Tech Curiosity
Session 6 of 6

Glen Maxson & Alan Freedman

Delaware Valley University

Fall 2021

Welcome

Glen Maxson

glenmaxson@gmail.com

267-866-7827

seniortechadvisor.com

Tech Curiosity Presentation Archive

Alan Freedman

alan@computerlanguage.com

(215) 297-8082

computerlanguage.com

Technology in the News

- **Udemy filed its S-1 document with the SEC for an initial public offering.** The online course provider said users watched 2.8 billion minutes of content on its platform in Q2.
  - Udemy has more than 44 million users and 201 million course enrollments.
  - The total addressable market for online learning is estimated to be $200B, according to Udemy.

Technology in the News

- **Google plans to invest $1B to support digital transformation in Africa over the next five years.** The plans include a subsea cable, Equiano, that will extend from South Africa, Namibia, St. Hellena, and Nigeria, and connect to Europe.
  - Google plans to expand its partnership with Safaricom on device financing to include carriers such as Airtel, MKOPA, MTN, Orange, Transsion Holdings, and Vodacom, among others.
  - The company plans a $50M investment in start-ups and would provide access to Google employees, tech, and network.
  - Google will extend $10M in low-interest loans via Kiva for small businesses and entrepreneurs in Ghana, Kenya, Nigeria, and South Africa.

Technology in the News

- Telegram gained 70 million users during the WhatsApp and Instagram outage.
- Google and YouTube stop running ads that deny climate change.
- Google added a guitar tuner via Google Assistant.
- Tesla starts rolling out FSD Beta 10.2.

Technology in the News

- **Facebook, including its Instagram and WhatsApp services, suffered a new outage on Friday.** The apps were reportedly down due to data center configuration changes unrelated to last Monday's mass outage.
  - The new outage was resolved ~30 minutes after Facebook acknowledged the outage via a tweet at 3:22 p.m. ET. Facebook confirmed a fix to the issue at 5:17 p.m. on Friday.

Technology in the News

- **Pinterest revealed its new features for shopping on its platform, including merchant verification.** The social media company also announced Idea Ads with paid partnership, a tool that allows advertisers to promote a creator's Idea Pin as an ad.
  - Pinterest said that people who use their platform on a weekly basis are 7 times more likely to say Pinterest is the "most influential platform in their purchase journey," when compared to other social media.
  - Pinterest claims its users have 85% bigger baskets and spend twice the amount of shoppers on other social media platforms.

Technology in the News

- Twitter begins testing a warning prompt for intense conversations.
- Before you jump into a feisty Twitter thread about Sora being the last *Super Smash Bros. Ultimate* character, you may eventually see a warning about the potentially heated conversation. Today, the company said it's testing a "Heads Up" feature on iOS and Android that'll serve as a helpful PSA*. (Twitter said it was in the works a few weeks ago.)
- On top of the intensity warning, there's also a screen that highlights a few golden rules of online conversations: remember there's a person on the other side; focus on facts; and consider the value of different opinions, which could help strengthen your perspective.
- Similar to Birdwatch, Twitter's community-driven push to fight misinformation with informed context, the Heads Up feature is an attempt at empowering the company's users. Of course, this isn't a replacement for tools that can actually help people avoid harassment, like its new Safety Mode.

***PSA = Public Service Announcement**

Technology in the News

- **Tesla is moving its headquarters from Palo Alto, California, to Austin, Texas, CEO Elon Musk announced on Thursday at the company's annual shareholder meeting.** Musk said Tesla would keep and expand some of its activities in California, particularly at its Fremont factory.
  - Tesla joins a handful of Silicon Valley companies that have left California in the last couple of years, citing high costs. HP and Oracle are two prominent examples.
  - Last year Musk announced he moved to Texas to be closer to his Space company, SpaceX.

Technology in the News

- **Snap has developed an in-app education portal with content from organizations to prevent substance abuse.** Heads Up, the app portal, was developed by Snap in collaboration with Shatterproof, Song for Charlie, and the Substance Abuse and Mental Health Services Administration, and includes resources by the CDC.
  - The company commissioned research that found that people aged 13 to 24 face significant mental health challenges connected to high levels of stress and that young people are turning to prescription drugs for coping.
  - The study, which had a sample of 1,449 Americans, found young people lacked information about the dangers and deadliness of fentanyl — a synthetic opioid.

Technology in the News

- **Microsoft and AMD are investigating an issue that is causing processors to run slower on Windows 11.** Performance is impacted by 3% to 5% in affected applications, per AMD.
  - AMD detailed a 10% to 15% impact in performance for outlier applications used in eSports.
  - Windows is developing an update to address the latency issues and expects to make it available this month.

Technology in the News

- **Rocket Lab is acquiring Advance Solutions, Inc., which focuses on aerospace software, for $40M.** ASI works on space mission software, test systems, and navigation and control solutions.
  - ASI's software, MAX, has been used by 45 spacecraft. The company's clients include NASA, the U.S. Air Force, the Department of Defense, and commercial operators.
  - The acquisition will help Rocket Lab move toward its goal of providing end-to-end space solutions, the company said.

- **Endless fake faces:** Load up the website This Person Does Not Exist and it'll show you a human face, near-perfect in its realism yet totally fake. Refresh and the neural network behind the site will generate another, and another, and another. The endless sequence of AI-crafted faces is produced by a generative adversarial network (GAN)—a type of AI that learns to produce realistic but fake examples of the data it is trained on.
- **Hang on:** But such generated faces—which are starting to be used in CGI movies and ads—might not be as unique as they seem. In a paper titled This Person (Probably) Exists, researchers show that many faces produced by GANs bear a striking resemblance to actual people who appear in the training data. The fake faces can effectively unmask the real faces the GAN was trained on, making it possible to expose the identity of those individuals. The work raises some serious privacy concerns.

Closed-loop neuromodulation

- **Closed-loop neuromodulation in an individual with treatment-resistant depression** (aka "**a brain 'pacemaker'** implant) could eliminate severe depression in seconds". It's a **neuro-modulation implant** which is constantly on the lookout for the first signs of depression, and then delivers a short burst of electricity to reboot the brain circuits.
- Reported in Nature Medicine (Oct. 4, 2021) it "represents a landmark success in the years-long effort to apply advances in neuroscience to the treatment of psychiatric disorders". (link) and (video)
- "A precision-medicine approach that has successfully managed our patient's treatment-resistant depression by identifying and modulating the circuit in her brain that's uniquely associated with her symptoms"
- A device about the size of a matchbook was implanted in Sarah's skull with electrodes running to the two parts of the brain, to monitor amygdala activity then deliver a six second, one milliampere pulse to the ventral striatum.
- Scientists found that Sarah's brain activity triggered the device about 300 times a day, leading to 30 minutes of cumulative stimulation.
- "When we turned this treatment on, our patient's depression symptoms dissolved and in a remarkably short time she went into remission,"

More on **Cell Phones**

- The main hazard with non-ionizing radiation (less than 3 PHz (peta hertz (10^{15}) GHz (10^{9}) is **heating**.
- 28 GHz radiation of 5G is less penetrating than the 8 Ghz of 4G (penetration into biological tissue goes down with increase in radio frequency). Therefore, **5G is less damaging than 4G**. Only the skin and eyes are in danger of being heated.
- There is **significant data** from many studies on the effects of non-ionizing radiation that goes back decades.
- Cell tower and cell phone emissions are **highly regulated** in the US by the **FCC.**
- By finding your cell phones **FCC ID**, you can check its emission level
- https://www.phonescoop.com/ (select phones, manufacturer, model, FCC ID – then what?)

