

The People Vs Tech: How the internet is killing democracy

<https://www.amazon.co.uk/dp/B077JJ8YG7>

0) Introduction

- Within a generation or two the contradictions between democracy and technology will exhaust themselves.
- However, at a deep level, these two grand systems – technology and democracy – are locked in a bitter conflict. They are products of completely different eras and run according to different rules and principles.
 - The machinery of democracy was built during a time of nation-states, hierarchies, deference and industrialised economies.
 - The fundamental features of digital tech are at odds with this model: non-geographical, decentralised, data-driven, subject to network effects and exponential growth.
 - Put simply: democracy wasn't designed for this.
- 1996 Declaration of the Independence of Cyberspace: 'Governments derive their just powers from the consent of the governed. You have neither solicited nor received ours. We did not invite you. You do not know us, nor do you know our world ... Your legal concepts of property, expression, identity, movement and context do not apply to us. They are all based on matter, and there is no matter here.'
- Six key pillars that make democracy work
 - Active Citizens: Alert, independent-minded citizens who are capable of making important moral judgements.
 - A Shared Culture: A democratic culture which rests on a commonly agreed reality, a shared identity and a spirit of compromise.
 - Free Elections: Elections that are free, fair and trusted.
 - Stakeholder Equality: Manageable levels of equality, including a sizeable middle class.
 - Competitive Economy And Civic Freedom: A competitive economy and an independent civil society.
 - Trust In Authority: A sovereign authority that can enforce the people's will, but remains trustworthy and accountable to them. In the following chapters I will examine
- Invisible algorithms are creating new, hard-to-see sources of power and injustice.
- Democracy will fail in new and unexpected ways
 - The looming dystopia to fear is a shell democracy run by smart machines and a new elite of 'progressive' but authoritarian technocrats. And the worst part is that

lots of people will prefer this, since it will probably offer them more prosperity and security than what we have now.

- The great tech pioneers, of course, do not share this concern because they are firm believers in a sunny techno-utopia and in their ability to take us there.
- Democracy (and indeed the world) does not run like this – it is slow, deliberative and grounded in the physical. Democracy is analogue rather than digital. And any vision of the future that runs contrary to the reality of people's lives and wishes can only end in disaster.

1) The New Panopticon

Free Will

- The founding myth for social media is that they are the heirs to the 'hacker culture'
- Around 90 per cent of Facebook and Google's revenue comes from selling adverts.
- The founding story of American psychology, emerged as a serious academic discipline a century ago alongside the beginnings of mass consumer culture.
- Psychology had been developing in Europe – and especially Germany – for some years, and was imported to the US before the First World War.
- The American variety diverged from the European fascination with philosophical whimsies like 'free will' and 'the mind'. It looked instead at how to turn the question of human decision-making into a hard science that could be used by business.
- Yuval Noah Harari called 'dataism': positing that mathematical laws of data apply to humans as well as machines.
- The notion that with enough data the mysteries of the human mind can be understood and influenced is perhaps the dominant philosophy in Silicon Valley today.
- In 2008 the editor-in-chief of Wired Chris Anderson hailed the 'end of theory'.
 - Scientific theories were unnecessary, he said, now that we have big data.
 - Who knows why people do what they do?
 - The point is they do it, and we can track and measure it with unprecedented fidelity.'
- Tech companies run thousands of tests with millions of users – tweaking backgrounds, colours, images, tones, fonts and audio – all to maximise user experience and user clicks.
- Hordes of us are now members of a zombie army that walks while looking down at our phones and chats to distant disembodied avatars rather than whoever is sitting next to us.
- According to Adam Alter, addictions to alcoholism and tobacco are giving way to digital dependency, an epidemic of checking, picking-up, swiping and clicking.
- Some academics even think declining drug and alcohol intake among young people might be caused by them getting their dopamine rushes through pings and beeps.

- exploiting a vulnerability in human psychology'. He said that he, Mark Zuckerberg and others understood this, 'And we did it anyway'.

Data

- The Holy Grail for the social media giants, just as it always has been for all ad men, is to understand you better than you understand yourself.
- By 2020 there will be around 50 billion internet-enabled devices – 4x 2018
- Humans are often quite predictable, and with enough data – even trivial or meaningless scraps such as what songs you play – algorithms can learn very important things about what sort of person you are.
- The logical end goal of dataism is for each of us to be reduced to a unique, predictable and targetable data point.
- Data can and will help people hold governments to account by making more information about departmental performance available.

Life under the microscope

- AI will create unprecedented levels of government surveillance and control.
- In free societies we're never 'let alone' either; the data gold rush has opened up new forms of potential surveillance from democratic governments, too, and most civil liberty groups worry what that means for legitimate political debate and activism.
- Intelligence agencies don't need to spy on you anymore; they can simply go to the technology companies and prise out of them what they need.
- Being always under surveillance and knowing that the things you say are collected and shared creates a soft but constant self-censorship.
- This is damaging to the citizen's ability to exercise moral judgement in their lives. Developing the faculties to think for oneself requires that people say controversial things, make mistakes and learn from them.
- The ability to forget is an important part of self-development, because changing one's mind is how we are able to mature and grow.
- More and more people will conclude it is safer just to never say anything.

