

3 The Age of Attention

To see what is in front of one's nose needs a constant struggle.

Orwell

When I told my mother I was moving to the other side of the planet to study technology ethics at a school that's almost three times as old as my country, she asked, "Why would you go somewhere so *old* to study something so *new*?" In a way, the question contained its own answer. Working in the technology industry, I felt, was akin to climbing a mountain, and that's one way – a very up-close and hands-on way – to get to know a mountain. But if you want to see its shape, paint its profile, understand its relations with the wider geography – to do that, you have to go a few miles away and look back. I felt that my inquiry into the faulty GPSes of my life required this move. I needed distance, not only physical but also temporal and ultimately critical, from the windy yet intriguing cliffs of the technology industry. "Amongst the rocks one cannot stop or think."¹ Sometimes, the struggle to see what's in front of your nose is a struggle to get away from it so you can see it as a whole.

I soon found that my quest to gain distance from the mountain of the technology industry was paralleling, and in many ways enabling, a more general quest to gain distance from the assumptions of the Information Age altogether. I suspect that no one living in a named age – the Bronze Age, the Iron Age – ever called it by the name we give it now. They no doubt used other names rooted in assumptions of their times that they could not imagine would ever be overturned. So it's always both bemused and annoyed me, in roughly equal measure, that we so triumphantly call our time the "Information Age." Information is the water in which we swim; we perceive it to be the raw material of the human experience. So the dominant

metaphor for the human is now the computer, and we interpret the challenges of our world primarily in terms of the management of information.

This is, of course, the standard way people talk about digital technologies: it's assumed that *information* is fundamentally what they're managing, manipulating, and moving around. For example, ten seconds before I started writing this sentence my wife walked into the room and said, "I just heard the internet described on the radio as 'a conveyor belt of fraudulent information.'" Every day, we hear dozens of remarks like this: on the radio, in the newspaper, and in conversations with others. We instinctively frame issues pertaining to digital technologies in informational terms, which means that the political and ethical challenges we end up worrying about most of the time also involve the management of information: privacy, security, surveillance, and so on.

This is understandable. For most of human history, we've lived in environments of information scarcity. In those contexts, the implicit goal of information technologies has been to *break down* the barriers between us and information. Because information was scarce, any new piece of it represented a novel addition to your life. You had plenty of capacity to attend to it and integrate it into your general picture of the world. For example, a hundred years ago you could stand on a street corner in a city and start preaching, and people would probably stop and listen. They had the time and attention to spare. And because information has historically been scarce, the received wisdom has been that more information is better. The advent of digital computing, however, broke down the barriers between us and information to an unprecedented degree.

Yet, as the noted economist Herbert Simon pointed out in the 1970s, when information becomes abundant, *attention* becomes the scarce resource:

in an information-rich world, the wealth of information means a dearth of something else: a scarcity of whatever it is that

information consumes. What information consumes is rather obvious: it consumes the attention of its recipients. Hence a wealth of information creates a poverty of attention and a need to allocate that attention efficiently among the overabundance of information sources that might consume it.²

Since Simon's time, the ubiquity of small, constantly connected, general-purpose computers has produced this information–attention inversion on a global scale. Today you can access most any piece of information, or contact most anyone you wish, via a small device in your pocket not much bigger than a cigarette box. This capacity for instantaneous information and connection has come to form the background of our experience astonishingly quickly. That is to say, our informational *tools* have rapidly become our informational *environment*. What's more, predigital media such as television and radio have largely been digitally retrofitted, rendering the networked digital environment a constant presence in human life. Today, in the average household in North America, you will find thirteen internet-connected devices.³

This inversion between information and attention has so completely pervaded our lives that it's now (perhaps paradoxically) harder for us to notice its effects. There seems to have been a period around the time the field of cybernetics, or the science of control systems, was emerging, when it was easier to recognize the nature of this shift. This is the period in which Simon was writing, and when the Canadian media theorist Marshall McLuhan and others were beginning to put the concept of "media ecology" on the radar of popular culture.⁴ Now, however, we've pretty much lost all touch with any perceptual benchmarks against which we might judge how utterly our information technologies have enveloped our lives. We get fragmentary glimpses of that old world from time to time: when we go camping, when we take a long flight without internet connectivity, when our phone dies for several days, or when we intentionally take a digital "detox." But these increasingly rare occurrences are exceptions, not

the rule. Barring some unthinkable global catastrophe, the old world of information scarcity seems to be gone for good.

But what does it *really* mean to say that information abundance produces attention scarcity? Abundance can only be abundant relative to some threshold, so we might ask, "What is information now abundant relative to?" One answer would be "The amount of information available historically." While true, this doesn't seem like the *really* relevant threshold we should be interested in. For our purposes, we're only incidentally concerned with the *historical* story here: the mere increase in information between two time points isn't, in itself, a problem. Rather, the relevant threshold seems to be a *functional* one: what matters to us is whether the amount of information is above or below the threshold of what can be well processed given existing limitations.

To illustrate what I mean, consider the video game *Tetris*. The goal of *Tetris* is to rotate, stack, and clear different configurations of blocks as they rain down one by one from off screen, which they do at a constantly increasing rate of speed. The total number of bricks waiting off screen for you to stack is infinite – the game can keep going for as long as you can – but their infinitude, their abundance, is not the problem. The challenge of the game, and what ultimately does you in, is the increasing speed at which they fall. In the same way, information quantity *as such* is only important insofar as it enables information velocity. At extreme speeds, processing fails.

So the main risk information abundance poses is not that one's attention will be *occupied* or *used up* by information, as though it were some finite, quantifiable resource, but rather that one will *lose control over* one's attentional processes. In other words, the problems in *Tetris* arise not when you stack a brick in the wrong place (though this can contribute to problems down the line), but rather when you lose control of the ability to direct, rotate, and stack the bricks altogether.

It's precisely in this area – the keeping or losing of control – where the personal and political challenges of information abundance,

and attention scarcity, arise. To say that information abundance produces attention scarcity means that the problems we encounter are now less about breaking down barriers between us and information, and more about putting barriers in place. It means that the really important sort of censorship we ought to worry about pertains less to the management of information, and more to the management of attention.

Here's the problem: Many of the systems we've developed to help guide our lives – systems like news, education, law, advertising, and so on – arose in, and still assume, an environment of information scarcity. We're only just beginning to explore what these systems should do for us, and how they need to change, in this new milieu of information abundance.

We call our time the Information Age, but I think a better name for it would be the "Age of Attention." In the Age of Attention, digital technologies are uniquely poised to help us grapple with the new challenges we face – challenges which are, fundamentally, challenges of self-regulation.

NOTES

- 1 Eliot, T. S. (1922). *The Waste Land*. New York, NY: Boni & Liveright.
- 2 Simon, Herbert A. (1971). Designing Organizations for an Information-Rich World. *Computers, Communication, and the Public Interest* (pp. 40–41). Baltimore, MD: Johns Hopkins University Press.
- 3 Fanelli, Matthew (2017). Getting Consumers' Attention Across Every Screen They have at Home. eMarketer, December 5. www.emarketer.com/Article/Getting-Consumers-Attention-Across-Every-Screen-They-Have-Home/1016798
- 4 McLuhan, Marshall (1964). *Understanding Media*. New York, NY: Mentor. Postman, Neil (1970). The Reformed English Curriculum. *High School 1980: The Shape of the Future in American Secondary Education*, ed. A.C. Eurich. London: Pitman.