Roy's phone:
Motorola One 5G: **FCC ID** **IHDT56ZC2** web link to FCC site, summaries of reports
Max **SAR 1.43 W/Kg** well under **FCC 1.6 W/Kg**

1. Statement of Compliance

The maximum results of Specific Absorption Rate (SAR) found during testing for **Motorola Mobility LLC, Mobile Cellular Phone, XT2113-2,XT2113-5,** are as follows.

Highest 1g SAR Summary						
Equipment Class	Frequency Band		Head (Separation 0mm)	Hotspot (Separation 5mm)	Body-worn (Separation 5mm)	Highest Simultaneous Transmission 1g SAR (W/kg)
			1g SAR (W/kg)			
	GSM	GSM850	0.90	1.13	0.79	
		GSM1900	<0.10	**1.43**	**1.43**	
	WCDMA	Band II	<0.10	1.24	1.13	
		Band IV	<0.10	1.30	1.30	
		Band V	0.86	1.09	0.91	
	CDMA	CDMA2000 BC0	**1.18**	1.04	0.83	
		CDMA2000 BC1	<0.10	1.41	1.39	
		CDMA2000 BC10	0.85	0.97	0.73	
		Band 7	<0.10	1.37	1.37	

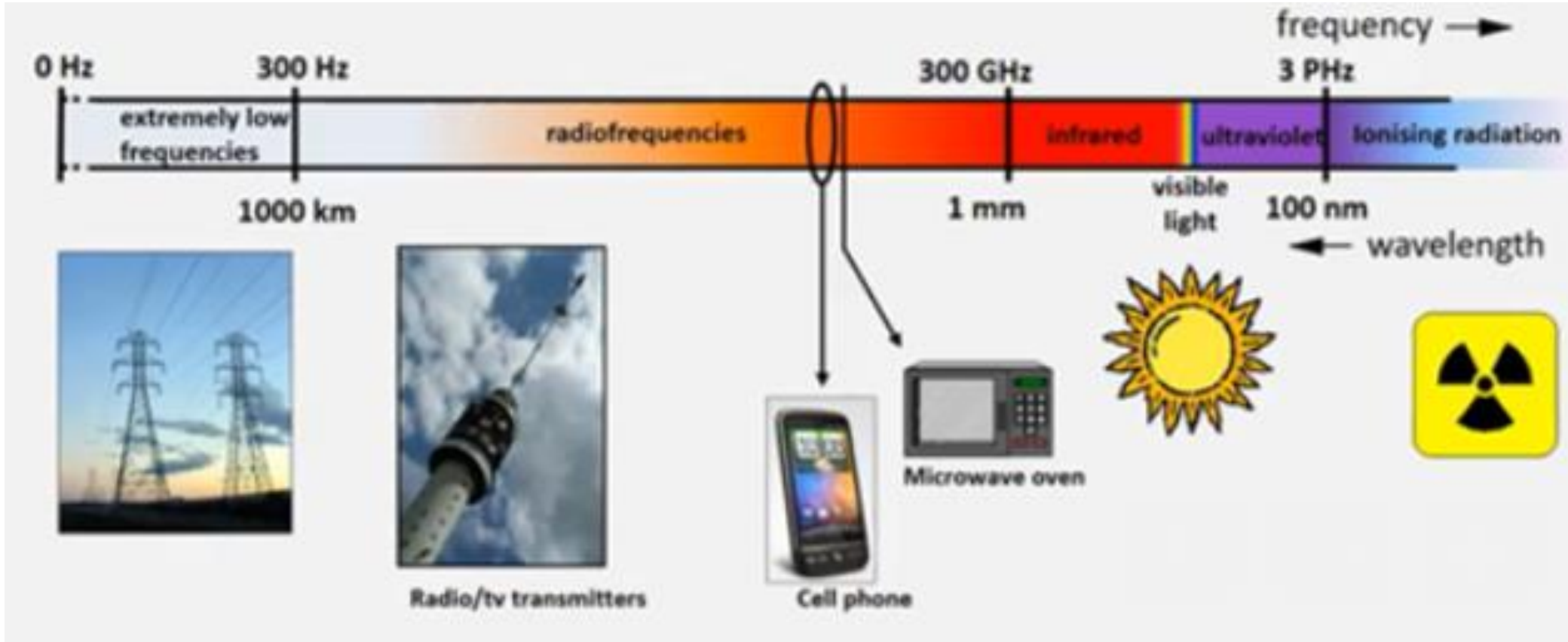
Supporting Articles

https://www.nature.com/articles/d42473-019-00009-7
This is a link to an article entitled “What 5G means for our health” from the Australian Centre for Electromagnetic Bioeffects Research (ACEBR - key contributor to the International Commission on Non-Ionizing Radiation Protection (ICNIRP) review, which was released in 2019

https://www.icnirp.org/en/activities/news/news-article/rf-guidelines-2020-published.html
https://www.icnirp.org/en/applications/mobile-phones/index.html
These are links to the International Commission on Non-Ionizing Radiation Protection (ICNIRP)

https://www.fcc.gov/general/radio-frequency-safety-0
https://www.fcc.gov/general/specific-absorption-rate-sar-cellular-telephones
These are links to the FCC site.

The FCC has adopted limits for safe exposure to radiofrequency (RF) energy, given as the Specific Absorption Rate **(SAR)** - a measure of the amount of radio frequency energy absorbed by the body when using a mobile phone. The FCC limit for public exposure from cellular telephones is an **SAR level of 1.6 watts per kilogram**.


frequency
0 Hz
300 Hz
300 GHz
3 PHz
extremely low frequencies
radiofrequencies
infrared
ultraviolet
ionising radiation
1000 km
1 mm
visible light
100 nm
wavelength
Radio/tv transmitters
Cell phone
Microwave oven