The power of manipulation

- If data analysts or algorithms understand us better than we do, they can manipulate or control us in ways we can't understand or uncover.
 - perhaps you can sell 20% more anti-depressants to people if you catch them at a certain point in the week and use messages that play to low self-esteem.
 - What if payday loan ads and gambling offers were precisely worded and targeted at the very moment that someone is most vulnerable or short on cash?
- The extent to which our choices are ever truly free might depend on your view of free will

- Big data algorithms throw up important questions regarding new locations of power, influence and control.
- Powerful algorithms, comprised of lines upon lines of code, shape our world, and much of the time humans aren't involved at all.
- The modern equivalent of the recipe for Coca-Cola – most regulators have no idea where injustice might occur, and much less how to keep on top of it.

Free as in freedom

- Mathematical rules of data can be applied to human decision-making – may soon pose a fundamental challenge to our understanding of ourselves.
- For centuries we have believed that we are the ultimate source of meaning, and that human free will is the highest form of authority. That is our own founding myth: that we didn't conquer the world because we were stronger and bigger than other animals, but because we were smarter.
- We consider that democracy has a special moral value and purpose because we regard human judgement and moral choices as uniquely valuable.
- Futurists often talk about what this means for jobs but rarely ask what it might do for our self-confidence and sense of worth.
- When it comes to making difficult decisions, humans (and government departments, in my experience) are easily swayed by numbers and data, no matter how imperfect.
- Numbers are intoxicating, because they hold out the promise of a pure, exact, judgement-free answer.
- Cathy O'Neil, in her recent book *Weapons of Math Destruction*, documented dozens of instances where important decisions – relating to hiring policy, teacher evaluations, police officer distribution and more – are effectively outsourced to the cold and unquestionable efficiency of proprietary data and algorithms, even though these decisions have important moral dimensions and consequences.
- They might look and sound very objective but algorithms always start with a question framed by whoever is in charge. As a result they tend to reproduce the biases of their creators.
 - That they are all currently created and owned by a bunch of rich white tech guys in Northern California has already thrown up some extremely unfortunate results.
- The danger is not in machines coughing up poor solutions, but the opposite. As they improve, they will repeatedly produce extremely good, money-saving solutions (at least, compared to human decisions), which will further establish their importance in our lives, even if they are unjust in invisible ways.
- When voting:
 - If you're going to use an app, why not just hand your vote over to an algorithm entirely?
 - We're far too irrational, and bring a headful of cognitive biases into the polling station.

- We might conclude – in small, harmless ways at first, of course – that perhaps we really don't know best and that it's probably wiser not to listen to ourselves when making important moral and political decisions.
- What would be the moral case for humans to make significant decisions if there was another, superior, system?
- Once we start relying on it, we'll never stop.
- The extent to which we believe ourselves to be moral agents depends on us repeatedly taking moral decisions – shopping, voting, raising children, joining campaigns and a thousand things besides.
- Our critical faculties only improve through the repeated use of reason, evidence and moral inquisition.
- To give in to this urge (of handing power to AI) will be easy, but it would condemn us to losing the ability to think freely, and to spiral into ever greater reliance on machines.

2) The Global Village

Why the Closer We Get, the Further We are Apart

- Information overload and connectivity has encouraged a divisive form of emotional tribal politics, in which loyalty to the group and anger outrank reason and compromise. While partisanship is necessary in politics, too much of it is dangerous. Political leaders are evolving to the new medium of information – hence the rise of populists who promise emotional, immediate and total answers. But warring tribes of anchorless, confused citizens is a precursor to totalitarianism.
- McLuhan said conflict and disharmony was possible in a world where everyone was connected to everyone else, because information-at-all-times would be so discombobulating that it would spark a mass identity crisis.
- Over the last few years however, the nature of political disagreement has changed. It's gone tribal.
- We are living, as McLuhan predicted, through a great re-tribalisation of politics.
- We've had enough civil wars to know that the need to belong to a group is deep-rooted.
- Psychologists have long remarked on the irrationality of large crowds.
- Charles Mackay said that 'men think in herds ... it will be seen they go mad in herds, while they only recover their senses slowly, one by one'.
- Democracy carries the risk of degeneration into ignorant and self-interested mob rule, running on unchecked emotion.
- The modern technologist, however, doesn't believe the mob is faceless and mad, but rather wise and just
 - See book: Howard Rheingold's Smart Mobs
 - Which talks about 'crowd sourcing' solutions and 'the wisdom of the crowd'.
 - He trusts the 'hive mind'.

- Crowds certainly are wise when it comes to solving technical, non-value based problems like fixing computer bugs, but politics is very different.
- Silicon Valley, in its optimistic quest for a global village of total information and connectivity, has inadvertently let tribalism back out of the cage that modern representative democracy built for it.

