



# Constant Connection, Total Distraction

## Self and Nature in the Cyber-Age

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from *The Practice of Spiritual Ecology in the Age of Distraction*

One of the more endangered experiences of our time is a pristine view of the night sky. There are few locales where a patina of artificial light doesn't obscure all but the brightest of stars. Our cities gleam and shimmer under domes of undifferentiated and milky sameness. To experience the wonder of the stars, we need to travel to remote areas of the desert or far off-shore in the ocean. There are few sanctuaries free of artificial light that remain.

This pollution of the night sky serves an apt simile for the state of our consciousness as we are pulled ever more deeply into the cyber-age. As an unstructured flood of information washes over us from every direction, we are experiencing an eclipse of depth. Our attention, much like the pollution of the night sky, has become colonized with cyber-noise and uncensored data. Deeper illuminations from the depths of the unconscious are still there. But like the stars, it's just harder to perceive them.

The Internet, our phones and tablets, social media, and gaming apps can take us anywhere, in a sense, even to space itself where we peer down onto a planet that is parceled out by Google Earth and other mapping software. However, as Roman philosopher Lucius Annaeus Seneca wrote, “To be everywhere is to be nowhere.” Seneca was writing over 2,000 years ago. Still, his time was similar to our own, and his words particularly apt for our time. In the Rome of his day, there was a major upswing in written communication which created an upsurge in information to process. Distraction and busyness was everywhere in the empire, and Seneca addressed it in his writings. His personal method, and advice, was to choose one main thought per day on which to focus, and train the mind to concentrate and shut out distraction. <sup>1</sup>

But it’s not simply that our attention is colonized. There is mounting evidence that our cyber obsessions are physically rewiring our brains. What we choose to give our deepest attention to structures our synapses and reinforces certain neural pathways. In essence, our attention determines how we think and, by extension, who we become. If we’re not conscious about our online obsessions and its impact on our consciousness, we run the risk of altering what makes us human — our emotional engagement, capacity for empathy, and the experiences that shape our memory and build our identity.

Nicholas Carr, in his book *The Shallows: What the Internet is Doing to Our Brains*, explores how much our understanding of the structure and function of the brain has evolved over time. The brain was once thought to be a network of nerve fibers that developed up to a certain age (sometime in one’s 20s), but then remained fixed and immutable throughout one’s lifetime, slowly declining into old age. Research has since revealed that the adult brain is composed of cells (neurons) and that there is a flow of neurotransmitters across synapses — connections through which the neurons communicate with each other. The synaptic connections remain in flux throughout one’s lifetime. They give rise to the way we think and feel, basically shaping our very identity. And far from being static and immutable, the brain’s synaptic connections can “change in response to a person’s experience.” <sup>2</sup> Referred to as neuroplasticity, this more evolved understanding helped shift our conception of the brain away from something pre-determined, hard-wired, and mechanistic. Instead, the brain is a genius of evolution —

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<sup>1</sup> William Powers, *Hamlet’s Blackberry*, HarperCollins Publishers (New York, New York, 2010), 107-119.

<sup>2</sup> Nicholas Carr, *The Shallows: What the Internet is Doing to Our Brains*, W. W. Norton & Company, Inc. (New York, New York, 2010) 22.

highly resilient and adaptable to experience. “Evolution has given us a brain,” Carr writes, that can literally change its mind—over and over again.”<sup>3</sup>

Carr cites a number of studies to illustrate how physical changes occur in the brain. One study, done by neuroplasticity researcher Edward Taub, was of right-handed violinists. He measured the cortical areas in their brains that corresponded with their left hands, the hands that fingered the strings of their instruments. Then he measured the same cortical areas in people who had never played an instrument. The size of the cortical area in the violinists were significantly larger. Finally, he measured the cortical areas that processed sensations from the subjects’ right hands and found no difference in size between the musicians and non-musicians. In essence, significant physical changes in the brain resulted from playing an instrument. It wasn’t a matter of simple rerouting neural pathways. And researchers found that the physical changes occurred even for musicians who took up the instrument as adults.