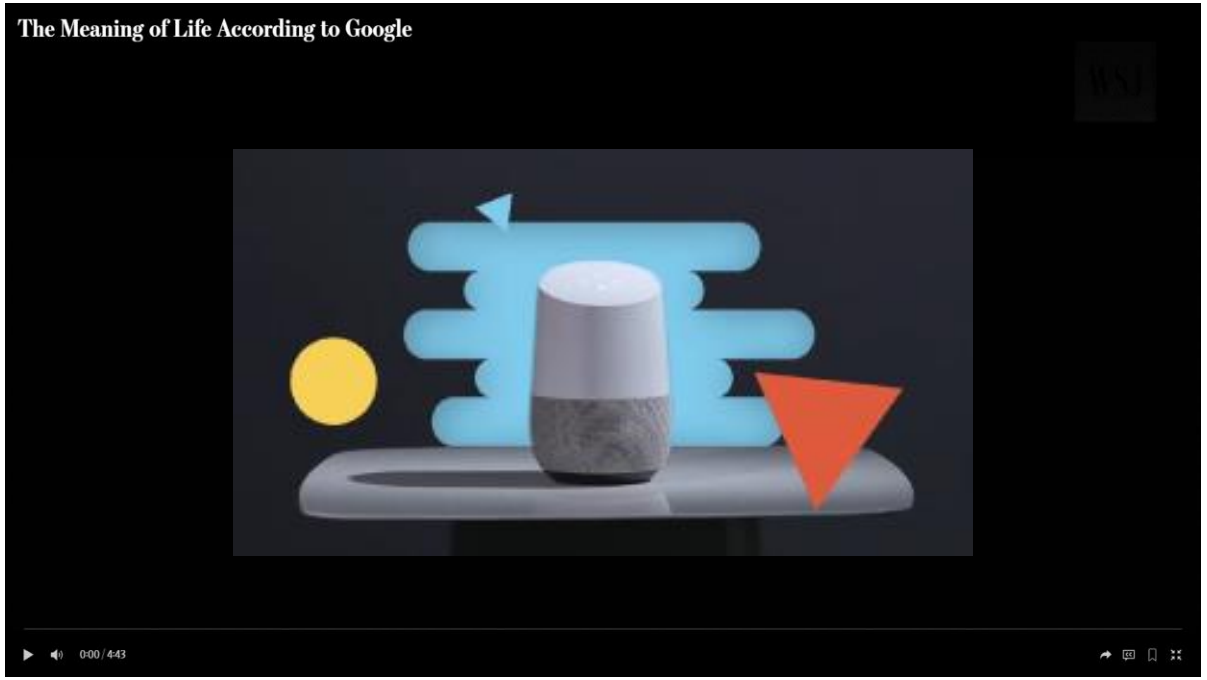
Search

How Google Search Works

- Google uses software known as *web crawlers* that explore the web on a regular basis to find sites to add to its index.
- Google Search works in three stages:
  1. **Crawling:** looks for pages that are new or updated. Google stores page addresses (*URLs*) in a list
  2. **Indexing:** Google analyzes content, images, and video files in the page and stores results in the *Google index*, a distributed database
  3. **Serving search results:** When using Search, Google determines the highest quality results. “Best" results have many factors, including things such as the user's location, language, device (desktop or phone), and previous queries.

More on Search

- https://www.wsj.com/articles/googles-featured-answers-aim-to-distill-truthbut-often-get-it-wrong-1510847867, incl. video

