

Technology and Democracy: Self-correcting or Collision Course?

Foresight Synergy Network
University of Ottawa, November 23, 2018
Stephen Fanjoy

“A people that no longer can believe anything cannot make up its mind. It is deprived not only of its capacity to act but also of its capacity to think and to judge. And with such a people you can then do what you please.”

Hannah Arendt, 1978

Technology and Democracy: Self-correcting or Collision Course?

Communication and information technology has always played a role in politics. Until very recently, the normative view was that these technologies were a constructive, humanistic force that generally helped to achieve, among other things, more just, functional, rational and accountable political governance. This view was held no more firmly than in democratic states, especially during the Cold War era through to the early years of mass internet adoption. But almost all technologies have dual uses and, compared to authoritarian governance, democracy is a historically young, incomplete, and fragile human institution. The technology developments of the last half decade and a critical appreciation of the information operations, propaganda, and psychology of the last century suggest much future uncertainty about the role that technology may continue to play in advancing democracy. This overview will raise many questions, answer too few, but should stimulate much discussion and thought.

What (is) “democracy”?

Democracy

[History](#)

Types

[Anticipatory](#) • [Athenian](#) • [Cellular](#) • [Consensus](#) • [Cosmopolitan](#) • [Defensive](#) • [Delegative](#) • [Deliberative](#) • [Direct](#) • [Economic](#) • [Electronic](#) • [Empowered](#) • [Ethnic](#) • [Grassroots](#) • [Guided](#) • [Inclusive](#) • [Industrial](#) • [Interactive](#) • [Jacksonian](#) • [Jeffersonian](#) • [Liberal](#) / [Illiberal](#) • [Media](#) • [Multiparty](#) • [New](#) • [Non-partisan](#) • [Participatory](#) • [People's](#) • [Pluralist](#) • [Popular](#) • [Procedural](#) • [Radical](#) • [Representative](#) • [Religious](#) ([Christian](#) • [Islamic](#) • [Jewish](#) • [Mormon](#)) • [Sectarian](#) • [Semi](#) • [Semi-direct](#) • [Social](#) • [Socialist](#) • [Sociocracy](#) • [Sovereign](#) • [Soviet](#) • [Substantive](#) • [Totalitarian](#) • [Workplace](#)

Related topics

[Anarchism](#) • [Kleroterion](#) • [Democratic capitalism](#) • [Democratic centralism](#) • [Democratic confederalism](#) • [Democratic republic](#) • [Democratic socialism](#) • [Democratization](#) • [Democracy and economic growth](#) • [Democracy in Marxism](#) • [Democracy promotion](#) • [Liberalism](#) • [Libertarianism](#) • [Majoritarianism](#) • [Motion](#) • [Ochlocracy](#) • [People's democratic dictatorship](#) • [Polyarchy](#) • [Populism](#) • [Sortition](#) • [Tyranny of the majority](#) • [Voting](#) • [Wars between democracies](#) • [Wave of democracy](#)

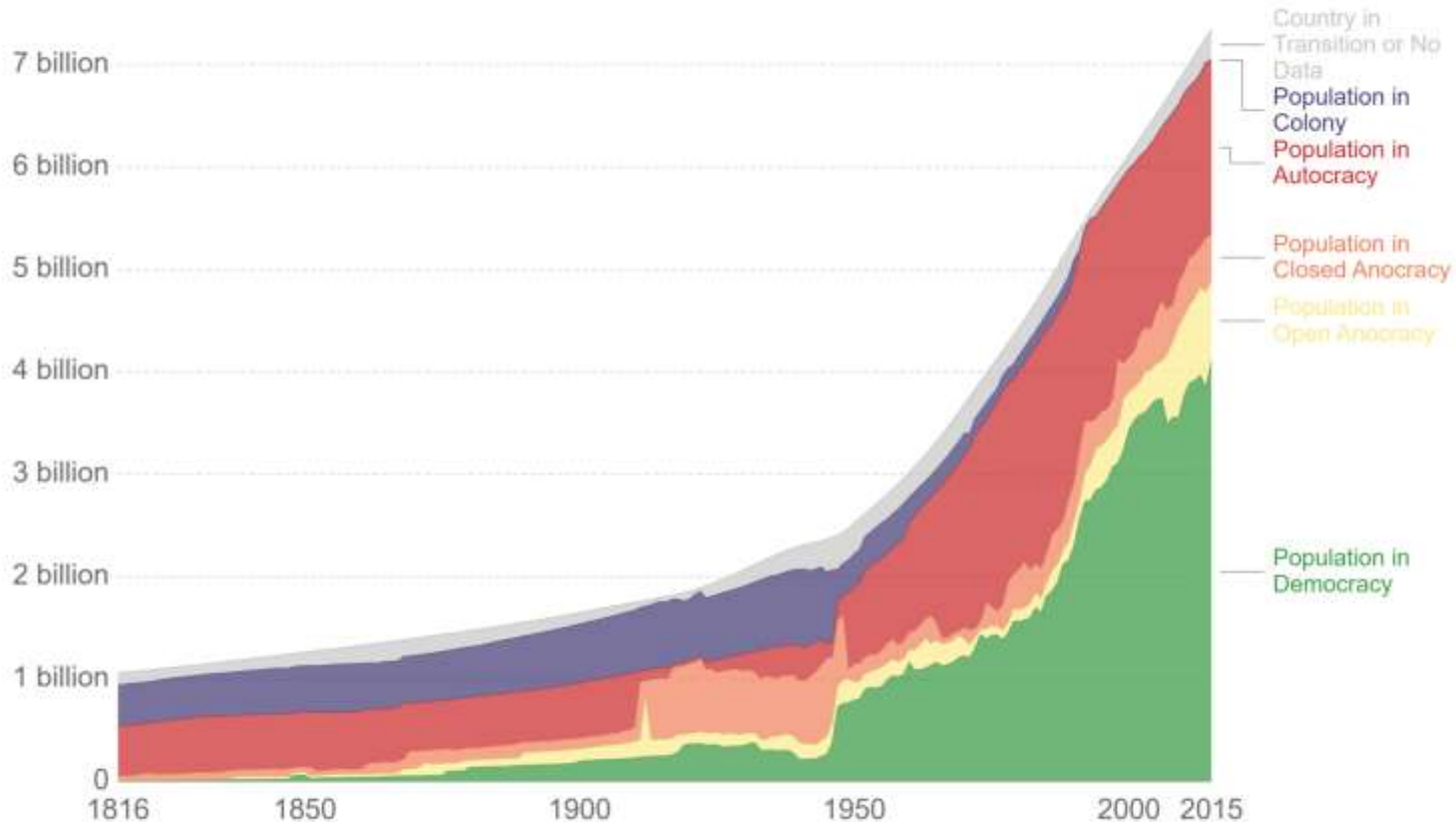
[Politics portal](#)

A Simple, Working Definition of Democracy

- Group decision making via representation
 - Free, fair, and regular elections
 - Election results accepted
- Rules and norms for civil information exchange
 - Including but not limited to news media
 - Reasonable disagreement
- Equality of participants
- A process that iterates, corrects, continues

Number of world citizens living under different political regimes

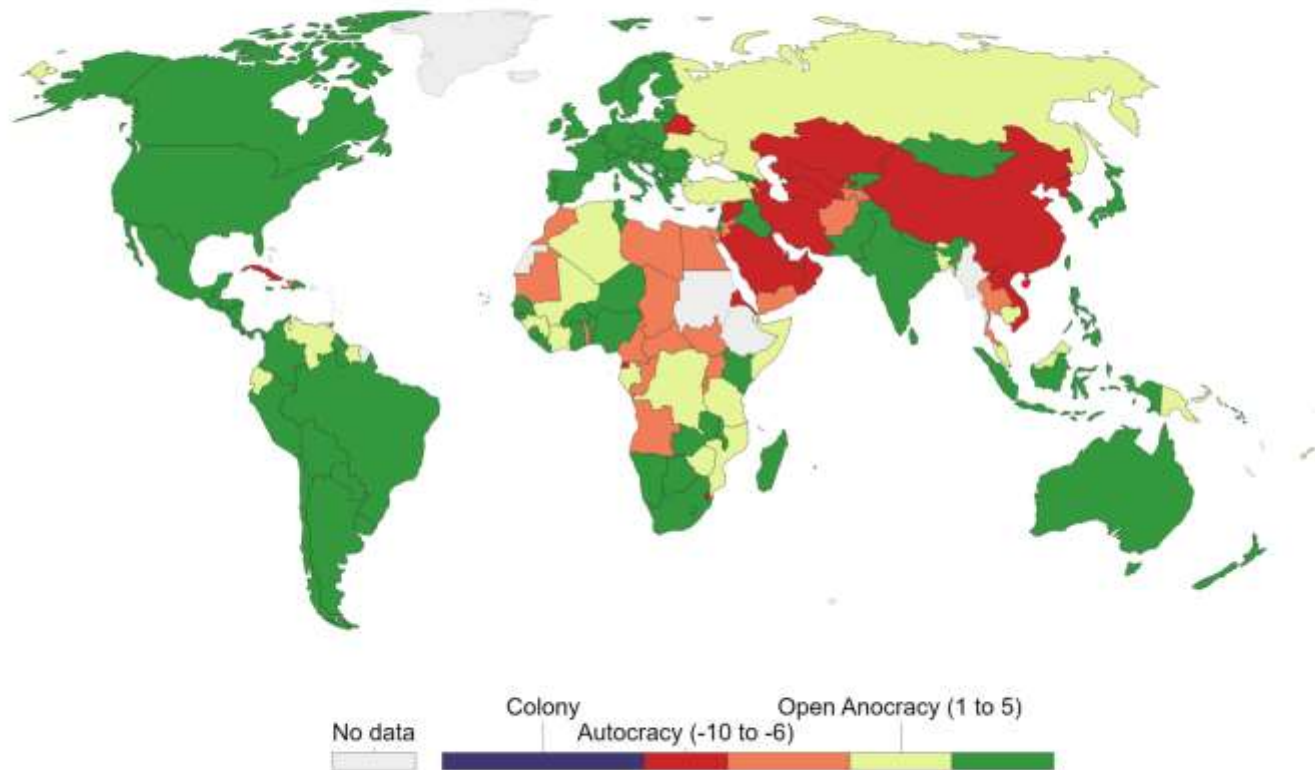
The Polity IV score captures the type of political regime for each country on a range from -10 (full autocracy) to +10 (full democracy). Regimes that fall into the middle of this spectrum are called anocracies.



Source: World Population by Political Regime they live in (OWID (2016))
OurWorldInData.org/a-history-of-global-living-conditions-in-5-charts/ • CC BY-SA

Political Regime, 2015

The Polity IV score classifies the type of political regime for each country on a range from -10 (full autocracy) to +10 (full democracy). Regimes that fall into the middle of this spectrum are called anocracies.



Source: Political Regime (OWID based on Polity IV and Wimmer & Min)

OurWorldInData.org/democracy/ • CC BY-SA

Note: See the linked democracy entry for some discussion of the complexity in defining democracy and the limitations of this data.

