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Digital Minimalism

Choosing a Focused Life in a Noisy World

CAL NEWPORT

Bestselling author of *Deep Work*

Digital Minimalism

CHOOSING A FOCUSED LIFE IN A NOISY WORLD

Cal Newport

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Introduction

> n September 2016, the influential blogger and commentator Andrew Sullivan wrote a 7,000-word essay for *New York* magazine titled "I Used to Be a Human Being." Its subtitle was alarming: "An endless bombardment of news and gossip and images has rendered us manic information addicts. It broke me. It might break you, too."

The article was widely shared. I'll admit, however, that when I first read it, I didn't fully comprehend Sullivan's warning. I'm one of the few members of my generation to never have a social media account, and tend not to spend much time web surfing. As a result, my phone plays a relatively minor role in my life—a fact that places me outside the mainstream experience this article addressed. In other words, I knew that the innovations of the internet age were playing an increasingly intrusive role in many people's lives, but I didn't have a *visceral* understanding of what this meant. That is, until everything changed.

Earlier in 2016, I published a book titled *Deep Work*. It was about the underappreciated value of intense focus and how the professional world's emphasis on distracting communication tools was holding people back from producing their best work. As my book found an audience, I began to hear from more and more of my readers. Some sent me messages, while others cornered me after public appearances—but many of them asked the same question: What about their personal lives? They agreed with my arguments about office distractions, but as they then explained, they were arguably even more distressed by the way new technologies seemed to be draining meaning and satisfaction from their time spent outside of work. This caught my attention and tumbled me unexpectedly into a crash course on the promises and perils of modern digital life.

Almost everyone I spoke to believed in the power of the internet, and recognized that it can and should be a force that improves their lives. They didn't necessarily want to give up Google Maps, or abandon Instagram, but they also felt as though their current relationship with technology was unsustainable—to the point that if something didn't change soon, they'd break, too.

A common term I heard in these conversations about modern digital life was *exhaustion*. It's not that any one app or website was particularly bad when considered in isolation. As many people clarified, the issue was the overall impact of having *so many* different shiny baubles pulling so insistently at their attention and manipulating their mood. Their problem with

this frenzied activity is less about its details than the fact that it's increasingly beyond their control. Few want to spend so much time online, but these tools have a way of cultivating behavioral addictions. The urge to check Twitter or refresh Reddit becomes a nervous twitch that shatters uninterrupted time into shards too small to support the presence necessary for an intentional life.

As I discovered in my subsequent research, and will argue in the next chapter, some of these addictive properties are accidental (few predicted the extent to which text messaging could command your attention), while many are quite purposeful (compulsive use is the foundation for many social media business plans). But whatever its source, this irresistible attraction to screens is leading people to feel as though they're ceding more and more of their autonomy when it comes to deciding how they direct their attention. No one, of course, signed up for this loss of control. They downloaded the apps and set up accounts for good reasons, only to discover, with grim irony, that these services were beginning to undermine the very values that made them appealing in the first place: they joined Facebook to stay in touch with friends across the country, and then ended up unable to maintain an uninterrupted conversation with the friend sitting across the table.

I also learned about the negative impact of unrestricted online activity on psychological well-being. Many people I spoke to underscored social media's ability to manipulate their mood. The constant exposure to their friends' carefully curated

portrayals of their lives generates feelings of inadequacy—especially during periods when they're already feeling low—and for teenagers, it provides a cruelly effective way to be publicly excluded.

In addition, as demonstrated during the 2016 presidential election and its aftermath, online discussion seems to accelerate people's shift toward emotionally charged and draining extremes. The techno-philosopher Jaron Lanier convincingly argues that the primacy of anger and outrage online is, in some sense, an unavoidable feature of the medium: In an open marketplace for attention, darker emotions attract more eyeballs than positive and constructive thoughts. For heavy internet users, repeated interaction with this darkness can become a source of draining negativity—a steep price that many don't even realize they're paying to support their compulsive connectivity.