But changes in size of areas of the brain aren’t limited to repetitive physical actions or learning a kinetic skill. Another study was conducted by a group of British researchers on a group of sixteen London cab drivers. When they scanned the area of the brain involved in learning how to navigate London’s complex labyrinth of streets and compared them with a control group, the cab drivers’ posterior hippocampus were significantly larger. The longer they had been on the job, the larger the posterior hippocampus. It was also found that the growth of the posterior hippocampus resulted in a corresponding shrinkage in another part of the brain. A reconfiguration of gray matter was occurring. The brain reappropriates itself in response to direct experience and focus of attention.

Yet another study involving the role of imagination on changes in the brain. The researcher taught people who had never played the piano to play a simple melody. He then split them into two groups. One group practiced the melody for two hours a day for five days. The other group sat in front of the keyboard for the same period of time and only imagined playing the song. They never touched the keys. The people who had only imagined touching the keys had precisely the same physical changes in brain structure as those who had actually played the melody.

The significance of this latter study has particular relevance to our time spent in cyberspace. As Carr writes: “We become, neurologically, what we think.” He goes on to say that the brain’s plasticity, its adaptability, “provides all of us with a mental flexibility, an intellectual liveness, that allows us to adapt to new situations, learn new skills, and in general expand our

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<sup>3</sup> Ibid., 31.

horizons.” But it’s not all good news. As some circuits in our brains strengthen from repetitive use, they rigidify over time into actual habit. We become locked into certain behaviors. The brain fine tunes itself and it becomes increasingly difficult to regain certain desirable cognitive abilities once they fade as a result of habitual experience. In other words, the more we physically rebuild the vital paths of our brains through online experience, the more entrenched those neural pathways become. The brain, while elastic, writes Carr, does not simply snap back like a rubber band. <sup>4</sup>

The more we lose the neural and synaptic connections that allow us to contemplate, read slowly, and think deeply, the less likely we will be to engage in long term thinking. To think creatively about solutions to some of our more intractable problems, to imagine and create a vibrant and sustainable future, we need to think long term. It’s not easy for us; human beings don’t seem wired for it. In the distant past, it served us well as a species to simply move on to a new habitat when scarcity or hardship loomed. Thinking for the short term was an effective biological survival strategy.

That strategy has transmuted over time. Fast thinking has come to be valued over contemplation; analytical thought over the intuitive; doing over being; and movement over staying put. Most of us, especially in urbanized society, are still migratory rather than bioregional. Bioregionalism, a lifestyle of staying put and gaining an intimate knowledge of place is, like the starry night sky, an endangered experience. We move from city to city, region to region, in pursuit of career goals or lifestyle changes. Even though we know more about the evolution of the universe and our own emergence, thinking about ourselves as a species within the trajectory of evolution is still difficult with a brain accustomed to thinking short term.

A mind wired for short-term thinking, one less able to sustained focus and deep thought, is a mind more easily distracted. Moreover, as author and management professor Margaret Wheatley writes in her essay “Living in the Age of Distraction,” “distracted people don’t know they are in danger...The evidence is plentiful these days that distracted people cause harm to themselves and to others. We read reports of train accidents caused by the engineer texting and commercial flight crashing because pilots were chatting. Pedestrians and drivers are killed because they’re on the phone or texting.” <sup>5</sup>

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<sup>4</sup> Ibid., 34-35.

<sup>5</sup> Margaret Wheatley, “Living in the Age of Distraction,” *Shambhala Sun*, May 2013.

Distraction, however, is about much more than texting while driving. We can also become distracted from the core issues of our time, unaware of their implications until it is too late. Creative problem solving in addressing difficult human problems is generally foreclosed when in a distracted state. What happens when an entire populace is distracted from the implications of species extinction, global warming, a dying planet, and from the magnificence of the universe? What happens when we text and tweet each other with 30 second thoughts rather than working out problems face to face? What happens when young people incapable of developing the critical thinking skills needed to be engaged and informed citizens because the internet has flattened their reality to the depth of a smartphone screen? The capacity for critical reflection makes us less likely to fall prey to mass culture, ideology, advertising, and the tyranny of demagogues. It makes us more able to imagine what it will take to bring about a viable future for our children.