The great clustering

- Information is now far beyond the ability of even the most ordered brain to categorise into any organising principle, sense or hierarchy.
- We live in an era of fragmentation, with overwhelming information options.
- The splintering of established mainstream news and a surge of misinformation allows people to personalise their sources in ways that play to their pre-existing biases.
- Faced with infinite connection, we find the like-minded people and ideas, and huddle together.
- Brand new phrases have entered the lexicon to describe all this: filter bubbles, echo chambers and fake news... 'post-truth' was the word of the year in 2016.
- In some circles it has become a slightly patronising new orthodoxy to say that stupid proles have been duped by misinformation on the internet into voting for things like Brexit or Trump.
- Well-educated people are in my experience even more subject to these irrationalities because they usually have an unduly high regard for their own powers of reason and decision-making.
- Digital communication is changing the very nature of how we engage with political ideas and how we understand ourselves as political actors.
- Just as Netflix and YouTube replaced traditional mass-audience television with an increasingly personalised choice, so total connection and information overload offers up an infinite array of possible political options.
- The result is a fragmentation of singular, stable identities – like membership of a political party – and its replacement by ever-smaller units of like-minded people.
- Anyone who is upset can now automatically, sometimes algorithmically, find other people that are similarly upset. Sociologists call this 'homophily', political theorists call it 'identity politics' and common wisdom says 'birds of a feather flock together'. I'm calling it re-tribalisation.
- The key thing is that the more possible connections, the greater the opportunities to cluster with ever more refined and precise groups.
- What transforms a group of like-minded people into a motivated, mobilised tribe is a sense of shared struggle and common grievance. And the internet is the largest and most abundantly stocked pantry of grievance in the history of mankind.
- Every individual now has a truckload of reasons to feel legitimately aggrieved, outraged, oppressed or threatened, even if their own life is going just fine.
- This produces a powerful sense of belonging and solidarity with a group they never even thought about until they kept reading how oppressed they were.

- For years we've retreated into tribes with different information and principles, but the internet has opened new ways of forming, finding and joining ever-smaller tribes that we never even knew we belonged to, and stuffing ourselves full of evidence to harden the conviction.
- Tribalism is understandable, but ultimately it is damaging to democracy, because it has the effect of magnifying the small differences between us, and transforming them into enormous, unsurpassable gulfs.

The 'system one' system

- McLuhan said the literate man, was calm, cool and rational
- Electronic information, and especially television – his era's internet – was aural. It was sound and pictures, a more complete sensory experience.
- If literate man was rational, said McLuhan, then electronic man would be more emotional, aural and tactile.
- Kahneman's main point was that there are two basic systems that govern human behaviour.
 - System one thinking is fast, instinctive and emotional. It's the reptilian brain, running on instinct.
 - System two thinking is slow, deliberative and more logical. It sometimes, but not always, acts as a check on those wilder rages.
- Modern democracies aspire to run on 'system two' logic, and its ideal citizens are McLuhan's literate man. Its institutions are arranged to arrive at logical, thought-out, fact-driven decisions.
- The internet, by contrast, more closely resembles 'system one': everyone and everything is immediate, instinctive and emotional.
- First of all, everything online is fast and personalised: access to everything and everyone, to millions of web pages, all the goals, all the baby pictures, and all for free. You zoom in, you zoom out, swipe, tap and chat with a far-flung relative.
- Douglas Rushkoff explains in his recent book Present Shock, in the modern world 'what we are doing at any given moment becomes all-important'.
- The result is a growing disconnection between the choice and freedom that characterise our lives as consumers, and the compromise and tedious plodding world of politics.
- The modern citizen is expected to sift through an insane torrent of competing facts, networks, friend requests, claims, blogs, data, propaganda, misinformation, investigative journalism, charts, different charts, commentary and reportage. This is confusing and stressful, and so we lean on easy and simple emotional heuristics to make sense of the noise.
- The internet has not created this problem. We've always had our affiliations and always been roused by emotion... But the internet has taken this to a whole new level.

The problem with tribes

- Tribalism and 'system one' thinking are the direct products of information overload.
- But if partisanship overwhelms everything democracy breaks down because it makes compromise impossible.
- opponents can only be incoherent babblers, sinister Machiavellians, oppressors who don't understand your suffering. Disagreement over practical issues starts to involve purity and impurity
- people who voted Leave and Remain in the 2016 EU referendum will generally get on amicably enough around the dinner table. They will disagree of course, but they will at least listen and attempt to understand each other. Online, however, Remain voters are recast as smug and elitist 'remoaners', while Brexiteers are irresponsible nativists and hate-filled jingoists. Once more, the internet's mode of communication is driving this problem.
- Several inconvenient studies have found that if two groups of people debate with each other they often consequently hold more extreme views than when they started.
- Unfortunately, the nature of digital communication rarely allows for understanding of other people's mindset or background, because interaction with rivals or opponents is typically swift, fleeting and emotionally heightened.
- Suler argues that because we don't know or see the people we are speaking to (and they don't know or see us), because communication is instant, seemingly without rules or accountability, and because it all takes place in what feels like an alternative reality, we do things we wouldn't in real life. Suler calls this 'toxic disinhibition'.
- The internet doesn't only create small tribes: it also gives easy access to enemy tribes. I see opposing views to mine online all the time; they rarely change my mind, and more often simply confirm my belief that I am the only sane person in a sea of internet idiots.
- Tech has turbocharged these weaknesses, but we are also responsible.
- There have always been manipulation and liars in politics though
- Tech giants have turned these psychological weaknesses into a structural feature of news consumption and exploited them for money. Their financial incentives sometimes run directly contrary to the democratic need for people to be informed and draw from a wide range of accurate sources and ideas.
- All social media platforms insist they are 'platforms' not 'publishers' which means that, unlike newspapers, they aren't legally liable for the content they host.
- They have no obvious escape from this dilemma unless lawmakers conclude they are behaving like publishers and regulate them as such.
- Everything on social media is still curated, usually by some mysterious algorithm rather than a human editor. These algorithms are designed to serve you content that you're likely to click on, as that means the potential to sell more advertising alongside it.
- the algorithms aren't there to optimise what is truthful or honest – but to optimise watch-time. 'Everything else was considered a distraction,'

