

Tech Talks: Tech for Seniors

The Glass Cage (2014)

by Nicholas Carr

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Introduction

- [Nicholas G. Carr](#) (born 1959) is an American writer who has published books and articles on technology, business, and culture. His book *The Shallows: What the Internet Is Doing to Our Brains* was a finalist for the 2011 Pulitzer Prize in General Nonfiction.



- [Does IT Matter?](#) '04
- [The Big Switch: Rewiring the World, from Edison to Google](#) '08
- [The Shallows: What the Internet Is Doing to Our Brains](#) '11
- [The Glass Cage: How Our Computers Are Changing Us](#) '14
- [Utopia Is Creepy](#) '16
 - [Is Google Making Us Stupid](#) (*The Atlantic*, '08)
 - [The Web Shatters Focus, Rewires Brains](#) (*Wired*, '10)

['The Shallows': This Is Your Brain Online](#) Audio Interview on NPR '10

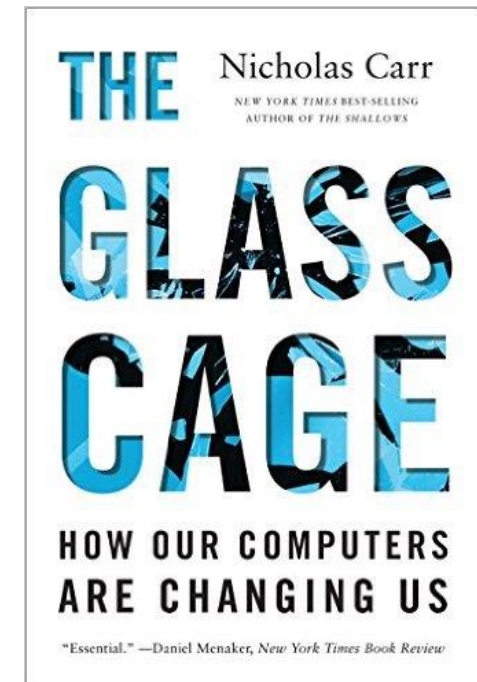
[The Shallows - What the Internet Is Doing to Our Brains](#), 2010

[The Neuroscience of Internet Addiction](#), 2011

[The Decline of Deep Thinking](#), 2013

['The Glass Cage: Automation and Us'](#) Talks at Google '14

[Our Automated Lives](#), 2015



Topic

- The Glass Cage (2014)

Automation... makes getting what we want easier, but it distances us from the work of knowing. As we transform ourselves into creatures of the screen, we face the... existential question... : Does our essence still lie in what we know, or are we now content to be defined by what we want?

... the aim is joy... By reclaiming our tools as parts of ourselves, as instruments of experience rather than just a means of production, we can enjoy the freedom that congenial technology provides when it opens the world more fully to us. P. 232

Summary

- The Glass Cage

- This book is about automation^{*}, about the use of computers and software to do the things we used to do ourselves. Computer automation makes our lives easier. We're often able to accomplish more in less time – or do things we simply couldn't do before. But automation also has deeper, hidden effects. Automation can take a toll on our work, our talents, and our lives. It can narrow our perspectives and limit our choices. It can open us to surveillance and manipulation. As computers become our constant companions... it seems wise to take a closer look at exactly how they are changing what we do and who we are. p. 2

^{*}The use of various control systems for operating equipment... with minimal or reduced human intervention. From the Greek αὐτόματον, *automaton*, (neuter) "acting of one's own will".