Encountering this distressing collection of concerns—from the exhausting and addictive overuse of these tools, to their ability to reduce autonomy, decrease happiness, stoke darker instincts, and distract from more valuable activities—opened my eyes to the fraught relationship so many now maintain with the technologies that dominate our culture. It provided me, in other words, a much better understanding of what Andrew Sullivan meant when he lamented: "I used to be a human being."

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This experience of talking with my readers convinced me that the impact of technology on people's personal lives was worth

deeper exploration. I began more seriously researching and writing on this topic, trying to both better understand its contours and seek out the rare examples of those who can extract great value from these new technologies without losing control.*

One of the first things that became clear during this exploration is that our culture's relationship with these tools is complicated by the fact that they mix harm with benefits. Smartphones, ubiquitous wireless internet, digital platforms that connect billions of people—these are triumphant innovations! Few serious commentators think we'd be better off retreating to an earlier technological age. But at the same time, people are tired of feeling like they've become a slave to their devices. This reality creates a jumbled emotional landscape where you can simultaneously cherish your ability to discover inspiring photos on Instagram while fretting about this app's ability to invade the evening hours you used to spend talking with friends or reading.

The most common response to these complications is to suggest modest hacks and tips. Perhaps if you observe a digital Sabbath, or keep your phone away from your bed at night, or

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* To some, the fact that I can't draw from a deep well of personal experience is a liability. "How can you criticize social media if you've never used it?" is one of the most common complaints I hear in response to my public advocacy on these issues. There's some truth to this claim, but as I recognized back in 2016 when I began this investigation, my outsider status can also prove advantageous. By approaching our tech culture from a fresh perspective, I'm perhaps better able to distinguish assumption from truth, and meaningful use from manipulation.

turn off notifications and resolve to be more mindful, you can keep all the good things that attracted you to these new technologies in the first place while still minimizing their worst impacts. I understand the appeal of this moderate approach because it relieves you of the need to make hard decisions about your digital life—you don't have to quit anything, miss out on any benefits, annoy any friends, or suffer any serious inconveniences.

But as is becoming increasingly clear to those who have attempted these types of minor corrections, willpower, tips, and vague resolutions are not sufficient by themselves to tame the ability of new technologies to invade your cognitive landscape—the addictiveness of their design and the strength of the cultural pressures supporting them are too strong for an ad hoc approach to succeed. In my work on this topic, I've become convinced that what you need instead is a full-fledged *philosophy of technology use*, rooted in your deep values, that provides clear answers to the questions of what tools you should use and how you should use them and, equally important, enables you to confidently ignore everything else.

There are many philosophies that might satisfy these goals. On one extreme, there are the Neo-Luddites, who advocate the abandonment of most new technologies. On another extreme, you have the Quantified Self enthusiasts, who carefully integrate digital devices into all aspects of their life with the goal of optimizing their existence. Of the different philosophies I studied, however, there was one in particular that stood out as a superior answer for those looking to thrive in our

current moment of technological overload. I call it *digital minimalism*, and it applies the belief that *less can be more* to our relationship with digital tools.

This idea is not new. Long before Henry David Thoreau exclaimed "simplicity, simplicity, simplicity," Marcus Aurelius asked: "You see how few things you have to do to live a satisfying and reverent life?" Digital minimalism simply adapts this classical insight to the role of technology in our modern lives. The impact of this simple adaptation, however, can be profound. In this book, you'll encounter many examples of digital minimalists who experienced massively positive changes by ruthlessly reducing their time spent online to focus on a small number of high-value activities. Because digital minimalists spend so much less time connected than their peers, it's easy to think of their lifestyle as extreme, but the minimalists would argue that this perception is backward: what's extreme is how much time *everyone else* spends staring at their screens.

The key to thriving in our high-tech world, they've learned, is to spend much less time using technology.

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The goal of this book is to make the case for digital minimalism, including a more detailed exploration of what it asks and why it works, and then to teach you how to adopt this philosophy if you decide it's right for you.

To do so, I divided the book into two parts. In part 1, I describe the philosophical underpinnings of digital minimalism, starting with a closer examination of the forces that are

making so many people's digital lives increasingly intolerable, before moving on to a detailed discussion of the digital minimalism philosophy, including my argument for why it's the *right* solution to these problems.