- The problem is that no one is intentionally programming it to be sensationalistic – it's just a mathematical response to our general preference for edgy and outrageous videos.
- newspapers are legally responsible for what they print, and citizens generally understand the editorial positions of various outlets. Algorithms, however, give the impression of being neutral and can't be held to account

Trump the tribal

- Political leaders evolve, albeit slowly and imperfectly, to fit the medium through which they reach the people.
- Today's latest iteration is Twitter addict and world-class simplifier Donald Trump.
- Who's a 'system one' leader who became popular by promising easy solutions to complicated questions.
- Trump is the strong man, the tribal leader who trades on outrage. He offers swift, immediate and total answers: it's the fault of the bureaucrats, the politically correct media, judges and immigrants. He promises to deliver the people quickly and completely from the complexities of the world.
- He offers a sense of tribal belonging in a digital world characterised by confusion, uncertainty and information overload. He represents all the problems described in the last few pages, in human form.
- It was perhaps inevitable that growing inequality and globalisation would result in some form of political backlash. But the form it has taken is a reflection of our media.
- Hannah Arendt wrote about this in *The Origins of Totalitarianism*, predicting that a bewildered post-identity mob would demand a tribal leader who could bring order to chaos, simplicity to complexity and a sense of belonging.
- However sensitivity, empathy, compassion, kindness, and honesty – are keys to political success.
- If you deal with people in the right manner, you are going to be able to work effectively with them.
- Recognising one's own weaknesses and one's opponents' strengths, and working together on the basis of common human decency – can keep tribalism in check.
- It will take work, time and effort.
- A system comprising warring and emotional tribes, surrounded by grotesque enemies and a gutful of malleable incendiary 'facts' doesn't lead anywhere good.
- In an era in which emotion outranks truth, bias outranks objectivity and tribe outranks compromise.

3) Software Wars

How Digital Analytics Has Changed Elections

- For decades political parties have been building up increasingly detailed insights using shopping data, web browsing history and voter records to help with their targeting and messaging.
- Every election now is a mini arms race.
- Cambridge Analytica discovered during the electoral race that a preference for cars made in the US was a strong indication of a potential Trump voter.
- So if consumer data records showed someone had recently bought a Ford but the RNC data revealed they hadn't voted for years, they should be ranked as a highly persuadable target.
- We used to call this sort of thing propaganda. Now we call it 'a behavioral approach to persuasive communication with quantifiable results'
- Big data, however, points to a more personalised model: work out who people are, find the one thing they care about, and zero in on that.
- If everyone receives personalised messages, there is no common public debate – just millions of private ones.
- Hyper-personalisation incentivises politicians to make different pledges to different 'universes' of users.
- Because ads are so personalised, and delivered to unique users, it is more difficult to check whether they are accurate.
- think about what the explosion of everyday life data will do for political campaigns. Consider it: within a decade your fridge data will know what time you eat, your car will know where you've been, and your home assistant device will work out your approximate anger levels by the tone of your voice.
- Perhaps the politicians of the future will be those with the fewest ideas and the greatest talent for being non-committal and vague.
- If every voter is a data point who receives, not messages from politicians, but a perfectly targeted machine-generated advert, finely tuned and retuned to suit a particular personality and mood, an algorithm which runs itself and improves iteratively, without making any serious effort to engage with you – then elections will become little more than software wars.
- But the more politics becomes a question of smart analysis and nudges rather than argument, the further power will shift away from those with good ideas and towards those with good data and lots of money.
- According to former CIA Director Mike Pompeo, this now constitutes a 'serious threat' to democracy – not because it might decisively swing an election, but rather because it chips away at social cohesion and public confidence in the democratic system itself.
- if the American people are arguing, the Russian government believes it is winning.

- democracies can no longer effectively police their information borders.
- Big Tech has built the infrastructure for selling stuff – some of the most sophisticated and connected configurations man has ever dreamt up – and now these infrastructures have been repurposed to win elections.

4) Driverless Democracy

What Happens to Citizens When AI Takes All the Work?

- rather than speculation about a 'jobless future', we should be worrying about growing inequality and whether the coming tech revolution will wipe out the middle class.
- there isn't a single industry that won't shortly be 'transformed'.
- AIs are starting to outperform humans in a small-but-quietly-growing number of narrow tasks.
- the Bank of England recently suggested that up to 15 million British jobs might be unnecessary within a generation.
- Many of these applications are still young. Every new technological revolution unleashes similar speculation, and it is often wide of the mark.
- machines tend to drive up productivity, which in turn stimulates more investment and demand.
- in many instances, productivity gains driven by technology won't mean fewer jobs, but rather improvements in current ones. When AI techniques transform medical diagnosis – within the next few years – it won't mean fewer doctors, but better patient care because our busy doctors won't need to spend hours staring at scans.
- It is far more likely that many truck drivers, without the necessary skills, will drift off to more precarious, piecemeal, low-paid work – perhaps becoming taxi drivers (assuming they still exist) or Amazon warehouse operators or Mechanical Turk labourers who are paid an hourly rate to train software or fill in surveys.