Life has always presented us with some degree of distraction. As hunter-gatherers, a predator looming on the periphery of our focus on nuts and berries or the pursuit of small game was a big distraction. The degree of attention we gave to it could mean life or death. However, the internet, and all of the bells and whistles that come with it, is particularly adept at short-circuiting our ability to focus, scattering our attention, and obstructing deep thought. Referring to instant messaging, social media, email alerts, pop-up ads, etc. that populate our computers, author and science fiction blogger Cory Doctorow has written that we live in an “ecosystem of interruption technologies.” Margaret Wheatley again: “Our insatiable appetites for self-creation and self-expression have transformed us into twenty-first century hunter-gatherers. We’ve become addicted to where the next click might lead us, so we keep hunting incessantly.”<sup>6</sup> And Nicholas Carr riffs on the same metaphor: “We are hunter-gatherers in the electronic data forest.”<sup>7</sup>

I don’t think that these ecological images from different writers are random attempts to envision the situation. Doctorow’s image of a cyber-ecosystem has limits; the virtual world can’t really approximate the richness of the living ecosystem. However, cyber-space has become a “habitat” in the sense of a place in which a living being lives, matures, and creates an identity. To think of the cyber-world as a kind of habitat is to begin thinking about how it shapes us, both in nourishing and deleterious ways. It’s particularly important to think about how it shapes children

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<sup>6</sup> Wheatley, “Living in the Age of Distraction.”

<sup>7</sup> Carr, *The Shallows*, 138.

because they are in an earlier formative stage, when a foundation is being laid for later development. In this sense, the time children spend in front of a screen instead of in a natural setting becomes an increasingly urgent question.

Paul Shepard, in his book *Nature and Madness*, describes in great detail the importance of the natural world to the ontogeny of the child. For much of human history a child was shaped by the natural forms, the animals, plants, the elements of wind, water, and soil. This relationship, along with a sense of being integral to these forms, created in the child, “a gradual mastery of the personal inner zoology of fears, joys, and relationships,” according to Shepard. “The coming into being” of the child and the influence of the “surrounds,” the “living plants, unpolluted air, the flicker of wild birds, the sound of wind and water, the calls of animals and insects, as well as human voices,” constitute an infant’s “second grounding.” (The primary grounding is the mother-infant bond.) “The surroundings are also that-which-will-be-swallowed, internalized, incorporated as the self.”<sup>8</sup>

Shepard continues: “If we replace the soft earth with pavement, we will learn in our child’s heart that the planet is a desert and a dead rock.”<sup>9</sup> What happens to our sense of ourselves, our sense of space, when an our orientation to the sun, stars, natural land forms, weather, is absent? How does it suffer or change when we are swimming in a cyber-habitat? If we replace the habitat of plants, animals, landscapes with an all-enveloping shroud of cyber-data and the pseudo-relationships of social media, what will we “learn in our child’s heart?”

If the cyber-world is becoming a habitat in which we live, it is a new and strange habitat for the human, one that is largely divorced from the body, ecological context, or cosmology. One way to see the progression is in terms of how we navigate. We once made our way through the landscape by way of our recognition of natural landmarks, trees and rock formations, geographical forms and contours, and the stars. Navigating in this way gave us a bodily sense of where we were. Then paper maps became a representation of that navigation, one step removed, an abstraction through symbols and images on paper. Online maps and GPS, while very useful in getting from A to Z in a strange city, are yet another step removed and have shrunk our sense of place even further to the dimensions of a smartphone screen. Google maps and other online mapping further alienate us from a sense of being in a place. We no longer even have a visual representation of where we are within the larger region in which we live.

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<sup>8</sup> Paul Shepard, *Nature and Madness*, University of Georgia Press (Athen, Georgia, 1982), 7. Shepard was Professor of Natural Philosophy and Human Ecology at Pitzer College.

