



Book Future Minds

How the Digital Age Is Changing Our Minds, Why this Matters and What We Can Do About It

Richard Watson
Nicholas Brealey Publishing, 2010
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Recommendation

Author and scenario planning consultant Richard Watson is clearly torn. One minute, he issues warnings about the negative effects of digital technologies on the brain and human society and discusses his fears that people pay insufficient attention to the possible consequences of these effects. The next minute, Watson is positively giddy and excited by the future potential of that same technology. The possibility of controlling machines with your mind, or improving your mental function by popping a pill, sounds like life in a science fiction utopia. But every utopia carries the possibility that it might turn into a dystopia that traps the human spirit: That’s Watson primary concern and the insight he offers his readers. *BooksInShort* recommends this book to anyone interested in futurism, cyberculture, digital technology or the ethics of human society.

Take-Aways

- The spread of computers throughout society represents a profound historical shift.
- Using computers and living amid “cyberculture” changes the way people think.
- Technology changes how people concentrate, disrupting deep thoughts and focus.
- The educational system has embraced technology, though research suggests that it provides few benefits to learning.
- Contemporary toys and education restrict imagination and “free play.” Children have become less original and more self-conscious.
- Developments in information technology may change law enforcement and produce artificial intelligence that outstrips humanity.
- Creating new ideas requires a process of “education, incubation and illumination.”
- “Commitment, curiosity and confidence” are essential for creative thinking.
- Technology-driven change demands profound consideration in order for people to grasp its full meaning.
- To think more clearly, gain control of your time and space. Do not let the cyberworld invade every corner of your life.

Summary

How Is the Computer Altering Your Mind?

Scientists once thought that the brain no longer changed once it matured. Now they know better. “The human brain is probably the most complex structure in the universe, but it has one very simple feature. It is not fixed. It is malleable.” Your brain is “plastic” and changes in response to experience. The proliferation of technology is modifying the human brain in countless ways, with profound implications.

“Our interaction with objects and environments is the bedrock of human intelligence and thinking.”

Cyberculture is changing how you concentrate, disrupting your deep thoughts and extended focus in favor of quick and shallow links. Such changes matter because only intense, focused thinking produces major creative breakthroughs. Computers change how you read. While printed text favors methodical reading and reflecting to find meaningful ideas, content on the computer screen lends itself to fragmented reading that seeks superficial bits of data. Reading computerized text strips facts of their context. Similarly, contacting people online allows personal choice and control to flourish, but it reduces “serendipitous encounters” and weakens empathic connections.

“Digital devices are turning us into a society of scatterbrains. If any piece of information can be recalled at the click of a mouse, why bother to learn anything?”

“Comparing the differences between generations is fraught with difficulty, but it is still one of the better ways to foresee the immediate future.” In the last few decades, computer use has spread throughout society, especially among the young. A 2010 study showed that young Americans between the ages of 8 and 18 “spend an average of 11 hours a day in front of a screen, be it a television, a computer, a cell phone, an iPod, or two or more simultaneously.” These teenagers spend as much time online or using other digital media as they would at a “full-time job.”

“People 35 and over use a cell phone to manage their day. For...screenagers, a cell phone is a proximity device that allows them to reshape time and space.”

You might call the current generation of teenagers “screenagers,” because they experience the world through computer interfaces and that helps define them. They expect to be able to personalize their entire lives, and they assume events will unfold at the press of a button, so they have very little patience. Their vision of the world is markedly discontinuous from previous generations. They’re so accustomed to continual digital interaction that their minds are strikingly agile, but also shallow. They’re losing intellectual rigor as their relationship to knowledge shifts. They don’t remember something if the Internet will remember it for them. They don’t follow established rules of writing. They’re weak at judging the trustworthiness of their online sources, and the way they read on screen is not the same way most people read books: Their eyes move differently, darting around as their attention shifts.

“Screenagers have a predilection for multitasking and parallel processing.”

Teenagers are not to blame for the changes their generation is undergoing. Their parents and teachers are the ones who filled their worlds with machines that teach children to expect immediate responses and, more importantly, that alter how their brains are wired.