Routine and non

- We should be reasonably confident that AI will result in forward leaps in productivity and overall wealth. The big question is how the spoils of that wealth will be shared out.
- Moravec's Paradox, after the roboticist Hans Moravec who realised that high-level reasoning often requires little computational power, but low-level sensorimotor skills need a lot.
- humans still win hands-down on breadth and range of intelligence.
- The safest, and most likely to be created, work will be 'non-routine'
- non-routine jobs tend to be either very well or very badly paid. A specialist in machine learning at Starsky Robotics or Google performs a non-routine job, since it involves a lot of intuition, creativity and independent thinking in unpredictable situations.

- It's the jobs in the middle – what you might call 'routine cognitive' jobs – that will be most at risk.
- David Autor, a labour market economist at MIT, calls a 'barbell-shaped economy', a kind of extreme inequality. Anyone with the skills, diligence, money or fortune to work closely with technology – and especially AI – will likely see huge leaps in productivity and wages.
- plenty more low-paid, insecure service jobs that won't disappear due to automation, too.
- The labour market in 2030: either a well-paid job at Facebook, or the opportunity to deliver food on a bicycle on minimum wage to these busy and important people.
- 'There is no economic law that says that all workers, or even a majority of workers, will benefit from technological progress.'
- The Second Machine Age <https://www.amazon.co.uk/dp/0393350649>
- Skilled workers, they explain, tend to benefit most from new technologies, while others fall further behind.
- In addition to favouring more skilled workers, digital technology also increases the financial returns to capital owners over labour.
- Machines don't demand a share of the profits, which means any machine-driven productivity gains accrue to whoever owns them, and that's usually the wealthy.
- While some degree of inequality is inevitable and necessary in a free market economy, too much is bad for democracy.
- a healthy democracy depends on a vibrant, sizeable middle class.
- 'barbell economy' would result in, among other things: a shrinking tax base, growing levels of crime, depression, addiction and infant mortality, lower life expectancy and poorer health.
- The more unequal life gets, the less we spend time with people not like ourselves, and the less we trust each other.

Epilogue: Universal Basic Income

- No one wants to live in a world comprising a handful of trillionaires and hordes of unemployed or extremely poorly paid people – not even the trillionaires.
- If the things that people gain from work – economic means, structure, purpose – can be achieved in other ways, that's worth exploring.
- society will have to change dramatically,' he replied. 'We've been through many of these changes before. Look, I understand that people have this spirit of "I'm going to hang on to the past at all costs [At this, Sam clenched his fists, looked up to the sky, and waved his arms] and I hate progress and I hate change"
- The winners always convince themselves that they deserve their small fortunes and that they are helping society become more connected, even as they profit from tearing it apart.
- a barbell-shaped economy where socially progressive tech millionaires live in gated communities well away from the masses who they either fear, patronise or detest. The feeling would, of course, be mutual.

5) The Everything Monopoly

How the Tech Giants are Taking Over the World

- in the coming years probably the most pressing – illustration of how digital tech drives inequality is the creation of massive tech monopolies.
- Why would I use the quite good local taxi firm when I can use brilliant Uber?
- networks can grow exponentially.
- Network effects are so powerful because they are self-reinforcing.
- All this means that the best provider can capture entire industries more easily, creating winner-takes-all sectors.
- rather than the hoped-for long tail of successful small vendors selling to niche markets, we instead have a few massive winners and little else.
- They talk about the benefits of free markets, while at the same time betting the venture capital on monopolies.
- the top companies in the US that spend the most on research and development are ‘the big five’: Amazon, Alphabet (Google’s holding company), Intel, Microsoft and Apple. And, if anyone does threaten to compete with them, they have enough cash reserve to simply buy them out before their position is challenged.
- tech firms are now converting their economic power into political influence.
- policy-makers and tech firms tend to be comprised of similar people with shared views and assumptions.
- Here’s my prediction: in the next decade or so, a small number of tech firms will get an edge in AI and smart manufacturing and create the biggest cross-industry monopolies that have ever existed.
- the public sector is predictably understaffed and under-skilled.

Soft power

- there is usually a corrosion of politics, because wealthy and powerful people will always wish to maintain and increase their power.
- Associate Supreme Court Justice Louis Brandeis said that ‘we can either have democracy in this country or we can have great wealth concentrated in the hands of a few, but we can’t have both’
- If tech monopolies carry on their seemingly unstoppable growth and continue to transfer their economic power into political influence (and the entire history of modern capitalism strongly suggests that they will), groups that are less well-positioned will switch off from politics entirely, creating a downward spiral in which politics will descend into a game of rich companies and politicians discussing positions and ideas among themselves.
- people were correct to think there is an economic and political elite of shared interests