What is technology?

- “Technology is the collection of *techniques, skills, methods,* and *processes* used in the production of goods or services or in the *accomplishment of objectives...*

Technology can be the *knowledge of techniques, processes,* and the like, or it can be *embedded in machines* to allow for operation without detailed knowledge of their workings...”

The Provisional Argument

- Information and communications technology (ICT) is increasingly pervasive and powerful
 - Serves commercial interests
 - Changes human values, behaviour, minds
 - Democracy requires humans and ICT
 - ICT is hackable and insecure
 - Humans are hackable
 - Democracy is hackable
 - We're in deep trouble...
- (Unless...)

Agenda

- Introduction
- (In)Security
- Battle for our minds
- Humans are hackable
- Humans are surveilled
- (Discussion: what can be done?)

Century of Converging Domains

GeoPol Context	WW1	WW2	Cold War					9/11	Snowden	**
	Arab Spring/Winter ISIS									
InfoOps	Propaganda	PSYOP	EW			CNO				
	MLDSEC OPSEC									
Surveil	HUMINT	SIGINT	OSINT		Industrial Espionage	Criminal	Commercial	OSINT 2.0		
ICT Security						Clipper Chip	RSA	ZeroDay	Stockpiling	
ICT Media	AdNews, Radio , Movies		TV		24hr News	Internet		Social	Mobile	
	IoT IoMe									
Science					Behavioural Psychology		Social Psychology			

** Ukraine/Brexit, 11/9

A brief history of ICT

- 3100 BCE words on clay tablets
- 1438 Johannes Gutenberg movable type
 - 1450 mass printing
- 1517 Martin Luther
 - 95 complaints, 30 pamphlets, 300,000 copies
- 1605 weekly “news press”
- 1844 Samuel Morse telegraph
 - 1880 650,000 miles worldwide
 - Used in Crimean and US Civil Wars
- 1876 Alexander Graham Bell telephone
 - 1983 first commercial mobile handset
- 1894 Guglielmo Marconi wireless telegraphy (radio)
 - Belgian Congo and Russian-Japanese war
 - 1906 first US radio broadcast
 - 1924 3 million sets and 20 million listeners
 - 1932 FDR Fireside Chats
 - 1941 Pearl Harbor speech 80% of Americans listened live

*“It would not have been possible for us to take power or
use it in the ways we have without the radio”*

Joseph Goebbels

A brief history of ICT

- **Television**
 - 1960 90% of American households
 - Telegenic JF Kennedy vs Nixon
 - 1980 CNN founded, 24hr news
- **BBSs 1978**
- **ARPANET to the Internet**
 - 1980 70 institutions and 5,000 users
 - 1980 Usenet
 - 1982 invention of :-) and :-(
 - 1989 160,000 users
 - 1990 Tim Berners-Lee html, https, url
 - 1990 3 million users
 - 1995 16 million users
 - 2000 360 million users
- **Social network 1998 (Six Degrees)**
 - 2004 Facebook
 - 2006 Twitter
- **Smartphone 2000 (Ericsson)**
 - 2007 iPhone
 - 2014 mobile time on internet exceeds PCs, 99.5% to access content/information
 - 2016 checked 165 day per day (ave)
- **Global Information war**
 - 2013+ ISIL social media
- **Hacking democracy**
 - 2014 Ukraine election hack
 - 2016 Brexit
 - 2016 US presidential election

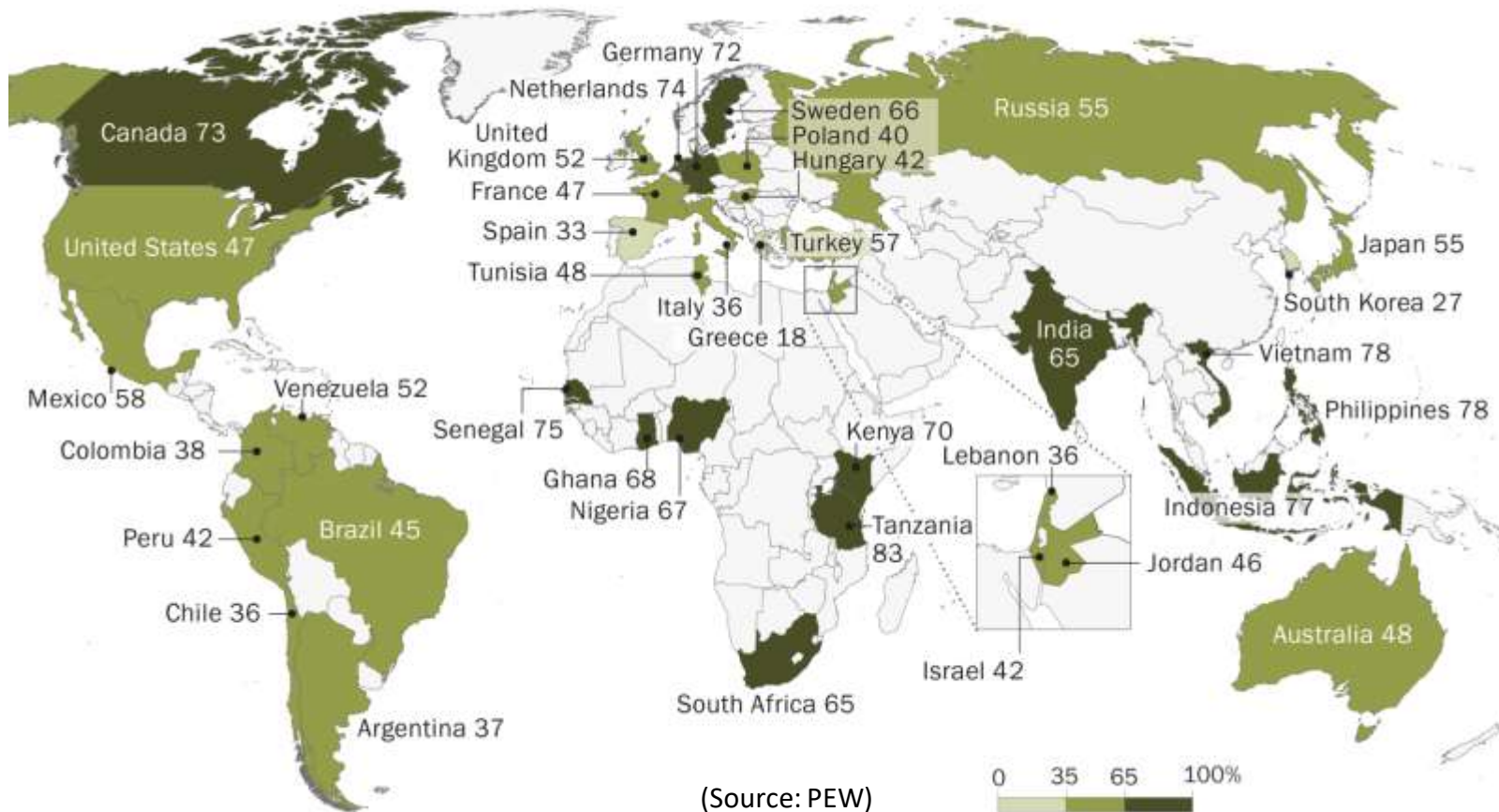
*“I thought once everybody could speak freely and
exchange information and ideas, the world was
automatically going to be a better place.
I was wrong about that”*

Evan Williams, Twitter Co-founder

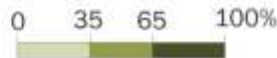
Selected Democratic Information Technologies

- Education
- Statistics and polling
- Election systems
- Media
- Political party
 - Voter data and analytics
 - Note: Exempted from privacy laws
 - Campaign systems
 - Communications (email, mobile, etc.)
- New technologies
 - Social media
 - Big data
 - Forums
 - AI

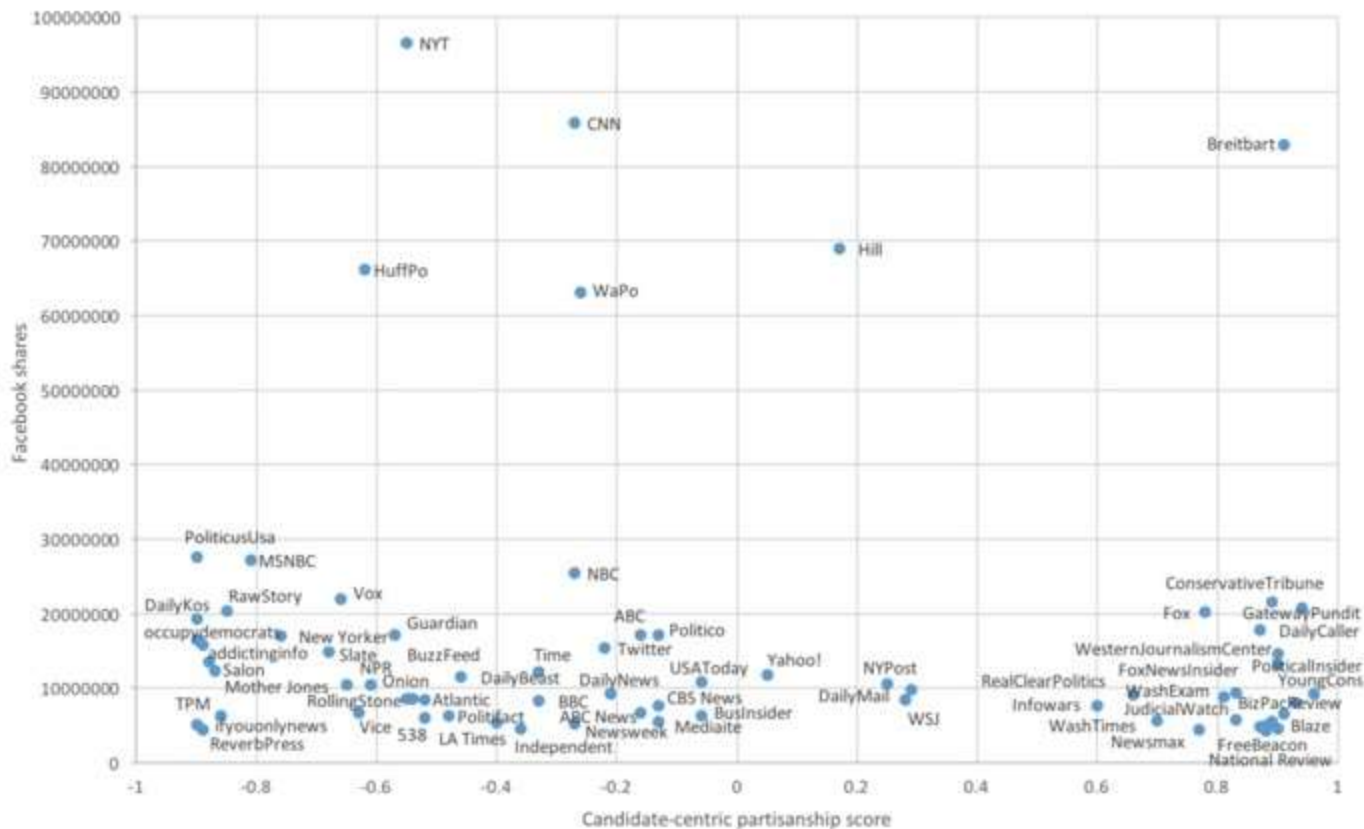
Percent Who Say Their News Media are Doing Very/Somewhat Well at Reporting ... The Different Positions on Political Issues Fairly



(Source: PEW)



News Sites by Partisan Attention



(Credit: The Atlantic)

US News Media Trends

Key annual audience trends, 2017 vs. 2016



Newspapers



11% daily circulation



Cable TV



12% evening news combined average audience



Network TV



7% evening news combined average audience



10% morning news combined average audience



Local TV



15% morning news combined average audience



7% late night/early evening combined average audience



Digital-native news



5% average monthly unique visitors

Sources: Pew Research Center analysis of Alliance for Audited Media data; comScore TV Essentials®, 2016 and 2017, U.S.; comScore StationView Essentials®, 2016 and 2017, U.S.; comScore Media Metrix Multi-platform, unique visitors, October-December 2016 and 2017.

