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Prologue: Never Get High on Your Own Supply

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Prologue:
Never Get High on Your Own Supply

At an Apple event in January 2010, Steve Jobs unveiled the iPad:

> What this device does is extraordinary . . . It offers the best way to browse the web; way better than a laptop and way better than a smartphone . . . It's an incredible experience . . . It's phenomenal for mail; it's a dream to type on.

For ninety minutes, Jobs explained why the iPad was the best way to look at photos, listen to music, take classes on iTunes U, browse Facebook, play games, and navigate thousands of apps. He believed everyone should own an iPad.

But he refused to let his kids use the device.

In late 2010, Jobs told *New York Times* journalist Nick Bilton that his children had never used the iPad. "We limit how much technology our kids use in the home." Bilton discovered that other tech giants imposed similar restrictions. Chris Anderson, the former editor of *Wired*, enforced strict time limits on every device in his home, "because we have seen the dangers of technology firsthand." His five children were never allowed to use screens in their bedrooms. Evan Williams, a founder of Blogger, Twitter, and Medium, bought hundreds of books for his two young sons, but refused to give them an iPad. And Lesley Gold, the founder of an analytics company, imposed a strict no-screen-time-during-the-week rule on her kids. She softened her stance only when they needed computers for schoolwork. Walter Isaacson, who ate dinner with the Jobs family while researching his biography of Steve Jobs, told Bilton that, "No one ever pulled out an iPad or computer. The kids did not seem addicted at all to devices." It seemed as if the people producing tech products were following the cardinal rule of drug dealing: never get high on your own supply.

This is unsettling. Why are the world's greatest public technocrats also its greatest private technophobes? Can you imagine the outcry if religious leaders refused to let their children practice religion? Many experts both within and beyond the world of tech have shared similar perspectives with me. Several video game designers told me they avoided the notoriously addictive game World of Warcraft; an exercise addiction psychologist called fitness watches dangerous—"the dumbest things in the world"—

and swore she'd never buy one; and the founder of an Internet addiction clinic told me she avoids gadgets newer than three years old. She has never used her phone's ringer, and deliberately "misplaces" her phone so she isn't tempted to check her email. (I spent two months trying to reach her by email, and succeeded only when she happened to pick up her office landline.) Her favorite computer game is Myst, released in 1993 when computers were still too clunky to handle video graphics. The only reason she was willing to play Myst, she told me, was because her computer froze every half hour and took forever to reboot.

Greg Hochmuth, one of Instagram's founding engineers, realized he was building an engine for addiction. "There's always another hashtag to click on," Hochmuth said. "Then it takes on its own life, like an organism, and people can become obsessive." Instagram, like so many other social media platforms, is bottomless. Facebook has an endless feed; Netflix automatically moves on to the next episode in a series; Tinder encourages users to keep swiping in search of a better option. Users benefit from these apps and websites, but also struggle to use them in moderation. According to Tristan Harris, a "design ethicist," the problem isn't that people lack willpower; it's that "there are a thousand people on the other side of the screen whose job it is to break down the self-regulation you have."

These tech experts have good reason to be concerned. Working at the far edge of possibility, they discovered two things. First, that our understanding of addiction is too narrow. We tend to think of addiction as something inherent in certain people—

those we label as *addicts*. Heroin *addicts* in vacant row houses. Chain-smoking nicotine *addicts*. Pill-popping prescription-drug *addicts*. The label implies that they're different from the rest of humanity. They may rise above their addictions one day, but for now they belong to their own category. In truth, addiction is produced largely by environment and circumstance. Steve Jobs knew this. He kept the iPad from his kids because, for all the advantages that made them unlikely substance addicts, he knew they were susceptible to the iPad's charms. These entrepreneurs recognize that the tools they promote—engineered to be irresistible—will ensnare users indiscriminately. There isn't a bright line between addicts and the rest of us. We're all one product or experience away from developing our own addictions.

