This information is sold to advertisers, media outlets, and others seeking to understand, anticipate, and possibly manipulate our behavior.<sup>2</sup>

Big tech companies are the ones who benefit off our digital lives.<sup>3</sup> The more time we spend on time, the more we engage, the more data we give them, and the better product they are able to produce and sell. “We are the Web’s neurons,” Nicholas Carr writes, “and the more links we click, pages we view, and transactions we make—the faster we fire—the more intelligence the Web collects, the more economic value it gains, and the more profit it throws off.”<sup>4</sup> Given the statistics above, every day we are providing these companies with exorbitant amounts of data they are using to increase their bottom line.

How is it that these companies get this data, exactly? Bruce Schneider, a leading computer security expert, has said that the principle business model of the internet is based largely on “mass surveillance.”<sup>5</sup>

So much of what is happening is out of our view and beyond our control. Like a network of mushroom spores sending out subterranean tendrils to silently exchange genetic material, our technological systems are increasingly passing information back and forth without bothering to tell us. They are parsing and analyzing it to squeeze out the deep meaning of what we say and do, sometimes before we are even aware of our own intentions.<sup>6</sup>

Glenn Wilkinson of SensePost’s U.K. office warns that “we are all carrying around the most prolific surveillance device ever invented, completely voluntarily, right in our pockets.”<sup>7</sup> The digital age is highly connected in a variety of ways, perhaps none more so than the constant connectivity our smartphone provides. The problem, however, is that they interested parties we are not aware of the ability to track our movements, monitor our internet searches, scan our meals, assess our mood, track our spending habits, and assess our preferences. In short, there is

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<sup>2</sup> Craig M. Gay, *Modern Technology and the Human Future* (Downer’s Grove, IL: IVP, 2018), 41.

<sup>3</sup> About 97 percent of Google’s revenue comes from advertising, much of it highly targeted thanks to a wealth of user data.

<sup>4</sup> Nicholas Carr, *The Big Switch: Rewiring the World from Edison to Google* (New York: W.W. Norton, 2013), 228.

<sup>5</sup> Craig M. Gay, *Modern Technology and the Human Future* (Downer’s Grove, IL: IVP, 2018), 41.

<sup>6</sup> Thomas P. Keenan, *Technocreep: The Surrender of Privacy and the Capitalization of Intimacy* (Vancouver: Greystone Books, 2014), 11.

<sup>7</sup> Spoken at Black Hat Asia 2014, quoted in Keen, *Technocreep*, 82.

little privacy left in this digital age, and the more time we spend connected, the less privacy we are able to enjoy. One computer security expert writes,

Most of us have already reached a kind of ‘privacy singularity.’ In some very important ways, our technologies, taken together, know more about us than our most significant friend or lover. This is totally understandable, since we spend so much time exchanging information through technology. They are our electronic confidants, our faithful servants, and in some cases, two-timing spies.<sup>8</sup>

To demonstrate this reality, let’s look at just some of the many ways in which we are being monitored or tracked:

- Cameras: According to a 2012 article in *Forbes* magazine, “In the United States, it is estimated that there are 30 million surveillance cameras, which create more than four billion hours of footage every week.”<sup>9</sup> That this information is now a decade old reminds us that, virtually everywhere we go—in public and, often, in private—we are on camera. This footage is being used to rack potential criminals, determine crowd size, and to track shoppers as they walk through the mall. “It’s not just that they’re capturing your image: it’s what they might do with it, now and in the future.”<sup>10</sup>
- Sensors: Virtually everywhere you go you are surrounded and being watched by sensors, also known as the “Internet of Things.” They are in road signs, the road itself, streetlamps, doorways, dishwashers, toothbrushes, smartphones, vehicles, clothing, and countless other things we would consider a part of daily life. All of them are silently and invisibly tracking us and gathering information about us.
- Google: Psychologist Robert Epstein has identified 15 ways that Google is monitoring its users, including through Gmail (software scans both your incoming and outgoing emails), its search engine (every key-stroke is recorded), other companies, like YouTube, that it owns, and even digital data captured by its Google Street teams (by grabbing data off your WiFi network as they drive by).<sup>11</sup> He notes that the revenue model demands that “Every major company expenditure. . . has to feed the beast.”<sup>12</sup>

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<sup>8</sup> Keenan, *Technocreep*, 85.

<sup>9</sup> Tarun Wadhwa, “The Next Privacy Battle: Cameras That Judge Your Every Move,” in *Forbes* (August 2012).

<sup>10</sup> Keenan, *Technocreep*, 34.

<sup>11</sup> See Robert Epstein, “Google’s Gotcha: 15 Ways Google Monitors You,” in *U.S. News* (May, 2013), <https://www.usnews.com/opinion/articles/2013/05/10/15-ways-google-monitors-you>.