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Key annual economic trends, 2017 vs. 2016



Newspaper



10% advertising revenue



Cable TV



10% total revenue for Fox News, CNN, and MSNBC combined



Network TV

No change

in combined advertiser expenditures for the evening broadcast news programs



Local TV



13% over-the-air ad revenue from 2016 election year



4% over-the-air ad revenue from last non-election year of 2015



Radio



2% Average per-station revenue for all-news, news/talk and news/talk/info stations

Sources: Pew Research Center analysis of year-end SEC filings of publicly traded newspaper companies; SNL Kagan; Kantar Media; Pew Research Center analysis of MEDIA Access Pro & BIA Advisory Services data.

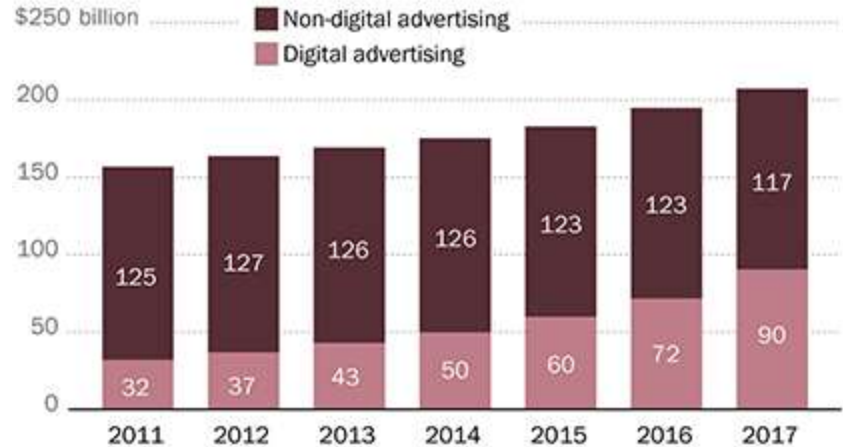
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US News Media Trends

- Digital advertising revenue continues to grow, but little of it benefits news organizations.
- 52% of all digital display advertising revenue goes to just two companies: Facebook and Google
- Mobile advertising revenue, which totaled \$61 billion in 2017, roughly equal to the total amount of digital advertising revenue just two years prior

Digital and non-digital advertising revenue

*Annual advertising revenue to all recipients, not just news outlets
(in U.S. dollars)*



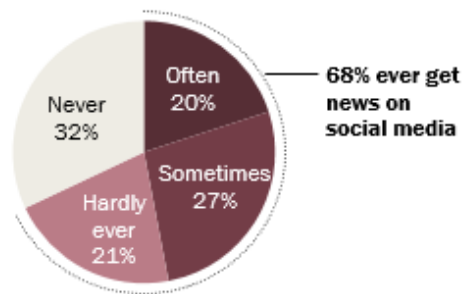
Note: Figures are updated annually.

Source: eMarketer, U.S. Ad Spending Estimates.

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About two-thirds of Americans get news on social media

% of U.S. adults who get news on social media ...



But most social media news consumers expect news there to be inaccurate

% of social media news consumers who say they expect the news they see on social media to be ...



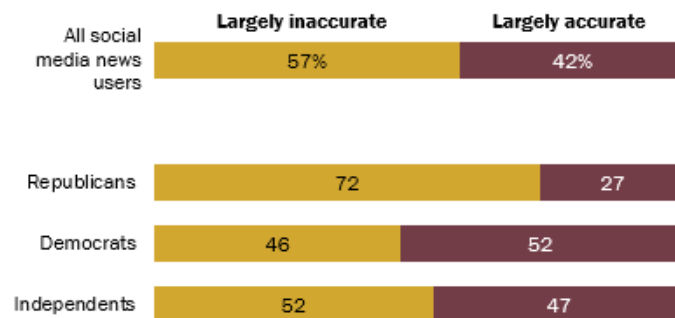
Note: No answer responses not shown.

Source: Survey conducted July 30-Aug. 12, 2018.
 "News Use Across Social Media Platforms 2018"

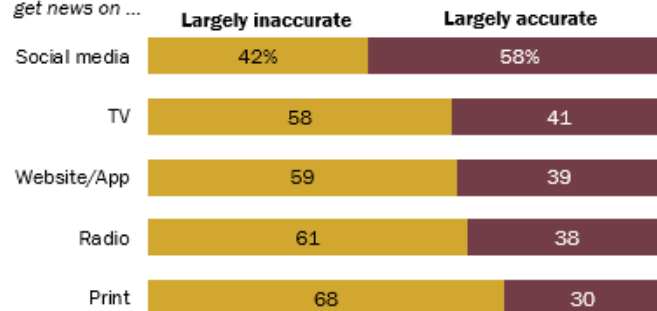
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More than half of social media news consumers expect the news there to largely be inaccurate

% of social media news consumers who say they expect the news they see on social media to be ...



Among social media news consumers, those who prefer to get news on ...



Note: No answer responses not shown.

Source: Survey conducted July 30-Aug. 12, 2018.
 "News Use Across Social Media Platforms 2018"

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Back in the top 20 but still room for improvement

Prime Minister Trudeau has strongly advocated for a “free media” as guaranteed under Canada’s 1982 Constitution. Despite recent positive steps, like the establishment of a Commission of Inquiry to investigate Quebec police surveillance of multiple journalists, and the adoption of a federal press “shield law” to protect the confidentiality of journalists’ sources, his first two years in office have been an overall disappointment. A VICE News reporter is still fighting a court order compelling him to hand over communications with his source to the Royal Canadian Mounted

18

in the 2018 World Press
Freedom Index

RANKING

↑ **+4**
22 in 2017

GLOBAL SCORE

↑ **-1.25**
16.53 in 2017

① Ranking since 2013

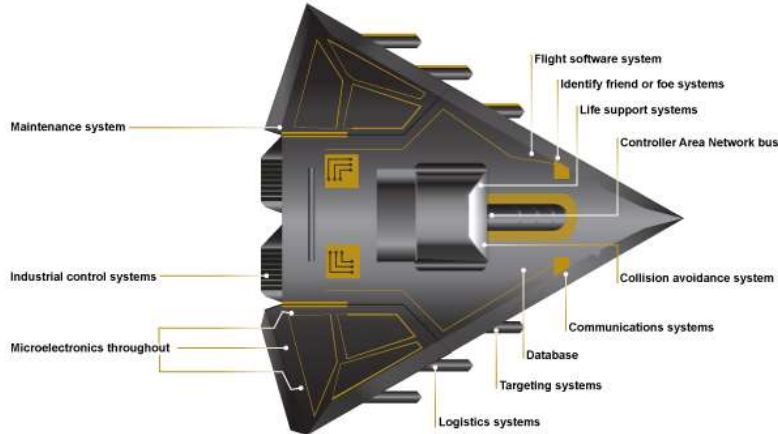


(IN)SECURITY

Carl von Clausewitz

- War is *“the continuation of political intercourse with the addition of other means”*
 - Part of a continuum of interactions between peoples and governments
- *“The moral elements are among the most important in war. They constitute the spirit that permeates war as a whole... they establish a close affinity with the will that moves and leads the whole mass of force.”*

Cybersecurity Risk to Weapons Systems

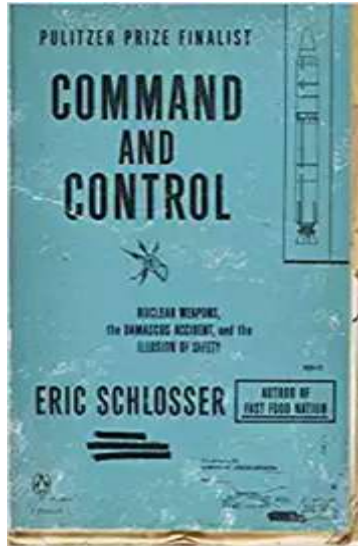


Source: GAO analysis of Department of Defense information. | GAO-19-128

USA GAO: “Automation and connectivity are fundamental enablers of DOD’s modern military capabilities. However, they make weapon systems more vulnerable to cyber attacks. Although GAO and others have warned of cyber risks for decades, until recently, DOD did not prioritize weapon systems cybersecurity. Finally, DOD is still determining how best to address weapon systems cybersecurity.”

“DOD testers routinely (2012 to 2017) found mission-critical cyber-vulnerabilities in nearly all weapon systems that were under development. Using relatively simple tools and techniques, testers were able to take control of these systems and largely operate undetected.”

Error, Luck, Complacency, Risk



“In 2010, 50 nuclear-armed Minuteman in underground silos in Wyoming disappeared from their launching crews’ monitors for nearly an hour...

Hackers were constantly bombarding our nuclear networks, and it was considered possible that they had breached the firewalls...



“Everything is Becoming a Computer”

- Computers are hard to secure
- Patching is failing
- Attackers harder to find
- Everyone is insecure
- Risks are becoming *catastrophic*



Hackers only needed a phone number to track this MP's cellphone

Tests show Canada's two largest telecoms vulnerable to international hackers

Brigitte Bureau, Catherine Cullen, Kristen Everson - CBC News -

Posted: Nov 22, 2017 5:00 PM ET | Last Updated: November 24, 2017

MOTHERBOARD

SEE | By Daniel Oberhelman | Oct 25 2016, 3:58pm

What is SS7 and is China Using It To Spy on Trump's Cell Phone?

The telecom industry has known about a major vulnerability in its mobile infrastructure for decades, so why was nothing ever done about it?