Bilton's tech experts also discovered that the environment and circumstance of the digital age are far more conducive to addiction than anything humans have experienced in our history. In the 1960s, we swam through waters with only a few hooks: cigarettes, alcohol, and drugs that were expensive and generally inaccessible. In the 2010s, those same waters are littered with hooks. There's the Facebook hook. The Instagram hook. The porn hook. The email hook. The online shopping hook. And so on. The list is long—far longer than it's ever been in human history, and we're only just learning the power of these hooks.

Bilton's experts were vigilant because they knew they were designing irresistible technologies. Compared to the clunky tech of the 1990s and early 2000s, modern tech is efficient and addictive. Hundreds of millions of people share their lives in real time through Instagram posts, and just as quickly those lives are evaluated in the form of comments and likes. Songs that once took

an hour to download now arrive in seconds, and the lag that dissuaded people from downloading in the first place has evaporated. Tech offers convenience, speed, and automation, but it also brings large costs. Human behavior is driven in part by a succession of reflexive cost-benefit calculations that determine whether an act will be performed once, twice, a hundred times, or not at all. When the benefits overwhelm the costs, it's hard not to perform the act over and over again, particularly when it strikes just the right neurological notes.

A like on Facebook and Instagram strikes one of those notes, as does the reward of completing a World of Warcraft mission, or seeing one of your tweets shared by hundreds of Twitter users. The people who create and refine tech, games, and interactive experiences are very good at what they do. They run thousands of tests with millions of users to learn which tweaks work and which ones don't—which background colors, fonts, and audio tones maximize engagement and minimize frustration. As an experience evolves, it becomes an irresistible, weaponized version of the experience it once was. In 2004, Facebook was fun; in 2016, it's addictive.

Addictive behaviors have existed for a long time, but in recent decades they've become more common, harder to resist, and more mainstream. These new addictions don't involve the ingestion of a substance. They don't directly introduce chemicals into your system, but they produce the same effects because they're compelling and well designed. Some, like gambling and exercise, are old; others, like binge-viewing and smartphone use, are relatively new. But they've all become progressively more difficult to resist.

Meanwhile, we've made the problem worse by focusing on

the benefits of goal-setting without considering its drawbacks. Goal-setting was a useful motivational tool in the past, because most of the time humans prefer to spend as little time and energy as possible. We're not intuitively hard-working, virtuous, and healthy. But the tide has turned. We're now so focused on getting more done in less time that we've forgotten to introduce an emergency brake.

I spoke to several clinical psychologists who described the magnitude of the problem. "Every single person I work with has at least one behavioral addiction," one psychologist told me. "I have patients who fit into every area: gambling, shopping, social media, email, and so on." She described several patients, all with high-powered professional careers, earning six figures, but deeply hobbled by their addictions. "One woman is very beautiful, very bright, and very accomplished. She has two master's degrees and she's a teacher. But she's addicted to online shopping, and she's managed to accumulate $80,000 in debt. She's managed to hide her addiction from almost everyone she knows." This compartmentalization was a common theme. "It's very easy to hide behavioral addictions—much more so than for substance abuse. This makes them dangerous, because they go unnoticed for years." A second patient, just as accomplished at work, managed to hide her Facebook addiction from her friends. "She went through a horrible breakup, and then stalked her ex-boyfriend online for years. With Facebook it's far more difficult to make a clean break when relationships end." A man she saw checked his email hundreds of times a day. "He's incapable of relaxing and enjoying himself on vacation. But you'd never know. He's deeply anxious, but he presents so well in the world; he has a successful

career in the healthcare industry, and you'd never know how much he suffers."

"The impact of social media has been huge," a second psychologist told me. "Social media has completely shaped the brains of the younger people I work with. One thing I am often mindful of in a session is this: I could be five or ten minutes into a conversation with a young person about the argument they have had with their friend or girlfriend, when I remember to ask whether this happened by text, phone, on social media, or face-to-face. More often the answer is, 'text or social media.' Yet in their telling of the story, this isn't apparent to me. It sounds like what I would consider a 'real,' face-to-face conversation. I always stop in my tracks and reflect. This person doesn't differentiate various modes of communication the way I do . . . the result is a landscape filled with disconnection and addiction."