Contemporary toys are more structured and involve following more rules than older toys, contributing to an overall reduction in “free play” for children and restricting kids’ imagination. The educational world shows little more discretion in its approach to digital media than the kids themselves. Studies have shown little or no connection between computer technology and learning, but education money gets spent on technology. Children are thinking less about the material they’re studying and more about themselves. The highly networked nature of online life makes kids more aware of how others define them, so they are losing the openness of childhood at an earlier age. “Since the world is going to become faster, more technological, more virtual, and more prescribed in the future, then what kids – and adults – need is a counterbalance.”

What Do These Changes in the Brain Portend?

The idea that the human brain functions like a machine (specifically, a computer) isn’t new, but it has become more popular in recent years. However, this simile, which emphasizes memory capacity or processing speed, may mislead people and cause them to miss the human mind’s complexity, its general intelligence, and how that intelligence responds to experience and interweaves with emotion. Humans also can think about their own thought processes in ways that make them much smarter (functionally) than computers. Developments in brain scanning offer more possibilities for pinning down what areas of the brain are involved in which activities, but right now scientists don’t know how human creativity works. Scans also offer the possibility of “reading” the mind mechanically, perhaps for indications of bias, dishonesty and criminal activity. Combined with ever more available public information on individuals’ activities, law enforcement may change radically, with extensive societal impact.

“Passive media such as newspapers and books are now generally rejected in favor of interactive media, and, ideally, media that can be co-created and controlled.”

Fascinating developments in artificial intelligence and related fields abound. Software can already do basic problem solving, as witnessed by search engines like Google. Several companies sell “decision-making software,” in effect “outsourcing” some of the brain’s activities. Some thinkers, such as futurist and author Ray Kurzweil, predicts that by 2045 computer technologies will become so intelligent they’ll improve their own design, thus generating a technological “singularity” that fundamentally disrupts the world. He also believes that, by around 2050, it will be possible “to upload the contents of the human brain” onto a mechanical device that has self-awareness, thus creating “a kind of digital immortality.” On a much more modest level, drugs developed to improve cognitive function in people with Alzheimer’s and other conditions can improve mental capacity in healthy individuals. New headsets even allow the disabled to control mechanized functions with their minds.

The Stages of Idea Generation

Innovation relies on memory. Ideas are rarely new. They often emerge when your mind recalls existing concepts and combines them. This “associative” aspect of idea generation usually happens in your subconscious. Ideas move through several stages in a process of “education, incubation and illumination.”

“What was once very private can now become very public.”

In the education stage, feed your mind, study widely and rigorously. Your attention “is not an unlimited resource.” Focus on the wrong person, place or thing, and you’ll miss out on a lot. You may make mistakes because of how you “tag information.” Your brain puts a marker on each new memory to organize it; if you don’t search your memory in ways that align with these markers, you’ll lose data. But, putting up with “a little disorder,” rather than strict organization, contributes to creativity, as does accepting stillness rather than busyness as part of your creative processes.

“If we are going to be deep thinkers, the place at which thinking needs to begin is in the unconscious mind.”

In the incubation stage, relax and trust your subconscious. Part of that trust is letting go of your inhibitions, lowering the barriers that normally keep stray impulses out of your consciousness. During this incubation or “fermentation” stage, people start thinking about an idea, often in response to a challenge or problem. This stage takes time – hours, days, months or even years. Just relax and consider other things; there’s no substitute for waiting.

“Memory plays a key role in the generation of ideas.”

Then, out of the blue, comes illumination: a solution jumps “into your mind” after some unknown interval and often when you least expect it.

The world’s increasingly fast pace works against idea generation. To spawn ideas that are both original and valuable, you need to come up with lots of them: good, bad, irrelevant, and so on. Too often, people who are developing new ideas overvalue “convergent thinking,” logical thought aimed at producing a single correct answer. Convergent thinking sees the world in terms of “clear right and wrong,” while “divergent thinking” generates “multiple, novel solutions.” It works better with “new, ambiguous or poorly articulated problems.” Sometimes, ideas come from the “distributed intelligence” of a group, which often knows more than one individual can know.