Overview

- The Glass Cage

- Are Robots Hurting Job Growth 60 Minutes

- <https://www.youtube.com/watch?v=yeyn9zzrC84>

- What will future jobs look like? | Andrew McAfee

- https://www.youtube.com/watch?v=cXQrbxD9_Ng

Overview

- The Glass Cage
 - Paradox of Work p15
 - McAfee p28
 - 60-Minutes p29
 - Automation p34
 - Degeneration Effect p80
 - Wall Street p156, 171
 - Human Centered Automation p163
 - Brin p199 - TED Talk
 - Well Made Tool 217

Paradox of Work

- Mihaly Csikszentmihalyi, *Flow* (1990)
 - People are happier, more fulfilled, while they are at work rather than during leisure hours. In free time they feel bored and anxious.
 - On the job, we express the desire to be off the job.
 - Off the job, the last thing we want is to go back to work.
 - Psychologists call this '*miswanting*' – being inclined to desire things we don't like and like things we don't desire.
 - When things we want to happen don't improve our happiness and when things we want not to happen do, we have 'wanted' badly.
- The promise of automation: to reduce the amount of work we have to do, promising to imbue our lives with greater ease, comfort and convenience.

Automation

- Ford, 1946 – needed a word to describe the machinery being installed on the company’s assembly lines – but workers still controlled the pace of production.
- 1958 – “Automation simply means something significantly more automatic than previously existed in that plant, industry or location.
- Technology changes, and it changes more quickly than human beings change. Computers sprint forward at the speed of Moore’s Law, while our innate abilities creep ahead.
- We’re compelled to adapt our own work, behavior, and skills to the capabilities and routines of the machines we depend on.

Degeneration Effect

- Working against the 'generation effect' (skill building), automation too often becomes an impediment to skill building.
- It relieves us of repetitive mental exercise, of deep learning.
- Automaticity, generation, flow: require “getting our hands dirty with the world and letting the world kick back in a certain way.” (Talissee)
- When automation distances us from our work, when it gets between us and the world, it erases the artistry of our lives.

Aviation

- 1950s – the radioman lost his seat on the airplane
- 1960s – the navigator was pushed off the deck
- 1970s – deregulation, advent of the ‘glass cockpit’, the flight engineer’s job is threatened
- 1981 – declared flight engineer no longer necessary
- 2009 – Air France A330 crash
- 2011 – “A pilotless airliner is going to come, it’s just a question of when.” (Boeing executive)
- 2012 – 95% of pilots say that cockpit automation erodes flying skills

Wall Street

- 2012 – Wall Street’s largest trading firm, Knight Capital Group, deployed automation software with a bug that flooded the exchanges with unauthorized orders, trading \$2.6 million worth of stocks – every second – for 45 minutes. The software caused \$7 billion in bad trades.
- 2013 – Brad Katsuyama (former RBC exec) spearheads a new, fairer exchange that protects buy and sell orders from the algorithmic manipulations (and fees) of ‘high-speed traders’. (*Flash Boys*, 2014)

Human Centered Automation

- Human-centered design begins with a careful evaluation of strengths and limitations of the people who will be interacting with the machine.
- Giving people more to do helps sustain the generation effect.
- Regular feedback heightens engagement and helps operator remain vigilant.
- Adaptive automation:
 - Computer pays close attention to the person operating it.
 - Aims to keep the operator at the peak of the [Yerkes-Dodson performance curve](#).
 - Promises to inject a dose of humanity into working relationship between man and machine.
- Airbus -> 'technology-centered' vs. Boeing -> 'human-centered' controls

Andrew McAfee

- [What will future jobs look like?\(2013\)](#)



Also interesting:

[Are Robots Hurting Job Growth](#) 60 Minutes (2013)

[AI & The Future of Work](#) | Volker Hirsch (2017)

The Well Made Tool

- The value of a well-made and well-used tool lies not only in what it produces for us but what it produces in us.
- Technology opens fresh ground. It gives us a world that is at once more understandable to our senses and better suited to our intentions – a world in which we are more at home.
- Used thoughtfully and with skill, technology becomes much more than a means of production or consumption. It becomes a means of experience. It gives us more ways to lead rich and engaged lives.

Nicholas Carr: ["The Glass Cage: Automation and Us"](#) | Talks at Google

Start at 41 min.