Irresistible traces the rise of addictive behaviors, examining where they begin, who designs them, the psychological tricks that make them so compelling, and how to minimize dangerous behavioral addiction as well as harnessing the same science for beneficial ends. If app designers can coax people to spend more time and money on a smartphone game, perhaps policy experts can also encourage people to save more for retirement or donate to more charities.

Technology is not inherently bad. When my brother and I moved with my parents to Australia in 1988, we left our grandparents in South Africa. We spoke to them once a week on expensive landline calls, and sent letters that arrived a week later.

When I moved to the United States in 2004, I emailed my parents and brother almost every day. We talked on the phone often, and waved to each other via webcam as often as we could. Technology shrank the distance between us. Writing for *Time* in 2016, John Patrick Pullen described how the emotional punch of virtual reality brought him to tears.

> . . . My playmate, Erin, shot me with a shrink ray. Suddenly, not only were all the toys enormous to me, but Erin's avatar was looming over me like a hulking giant. Her voice even changed as it poured through my headphones, entering my head with a deep, slow tone. And for a moment, I was a child again, with this giant person lovingly playing with me. It gave me such a profound perspective on what it must be like to be my son that I started to cry inside the headset. It was a pure and beautiful experience that will reshape my relationship with him moving forward. I was vulnerable to my giant playmate, yet felt completely safe.

Tech isn't morally good or bad until it's wielded by the corporations that fashion it for mass consumption. Apps and platforms can be designed to promote rich social connections; or, like cigarettes, they can be designed to addict. Today, unfortunately, many tech developments do promote addiction. Even Pullen, in rhapsodizing his virtual reality experience, said he was "hooked." Immersive tech like virtual reality inspires such rich emotions that it's ripe for abuse. It's still in its infancy, though, so it's too soon to know whether it will be used responsibly.

In many respects, substance addictions and behavioral addic-

tions are very similar. They activate the same brain regions, and they're fueled by some of the same basic human needs: social engagement and social support, mental stimulation, and a sense of effectiveness. Strip people of these needs and they're more likely to develop addictions to both substances and behaviors.

Behavioral addiction consists of six ingredients: compelling goals that are just beyond reach; irresistible and unpredictable positive feedback; a sense of incremental progress and improvement; tasks that become slowly more difficult over time; unresolved tensions that demand resolution; and strong social connections. Despite their diversity, today's behavioral addictions embody at least one of those six ingredients. Instagram is addictive, for example, because some photos attract many likes, while others fall short. Users chase the next big hit of likes by posting one photo after another, and return to the site regularly to support their friends. Gamers play certain games for days on end because they're driven to complete missions, and because they've formed strong social ties that bind them to other gamers.

So what are the solutions? How do we coexist with addictive experiences that play such a central role in our lives? Millions of recovering alcoholics manage to avoid bars altogether, but recovering Internet addicts are forced to use email. You can't apply for a travel visa or a job, or begin working, without an email address. Fewer and fewer modern jobs allow you to avoid using computers and smartphones. Addictive tech is part of the mainstream in a way that addictive substances never will be. Abstinence isn't an option, but there are other alternatives. You can confine addictive experiences to one corner of your life, while courting good habits that promote healthy behaviors. Meanwhile, once you understand

how behavioral addictions work, you can mitigate their harm, or even harness them for good. The same principles that drive children to play games might drive them to learn at school, and the goals that drive people to exercise addictively might also drive them to save money for retirement.

The age of behavioral addiction is still young, but early signs point to a crisis. Addictions are damaging because they crowd out other essential pursuits, from work and play to basic hygiene and social interaction. The good news is that our relationships with behavioral addiction aren't fixed. There's much we can do to restore the balance that existed before the age of smartphones, emails, wearable tech, social networking, and on-demand viewing. The key is to understand why behavioral addictions are so rampant, how they capitalize on human psychology, and how to defeat the addictions that hurt us, and harness the ones that help us.

IRRESISTIBLE

The Rise of Addictive Technology and
the Business of Keeping Us Hooked

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