<sup>12</sup> *Ibid.*

- Facebook Exchange (FBX): This is “a real-time bidding platform where companies. . . purchase access to your eyeballs through sponsored ads on Facebook.”<sup>13</sup> Companies bid for screentime on your screen in real time as you scroll through your Facebook feed.
- Social Media: Any picture of you or information about you on the internet is there forever and can be used against you. One humorous study in Brussels demonstrated this:
 

In an even more grandiose demonstration of online privacy risks, the Belgian Financial Sector Federation set up a tent in a square in Brussels and invited people to be a part of a TV program with a “gifted clairvoyant named Dave.” After some theatrics like hugging them and jumping around, he proceeded to tell them their most intimate details, from hidden tattoos. . . to their bank account numbers and precise balances.

At a strategic moment, a curtain drops to reveal hard working hackers dressed in black, bringing up the subject’s social media pages on large computer screens and feeding the information to Dave. Instead of a psychic TV show, participants became part of a public service announcement about the risks of sharing too much information online. The tagline is: ‘Your entire life is online. And it might be used against you.’
- Amazon uses an “item-to-item collaborative filtering” algorithm that tracks the purchases of your friends on social media and people in your geographical vicinity and then makes purchasing recommendations to you based on that data.
- Emotional AI: new software is being developed that, allegedly, is able to assess your emotional state based on eye-tracking and facial expression analysis.<sup>14</sup> However, as Professor Andrew McStay notes, “if you begin with the premise that there’s personal, economic, and organizational value in understanding human emotion, then there’s a certain inevitability about these technologies,”<sup>15</sup> an inevitability that he sees as highly invasive.
- Tokyo-based KDDI Corporation has developed software that uses your smartphone’s accelerometer to track your movements. Over time, “the system becomes more accurate as time goes on, recognizing each individual’s movements.”<sup>16</sup> This software is being marketed to employers as a way of keeping tabs on their employees at work.

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<sup>13</sup> Keenan, *Technocreep*, 86.

<sup>14</sup> See Tim Lewis, “AI Can Read Your Emotions. Should It?” in *The Observer* (August 2017), <https://www.theguardian.com/technology/2019/aug/17/emotion-ai-artificial-intelligence-mood-realeyes-amazon-facebook-emotient>.

<sup>15</sup> Andrew McStay, quoted in *ibid*.

<sup>16</sup> Addy Dugdale in *Fast Company*, quoted in Keenan, *Technocreep*, 89.

- Proteus Digital Health of Redwood, California, is working to develop a “password pill.” This pill would be consumed each day and will emit radio waves that will function as our password for any technologies we use, ridding us of the need to remember passwords ourselves.

To these could be added dozens more examples. Entire books have been written on the issue and countless articles warn of the gathering and use of personal data that is occurring all the time. Keenan writes, “All the sophisticated display systems in the world would be useless without a solid stream of data to feed them. Data is being gathered at unprecedented rates, from all over the planet, as well as from space and with manned and unmanned aircraft.”<sup>17</sup> We live in the information age driven by an attention economy. Information about us is valuable, and interested parties—many with nefarious motives—are trying to get their hands on as much data about us as they possible can.

Governments, corporations, and even nosy neighbors are starting to feel that “more is better” when it comes to data, and “if we can collect it, we should.” The cut-throat competition between online, brick-and-mortar, and hybrid retailers has fueled an “anything goes” mentality of massive data collection, archiving, resale, and brokering. A new breed of “data scientists” is starting to rule the roost, as businesses smell profit in techniques like collaborative filtering, long tail personalizations, and sophisticated suggestion algorithms.<sup>18</sup>

## **PERSUADED**

The loss of privacy described above is frightening, but worse yet is how all the data gathered about us is being used. In short, companies are using our data to manipulate us to their advantage. The fact is, the more that companies know about us, the more they are able to influence us, something that several former software programmers have observed. James Williams, a former strategist for Google, writes, “The dynamics of the attention economy are structurally set up to undermine the human will. If politics is an expression of our human will, on an individual and collective levels, then the attention economy is directly undermining the assumptions that democracy rests on.”<sup>19</sup> He goes on to reflect on his work, saying, “I realized: this is literally a million people that we’ve sort of nudged or persuaded to do this thing that they weren’t going to otherwise do.”<sup>20</sup>

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<sup>17</sup> Keenan, *Technocreep*, 92.

<sup>18</sup> *Ibid.*, 209.

<sup>19</sup> James Williams, quoted in Lewis, “Our Minds Can Be Hijacked.”