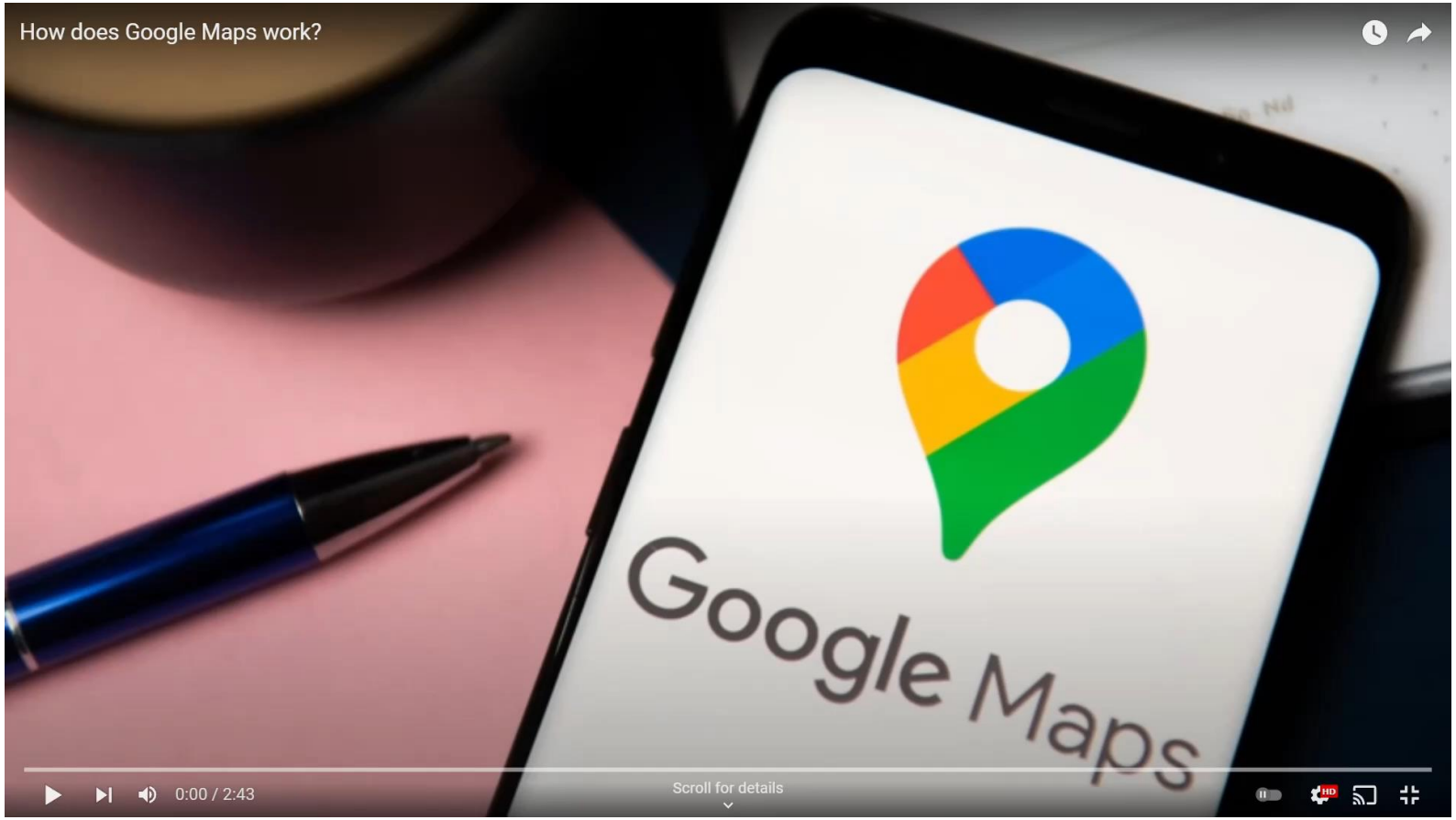


Maps

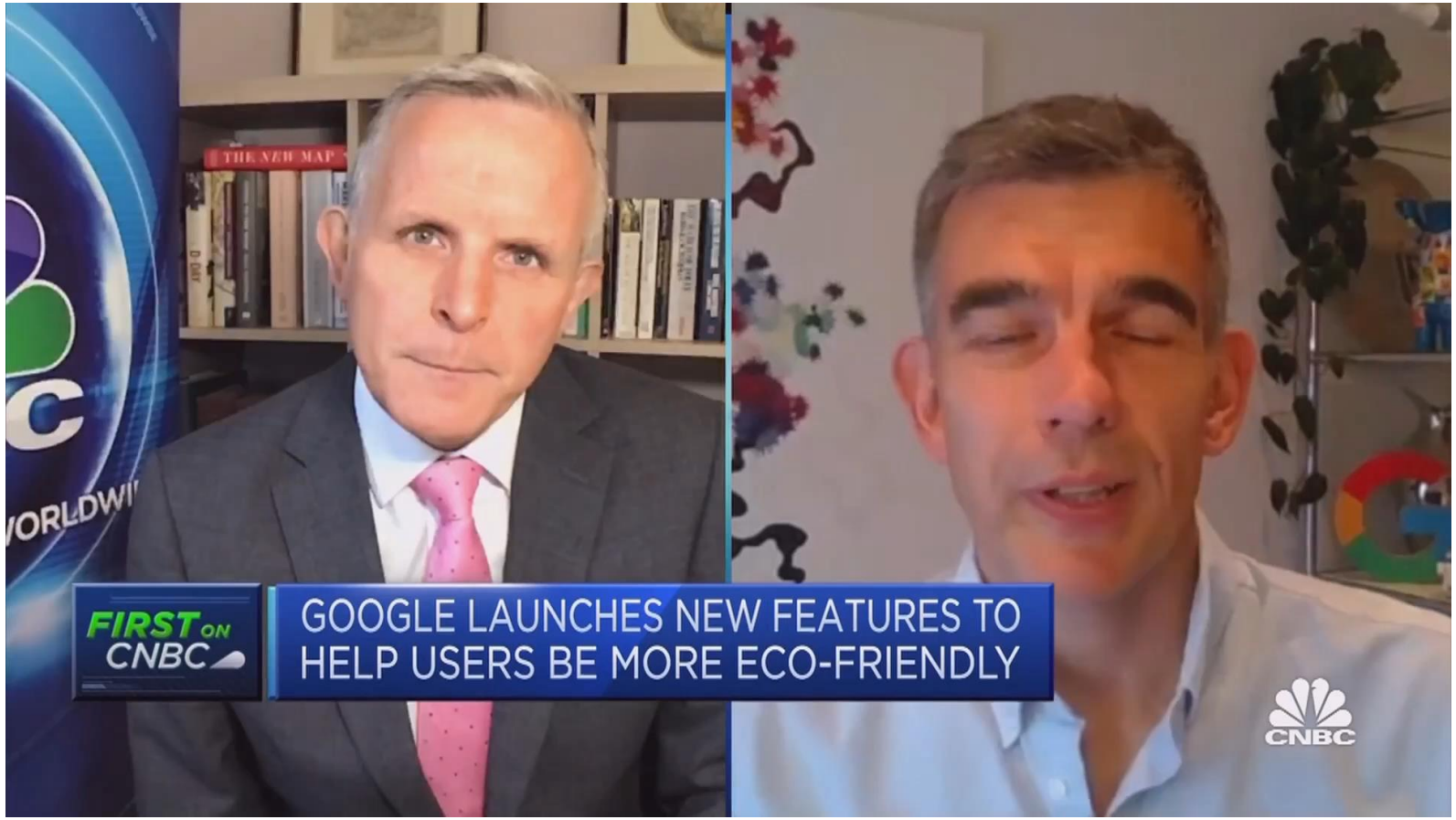
How Does Google Maps Work?

- Since You Asked, Here's How Google Maps Really Works (2017)
- How Does Google Maps Work? (2018)
- Google Maps Secrets: How Exactly Does Google Maps Work? (2019)
- How does Google Maps work? (2020)
- Google is updating Maps, Search and other products to help consumers save energy and reduce emissions (2021)

How Google Maps Work



What’s Next with Google Maps?



Google is updating Maps (Oct. 6 announcement)

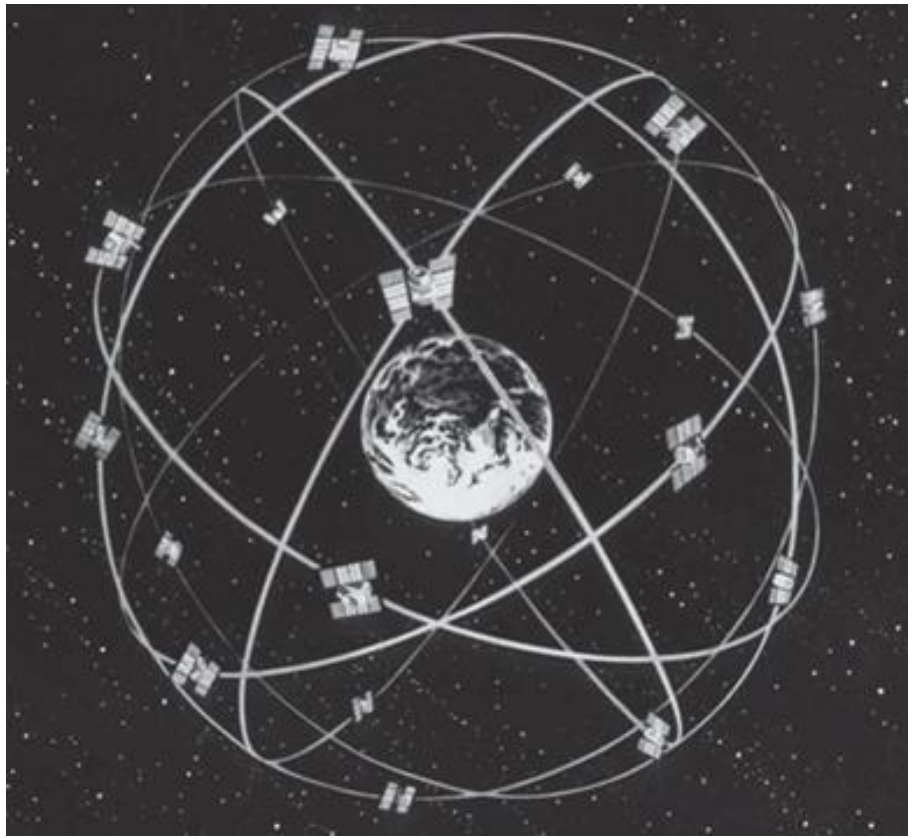
- **Google Maps: Routes that use less gas**
  - Google has partnered with the U.S. Department of Energy's National Renewable Energy Lab, Bird and Donkey Republic
  - "the feature will have the same impact next year as taking over 200,000 cars off the road"
- **Google Travel: Carbon emissions with flight info**
  - Google will display the carbon emissions associated with a flight in the search results
  - Google is partnering with Booking Holdings (Kayak), Earth Check, Green Key, Travalyst Coalition and others
- **Energy usage info in shopping results**
  - Including rebate information for a hybrid or electric vehicle, compatible charging stations nearby and typical charging times
- **And more**

GPS

- Two Decades of Development and Evaluation of GPS… (1999)
- GPS Future and Evolution
  - The GPS is a space-based global navigation satellite system (GNSS) that provides reliable positioning, navigation, and timing services to civilian and military users on a continuous worldwide basis. GPS is a U.S.-owned utility, developed by the U.S. Air Force starting with the program in 1978.
  - The U.S. actively engages in bi-lateral cooperation: Europe, Japan, India, Russia and multi-lateral cooperation: International Committee on GNSS (ICG), Asia Pacific Economic Cooperation (APEC), International Civil Aviation Organization (ICAO), International Maritime Organization (IMO), International Telecommunication Union (ITU) International Civil Aviation Organization (ICAO), International Maritime Organization (IMO), International Telecommunication Union (ITU).