Zero Days, Thousands of Nights

The Life and Times of Zero-Day
Vulnerabilities and Their Exploits



- Living vs immortal vulnerabilities
- Vulnerabilities are offensive and defensive intelligence assets
- 6.9 years average life
 - ~25% less than 1.5 years
- About 5.7% of known/secret vulnerabilities become public per year
- Once disclosed median time to exploit 22 days

BATTLE FOR OUR MINDS

Information Operations

- Information Operations (IO)
 - Electronic Warfare (EW)
 - Computer Network Operations (CNO)
 - Psychological Operations (PSYOP)
 - Military Deception (MILDEC)
 - Operations Security (OPSEC)

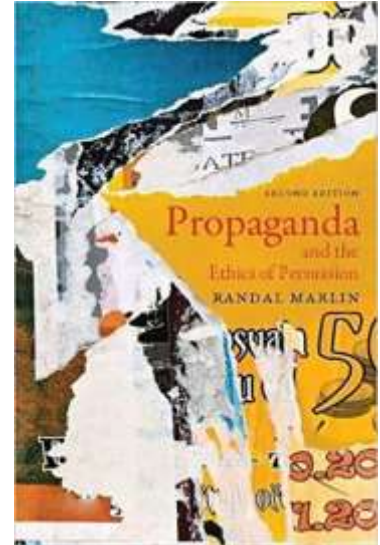
“This will always remain one of the best jokes of democracy, that it gave its deadly enemies the means by which it was destroyed.”

Joseph Goebbels

Propaganda

- *“From the Latin propagare, to propagate”*
 - *“The organized attempt through communication to affect the belief or action or inculcate attitudes in a large audience in ways that circumvent or suppress an individuals adequately informed, rational, reflective judgement.”*
- *“The propagandist sets the stage to provide some false or unexamined premise in the picture of reality affecting a propagandee’s action.”*

Randal Marlin

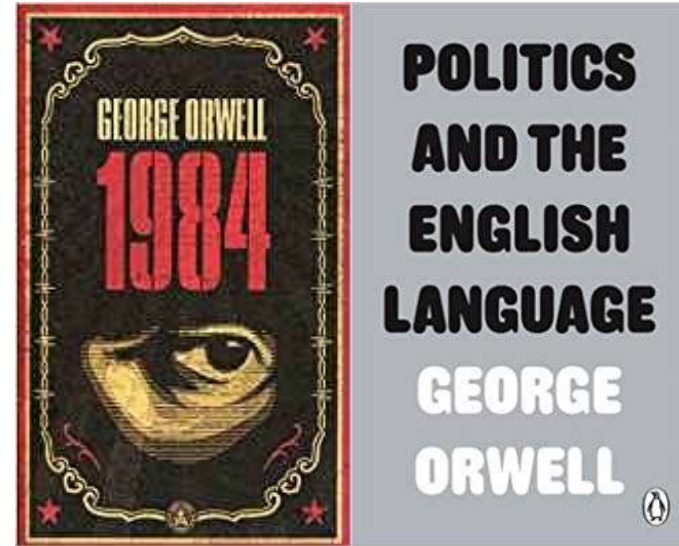


20th Century Propaganda

- WW1
 - British Political Warfare Executive
 - Domestic propaganda
 - US Office of War Information
 - Creel Committee delegitimized domestic propaganda
- Russian revolution
 - Films; domestic
- Nazi Germany
 - Hitler and Goebbels inspired by Britain and US; domestic
- Cold war
 - Film, radio, TV, print, think tanks
- Commercial advertising/public relations and propaganda are dual uses of the same underlying methods. Political advertising too.
- Social psychology of persuasion
 - Credibility, expertise, trustworthiness, attractiveness
 - Quick, superficial impressions and decisions
 - Emotion vs logic
 - Us vs them
 - Reach groups
 - Hide the propagandist

George Orwell: 1984, Politics and the English Language

- Doublethink:
 - “To know and not to know, to be conscious of complete truthfulness while telling carefully constructed lies, to hold simultaneously two opinions which cancel out, knowing them to be contradictory and believing them;
to use logic against logic, to repudiate morality while laying claim to it ...
to forget whatever was necessary to forget, then draw it back to memory again at the moment it was needed, and then promptly forget it again; and above all,
 - To apply the same process to the process itself... even to understand the word doublethink involved the use of doublethink”
- Political language is “designed to make lies sound truthful” a “contagion” designed to conceal
- Lies and false presuppositions vs neutral facts
- “...a nightmare world in which the Leader... controls not only the future but the past”
- Propaganda exploits lazy thinking



Jacques Ellul: Propaganda, Political Illusion, The Technological Society

- Use one or more governing myths:
 - Work, happiness, nation, youth, the hero
- Direct propaganda receptiveness requires prior conditioning “pre-propaganda”
 - Myths, stereotypes, ambiguities, images
- Propaganda is a technique that exploits sociology, psychology, technology
 - Political vs sociological propaganda
 - Agitation vs integration
 - Vertical vs horizontal
 - Irrational vs rational
- The illusion that people control politics, that it is the solution
- Technology is amoral, in control, growing, self-reinforcing, demands that people adapt and submit, will solve all problems



Psychological Operations (PSYOP)

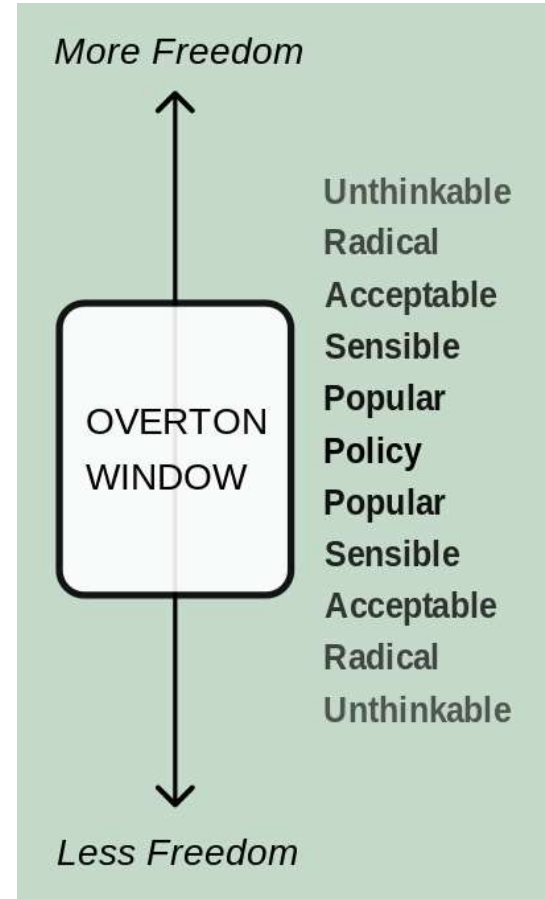
- Influence the emotions, motives, and objective reasoning, and ultimately the behavior of **governments, organizations, groups, and individuals**
 - Exploit logic, fear, desire
- **Propaganda + psychological tactics**
 - Individuals, groups, mass audiences
- Ancient form, “war of the mind”
 - For both conquering and controlling
 - Nonviolent force multiplier
- **White propaganda**
 - Truthful, sourced
 - Omissions and emphasis
- **Gray propaganda**
 - ~Truthful, can’t be falsified, unsourced
 - Omissions, emphasis, racial/ethnic/religious bias
- **Black propaganda**
 - Deceitful, false attribution
 - Hide true source
- Rolling Stone, ACLU 2011
 - US Army accused of PSYOP campaign on members of the Senate and Congress to manipulate funding for the war in Afghanistan
- US National Defense Authorization Act (2012) includes
 - “To amend the United States Information and Educational Exchange Act of 1948 to authorize the **domestic dissemination** of information and material about the United States intended primarily for foreign audiences, and for other purposes.

We're In The Era of Domestic Propaganda

- Smith-Mundt Act of 1948 (1972, 1998) prohibited the US government from propagandizing the American public with information and psychological operations intended for foreign audiences
- 2003 Rumsfeld DoD Information Operations Roadmap (declassified):
 - “information for foreign audiences, including public diplomacy and PSYOP, increasingly is consumed by our domestic audience and vice-versa... the distinction between foreign and domestic audiences becomes more a question of USG intent rather than information dissemination practices...”
- 2012 Smith-Mundt Modernization Act repeals previous domestic information operations restrictions

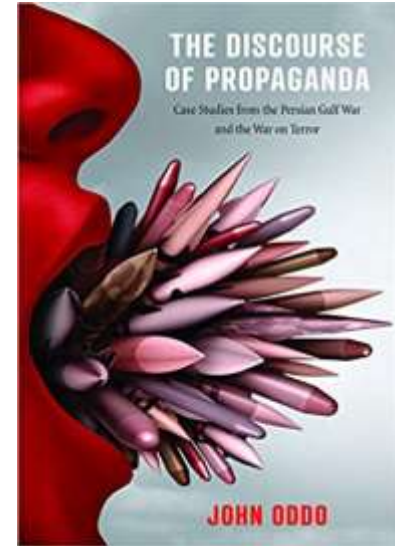
Overton Window

The (shifting) range of politically acceptable policies in the current climate of public opinion without being too extreme for a politician to gain or keep public office



21st Century Propaganda

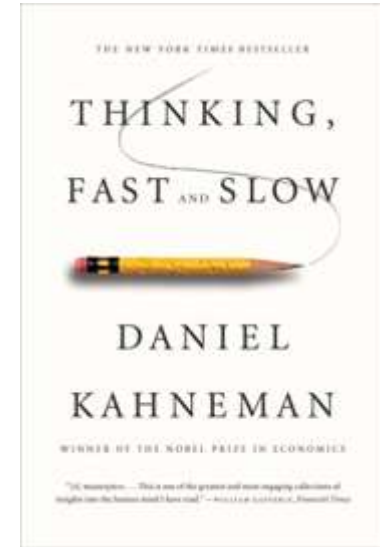
- Rich intertextuality (shaping of meaning)
- Horizontal diffusion rather than vertical
- Contributions from multiple agents
- Distributed activity
- Parallelism, repetition
 - 7/24 (mobile) sharing
 - Automated sharing
- Dialogic process
- Provocative, shock value
 - Outrage
- New highly segmented and mass audiences