<sup>20</sup> *Ibid.*

“All of our minds can be hijacked,” says Tristan Harris, another former Google employee. “Our choices are not as free as we think they are.”<sup>21</sup> Andrew Sullivan would agree. He laments the fact that we are often unwittingly being manipulated by big tech companies:

Do not flatter yourself in thinking that you have much control over which temptations you click on. Silicon Valley’s technologists and their ever-perfecting algorithms have discovered the form of bait that will have you jumping like a witless minnow. No information technology ever had this depth of knowledge of its consumers—or greater capacity to tweak their synapses to keep them engaged.<sup>22</sup>

Of great concern for many is the fact this is true not just at the level of the individual, but for entire populations. “A handful of people,” Harris says, “working at a handful of technology companies, through their choices will steer what a billion people are thinking today.”<sup>23</sup> If these insiders are right, then tech companies like Google and Facebook have a level of influence unparalleled in human history—influence that is covert, unseen, and often undetectable.

This phenomenon was observed even as far back as the 1950s. The American Journalist Vance Packard, writing in the tradition of Huxley (*Brave New World*, 1932) and Orwell (*1984*, 1949), observed in *The Hidden Persuaders* (1957) that the level of government control in those books was becoming a reality in America in often undetectable ways. Techniques like *subliminal stimulation* had been developed that could influence someone’s emotions, actions, or decisions without them even knowing. He also noted that companies are always looking for techniques they can use to influence people on a large scale to boost their own power and profits. He feared what economist Kenneth Boulding so eloquently described: “A world of unseen dictatorship is conceivable, still using the forms of democratic government.”<sup>24</sup> With the rise of the internet, the forces described by Packard and Boulding have become pervasive in our society and, even now, are being leveraged by companies without our awareness or approval.

How do they manipulate us? As we have previously seen, programmers have grown adept at designing platforms that leverage our own psychology and physiology against us. Simple, seemingly innocuous tools manipulate us into outcomes desirable to the companies, but not necessarily to us. Harris has observed how “LinkedIn exploits a need for social reciprocity to widen its network; how YouTube and Netflix autoplay videos and next episodes, depriving users of a choice about whether or not they want to keep watching; how Snapchat created its addictive

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<sup>21</sup> Tristan Harris, quoted in Lewis, “Our Minds Can Be Hijacked.”

<sup>22</sup> Sullivan, “I Used To Be A Human Being.”

<sup>23</sup> Tristan Harris, quoted in Lewis, “Our Minds Can Be Hijacked.”

<sup>24</sup> Kenneth Boulding, *Collected Papers: Political Economy* (L.D. Singell, 1973).

Snapstreak feature, encouraging near-constant communication between its mostly teenage users.”<sup>25</sup>

The problem is exacerbated by the algorithms employed by these companies, which use the data collected on an individual to tailor an online experience designed to move that individual in the desired direction. “The techniques these companies use are not always generic: they can be algorithmically tailored to each person. An internal Facebook report leaked this year, for example, revealed that the company can identify when teens feel ‘insecure,’ ‘worthless’ and ‘need a confidence boost’. Such granular information, Harris adds, is a ‘a perfect model of what buttons you can push in a particular person.’”<sup>26</sup>

Robert Epstein, a senior research psychologist at the American Institute for Behavioral Research and Technology, has done extensive research on the ability of search engines, especially Google, to influence people’s beliefs and choices. “Google,” he writes, “has become the main gateway to virtually all knowledge, mainly because the search engine is so good at giving us exactly the information we are looking for.”<sup>27</sup> Eighty-three percent of Americans specify Google as their preferred search engine, a number that is even higher in other countries. This lack of competition, Epstein notes, gives Google an unchecked ability to manipulate people according to its interests and desires.

Epstein’s focus is on Google’s ability to impact elections. Over several studies on both large and small scales, Epstein’s group has found that Google can sway undecided voters by substantial margins—sometimes by as much as 60 percent—based on what headlines its algorithm selects to place in the top 10 of its search results. “Our randomized, controlled experiments,” he writes, “tell us over and over again that when higher-ranked items connect with web pages that favour one candidate, this has a dramatic impact on the opinions of undecided voters, in large part for the simple reason that people tend to click only on higher-ranked items.”<sup>28</sup> This effect, which he has labeled *Search Engine Manipulation Effect* (or SEME), is largely undetectable. It is also easy to manipulate by simply adjusting the algorithm to prefer certain search results over others. Epstein and his research group have calculated that Google alone has the ability to flip “upwards of 25 per cent of the national elections in the world with no one knowing this is occurring.”<sup>29</sup>

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<sup>25</sup> Lewis, “Our Minds Can Be Hijacked.”

<sup>26</sup> Lewis, “Our Minds Can Be Hijacked.”

<sup>27</sup> Robert Epstein, “The New Mind Control,” *Aeon* (February 2016), <https://aeon.co/essays/how-the-internet-flips-elections-and-alters-our-thoughts>.

<sup>28</sup> *Ibid.*

<sup>29</sup> *Ibid.*, emphasis original.