GPS

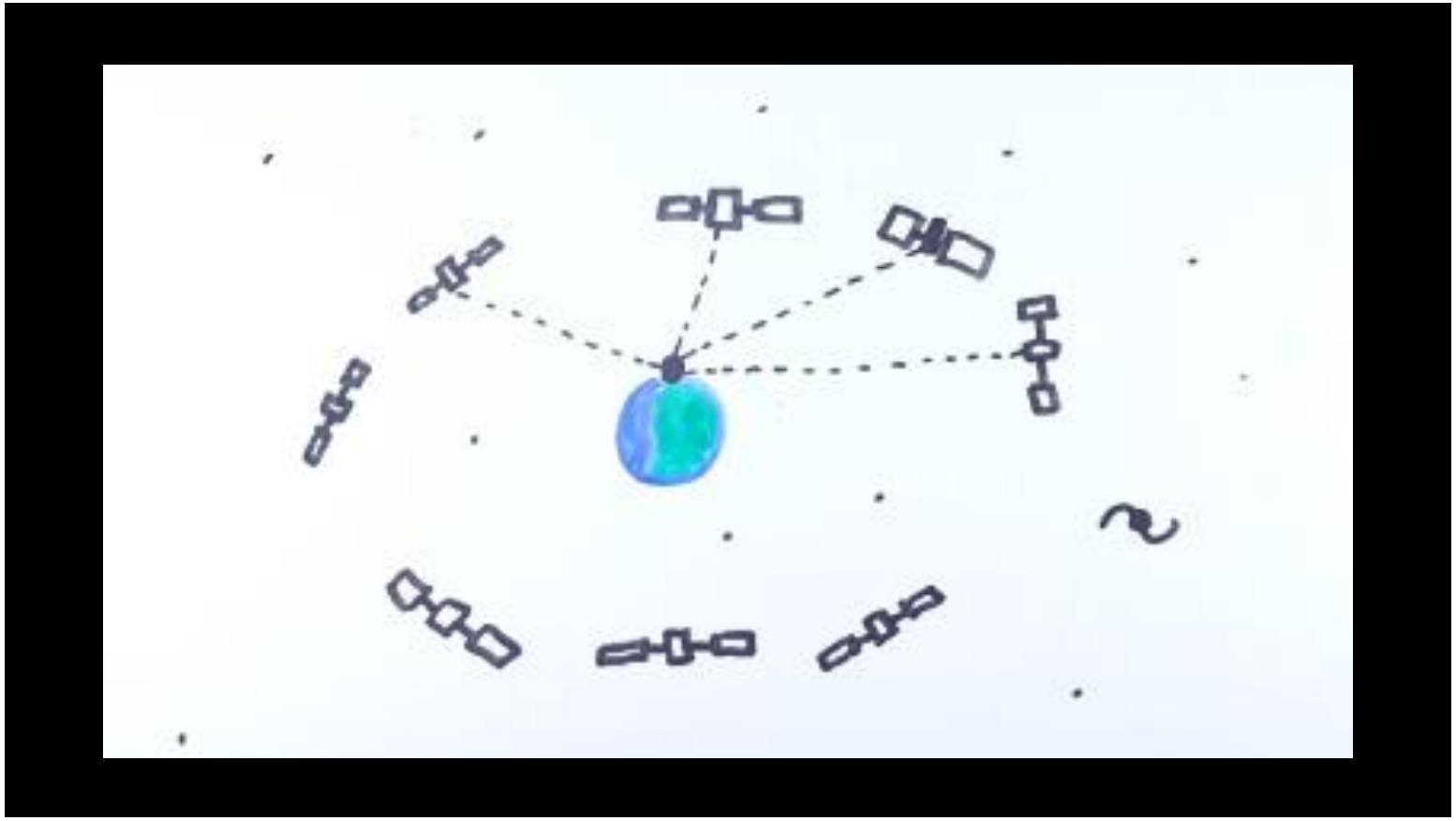
- The operational GPS satellite constellation consists of 24 NAVSTAR satellites arranged in six 55° planes around the Earth so that a minimum of four satellites would always be in view above the horizon.ce segment
- GPS satellites fly in medium Earth orbit (MEO) at an altitude of approximately 20,200 km (12,550 miles). Each satellite circles the Earth twice a day.



Space Segment Futures

LEGACY SATELLITES		MODERNIZED SATELLITES		
GPS IIA satellite	GPS IIR satellite	GPS IIR-M satellite	GPS IIF satellite	GPS III satellite
BLOCK IIA	**BLOCK IIR**	**BLOCK IIR-M**	**BLOCK IIF**	**GPS III/IIIF**
0 operational	8 operational	7 operational	12 operational	4 operational
▪ Coarse Acquisition (C/A) code on L1 frequency for civil users ▪ Precise P(Y) code on L1 & L2 frequencies for military users ▪ 7.5-year design lifespan ▪ Launched in 1990-1997 ▪ Last one decommissioned in 2019	▪ C/A code on L1 ▪ P(Y) code on L1 & L2 ▪ On-board clock monitoring ▪ 7.5-year design lifespan ▪ Launched in 1997-2004	▪ All legacy signals ▪ 2nd civil signal on L2 (L2C) *LEARN MORE* ➡ ▪ New military M code signals for enhanced jam resistance ▪ Flexible power levels for military signals ▪ 7.5-year design lifespan ▪ Launched in 2005-2009	▪ All Block IIR-M signals ▪ 3rd civil signal on L5 frequency (L5) *LEARN MORE* ➡ ▪ Advanced atomic clocks ▪ Improved accuracy, signal strength, and quality ▪ 12-year design lifespan ▪ Launched in 2010-2016	▪ All Block IIF signals ▪ 4th civil signal on L1 (L1C) *LEARN MORE* ➡ ▪ Enhanced signal reliability, accuracy, and integrity ▪ No Selective Availability *LEARN MORE* ➡ ▪ 15-year design lifespan ▪ IIIF: laser reflectors; search & rescue payload ▪ First launch in 2018

What is GPS and how does it work? (source)



Who is Brad Parkinson?

- **The Origins of GPS, and the Pioneers Who Launched the System** May 1, 2010
- **GPS pioneers honored with Queen's award at Buckingham Palace** **Dec 3 2019**
  - Bradford Parkinson said: "Today marks a landmark moment in all of our lives—there is no prize for engineering greater than this, it is an honor. This recognition reflects the responsibility incumbent upon those developing technology today to strive to do so for the good of humanity. Day-after-day, we are astounded at the new ways in which people across the world use GPS. It is a 'System for Humanity' in each and every sense."
- My father in-law's classmate and companymate at the Naval Academy
  - Brad lived across the hall from me at USNA from 1953 to graduation in 1957. While in SLO for David's graduation Marilyn and I visited with Brad at his palatial home outside SLO. One of his sons is sheriff of the territory.