<sup>9</sup> *Ibid.*, 103

But isn't the internet enhancing learning and making us smarter? Doesn't having all that technology at our fingertips free up our memories and brainpower for more worthwhile pursuits like the arts, philosophy, conversation, and intimacy? It turns out that these are both misconceptions rooted in a mechanistic worldview. Recent research indicates that the Internet is only making us better at certain types of behavior, like multi-tasking for instance, which obstruct our ability to contemplate or think creatively. Speed of thought, which the Net tends to enhance, is not the same as depth of thought. The Net, it appears, is only making us smarter in its own image, not in the ability to think deeply and creatively.<sup>10</sup>

Nicholas Carr cites a study done on reading retention in three groups, people reading linear text in a real-time book, online readers reading text with hyperlinks, and readers of text with hyper-media (text that includes images, video, and links to other media). Reading retention was much lower in the hyper-text readers compared to the book readers. Retention was even lower in the readers of hyper-media. Clicking on links to related material didn't enhance understanding, it disrupted the flow of ideas. Distracted reading, as it turns out, isn't a better way to learn.<sup>11</sup>

Other questions arise in relation to the nature of memory. Our tendency to think dualistically is part of the problem, if not at the core of the issue. The mechanistic worldview saw the brain more as a machine than something that could change in response to experience. Memory was seen as data stored in a database. The western world in particular has come to think of the brain as a repository of "data," where we swap out bits of information like inserting a CD or a jump drive. In reality, the brain is so much more elastic, expanding and contracting, growing and adjusting by creating new synaptic connections. Biological memory is alive, in a perpetual state of renewal, writes Carr.<sup>12</sup> By contrast, a computer's binary memory, based on ones and zeros, is digital and static. It is incapable of renewing itself and making the kinds of leaps in imagination required of creative thought.

So, unlike biological memory, computer memory is not alive. Thus, the metaphor of the brain as a kind of computer into which data is placed is increasingly suspect. In fact, Carr writes that "the old botanical metaphors for memory, with their emphasis on continual, indeterminate organic growth, are, it turns out, remarkably apt. In fact, they are more fitting than our new,

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<sup>10</sup> Carr, *The Shallows*, 140.

<sup>11</sup> *Ibid.*, 128-130.

<sup>12</sup> *Ibid.*, 191.

fashionably high-tech metaphors, which equate biological memory with... defined bits of digital data stored in databases and processed by computer chips.”<sup>13</sup> The philosopher Seneca thought of memory as a crucible, not just a container. Something new emerges from the organic mixing of experience and the way the brain creates synaptic pathways that goes beyond simple storage of information.

A second difficulty with memory is the idea that computers would become a kind of storage locker for information thus freeing the human mind for more noble pursuits. Computer scientist and professor David Levy, in a talk given at Google on March of 2008, addresses the difficulties of information overload in the cyber age. He describes of the work of American engineer, inventor, and science administrator, Vannevar Bush. Working in the post-war 1940s, Bush envisioned a machine called the “memex” that would improve the lot of the human. If we could make better use of the human record, we would develop wisdom. Better tools, like the computer, for doing routine tasks would free people up to be more creative in their work. They would have more time for contemplation. He saw the memex as a device in which individuals would compress and store all of their books, records, and communications. It would provide an “enlarged intimate supplement to one’s memory.”<sup>14</sup>

Ironically, with the rise of just such a machine, the computer, information overload has grown, not diminished. We have less time to think, and less leisure time in which to pursue creative work and engage in reflection, spiritual growth, to develop the capacity for wisdom as envisioned by Vannevar Bush. At least two things went wrong in my view: First, the co-optation of the world of computers by the corporate world made the online experience a shopping mecca, just one more consumer enclave replete with advertising. Second, computers became a source of entertainment, of diversion rather than a tool to alleviate people of routine tasks. As such, they tend to take us out of our deeper selves into the realm of titillation and distraction.

It is important for us to retrieve, as a counter-balance to distraction, the more measured modes of the human mind that have gone subterranean, beneath the dominant veneer of noise and busyness. To be free-thinking individuals, to educate children to be individuals capable of the critical reflection needed to break out of molds that no longer serve the future, we need to create sanctuaries from the flood of information. Maybe we’ll begin to see the stars again.

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<sup>13</sup> Ibid., 190.

<sup>14</sup> Levy, David. (March 5, 2008). “No Time to Think.” Google Tech Talks.