This is not only true in the political sphere. One study found that Facebook users' emotional states can be deliberately manipulated on a massive scale based on what kinds of terms—positive or negative—are placed in their newsfeed more frequently.<sup>30</sup> Epstein writes,

Search engines are influencing far more than what people buy and whom they vote for. We now have evidence suggesting that on virtually all issues where people are initially undecided, search rankings are impacting almost every decision that people make. They are having an impact on the opinions, beliefs, attitudes and behaviours of internet users worldwide—entirely without people's knowledge that this is occurring. This is happening with or without deliberate intervention by company officials; even so-called 'organic' search processes regularly generate search results that favour one point of view, and that in turn has the potential to tip the opinions of millions of people who are undecided on an issue.<sup>31</sup>

The manipulative impact of technology is a feature, not a bug, of the system, Felicia Wu Song argues. It is inherent to the incentives that drive these companies and the tools that are at their disposal. She writes,

while we as individuals still retain agency and can choose to use our technology as we would like, the built-in affordances of a technology's design create an unlevel playing field that privileges certain options over others. We *can* choose to watch only one episode of Netflix or we *can* resist checking our work email during vacation, but to do so requires swimming upstream with intention and effort. As media scholar Neil Postman presciently observed before the internet even existed, intrinsic to every technology is 'a predisposition to construct the world as one thing rather than another, . . . to amplify one sense or skill or attitude rather than another, . . . to amplify one sense or skill or attitude more loudly than another.' Though technological affordances certainly do not determine human behavior, it is important to recognize how they create environments that make some worlds and behaviors more imaginable and achievable than others.<sup>32</sup>

In short, while these companies do not overtly force us into decisions we would not otherwise make, they are exerting a subtle, invisible, but very real influence on us, effectively nudging us into making decisions that benefit them, whether or not they benefit us. If we are not aware of these dynamics and are not careful to mitigate their effect, we effectively hand over our autonomy to companies that are neither for us nor the God we serve.

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<sup>30</sup> Adam D. I. Kramer, Jamie E. Guillory, and Jeffrey T. Hancock, "Experimental Evidence of Massive-Scale Emotional Contagion through Social Networks," *PNAS* vol. 111, no. 24 (June 2014), <https://www.pnas.org/doi/pdf/10.1073/pnas.1320040111>.

<sup>31</sup> Epstein, "The New Mind Control."

<sup>32</sup> Song, *Restless Devices*, 26.



Scripture describes in painful detail the influence that Satan has over this fallen world. Jesus repeatedly calls him “the ruler of this world” (John 12:31; 14:30; 16:11), and Paul calls him “the prince of the power of the air” (Ephesians 2:1). “The whole world,” John writes, “lies under the sway of the wicked one” (1 John 5:19). Satan is our adversary (1 Peter 5:8), and he is undoubtedly working through these technologies to instill doubt, promote lies, to do anything he can to deceive us and draw us away from the truth.

Paul reminds the Ephesians, and us, that “we do not wrestle against flesh and blood, but against the rulers, against the authorities, against the cosmic powers over this present darkness, against the spiritual forces of evil in the heavenly places” (Ephesians 6:12). Life in this fallen world is marked by spiritual warfare, and all those who are outside of Christ are under the sway of our adversary. We must not be naïve to this. Though a software designer at Google may not have nefarious intentions, he may be creating technologies that others can use for nefarious purposes.

We should also realize that companies like Facebook or Google are not seeking to persuade people to believe the gospel, to follow Christ, and to be more holy. The opposite is true. These companies, under the very real influence of Satan, will leverage their manipulative powers to push people *away* from Biblical truth. If we are not careful, they will seek to do the same to us. It is no wonder that so many confessing Christians are rejecting creationism and affirming the LGBTQ movement. How do we resist? Paul says we must “take up the whole armor of God, that you may be able to withstand in the evil day, and having done all, to stand firm” (Ephesians 6:13). He goes on:

<sup>14</sup> Stand therefore, having fastened on the belt of truth, and having put on the breastplate of righteousness, <sup>15</sup> and, as shoes for your feet, having put on the readiness given by the gospel of peace. <sup>16</sup> In all circumstances take up the shield of faith, with which you can extinguish all the flaming darts of the evil one; <sup>17</sup> and take the helmet of salvation, and the sword of the Spirit, which is the word of God, <sup>18</sup> praying at all times in the Spirit, with all prayer and supplication.

Where do we find all these things? Where is truth found? How do you know what is righteous? How do we know the gospel? How do we know what to put our faith in? Where do we learn about salvation? How do we learn about the Spirit? In God’s word. All of it. As Christians living in this digital age, it is imperative that we take in a strong and steady diet of truth. We need God’s word so we can exercise discernment and avoid the traps the enemy has laid for us. We must commit ourselves to be people of the Word.