Our brains on technology

- https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7366948/#:~:text=Potential%20harmful%20effects%20of%20extensive,brain%20development%2C%20and%20disrupted%20sleep.
- https://wexnermedical.osu.edu/blog/how-internet-affects-your-brain
- https://www.scientificamerican.com/article/are-digital-devices-altering-our-brains/

Our brains on technology

- Some say our gadgets and computers can help improve intelligence. Others say they make us stupid and violent. Which is it?
  - **Research shows that by constantly distracting us**, the Internet affects cognitive performance but does not radically alter our brains.
  - **The findings also suggest that although video games** and brain training influence aggression and cognitive performance, respectively, the extent of that influence is much less than many would think.
  - **The risks of digital devices might be minimized** by educating people in ways to enhance concentration, self-control and critical-thinking skills.

Our brains on technology

- Discussion:
  - Are we becoming ‘stupid’?
  - Have we become (better) multitaskers?
  - What about our ‘attention span’?
  - Do video games increase aggression?
  - Is gaming better for our brains?

  Fact: young people must be taught to develop their concentration, self-control and critical-thinking skills!

Our brains on technology

- More on this topic can be found in this series of book reviews I taught in 2017:
  - Born Digital by Urs Gasser & John Palfrey
  - Alone Together by Sherry Turkle
  - Reclaiming Conversation by Sherry Turkle
  - The Shallows by Nicholas Carr
  - The Glass Cage by Nicholas Carr
  - What Technology Wants by Kevin Kelly
  - The Inevitable by Kevin Kelly
  - Irresistible by Adam Alter

What’s on your mind for next week?

Extra Credit

Some slides from my 2017 class

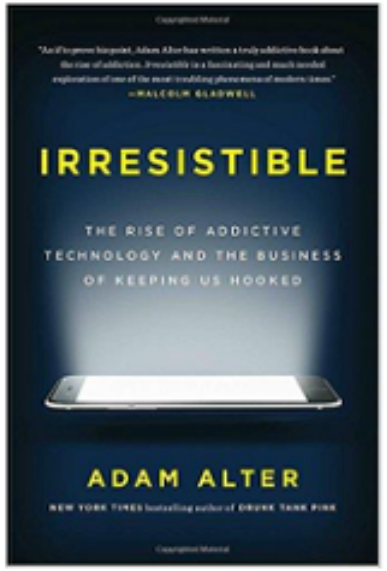
Tech Talks: Tech for Seniors

Addiction by Adam Alter

Center for Learning in Retirement - Fall 2017

Glen Maxson

seniortechadvisor.com



Irresistible:
The Rise of Addictive Technology and the Business of Keeping Us Hooked

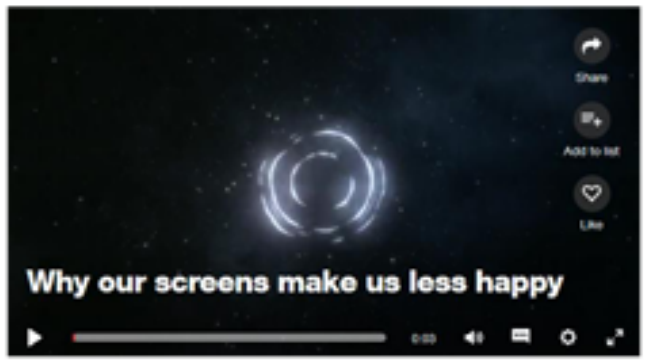
Review of a book by Adam Alter

Introduction

Adam Alter is an Associate Professor of Marketing at New York University's Stern School of Business, with an affiliated appointment in the New York University Psychology Department.

Adam is the *New York Times* bestselling author of two books: *Irresistible* (March, 2017), which considers why so many people today are addicted to so many behaviors, from incessant smart phone and internet use to video game playing and online shopping.

2017 TED Talk



What are our screens and devices doing to us? Psychologist Adam Alter studies how much time screens steal from us and how they're getting away with it. He shares why all those hours you spend staring at your smartphone, tablet or computer might be making you miserable -- and what you can do about it.

NPR Interview (Mar. 13, 2017)

'Irresistible' By Design: It's No Accident You Can't Stop Looking At The Screen (30:20)

Adam's definition of "addiction"?

It is something you enjoy doing in the short term, that undermines your well-being in the long term — but that you do compulsively anyway.

Play Intro

The Addicted Brain (Sept. 17 National Geography)