Part 1 concludes by introducing my suggested method for adopting this philosophy: *the digital declutter*. As I've argued, aggressive action is needed to fundamentally transform your relationship with technology. The digital declutter provides this aggressive action.

This process requires you to step away from optional online activities for thirty days. During this period, you'll wean yourself from the cycles of addiction that many digital tools can instill, and begin to rediscover the analog activities that provide you deeper satisfaction. You'll take walks, talk to friends in person, engage your community, read books, and stare at the clouds. Most importantly, the declutter gives you the space to refine your understanding of the things you value most. At the end of the thirty days, you will then add back a small number of carefully chosen online activities that you believe will provide massive benefit to these things you value. Going forward, you'll do your best to make these intentional activities the core of your online life—leaving behind most of the other distracting behaviors that used to fragment your time and snare your attention. The declutter acts as a jarring reset: you come into the process a frazzled maximalist and leave an intentional minimalist.

In this final chapter of part 1, I'll guide you through imple-

menting your own digital declutter. In doing so, I'll draw extensively on an experiment I ran in the early winter of 2018 in which over 1,600 people agreed to perform a digital declutter under my guidance and report back about their experience. You'll hear these participants' stories and learn what strategies worked well for them, and what traps they encountered that you should avoid.

The second part of this book takes a closer look at some ideas that will help you cultivate a sustainable digital minimalism lifestyle. In these chapters, I examine issues such as the importance of solitude and the necessity of cultivating high-quality leisure to replace the time most now dedicate to mindless device use. I propose and defend the perhaps controversial claim that your relationships will *strengthen* if you stop clicking "Like" or leaving comments on social media posts, and become harder to reach by text messages. I also provide an insider look at the *attention resistance*—a loosely organized movement of individuals who use high-tech tools and strict operating procedures to extract value from the products of the digital attention economy, while avoiding falling victim to compulsive use.

Each chapter in part 2 concludes with a collection of *practices*, which are concrete tactics designed to help you act on the big ideas of the chapter. As a budding digital minimalist, you can view the part 2 practices as a toolbox meant to aid your efforts to build a minimalist lifestyle that works for your particular circumstances.

In *Walden*, Thoreau famously writes: "The mass of men lead lives of quiet desperation." Less often quoted, however, is the optimistic rejoinder that follows in his next paragraph:

> They honestly think there is no choice left. But alert and healthy natures remember that the sun rose clear. It is never too late to give up our prejudices.

Our current relationship with the technologies of our hyper-connected world is unsustainable and is leading us closer to the quiet desperation that Thoreau observed so many years ago. But as Thoreau reminds us, "the sun rose clear" and we still have the ability to change this state of affairs.

To do so, however, we cannot passively allow the wild tangle of tools, entertainments, and distractions provided by the internet age to dictate how we spend our time or how we feel. We must instead take steps to extract the good from these technologies while sidestepping what's bad. We require a philosophy that puts our aspirations and values once again in charge of our daily experience, all the while dethroning primal whims and the business models of Silicon Valley from their current dominance of this role; a philosophy that accepts new technologies, but not if the price is the dehumanization Andrew Sullivan warned us about; a philosophy that prioritizes long-term meaning over short-term satisfaction.

A philosophy, in other words, like digital minimalism.

PART 1

Foundations

1

A Lopsided Arms Race

WE DIDN'T SIGN UP FOR THIS

I remember when I first encountered Facebook: It was the spring of 2004; I was a senior in college and began to notice an increasing number of my friends talk about a website called thefacebook.com. The first person to show me an actual Facebook profile was Julie, who was then my girlfriend, and now my wife.

"My memory of it was that it was a novelty," she told me recently. "It had been sold to us as a virtual version of our printed freshman directory, something we could use to look up the boyfriends or girlfriends of people we knew."

The key word in this memory is *novelty*. Facebook didn't arrive in our world with a promise to radically transform the rhythms of our social and civic lives; it was just one diversion among many. In the spring of 2004, the people I knew who signed up for thefacebook.com were almost certainly spending

significantly more time playing Snood (a Tetris-style puzzle game that was inexplicably popular) than they were tweaking their profiles or poking their virtual friends.