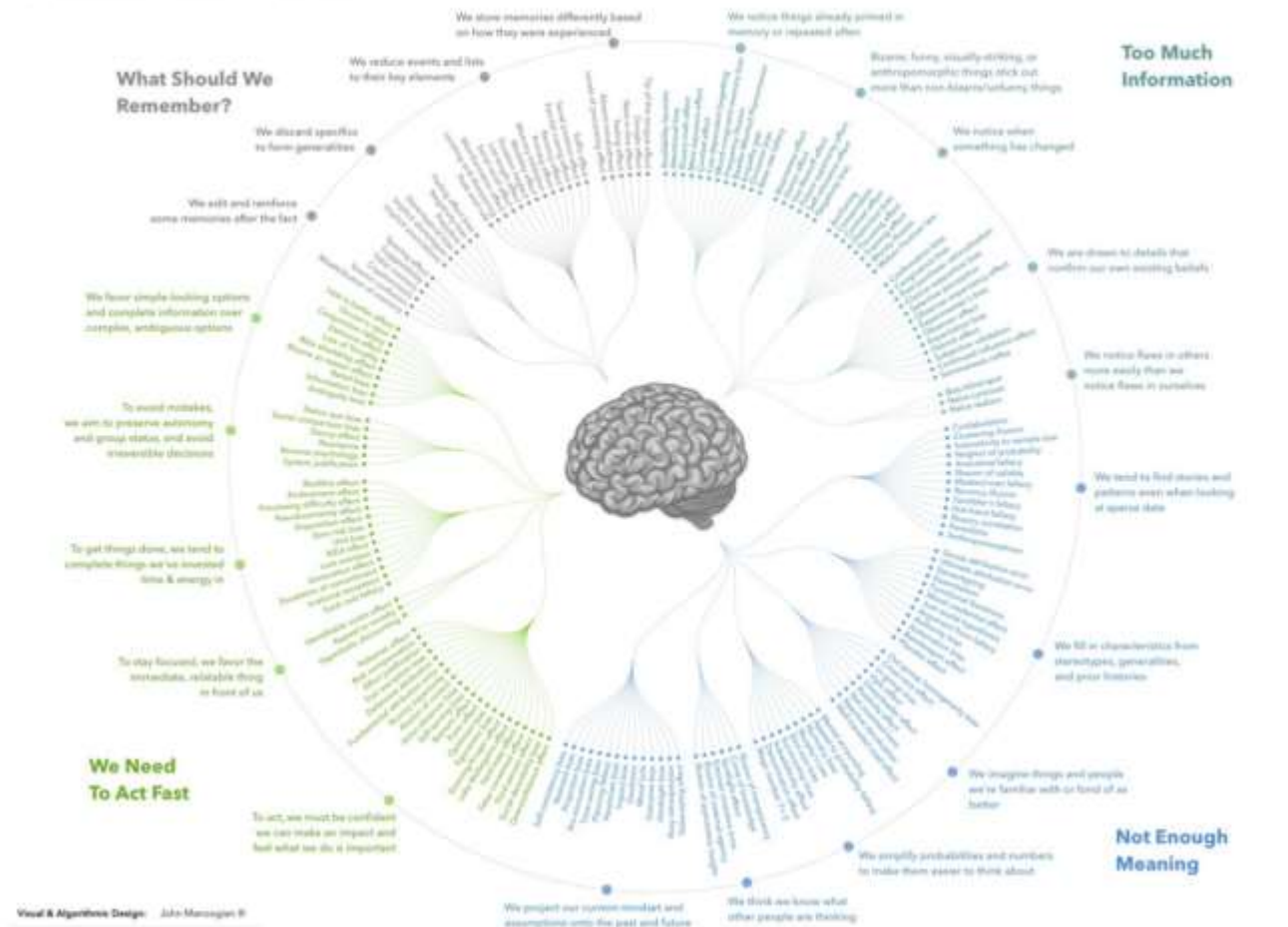
HUMANS ARE HACKABLE

Heuristics and Cognitive Biases

- Our brains have two systems
 - System 1 – our subconscious brain is fast
 - Intuition, instinct, automatic, involuntary, emotive, subjective
 - Uses heuristics
 - System 2 – our conscious brain requires effort
 - Reasoning, deliberating, focusing concentrating
 - Prone to logical error
 - Evolution made self control of our brain lazy
 - They are frequently in conflict
 - They are frequently wrong and can be easily manipulated
- Heuristics are simple, efficient decision making and judgement forming rules that are usually good enough or safe
- Heuristics can result in systematic errors in logic, probability, or rational choice theory. These errors are called cognitive biases.

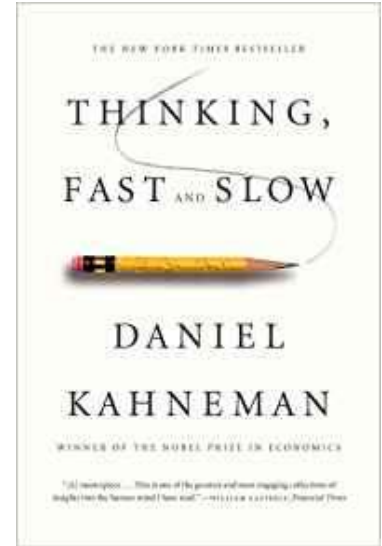


COGNITIVE BIAS CODEX



Heuristics

- Priming: so_p (is it u or a?)
- Cognitive ease: familiar and easy seem more true
- Coherent stories: assumption about anomaly
- Confirmation bias: prioritize supportive evidence
- Halo effect: assume a person/thing is all good or all bad
- Judgement: averages and false matching, false equivalence
- Substitution: replace complex problems with simpler ones
- Affect: let likes and dislikes determine belief
- ... and 39 others...



THE PIPA/KNOWLEDGE NETWORKS POLL

THE AMERICAN PUBLIC ON INTERNATIONAL ISSUES

MISPERCEPTIONS, THE MEDIA AND THE IRAQ WAR

October 2, 2003

PRINCIPAL INVESTIGATOR
STEVEN KULL

RESEARCH STAFF
CLAY RAMSAY
STEFAN SUBIAS
EVAN LEWIS
PHILLIP WARP



PROGRAM ON INTERNATIONAL
POLICY ATTITUDES (PIPA)

A joint program of the Center on Policy
Attitudes and the Center for International and
Security Studies at the University of Maryland



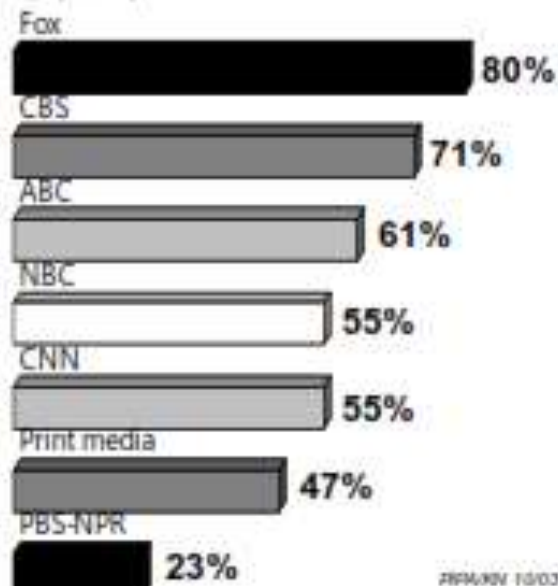
Knowledge
NETWORKS

A polling, social science, and
market research firm based in
Menlo Park, California

Frequency of Misperceptions

Evidence of al-Qaeda Links, WMD Found,
World Public Opinion Favorable

Respondents with one or more
misperceptions

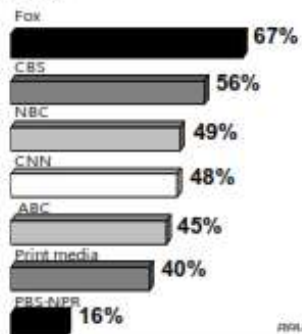


PIPA/KN 10/03

Evidence of Links Between Iraq and al-Qaeda

Is it your impression that the US has or has not found clear evidence in Iraq that Saddam Hussein was working closely with the al Qaeda terrorist organization?

US has:

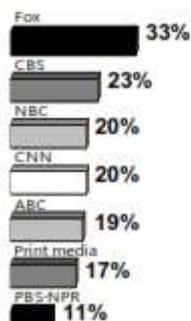


PEW/NOV 10/03

Weapons of Mass Destruction

Since the war with Iraq ended, is it your impression that the US has or has not found Iraqi weapons of mass destruction?

US has:

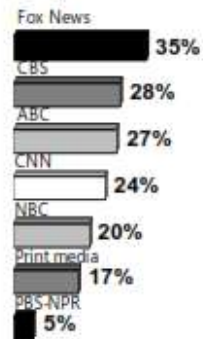


PEW/NOV 10/03

World Public Opinion

Thinking about how all the people in the world feel about the US having gone to war with Iraq, do you think:

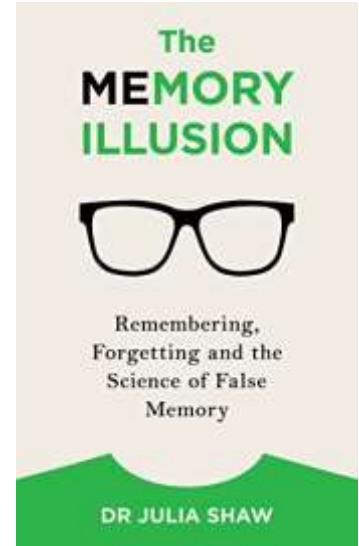
The majority of people favor the US having gone to war



PEW/NOV 10/03

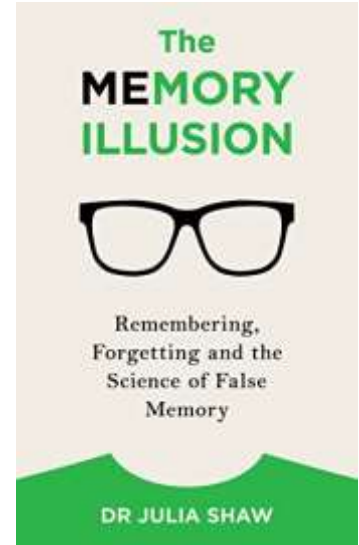
Memory is a Malleable, Subjective Construct

- Our brain is a reality simulation machine that constantly , selectively, and uniquely perceives, filters, codes, and recalls “objective reality” with our own biases and previous life influences
- The world is not truth and fact, lies and fiction, but many shades of grey
- Constructivism suggests that knowledge is self-constructed; meaning is the result of our experiences and our mental representation of ideas
- Neuroplasticity gives us learning and creativity, it also gives us vulnerability to false memories of false events, and these can be implanted
- News filters our reality and influences our perception of our identity
- Be cautious with our own memories, curious about where memories come from, kind to people who are factually untrue



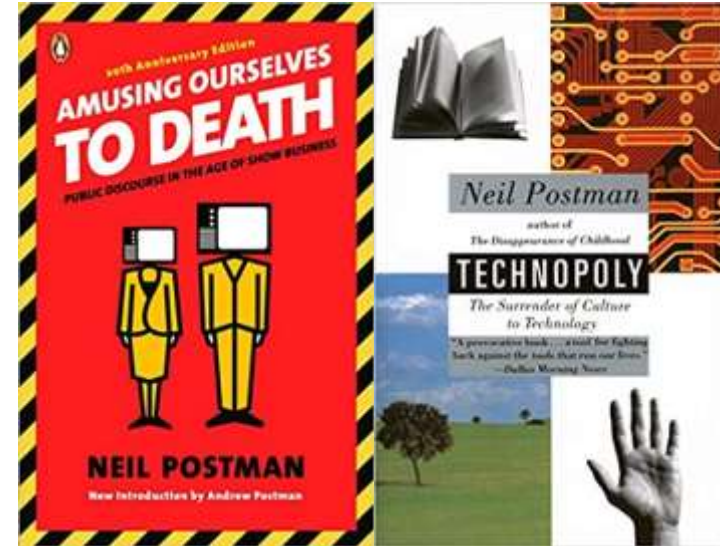
Memory is a Malleable, Subjective Construct

- “Our memories are constructive... Memory works... like a Wikipedia page: you can go in there and change, but so can other people.” Prof Elizabeth Loftus
- Memory and identity are inherently linked
- False memories, not real but feel like they are, happen all the time
 - Post-event information, memory borrowing, contagious memories, group conformity, informational social influences
 - We see, remember and understand the world in deeply imperfect ways
- Memories can be shaped



Neil Postman: Media, Technology and Thought

- Orwell vs... Aldous Huxley in *Brave New World*, where people medicate themselves into bliss, voluntarily sacrificing their rights
- A particular medium can only sustain a particular level of ideas. Speech vs books, essays, radio, news, television... digital news, social media, tweets...
- “Television is altering the meaning of 'being informed' by creating a species of information that might properly be called **disinformation**—misplaced, irrelevant, fragmented or superficial information that creates the illusion of knowing something but which in fact leads one away from knowing”
- Technopoly is deified, “totalitarian technocracy”, which demands the “submission of all forms of cultural life to the sovereignty of technique and technology”. Society seeks its authorization in technology, finds satisfactions in technology, and takes orders from technology”.