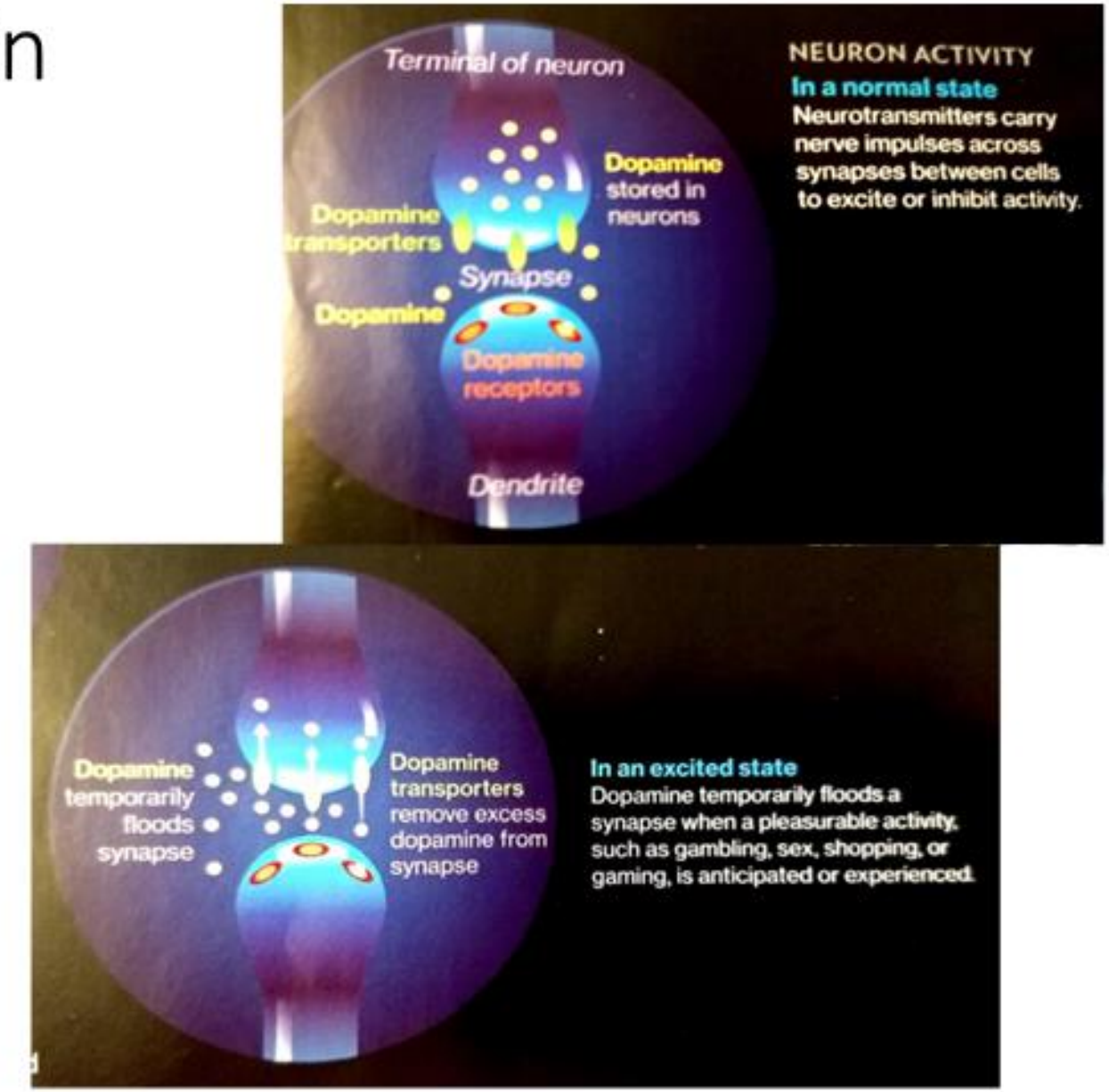
p. 41 – In the Grip of Gaming

In Seoul, e-stadiums and game parlors charge about a dollar an hour, and some venues are open around the clock. Soon after South Korea made super-high-speed Internet cheap and widely available, it became clear that some people were ruining their lives through obsessive game playing. The government now pays for treatment. The American Psychiatric Association hasn't recognized compulsive gaming as an addiction, but it lists Internet game disorder as 'requiring more study'.

Hijacking the Brain (continued)

A NATURAL HIGH

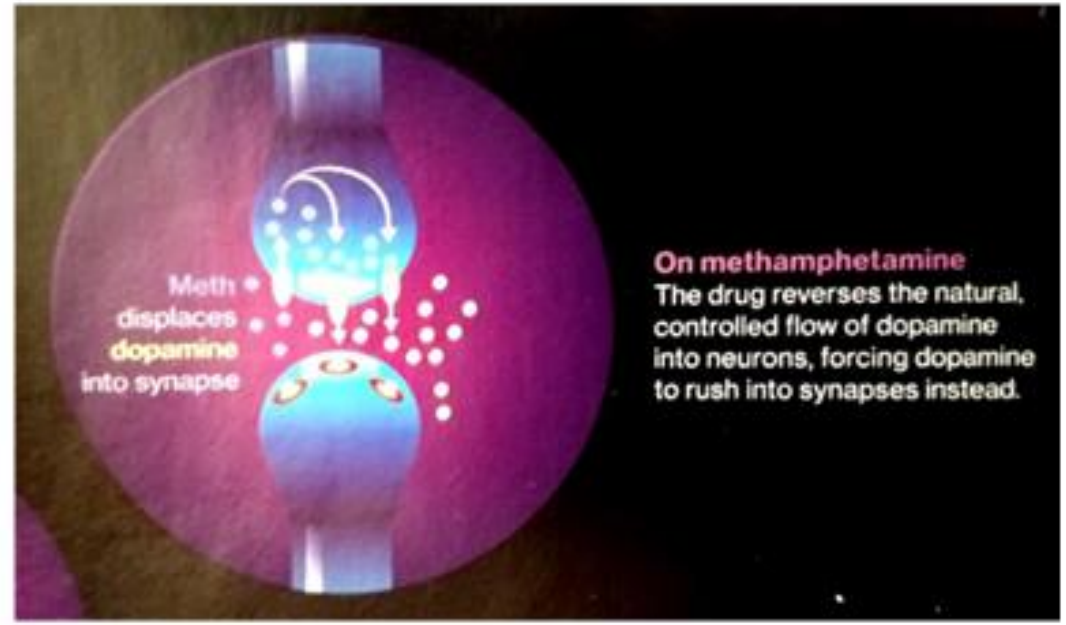
Our brains evolved a dopamine-based reward system to encourage behaviors that help us survive, such as eating, procreating, and interacting socially.



Hijacking the Brain (continued)

A CHEMICAL RUSH

Different drugs interact with the reward system in unique ways to keep synapses artificially flooded with dopamine. That dopamine rush can rewire your brain to want more drugs, leading to addiction.



Common ‘behavioral addictions’:

- Exercise
- Video games
- Gambling
- Work
- E-mail (p 109)
- Social media
- Binge watching
- Hoarding
- …

What do these have in common?

- Behavioral addiction is rooted in environment + circumstance
- Might fulfill a psychological need, obsession, compulsion
- May be detrimental to work, health, hygiene, social interaction…
- Often becomes something we ‘want’ versus something we ‘like’

What makes tech so ‘irresistible’?

By design,

- Goal setting, perfectionism – time and numbers (e.g. FitBit)
- Classic reinforcement – provide small doses of positive feedback (work)
- Uncertainty - Facebook, Instagram… (social media)
- ‘Loss as motivation’ – the gambler’s paradox (slots)
- Mobile access – iPad and iPhone enabled (mobile devices)
- Ludic loops – complete one challenging element, then the next… (video games)
- ‘Flow’ - proximal (skill) development – skill vs. challenge (video games)
- Zeigarnik effect – incomplete experiences (e.g. cliff-hangers) (TV shows)
- MUDs & MMOs - immersion, achievement, social (connection) (video games)
- Absence of Stopping rules (all)

Bottomline: Every technique in the book is used to get and keep us hooked!

And now to Slow Things Down a bit

- And a quiz: What's missing from this picture?

Amish Tech

- To the Amish, "progress" is not assumed to mean "something better.“
- The Amish do not consider technology evil in itself but they believe that technology, if left untamed, will undermine worthy traditions and accelerate assimilation into the surrounding society.
- Batteries, solar, a diesel generator, pneumatic tools, perhaps
- Power from the grid, definitely not!

The Amish Horse-Drawn Buggy Is More Tech-Forward Than You Think

- Buggy Brakes
  - Builders cast the drums in steel and the backer plates and shoes in aluminum-tin alloy. Then they bond their own shoes using brake lining from a company in Ohio.
  - Some use off-the-shelf disc brakes bought from outside Amish communities that were manufactured for dune buggies
- Electrical
  - Ohio and Pennsylvania have laws that require buggies to light up when sharing public roads with automotive traffic
  - Ninety-nine percent of buggies are built with a dash and a switchbox to control headlights, taillights, interior lights, and a turn signal switch
  - Bulbs stay on low-beam during normal use, but flicking a turn signal toggle switch activates a brake-light-style system that turns on the high-beams. That's the Amish turn signal: A buggy whose left-side headlight and taillight are brighter than their right-side counterparts is about to turn left.
  - A single 20-volt/6-amp battery, the type that powers an electric drill, runs the whole electrical system for two to three hours on a charge

The Amish Horse-Drawn Buggy Is More Tech-Forward Than You Think

- Body
  - The main body is fiberglass. It's pre-manufactured off-site and shipped to Amish builders
  - Aluminum components are added to areas that see a lot of wear
  - Everything else is white oak or ash wood framing stretched over with fabric
  - The wood is thermally modified, taken down to almost zero-percent moisture to prevent rot

The Amish Horse-Drawn Buggy Is More Tech-Forward Than You Think

- Tires and Wheels
  - Amish buggies roll on either steel or solid rubber tires, but most use steel. Both are built in-house
  - Rubber tires stress the turning mechanism (the fifth wheel) harder, so brakes are mounted on the rear wheels if a buggy has rubber tires. Steel-tire buggies have the brakes on the front wheels because the sliding of metal on road takes some of the stress off the fifth wheel
  - Wheels mounted within the tires are wood, steel, aluminum, or fiberglass
  - The wooden wheel is preferred because it’s quieter and easily repaired.
  - Amish buggy builders have developed an automotive-style tubular-steel torsion bar suspension that mounts the body over traditional leaf springs or, and air bags!