How to Generate Ideas Despite the Wired World

The first, simplest and most important action is thinking about the changes that are changing you. Engage in “deep thinking,” not flighty, surface impulses. Shape a setting that encourages and supports meaningful cogitation. The space you are in influences your thought processes. You’re likelier to generate ideas when you’re walking outside or working in a garden. Make a better space for intense thinking by getting away from any electronic screens, going outdoors, being close to water or shifting into motion. Take a train ride or go for a walk.

“Time, as they say, is money, but we seem to have confused both the value of doing nothing and what we do.”

Stress and fatigue reduce cognitive function. The increased pace of life makes you more tired and tense. You need rest, relaxation and changes in your routine to keep your mind fresh. Meditation and daydreaming offer altered states that make you more open to new ideas. The wired world disrupts these positive states. “Machines do not possess a subconscious mind, yet this, more than the conscious mind, is the basis of most human thought and behavior.” Technology’s demands on your attention distract you, disrupting your reflection.

“One of the biggest problems with big problems is that people give up far too soon.”

To counter these demands, draw upon your “commitment, curiosity and confidence.” Commit to creating “time and space” for thinking. Engage in “deliberate practice” that frees your mind from distractions and helps you focus, even if you concentrate on nothing. Schedule time that isn’t devoted to specific tasks. Google and 3M let employees dedicate substantial time, some 15% to 20% of the workweek, to their own projects. Emulate this approach to instill variety in your day. Alter your routine. Leave the office, or at least close the door; turn off your electronic devices.

“Clutter and creativity go together.”

Be curious. Ideas don’t spring into existence out of thin air. They are usually sparked by exposure to new things. To maximize the likelihood of recombining your various ideas into something new, become “intellectually promiscuous.” Travel, even if you just take a different road to work. Talk to a variety of people, listen to new music and read unfamiliar things. Surrender the tendency to give just one expected answer to a question. Actively cultivate the “open mind” of a child. Ask why, over and over, to drill your inquiries to a deeper level. To find new perspectives for your organization, assemble panels of “innocent experts,” people who don’t know your discipline, business or product.

“Is the digital age making us any smarter at not making silly mistakes? Unfortunately, it appears not.”

No matter what specific techniques you try, be confident and avoid impatience. Generating ideas takes time, but coming up with lots of them is essential to finding good ones. Keep an “ideas diary,” and always have some way to capture your ideas close at hand. As your ideas start to flow, evaluate them. Rate them on how difficult they are and how likely they are to have an impact. Focus on concepts that are easy to execute. Some will have major implications, but you still gain by working on several smaller ideas, too. Sometimes, you’ll find the solution you’re looking for by failing time and again, just as Thomas Edison did.

“Deep thinking is personally fulfilling. It is our deep thinking that makes us uniquely human.”

“Share the problem” with others, either in person or on the Internet, which makes it easy to share interesting questions with a wide array of people. You can see examples of this approach in works like Wikipedia, or in the production of open source software. Collaborative projects may require you to shift to an improvisational work approach, more like playing jazz than like conducting traditional research.

Protecting Humanity in the Digital Age

While some of these techniques utilize the Internet, all of them require you to shift from the common assumptions of cyberculture. The “convenience of the digital age” is seductive and disrupts the deep thinking required to be creative. Cell phones, Twitter, Facebook, and so on “invite reaction rather than reflection.” They make you focus outward, not inward. Consciously manage your use of such tools, putting them aside at times. Don’t use computers for everything. Put them to work for tasks they are good at, like “processing larger amounts of information.”

“If you want to have new ideas you need to go somewhere ideas can find you.”

Carving out time for reflection requires swimming against the cultural current. Choose to do things that are harder rather than easier. Recognize that some elements of human relationships can’t be replicated online – and protect your relationships from the growing number of people who believe they really can connect via electronics

alone. The number of important choices facing you will only grow in the future, as fields such as genetics, robotics and artificial intelligence provide tools to remake humanity. Don't let technology rush – or make – crucial decisions for you, and don't let the digital world intrude into every corner of your life.

About the Author

Scenario planning consultant **Richard Watson** is the author of *Future Files* and the publisher of What's Next, a website dedicated to tracking trends.