Ursula Franklin: The Real World of Technology

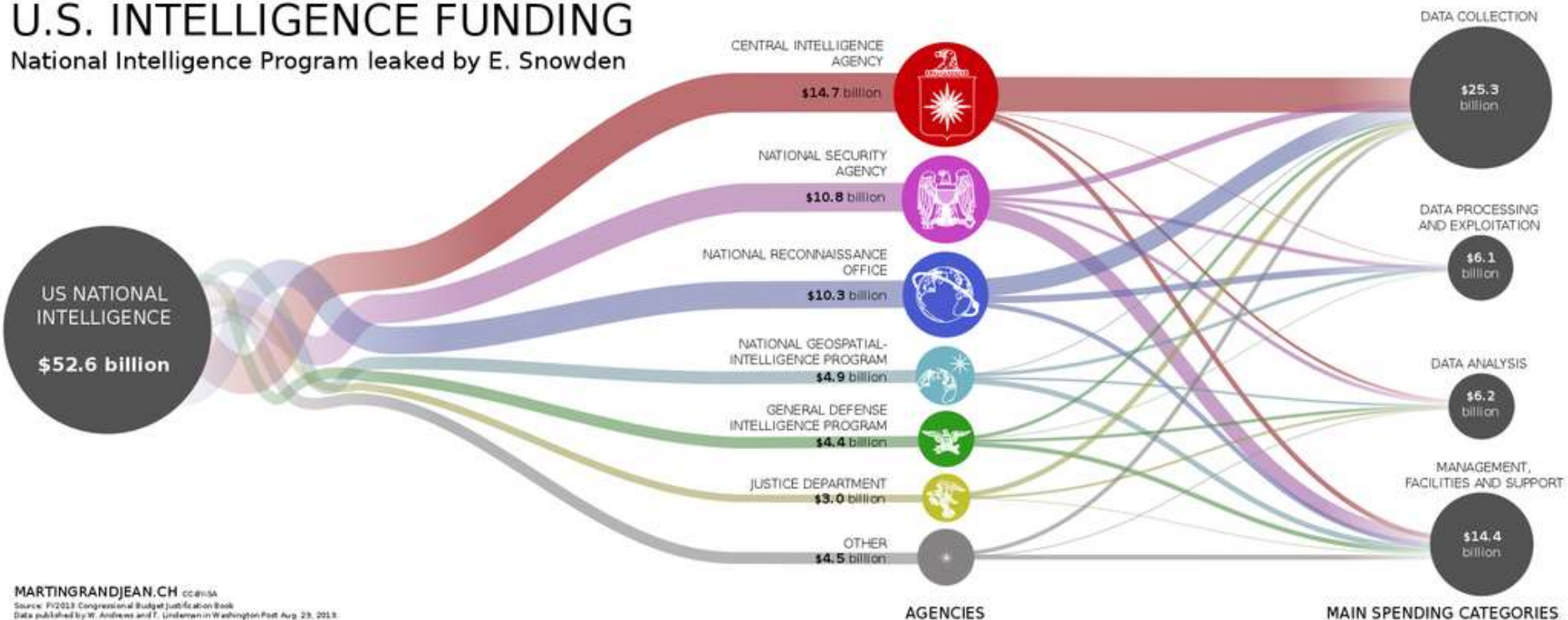
- Technology is a system of methods, procedures, organization, a *mindset*
- Holistic technologies
 - Craft workers or artisans; control, ownership of the work from start to finish
- Prescriptive technologies
 - Division of labour, work as a sequence of steps, large-scale
 - Establish structures of power and control, patterns of hierarchy, authoritarianism, supervision, competition, and exclusion
 - Discourages critical thinking, create "a culture of compliance" to the "one way of doing it"
 - "Many technological systems, ... are basically anti-people," ... "People are seen as sources of problems while technology is seen as a source of solutions."
- Communication technologies
 - Reshape political and social realities, distance people from each other
 - Focus on selective fragments, unusual pseudorealities, produced to attract and hold attention
 - "Images from afar have taken over much of our everyday reality like an immensely powerful occupation force. "And somewhere, someone will have to ask, 'How come the right to change our mental environment—to change the constructs of our minds and the sounds around us—seems to have been given away without anybody's consent?'"



SURVEILLANCE

U.S. INTELLIGENCE FUNDING

National Intelligence Program leaked by E. Snowden

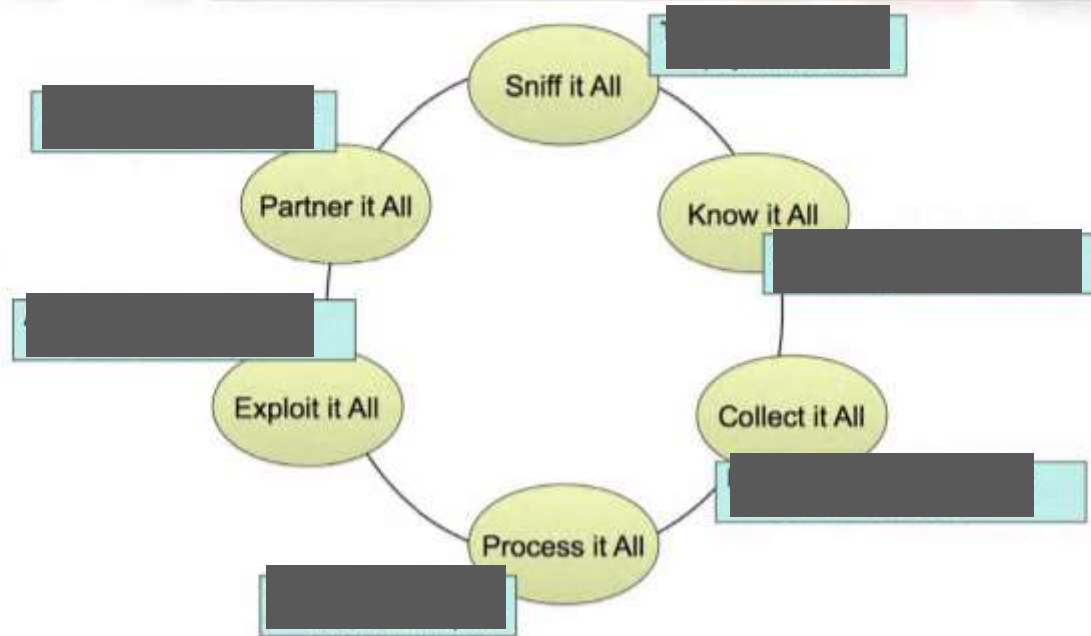


MARTINGRANDJEAN.CH CC@NSA

Source: FY2013 Congressional Budget Justification Book

Data published by W. Andrews and T. Lintner in Washington Post Aug. 29, 2013.

New Collection Posture





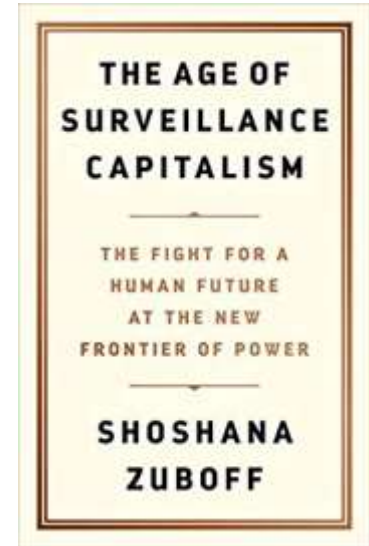
Google knows everything about you, me, everyone

Google Search

I'm Feeling Lucky

Surveillance Capitalism

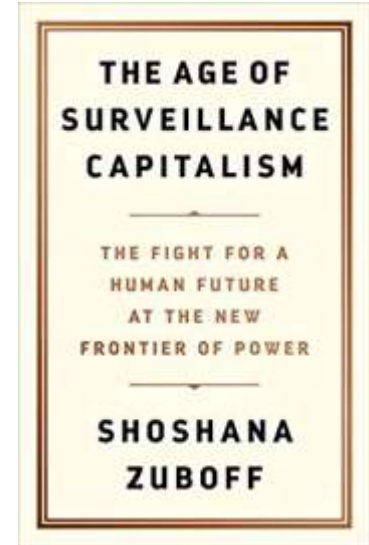
- Advertising is incidental. Behavioral data was the historic turning point
- “The online world is not truly bound by terrestrial law... it’s the world’s largest ungoverned space.” (Eric Schmidt)
- “Three laws of information technology:
 - Everything that can be automated will be automated
 - Everything that can be informed will be informed
 - Every digital application that *can* be used for surveillance and control *will* be used for surveillance and control”
- “There are two groups of people who are being monitored regularly as they move about the country. The first group is monitored involuntarily by a court order requiring that a tracking device be attached to their ankle. The second group includes everyone else.” (Auto insurance executive)



(January 2019)

Surveillance Capitalism

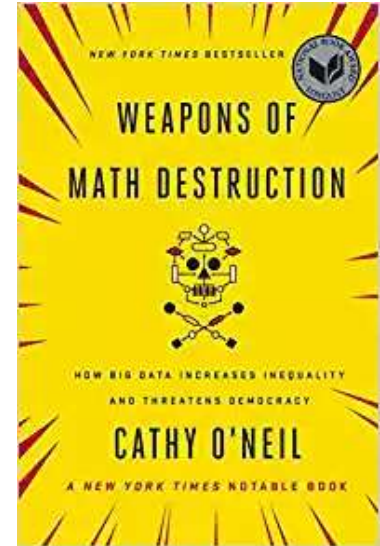
- “The goal of everything we do is to change peoples actual behavior at scale. When people use our app, we can capture their behaviors, identify good and bad behaviors, and develop ways to reward the good and punish the bad. We can test how actionable our cues are for them and how profitable for us” (CDS of prominent SV startup)
- “The assault on behavioral data is so sweeping... (that it) threatens the existential and political canon of the modern liberal order.. The principle of self-determination...The sanctity of the individual and the ideals of social equality; the development f identity, autonomy, and moral reasoning; the integrity of contract.. Norms and rules of collective agreement; the functions of market democracy; the political integrity of societies; and the future of democratic sovereignty.”