"It was interesting," Julie summarized, "but it certainly didn't seem like this was something on which we would spend any real amount of time."

Three years later, Apple released the iPhone, sparking the mobile revolution. What many forget, however, was that the original "revolution" promised by this device was also much more modest than the impact it eventually created. In our current moment, smartphones have reshaped people's experience of the world by providing an always-present connection to a humming matrix of chatter and distraction. In January 2007, when Steve Jobs revealed the iPhone during his famous Macworld keynote, the vision was much less grandiose.

One of the major selling points of the original iPhone was that it integrated your iPod with your cell phone, preventing you from having to carry around two separate devices in your pockets. (This is certainly how I remember thinking about the iPhone's benefits when it was first announced.) Accordingly, when Jobs demonstrated an iPhone onstage during his keynote address, he spent the first eight minutes of the demo walking through its media features, concluding: "It's the best iPod we've ever made!"

Another major selling point of the device when it launched was the many ways in which it improved the experience of making phone calls. It was big news at the time that Apple forced AT&T to open its voicemail system to enable a better

interface for the iPhone. Onstage, Jobs was also clearly enamored of the simplicity with which you could scroll through phone numbers, and the fact that the dial pad appeared on the screen instead of requiring permanent plastic buttons.

"The killer app is making calls," Jobs exclaimed to applause during his keynote. It's not until thirty-three minutes into that famed presentation that he gets around to highlighting features like improved text messaging and mobile internet access that dominate the way we now use these devices.

To confirm that this limited vision was not some quirk of Jobs's keynote script, I spoke with Andy Grignon, who was one of the original iPhone team members. "This was supposed to be an iPod that made phone calls," he confirmed. "Our core mission was playing music and making phone calls." As Grignon then explained to me, Steve Jobs was initially dismissive of the idea that the iPhone would become more of a general-purpose mobile computer running a variety of different third-party applications. "The second we allow some knucklehead programmer to write some code that crashes it," Jobs once told Grignon, "that will be when they want to call 911."

When the iPhone first shipped in 2007, there was no App Store, no social media notifications, no quick snapping of photos to Instagram, no reason to surreptitiously glance down a dozen times during a dinner—and this was absolutely fine with Steve Jobs, and the millions who bought their first smartphone during this period. As with the early Facebook adopters, few predicted how much our relationship with this shiny new tool would mutate in the years that followed.

It's widely accepted that new technologies such as social media and smartphones massively changed how we live in the twenty-first century. There are many ways to portray this change. I think the social critic Laurence Scott does so quite effectively when he describes the modern hyper-connected existence as one in which "a moment can feel strangely flat if it exists solely in itself."

The point of the above observations, however, is to emphasize what many also forget, which is that these changes, in addition to being massive and transformational, were also unexpected and unplanned. A college senior who set up an account on thefacebook.com in 2004 to look up classmates probably didn't predict that the average modern user would spend around two hours *per day* on social media and related messaging services, with close to half that time dedicated to Facebook's products alone. Similarly, a first adopter who picked up an iPhone in 2007 for the music features would be less enthusiastic if told that within a decade he could expect to compulsively check the device eighty-five times a day—a "feature" we now know Steve Jobs never considered as he prepared his famous keynote.

These changes crept up on us and happened fast, before we had a chance to step back and ask what *we really wanted* out of the rapid advances of the past decade. We added new technologies to the periphery of our experience for minor reasons, then woke one morning to discover that they had colonized

the core of our daily life. We didn't, in other words, sign up for the digital world in which we're currently entrenched; we seem to have stumbled backward into it.

This nuance is often missed in our cultural conversation surrounding these tools. In my experience, when concerns about new technologies are publicly discussed, techno-apologists are quick to push back by turning the discussion to utility—providing case studies, for example, of a struggling artist finding an audience through social media,* or WhatsApp connecting a deployed soldier with her family back home. They then conclude that it's incorrect to dismiss these technologies on the grounds that they're useless, a tactic that is usually sufficient to end the debate.