- Over the years, most democracies have developed anti-trust legislation to guard against this. But, especially in the US, such legislation is designed around the idea that monopolies are bad for the public only when prices start going up or consumer welfare is damaged.
- Today's tech firms are different beasts, because they often push prices down and are generally excellent for consumers.
- We need to reconsider what modern monopolies look like using non-price metrics. The threat tech monopolies pose to democracies is about more than the prices they charge: it's the concentration of power, data and control over the public space – and their ability to wield this power over a growing number of economic activities, especially in the infrastructure and technologies of the future.
- Firstly, political parties are dependent on tech firms in ways that they are not on other companies. Every politician, with only a few exceptions, values the support of business.
- these massive digital platforms also gives these companies the unprecedented opportunity to tweak and nudge the public debate in subtle-but-beneficial ways.
- That a small clique of private companies have so much power over the structure and content of public debate, what information we receive and how we communicate seems to me completely and utterly insane
- civil society itself is becoming arranged around platforms and abstractions rather than alert citizens practised in locally rooted action. The nightmare scenario would involve infantilised consumer-citizens hooked on and desperate for cheap and accessible goods and services, with no questions or strings attached – millions of convenience addicts, ready to mobilise at a moment's notice if an update alert tells them to.
- citizens getting together freely to do things is the way they are educated to be 'free and independent actors' rather than supplicants of the state or corporate interests.
- psychologist Sherry Turkle points out in her book of the same title, we are often 'alone, together', especially when online, chatting without forming meaningful bonds or learning the art of uniting for a common purpose.
- Finally, the great tech monopolies have prospered at the expense of journalism, the traditional 'fourth estate' and one of the few institutions that can shine a light on them.
- print advertising and sales revenue is down, because fewer people read the physical paper. Online advertisers are more interested in volume than quality, and so the link between advertising spends and quality output is fractured. And because there is now so much content online, the ad spend per article is tiny.
- most journalists, imperfect though they are, do have a commitment to 'the best available version of the truth' and to holding the powerful to account.
- almost every story that uncovers shadowy influences in our politics – lobbying, manipulation, corruption – is the result of painstaking, expensive journalism
- if the tech gets more complicated, more pervasive and more political (and it will) then we will need ever-more-careful – and probably extremely expensive – investigations to uncover what's going on.
- We need our best and most fearless minds to tackle questions like:
 - how are algorithms run, and in whose interest?

- What new injustices is tech creating?
- Where is political influence being applied at the local level?
- Which AI firms and new capabilities are Google buying, and why?
- And what might they do with them?
- These are extremely difficult questions to answer. Some – like the mysterious ad tech infrastructure, surely one of the most-powerful and least-understood aspects of online life – are extremely technical.
- Tech companies could become even less subject to the investigations that could keep their growing power in check.

Economic to political to cultural

- All technology encodes within it certain values and assumptions about how the world works.
- The medium, remember, is the message. And the medium of digital technology, as a sector, is now monopolising the whole economy.
- Silicon Valley runs according to a Faustian pact: money in exchange for world-changing ideas.
- investment brings with it new responsibilities, and suddenly there are profit margins, quarterlies and growth targets.
- tech is just the latest vehicle for very rich people to use well-tested techniques of buying political influence, monopolistic behaviour and regulation avoidance, to help them become even richer.
- Over the years, the big tech firms have very carefully cultivated the Californian Ideology: even though they are massive multi-billion-dollar corporations with huge PR teams, they pitch themselves as anti-establishment; even though they are built on a model of data extraction and surveillance capitalism, they purport to be promoting exciting and liberating technology; even though they are dominated by rich white guys, they talk of social justice and equality.
- The worse these companies behave and the richer they become, the more they spend on looking cool and talking about fairness and community.
- Wealthy corporations cultivate the popular ideas of the day not just by direct pressure, but also by funnelling money – through think tanks, TED Talks, grants, sponsorships and consulting – towards individuals and ideas that see the world as they do.
- ‘The Californian Ideology’, a fusion of the cultural bohemianism of San Francisco and entrepreneurial free market zeal. This ideology, they thought, was appealing because it offered a way out of the traditional political struggles over wealth distribution or fairness.
- believing it all means the tech firms march off into the future and then come back and hand us a map to guide us through it.
- And to whom do we look in order to solve our collective social problems? It’s no longer the state, but the modern tech-geek superhero.
- Total victory for the monopoly is not over economics or politics – it’s over assumptions, ideas and possible futures. Because when that happens, Big Tech won’t need to lobby or

buy out competitors. They will have so insinuated themselves in our lives and minds, that we won't be able to imagine a world without them.

6) Crypto-Anarchy

Does Total Liberty Lead to the End of the State?

- the end-point of this revolution is more far-reaching than its supporters realise.... Most liberals have been very short-sighted about this, because they want total freedom and equality, without realising that the two are sometimes in tension.
- Crypto-anarchy is dynamite against state control because it challenges the government's authority to coerce people within its borders and to control information
- Rousseau wrote that on birth we enter into a social contract where society grants us rights but also assigns us responsibilities, which the state is able to enforce by violence... Crypto-anarchists want to opt out of the latter, but that will come at the cost of the former.
- The more connected we are, the more vulnerable we are.
- There are already plenty of crypto-anarchist corners of the internet where the king's writ barely runs.
- Part of the 'deal' of living under a democracy is that we give up certain individual liberties in order to secure other collective rights, most obviously security. The rise of crypto-anarchy means that governments might soon struggle to hold up their end of this bargain.
- If history is anything to go by, the most crypto-savvy will be able to engage in all sorts of spectacular and untraceable tax evasion, and a greater burden will fall on an increasingly aggrieved and angry middle class.
- Lots of privacy activists believe in encryption for very honourable and educated reasons. Most have no intention of creating a stateless crypto-anarchic utopia. But that is where we might end up.
- 'We're about to see the burn-off of useless eaters,' he added, only half-joking. 'Approximately four to five billion people on our planet are essentially doomed: crypto is about making the world safe for the one per cent.' That's the final realisation of the crypto-anarchist fantasy.