(January 2019)

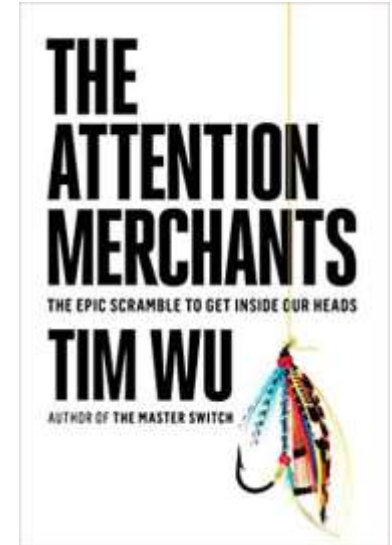
The Growing Algorithmization of Life

- Data, algorithms and models have subjective presuppositions and logic
 - Create feedback loops
 - Justice and compassion elude direct quantification
- Examples
 - Policing and criminal courts
 - Politics
 - University acceptance
 - Job applications and performance evaluation
 - Credit
 - Insurance and healthcare
- Algorithmic bias shapes society



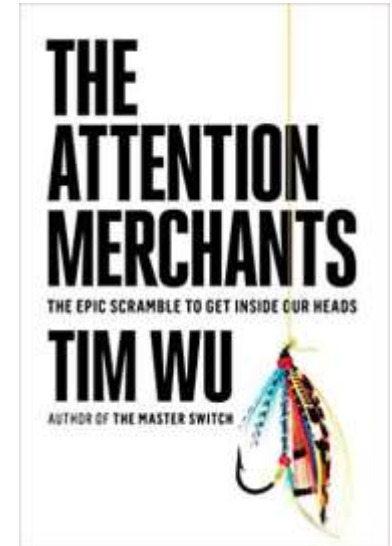
We are the Product

- By the end of the 1920s, most Americans were accustomed to being “cajoled and sold to” in print and on billboards.
- By the end of the 1950s, advertisers had wormed their way into the family living room, with television and radio networks “owning” times of the day that were previously sacred, like dinner hour.
- Then came the personal computer, the internet and, finally, the “fourth screen”: our mobile phones. They devoured every morsel of attention we had left, “rather in the way fracking would later recover great reserves of oil once considered wholly inaccessible.”
- “Once a commons that fostered the amateur eccentric in every area of interest, the web, by 2015, was thoroughly overrun by commercial junk”
- Philosopher William James *“our life experience would ultimately amount to whatever we had paid attention to.”*



We are the Product

- Attention is the product, merchants are the customer
- Attention capture for advertising has a long history
 - Public spaces, homes, cars, schools, recreation, bedrooms, hands, brains
 - Social media is the latest in a long tradition
- Rene Girard: **mimetic desire is the root of behaviour**
 - “Man is a creature who does not know what to desire, and who turns to others to make up his mind. We desire what others desire because we imitate their desires.”
- Humans seek the like-minded – “community”
- Humans respond to implied recommendations from friends



What is Fake News?

- **Fabricated content**
 - Completely false
- **Manipulated content**
 - Distort genuine information or imagery (eg “clickbait” headline)
- **Imposter content**
 - Impersonate genuine sources to leverage brand trust
- **Misleading content**
 - Eg present comment as fact
- **Fake context of connection**
 - Factually accurate content with false contextual information (eg article headline not related to content)
- **Satire and parody**
 - Presenting humorous but false content as if it is true
- **False Amplification**
 - Coordinated campaigns to manipulate public discussion
 - Increase desired engagement
 - Suppress genuine engagement
 - By state and non-state actors
 - Government agencies
 - State-funded media
 - Third party intermediaries
 - Paid “trolls”
- **Digital Information Operations methods by another name**

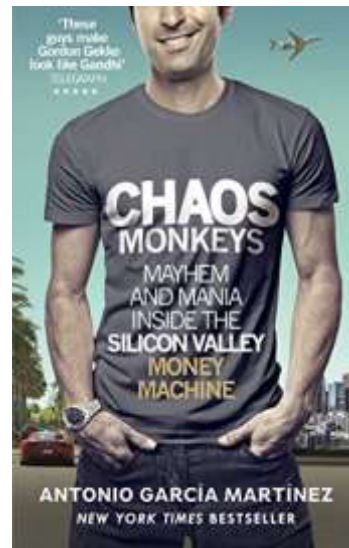


Facebook, the Perfect Advertising & Fake News Factory

- NYT 2014
 - FB's 1.2 billion users generated 15M person years of free labour
- It is not just about friends, following, and likes
- Internet is filled with social media identity tracking pages
 - Every click, scroll, page
- Offline, real-world ID, behaviour and attribute tracking
 - Location, spending, doing
- (Get “quasi immutable device ID examples)
- Advertising has become surveillance
- Guardian in 2016
 - FB ‘sucked up \$27 million of ad revenue’
- As admitted, but not limited to Facebook:
- Information operations
 - Action to distort political sentiment
- False news
 - Pretend to be factual but contains intentional falsehoods to arouse attention and emotion
- Disinformation
 - Spreading false news
 - Feeding unwitting intermediaries
- False amplifiers
 - Coordinated activity to manipulate the political discussion, amplifying chosen narratives
 - Includes intimidating counter narratives

How are we Targeted and Tracked?

- Identity for flyers or coupons
 - Antonio García Martínez
1 Clarence Place #13
San Francisco, CA 94107
- Quasi-immutable device ID broadcast hundreds of times a day on mobile ad exchanges.
 - 38400000-8cfo-11bd-b23e-10b96e40000d
- On a PC
 - 07J6yJPMB9juTowar.AWXGQnGPA1MCmThgb9wN4vLoUpg.BUUtWg.rg.FTN.O.AWUxZtUf
 - *"This is the content of the Facebook re-targeting cookie, which is used to target ads-are-you based on your browsing."*



Social Media Icons



Grow your social media following with linked icons



Weaponization of Social Media

- The internet has left adolescence
- The internet has become a battlefield
- This battlefield changes how conflicts are fought
- This battlefield changes what “war” means, war and politics have become fused
- We are all part of this war



“Digital information warfare is cost-effective and high-impact, making it the perfect weapon of a technologically and economically weak power.”

Alina Polyakova, The Brookings Institute, 2018

Russian Interference in 2016 US Election

- “In sum, the total known cost of the most high-profile influence operation against the United States is likely around one million dollars.”
 - \$100,000 Facebook ads
 - \$4,700 Google ads
 - \$240,000 over two years for 36,000 bot accounts on Twitter (IRA troll farm)
 - \$50,000 intelligence gathering trip carried out by two Russian agents
 - Production of misleading or divisive content (pictures, memes, etc.)
 - Cyber attacks on the Democratic National Committee and the Clinton campaign

“Artificial intelligence is the future, not only for Russia, but for all humankind. It comes with colossal opportunities, but also threats that are difficult to predict. Whoever becomes the leader in this sphere will become the ruler of the world.”

Russian President Vladimir Putin, 2017

A. The race for leadership

Global distribution of AI startups

Top countries and cities by number of startups

Top Countries



Top regional hubs

Cities' extended urban areas¹



¹ Regional hubs comprise a core city plus its extended urban area and wider agglomeration; e.g. San Francisco plus Bay Area, London plus Oxford & Cambridge et al., Beijing plus Tianjin, Shenzhen plus Guangzhou et al., etc.

² Ranking excluding 180 startups for which information on city was not available – Among them, 130 are located in Israel

United States

1,393

Europe

769

United Kingdom

245

Germany

106

France

109

Israel

362

India

84

China

383

Latin America

41

Oceania

33

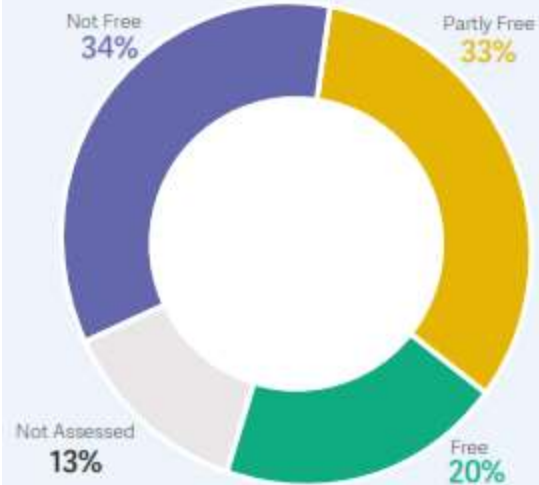
“For the first time in history
it is near impossible to be unobserved”
US Army General Mark Milley, 2017



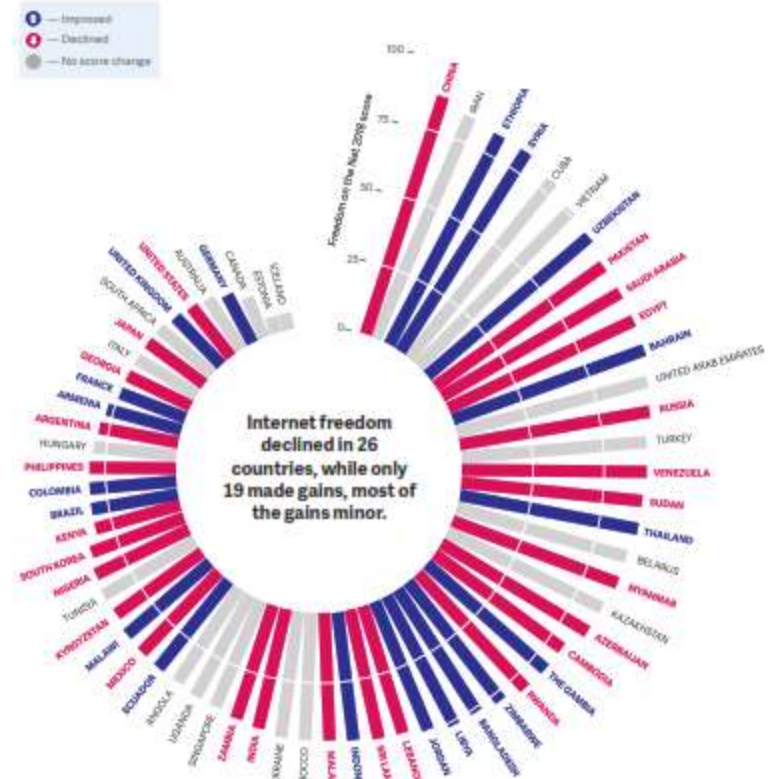
Freedom House: Freedom on the Net, 2018

GLOBAL INTERNET POPULATION BY 2018 FOTN STATUS

FOTN assesses 87 percent of the world's internet user population.



Rising Digital Authoritarianism, by the Numbers





Global internet user stats

Nearly **3.7 billion** people have access to the internet.

According to Freedom House estimates:

71% live in countries where ICT users were arrested or imprisoned for posting content on political, social, or religious issues.