The techno-apologists are right in their claims, but they're also missing the point. The perceived utility of these tools is not the ground on which our growing wariness builds. If you ask the average social media user, for example, why they use Facebook, or Instagram, or Twitter, they can provide you with reasonable answers. Each one of these services probably offers them something useful that would be hard to find elsewhere:

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* This example comes from personal experience. In the fall of 2016, I appeared on a national radio show on the CBC network in Canada to discuss a *New York Times* column I wrote questioning the benefits of social media for career advancement. The host surprised me early in the interview by bringing into the discussion an unannounced guest: an artist who promotes his work through social media. Funnily enough, not long into the interview, the artist admitted (unprompted) that he was finding social media to be too distracting and that he now takes long breaks from it to get work done.

the ability, for example, to keep up with baby pictures of a sibling's child, or to use a hashtag to monitor a grassroots movement.

The source of our unease is not evident in these thin-sliced case studies, but instead becomes visible only when confronting the thicker reality of how these technologies as a whole have managed to expand beyond the minor roles for which we initially adopted them. Increasingly, they dictate how we behave and how we feel, and somehow coerce us to use them more than we think is healthy, often at the expense of other activities we find more valuable. What's making us uncomfortable, in other words, is this feeling of *losing control*—a feeling that instantiates itself in a dozen different ways each day, such as when we tune out with our phone during our child's bath time, or lose our ability to enjoy a nice moment without a frantic urge to document it for a virtual audience.

It's not about usefulness, it's about autonomy.

The obvious next question, of course, is how we got ourselves into this mess. In my experience, most people who struggle with the online part of their lives are not weak willed or stupid. They're instead successful professionals, striving students, loving parents; they are organized and used to pursuing hard goals. Yet somehow the apps and sites beckoning from behind the phone and tablet screen—unique among the many temptations they successfully resist daily—managed to succeed in metastasizing unhealthily far beyond their original roles.

A large part of the answer about how this happened is that

many of these new tools are not nearly as innocent as they might first seem. People don't succumb to screens because they're lazy, but instead because billions of dollars have been invested to make this outcome inevitable. Earlier I noted that we seem to have stumbled backward into a digital life we didn't sign up for. As I'll argue next, it's probably more accurate to say that we were *pushed* into it by the high-end device companies and attention economy conglomerates who discovered there are vast fortunes to be made in a culture dominated by gadgets and apps.

TOBACCO FARMERS IN T-SHIRTS

Bill Maher ends every episode of his HBO show *Real Time* with a monologue. The topics are usually political. This was not the case, however, on May 12, 2017, when Maher looked into the camera and said:

> The tycoons of social media have to stop pretending that they're friendly nerd gods building a better world and admit they're just tobacco farmers in T-shirts selling an addictive product to children. Because, let's face it, checking your "likes" is the new smoking.

Maher's concern with social media was sparked by a *60 Minutes* segment that aired a month earlier. The segment is titled "Brain Hacking," and it opens with Anderson Cooper

interviewing a lean, red-haired engineer with the carefully tended stubble popular among young men in Silicon Valley. His name is Tristan Harris, a former start-up founder and Google engineer who deviated from his well-worn path through the world of tech to become something decidedly rarer in this closed world: a whistleblower.

"This thing is a slot machine," Harris says early in the interview while holding up his smartphone.

"How is that a slot machine?" Cooper asks.

"Well, every time I check my phone, I'm playing the slot machine to see 'What did I get?'" Harris answers. "There's a whole playbook of techniques that get used [by technology companies] to get you using the product for as long as possible."

"Is Silicon Valley programming apps or are they programming people?" Cooper asks.

"They are programming people," Harris says. "There's always this narrative that technology's neutral. And it's up to us to choose how we use it. This is just not true—"

"Technology is not neutral?" Cooper interrupts.

"It's not neutral. They want you to use it in particular ways and for long periods of time. Because that's how they make their money."

Bill Maher, for his part, thought this interview seemed familiar. After playing a clip of the Harris interview for his HBO audience, Maher quips: "Where have I heard this before?" He then cuts to Mike Wallace's famous 1995 interview with Jeffrey Wigand—the whistleblower who confirmed for

the world what most already suspected: that the big tobacco companies engineered cigarettes to be more addictive.