Conclusion: Say Hello to the Future

- A growing number of people from both the left and the right of politics imagine that the falling cost of goods and higher machine-driven productivity will produce a world of plenty and the end of meaningless work. Our lives will be happier, easier and more fulfilling. Greater connectivity and more information will continue to make us generally wiser, better informed and hopefully kinder. But, to make sure people aren't left behind,

something akin to a universal basic income will be needed to spread the wealth around. For many people this is the utopian scenario. By contrast, the dystopian scenario is that central governments will gradually lose the ability to function properly. Inequality will increase to a point where a tiny number of people end up with all the tech and all the wealth and everyone else has no choice but to scratch out a living serving the winners. Governments will lose their authority, power and right to represent. And, as order slowly breaks down, the richest will disappear into heavily defended forts, as in Ayn Rand's *Atlas Shrugged*. One man's nightmare in another's fantasy: for the hard-line crypto-anarchists like Timothy May, this is a necessary and welcome step on the path to a post-state paradise of cryptocurrencies and borderless virtual communities.

- Growing inequality, which I think seems unavoidable at this point, would worsen many social problems, including depression, alcoholism and crime. As Pickett and Wilkinson argue in *The Spirit Level*, greater economic inequality in a country results in more big government because the demand for police, healthcare, prisons and social services all go up.
- the real threat is that large numbers of people conclude that democratic values and institutions no longer solve social problems, reduce crime or create jobs.
- One possibility is a new enthusiasm among governments and citizens for increasingly authoritarian anti-democratic techno-solutions to the problems democracy seems ill-equipped to handle.
- Over the last 200 years, individual liberty and wealth have grown hand-in-hand, because freedom was good for the economy, and that economy produced more well-off people who valued freedom.
- What if economic growth in the future no longer depended on individual freedom and entrepreneurial spirit, but on capital and the ownership of smart machines that can drive research and entrepreneurship? What need would the rich then have for the poor they neither knew nor liked?
- This is why the predicted decline of the middle class is so worrying. They are our bulwark against this dystopia.
- the middle class, rather than wealthy progressive liberals, have been its most ardent supporters. This is why the digital addiction, the erosion of free will, the barbell-shaped economy and the mobbish divisions I've warned about are so serious. If what was traditionally the middle class becomes sufficiently enfeebled by growing inequality and too addicted and dependent on machines, it will neither spot what's coming nor have the time, inclination or resources to act.
- Many of us won't notice, and those who do mostly won't care.
- Liberating gadgets and tech feel intuitively like they're good for democracy, because they're good for individual freedom.
- Digital technology is behind the slow unravelling of power and control in democracies. The obvious monster is Scylla – turbo-charged inequality and social breakdown. But in trying to avoid it, democracies could end up in the thrall of Charybdis, a digitally powered techno-authoritarian, and wind up with China and Russia undermining democracy in the name of order and harmony.

- Like artificial intelligence, democracy is a 'general purpose' technology.
- While this book has examined the problems of technology, many of those failures are partly down to democracies' inability to keep up with the rapid changes taking place.

7) 20 Ideas to Save Democracy

Alert, independent-minded citizens invested with moral autonomy

- **OWN YOUR OPINION**
 - While a shortage of time and attention in our ever-accelerating culture means we are always looking for help to make our choices and decisions, whether from a comparison website or Google Maps, always beware of outsourcing the responsibility to think for yourself. What can seem helpful in the short term will enfeeble you in the long term. This is all the more dangerous when it comes to making political and moral decisions.
- **FIGHT DISTRACTION**
 - Being yourself is not a given in the digital age; it takes real effort and investment to assert and defend what John Stuart Mill called 'the freedom of mind'. Think of every micro-gesture online as a political statement that can have an impact, and deserves your attention. Plan your personal time and space carefully, or you'll become a slave to internet addiction and the relentless, frenetic nature of life online – at the cost of your powers of concentration and focus. Have switch-off times, avoid the 'checking cycle' and never, never hit refresh. As with all addictive practices, you need to moderate yourself with real discipline. Think of it as part of your duty to be an alert citizen.
- **A NEW DIGITAL ETHICS**
 - In line with ex-Google designer Tristan Harris's 'Time Well Spent' movement and his championing of 'meaningful interactions', we need to shape a new digital ethic that is shared by the tech giants and encourages them to design services that aid human well-being not just maximise clicks. There must be a firm distinction ruled between ethical and unethical persuasion. The attention economy must be replaced with an economy of human value.