The Amish Horse-Drawn Buggy Is More Tech-Forward Than You Think

- Buying an Amish Buggy
  - Average cost of a buggy is about $8,000
  - You can get 20 or 30 years out of a buggy before a major rebuild – a lot of buggies will be running 40 or 50 years, rebuilt several times

Amish Homes and Modern Technology

Amish Homes and Modern Technology

- **Washing Machines**
  - **Lancaster County's Amish have adapted post-war era wringer washers, powered using a diesel generator**
  - **Once washed, they hang the garments on a long clothesline outside and use a traditional stove-heated iron if necessary.**
- **Refrigerator**
  - **Around 1969, Lancaster County's Amish bishops needed to consider methods of refrigeration that didn't require the community to become dependent on the public grid. As a result, gas or diesel-powered refrigerators made their way into Amish dairy farms and personal kitchens**

Amish Homes and Modern Technology

- **Telephones**
  - **Regular use of cell phones could result in relying on machines or technology to solve problems or decrease interest in face-to-face interactions. Acceptance of phones ranges widely from church to church. Some communities allow phones for business, though they cannot be brought into the house. Some have built small outhouse-like buildings at the edge of a property which houses a phone accessible by multiple families. Still, others encourage Amish families to use a friendly neighbor's phone when necessary.**

Amish Homes and Modern Technology

- **Lights**
  - **Many Amish rely on lamps fueled by propane or naphtha, which creates a bright and hot light. Some of the more conservative Amish communities will use traditional kerosene teardrop-style lamps.**
  - **With the rise of solar power in the Amish communities, you might also find some battery-operated lights. For example, some Amish homes allow a small bedside LED or bulb lamps for reading or for rising from bed at night. The batteries of these lamps may be charged by solar panels. They might also use solar power to charge the batteries for buggy headlights.**

Amish Homes and Modern Technology

- For the Amish, technology in the workplace has long been more accepted than technology in homes. A recent issue of the Fabricator trade journal reported on advanced manufacturing processes in an Amish factory in Dalton, Ohio.
  - A robot welds wheels
  - Programmed lasers cut metal
  - Engineers use three-dimensional computer-aided design, known as 3-D CAD
  - A generator powered by natural gas provides electricity
  - At day's end, the workers ride home on bicycles
    https://www.nytimes.com/2017/09/15/business/amish-technology.html

- Amish Sustainable Living and How The Amish Live OFF The Grid

GDPR vs privacy US laws

- https://www.ispartnersllc.com/blog/us-nationwide-data-privacy-law-gdpr/
- https://edaa.eu/a-legislative-comparison-us-vs-eu-on-data-privacy/
- https://www.forbes.com/sites/forbestechcouncil/2020/07/29/the-privacy-mindset-of-the-eu-vs-the-us/?sh=57bff0597d01

The Privacy Mindset Of The EU Vs. The US

- The norm in the U.S. that online behavior gets tracked and used for a slew of subsequent manipulation. U.S. legislation isn't even close to providing adequate protection of consumer privacy interests.
- Americans choose to believe that their online behavior being tracked happens in their best interests or is a price to pay for getting free or discounted products.
- GDPR was adopted on April 14, 2016, and before it became enforceable on May 25, 2018, the U.S. Congress enacted the Clarifying Lawful Overseas Use of Data (CLOUD) Act on March 23, 2018. Rather than being compatible with the GDPR, the U.S. CLOUD Act overrules it.

The Privacy Mindset Of The EU Vs. The US

- Federal law requires U.S.-based software companies and IT service providers to ensure that authorities can have access to all stored data, including data stored on foreign servers. Furthermore, it guards U.S. service providers from having to tell customers whether authorities have requested their data.
- One lobbying group that represents internet companies is striving for a federal privacy law that would preempt more state regulations like the California Consumer Privacy Act (CCPA), which actually makes real progress. Its ideal federal privacy law would undermine the CCPA to essentially let companies return to business as normal and also make it impossible for other states to set the bar even higher.

What is GDPR, the EU's new data protection law?

- In May 2018, the EU implemented the General Data Protection Regulation (GDPR) which became the new legal backbone on data protection and privacy in the EU.
  - It imposes obligations onto organizations anywhere, so long as they target or collect data related to people in the EU.
    - **The GDPR applies to you even if you're not in the EU**
    - **Fines for violating the GDPR are very high**

What is GDPR, the EU's new data protection law?

- If you process data, you have to do so according to seven protection and accountability principles outlined in Article 5.1-2:
  1. **Lawfulness, fairness and transparency** — Processing must be lawful, fair, and transparent to the data subject.
  2. **Purpose limitation** — You must process data for the legitimate purposes specified explicitly to the data subject when you collected it.
  3. **Data minimization** — You should collect and process only as much data as absolutely necessary for the purposes specified.
  4. **Accuracy** — You must keep personal data accurate and up to date.
  5. **Storage limitation** — You may only store personally identifying data for as long as necessary for the specified purpose.
  6. **Integrity and confidentiality** — Processing must be done in such a way as to ensure appropriate security, integrity, and confidentiality (e.g. by using encryption).
  7. **Accountability** — The data controller is responsible for being able to demonstrate GDPR compliance with all of these principles.

What is GDPR, the EU's new data protection law?

- GDPR recognizes a litany of new **privacy rights for data subjects**, which aim to give individuals more control over the data they loan to organizations. Data subjects' privacy rights:
  1. The right to be informed
  2. The right of access
  3. The right to rectification
  4. The right to erasure
  5. The right to restrict processing
  6. The right to data portability
  7. The right to object
  8. Rights in relation to automated decision making and profiling.

Thank you!

- **How to Search for Text Inside of Any File Using Windows Search**
  - Hit Start, type “index,” and then click the “Indexing Options” result.
  - In the “Indexing Options” window, click the “Advanced” button.
  - In the “Advanced Options” window, switch to the “File Types” tab. Select the extension for the file type you would like to include in content searches, and then select the “Index Properties and File Contents” option under the list.

Indexing Options

Control panel

- The text in the “Filter Description” column should change to reflect whatever filter is used to open that file type by default. In our example, we’re selecting the BAT extension, so the filter type changes to “Plain Text Filter.”
- If you’d like to always search within file contents for a specific folder, navigate to that folder in File Explore “Folder and Search C
- On the “Search” tab, a contents” option.