"Philip Morris just wanted your lungs," Maher concludes. "The App Store wants your soul."

Harris's transformation into a whistleblower is exceptional in part because his life leading up to it was so normal by Silicon Valley standards. Harris, who at the time of this writing is in his midthirties, was raised in the Bay Area. Like many engineers, he grew up hacking his Macintosh and writing computer code. He went to Stanford to study computer science and, after graduating, started a master's degree working in BJ Fogg's famed Persuasive Technology Lab—which explores how to use technology to change how people think and act. In Silicon Valley, Fogg is known as the "millionaire maker," a reference to the many people who passed through his lab and then applied what they learned to help build lucrative tech start-ups (a group that includes, among other dot-com luminaries, Instagram co-founder Mike Krieger). Following this established path, Harris, once sufficiently schooled in the art of mind-device interaction, dropped out of the master's program to found Apture, a tech start-up that used pop-up factoids to increase the time users spent on websites.

In 2011, Google acquired Apture, and Harris was put to work on the Gmail inbox team. It was at Google where Harris, now working on products that could impact hundreds of millions of people's behaviors, began to grow concerned. After a

the same birthday as someone who does something horrible," Alter explained to me, "you hate them even more than if you didn't have that information."

His first book, *Drunk Tank Pink*, cataloged numerous similar cases where seemingly small environmental factors create large changes in behavior. The title, for example, refers to a study that showed aggressively drunk inmates at a Seattle naval prison were notably calmed after spending just fifteen minutes in a cell painted a particular shade of Pepto-Bismol pink, as were Canadian schoolchildren when taught in a classroom of the same color. The book also reveals that wearing a red shirt on a dating profile will lead to significantly more interest than any other color, and that the easier your name is to pronounce, the faster you'll advance in the legal profession.

What made 2013 a turning point for Alter's career was a cross-country flight from New York to LA. "I had grand plans to get some sleep and do some work," he told me. "But as we started taxiing to take off, I began playing a simple strategy game on my phone called 2048. When we landed six hours later, I was still playing the game."

After publishing *Drunk Tank Pink*, Alter had begun searching for a new topic to pursue—a quest that kept leading him back to a key question: "What's the single biggest factor shaping our lives today?" His experience of compulsive game playing on his six-hour flight suddenly snapped the answer into sharp focus: *our screens*.

By this point, of course, others had already started asking critical questions about our seemingly unhealthy relationship

with new technologies like smartphones and video games, but what set Alter apart was his training in psychology. Instead of approaching the issue as a cultural phenomenon, he focused on its psychological roots. This new perspective led Alter inevitably and unambiguously in an unnerving direction: the science of addiction.

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To many people, *addiction* is a scary word. In popular culture, it conjures images of drug addicts stealing their mother's jewelry. But to psychologists, addiction has a careful definition that's stripped of these more lurid elements. Here's a representative example:

> Addiction is a condition in which a person engages in use of a substance or in a behavior for which the rewarding effects provide a compelling incentive to repeatedly pursue the behavior despite detrimental consequences.

Until recently, it was assumed that addiction only applied to alcohol or drugs: substances that include psychoactive compounds that can directly change your brain chemistry. As the twentieth century gave way to the twenty-first, however, a mounting body of research suggested that behaviors that did not involve ingesting substances could become addictive in the technical sense defined above. An important 2010 survey paper, for example, appearing in the *American Journal of Drug*

and Alcohol Abuse, concluded that "growing evidence suggests that behavioral addictions resemble substance addictions in many domains." The article points to pathological gambling and internet addiction as two particularly well-established examples of these disorders. When the American Psychiatric Association published its fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-5*) in 2013, it included, for the first time, behavioral addiction as a diagnosable problem.