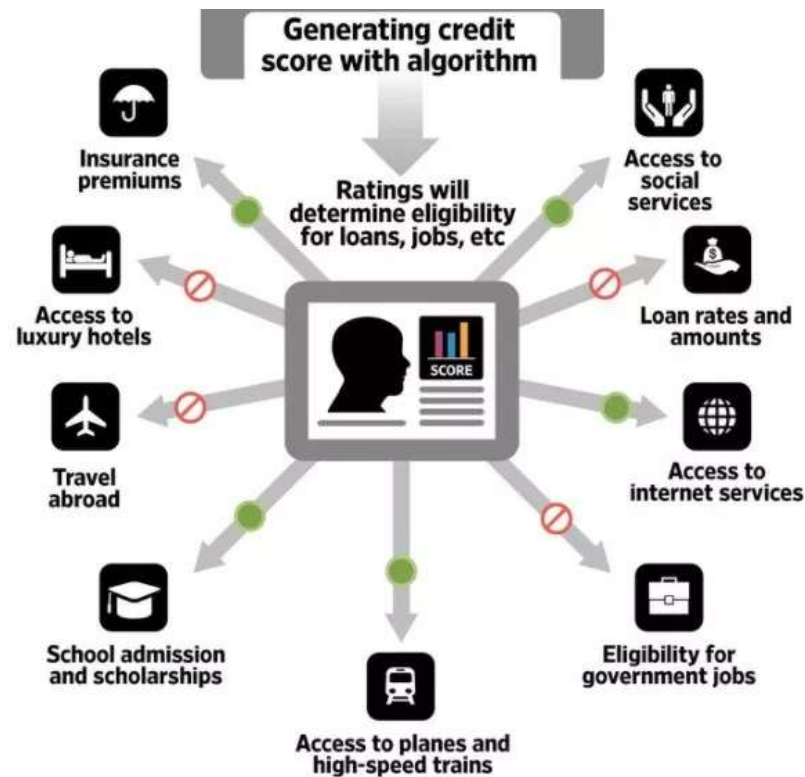
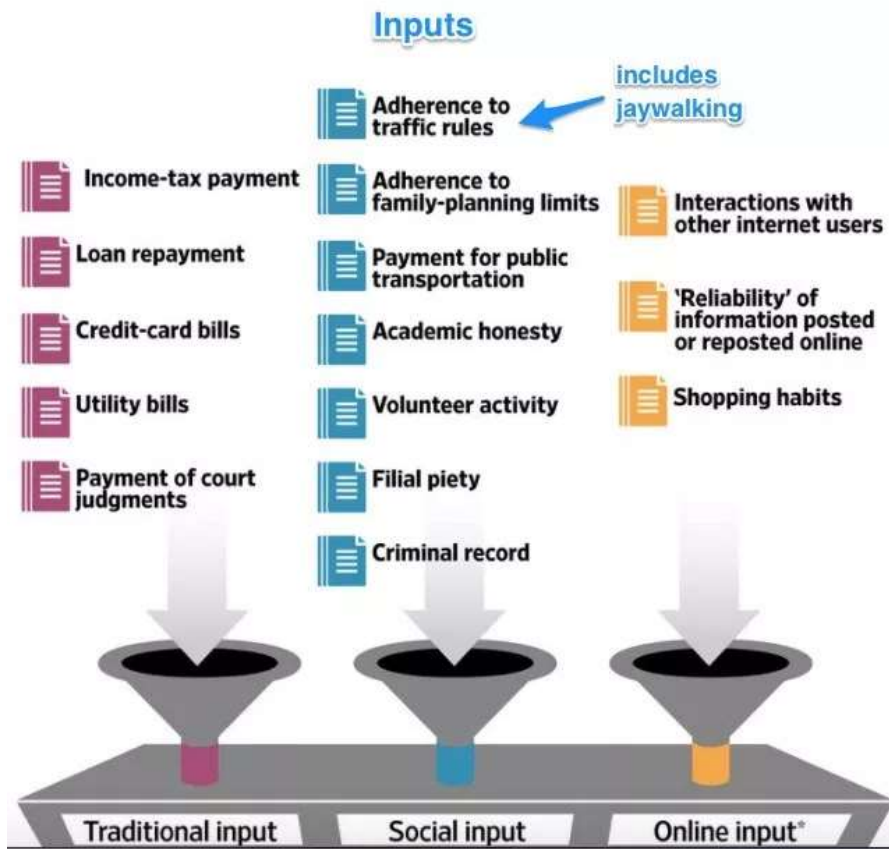
55% live in countries where political, social, or religious content was blocked online.

48% live in countries where individuals have been attacked or killed for their online activities since June 2017.

47% live in countries where the surveillance powers of the authorities increased in the past year, threatening user rights to privacy.

47% live in countries where access to social media or messaging platforms were temporarily or permanently blocked.

42% live under governments that disconnected internet or mobile networks, often for political reasons.

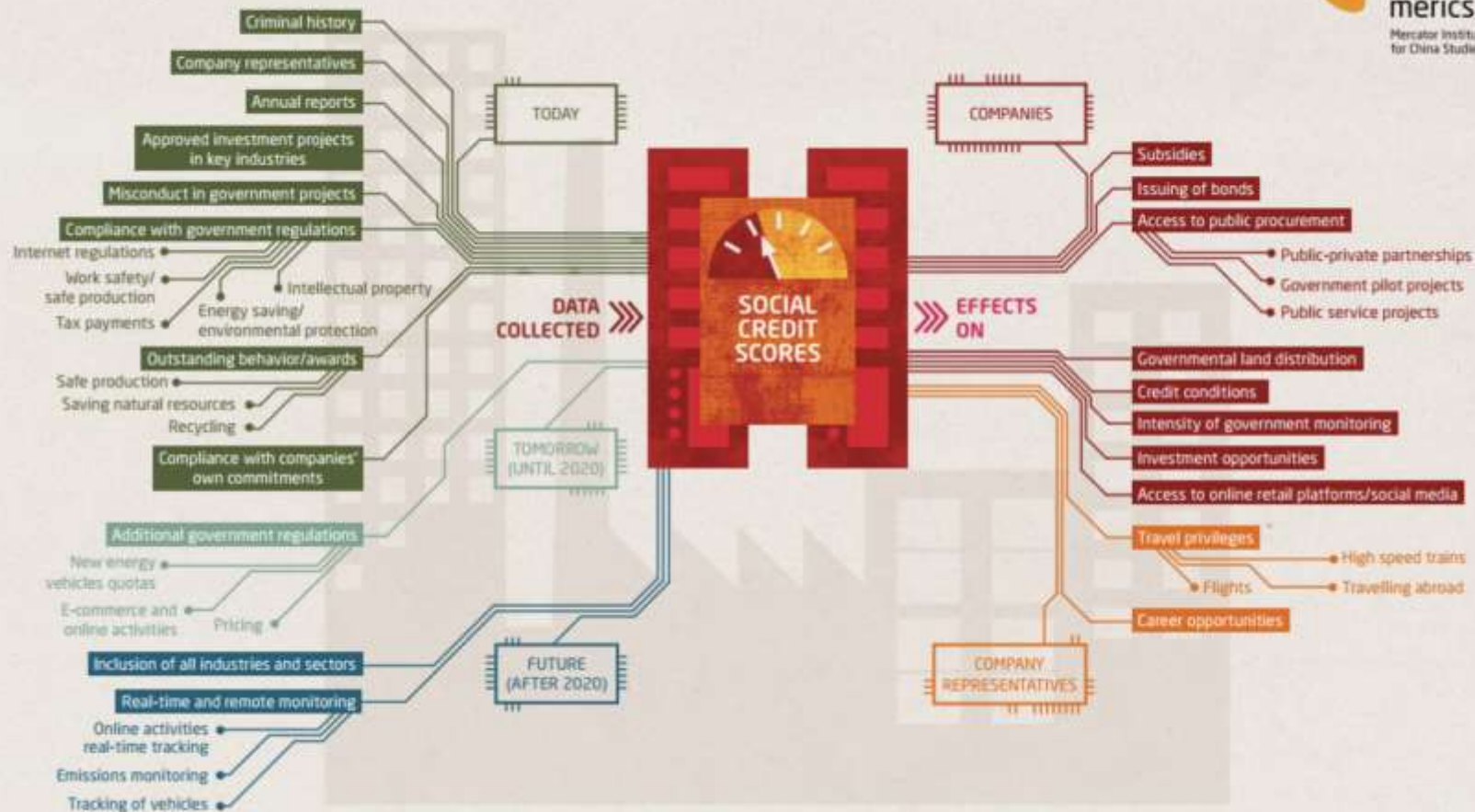


* It is currently unclear how "online inputs" will be implemented.
Source: WSJ reporting based on government blueprints, state-media reports and interviews with architects of the plan.

THE WALL STREET JOURNAL.

China's tight grip on enterprises

Influencing business decisions via Social Credit Scores*

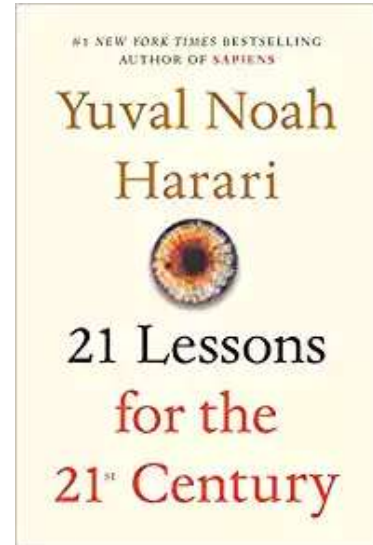


*Selection of data collected and exemplary effects of Social Credit Scores.

Source: Policy documents and regulations released by the Chinese central government since 2014.

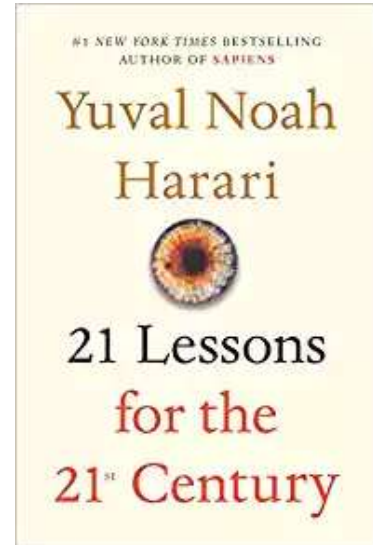
Foreboding Warnings

- For millennia, authority came from god, from humans for a century or so
- Democracy is predicated on free will
 - Elections are based on feelings, no voter preconditions of informed rational thought
- Feelings are genetic neural, or biochemical algorithms
- Soon data and algorithms will give better answers (they only have to be better than average)
- We will be forced to submit to algorithms
- Digital dictatorship with human figureheads (for illusion)
- The human mind has been domesticated by technology
- We hardly know how the mind works, and invest little to learn



Foreboding Warnings

- The goal of human equality is very recent, “inequality goes back to the stone age”
- Globalization has grown inequality.
- AI and bioengineering will make inequality much worse
 - Human casts
 - Human speciation
- Humans will unavoidably generate and cede their data: DNA, body, mind
- Regulating data ownership is key



WHAT CAN BE DONE?