This brings us back to Adam Alter. After reviewing the relevant psychology literature and interviewing relevant people in the technology world, two things became clear to him. First, our new technologies are particularly well suited to foster behavioral addictions. As Alter admits, the behavioral addictions connected to technology tend to be "moderate" as compared to the strong chemical dependencies created by drugs and cigarettes. If I force you to quit Facebook, you're not likely to suffer serious withdrawal symptoms or sneak out in the night to an internet café to get a fix. On the other hand, these addictions can still be quite harmful to your well-being. You might not sneak out to access Facebook, but if the app is only one tap away on the phone in your pocket, a moderate behavioral addiction will make it really hard to resist checking your account again and again throughout the day.

The second thing that became clear to Alter during his research is even more disturbing. Just as Tristan Harris warned, in many cases these addictive properties of new technologies

are not accidents, but instead carefully engineered design features.

The natural follow-up question to Alter's conclusions is: What specifically makes new technologies well suited to foster behavioral addictions? In his 2017 book, *Irresistible*, which details his study of this topic, Alter explores the many different "ingredients" that make a given technology likely to hook our brain and cultivate unhealthy use. I want to briefly focus on two forces from this longer treatment that not only seemed particularly relevant to our discussion, but as you'll soon learn, repeatedly came up in my own research on how tech companies encourage behavioral addiction: *intermittent positive reinforcement* and *the drive for social approval.*

Our brains are highly susceptible to these forces. This matters because many of the apps and sites that keep people compulsively checking their smartphones and opening browser tabs often leverage these hooks to make themselves nearly impossible to resist. To understand this claim, let's briefly discuss both.

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We begin with the first force: intermittent positive reinforcement. Scientists have known since Michael Zeiler's famous pecking pigeon experiments from the 1970s that rewards delivered unpredictably are far more enticing than those delivered with a known pattern. Something about unpredictability releases more dopamine—a key neurotransmitter for regulating

our sense of craving. The original Zeiler experiment had pigeons pecking a button that unpredictably released a food pellet. As Adam Alter points out, this same basic behavior is replicated in the feedback buttons that have accompanied most social media posts since Facebook introduced the "Like" icon in 2009.

"It's hard to exaggerate how much the 'like' button changed the psychology of Facebook use," Alter writes. "What had begun as a passive way to track your friends' lives was now deeply interactive, and with exactly the sort of unpredictable feedback that motivated Zeiler's pigeons." Alter goes on to describe users as "gambling" every time they post something on a social media platform: Will you get likes (or hearts or retweets), or will it languish with no feedback? The former creates what one Facebook engineer calls "bright dings of pseudo-pleasure," while the latter feels bad. Either way, the outcome is hard to predict, which, as the psychology of addiction teaches us, makes the whole activity of posting and checking maddeningly appealing.

Social media feedback, however, is not the only online activity with this property of unpredictable reinforcement. Many people have the experience of visiting a content website for a specific purpose—say, for example, going to a newspaper site to check the weather forecast—and then find themselves thirty minutes later still mindlessly following trails of links, skipping from one headline to another. This behavior can also be sparked by unpredictable feedback: most articles end up duds, but occasionally you'll land on one that creates a strong

adaptive. In Paleolithic times, it was important that you carefully managed your social standing with other members of your tribe because your survival depended on it. In the twenty-first century, however, new technologies have hijacked this deep drive to create profitable behavioral addictions.

Consider, once again, social media feedback buttons. In addition to delivering unpredictable feedback, as discussed above, this feedback also concerns other people's approval. If lots of people click the little heart icon under your latest Instagram post, it feels like the tribe is showing you approval—which we're adapted to strongly crave.* The other side of this evolutionary bargain, of course, is that a lack of positive feedback creates a sense of distress. This is serious business for the Paleolithic brain, and therefore it can develop an urgent need to continually monitor this "vital" information.

The power of this drive for social approval should not be underestimated. Leah Pearlman, who was a product manager on the team that developed the "Like" button for Facebook (she was the author of the blog post announcing the feature in 2009), has become so wary of the havoc it causes that now, as a small business owner, she hires a social media manager to handle her Facebook account so she can avoid exposure to the service's manipulation of the human social drive. "Whether there's a notification or not, it doesn't really feel that good,"

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* For a good introduction to the evolution of "groupish" instincts in human beings and their central role in how we make sense of the world, see Jonathan Haidt's illuminating book *The Righteous Mind* (New York: Pantheon, 2012).

Pearlman said about the experience of checking social media feedback. "Whatever we're hoping to see, it never quite meets that bar."

A similar drive to regulate social approval helps explain the current obsession among teenagers to maintain Snapchat "streaks" with their friends, as a long unbroken streak of daily communication is a satisfying confirmation that the relationship is strong. It also explains the universal urge to immediately answer an incoming text, even in the most inappropriate or dangerous conditions (think: behind the wheel). Our Paleolithic brain categorizes ignoring a newly arrived text the same as snubbing the tribe member trying to attract your attention by the communal fire: a potentially dangerous social faux pas.

The technology industry has become adept at exploiting this instinct for approval. Social media, in particular, is now carefully tuned to offer you a rich stream of information about how much (or how little) your friends are thinking about you at the moment. Tristan Harris highlights the example of tagging people in photos on services like Facebook, Snapchat, and Instagram. When you post a photo using these services, you can "tag" the other users who also appear in the photo. This tagging process sends the target of the tag a notification. As Harris explains, these services now make this process near automatic by using cutting-edge image recognition algorithms to figure out who is in your photos and offer you the ability to tag them with just a single click—an offer usually made in the

form of a quick yes/no question ("do you want to tag . . . ?") to which you'll almost certainly answer yes.

This single click requires almost no effort on your part, but to the user being tagged, the resulting notification creates a socially satisfying sense that *you were thinking about them*. As Harris argues, these companies didn't invest the massive resources necessary to perfect this auto-tagging feature because it was somehow crucial to their social network's usefulness. They instead made this investment so they could significantly increase the amount of addictive nuggets of social approval that their apps could deliver to their users.

As Sean Parker confirmed in describing the design philosophy behind these features: "It's a social-validation feedback loop . . . exactly the kind of thing that a hacker like myself would come up with, because you're exploiting a vulnerability in human psychology."

■ ■ ■

Let's step back for a moment to review where we stand. In the preceding sections, I detailed a distressing explanation for why so many people feel as though they've lost control of their digital lives: the hot new technologies that emerged in the past decade or so are particularly well suited to foster behavioral addictions, leading people to use them much more than they think is useful or healthy. Indeed, as revealed by whistleblowers and researchers like Tristan Harris, Sean Parker, Leah Pearlman, and Adam Alter, these technologies are in many

cases *specifically* designed to trigger this addictive behavior. Compulsive use, in this context, is not the result of a character flaw, but instead the realization of a massively profitable business plan.

We didn't sign up for the digital lives we now lead. They were instead, to a large extent, crafted in boardrooms to serve the interests of a select group of technology investors.

A LOPSIDED ARMS RACE

As argued, our current unease with new technologies is not really about whether or not they're useful. It's instead about autonomy. We signed up for these services and bought these devices for minor reasons—to look up friends' relationship statuses or eliminate the need to carry a separate iPod and phone—and then found ourselves, years later, increasingly dominated by their influence, allowing them to control more and more of how we spend our time, how we feel, and how we behave.

The fact that our humanity was routed by these tools over the past decade should come as no surprise. As I just detailed, we've been engaging in a lopsided arms race in which the technologies encroaching on our autonomy were preying with increasing precision on deep-seated vulnerabilities in our brains, while we still naively believed that we were just fiddling with fun gifts handed down from the nerd gods.

When Bill Maher joked that the App Store was coming for

our souls, he was actually onto something. As Socrates explained to Phaedrus in Plato's famous chariot metaphor, our soul can be understood as a chariot driver struggling to rein two horses, one representing our better nature and the other our baser impulses. When we increasingly cede autonomy to the digital, we energize the latter horse and make the chariot driver's struggle to steer increasingly difficult—a diminishing of our soul's authority.

When seen from this perspective, it becomes clear that this is a battle we must fight. But to do so, we need a more serious strategy, something custom built to swat aside the forces manipulating us toward behavioral addictions and that offers a concrete plan about how to put new technologies to use *for* our best aspirations and not *against* them. Digital minimalism is one such strategy. It's toward its details that we now turn our attention.