A democratic culture with a commonly agreed reality and a spirit of compromise

- **SMASH YOUR ECHO CHAMBER**
 - It is very easy to blame others, but all of us have a responsibility to uphold decorum online. A helpful starting point is to make a concerted effort to listen to what your opponents are saying, rather than dismissing them or suspecting them of having nefarious motives. Try the 'principle of charity', which means seeking

out the best possible interpretation of your opponent's view and working from there. Politics should be raucous and argumentative, but also based on the underlying belief that rivals can have reasonable differences of opinions. Make a deliberate effort to break out of your echo chamber by seeking alternative information sources, joining new Facebook groups or creating different feeds. Place yourself in the position of someone unlike yourself, taking that charitable frame of mind with you. And always remember the golden rule of the internet: no one is ever as annoying in real life as they seem online.

- **TEACH CRITICAL THINKING**

- It's not all on us citizens. Our education system needs to respond to the overwhelming and confusing information world. Every school should teach the critical thinking necessary to navigate the internet sceptically. The ability to judge the merits of different pieces of information isn't new, but a specific body of skills and knowledge is now needed: a combination of 'classic' techniques (such as source verification), new knowledge about how the digital world works (such as algorithms or video splicing) and a deep understanding of our own psychological biases and irrationalities. It's not just young people who are subject to online misinformation. There are plenty of books and resources available to everyone to get savvy when it comes to life online.

- **POLICING THE ALGORITHMS**

- Secretly designed algorithms are already creating data-led bias and invisible injustices and we urgently need a democratic mechanism to hold them to account. Our lawmakers – whether national or international – must create accountability officials who, like IRS or Ofsted inspectors, have the right to send in technicians with the requisite skills to examine Big Tech algorithms, either as random spot-checks or in relation to a specific complaint. While it may no longer be easy to 'look under the bonnet' of modern algorithms, careful examination and oversight are still possible. This is especially true during elections, where governments must demand explanations and justifications for changes in news feeds and search results that might impact on the information the public receives.

- **BREAK THE AD MODEL**

- As they say, 'If you're not paying, you're the product'. An internet economy run on the ad-based model is turning us into data points, and this has to stop. But it only works because of our complicity. Support this change with your political voice – look for greater transparency and use services that don't collect and sell personal data (consider more paid-for premium systems), strengthen your privacy settings and download ad-blockers.

Elections that are free, fair and command public trust

- **UPDATE ELECTION CAMPAIGN LAWS**

- Analogue regulations need to be brought up to speed with the digital reality. The Electoral Commission must insist that all social media spending be recorded and

shared transparently – and be prepared to investigate any misuse of personal data or spending irregularities. 1 Political parties should be required to publish databases of every data point, advert and targeting technique they use during an election. Journalists and academics can then analyse it and expose any wrongdoing. The requirement of transparency should keep campaigns (slightly more) honest, and even discourage the more sinister techniques, like psychographics.

- CELEBRATION DAY

- The more micro-targeted we are, the narrower the public commons becomes. Combatting that means creating opportunities for citizens to engage with ideas and people outside their own bubbles. Election days should be public holidays, providing an opportunity for citizens to reflect on the dazzling combination of promises, pledges, half-truths and bullshit they've been subjected to over the course of the campaign. This day (or perhaps the day before, because there are legal limits on campaigning on the day of an election itself) should include hustings, debates and meet-up groups.

- BOT-WATCH

- Banning them will be impossible, so someone needs to keep track of the bots, trolls and other influencers that now work to shift public opinion one way or another during elections. There are already good examples of independent groups keeping a watchful eye on this, like Oxford University's 'computational propaganda' team and the Alliance for Securing Democracy, which was established in 2017 with the aim of countering attacks on democracy, including from online manipulation. Social media platforms have started to take more responsibility for policing their sites, and wherever possible they should work with these watchdog organisations to share data, intelligence and expertise in identifying manipulation techniques and make them known to the public.

Manageable levels of equality, and a vibrant middle class with a shared investment in society

- SPREAD THE WEALTH

- Creating the relatively stable and strong middle classes of the last century did not happen by chance – we need the same level of imagination and intervention today to manage the transition of our economies. This will almost certainly require more government intervention in the economy. One way is heavy investment in retraining schemes and incentivising job creation, especially in emerging industries like climate change adaptation, bio-tech and the health sector. Transport for London and other local authorities should build their own versions of popular apps or products (like Uber), where the profit stays with the workers, rather than going to the venture capitalists. Governments should also invest more in building (or convening standards) for the underlying architecture of

the future economy, such as the driverless cars network, which should be a publicly owned and publicly run (or at least publicly regulated) utility. This would be a platform on which car companies could compete fairly.

- **ROBOT TAXES**

- We will need new ways to raise taxation – land, resource and carbon taxation all need to be re-examined because corporation and income tax are both likely to decrease in coming years. One way is to levy a tax on robots that displace human workers. If a human was working in a factory earning £ 25k and is replaced directly by a robot, the owner of the machine should be taxed at broadly the same rate. Measurement and compliance will be difficult, but taxing robots would in reality just be a new type of tax on capital – with the benefit of it being raised in the jurisdiction where the robot worked, which is simpler than trying to squeeze corporation tax out of a company ‘based overseas’.

- **NEW SAFETY NETS**

- As the economy changes, we need to experiment with new forms of wealth distribution and social security. While universal basic income is a popular idea at the moment I don’t think it will work economically or socially. But it is worth testing further. The key to future employment is likely to be continuous learning and skills development because the labour market is likely to change quickly as new technology is adopted. People can no longer expect to leave school or university with a set of skills that will see them through to retirement. Therefore we should pilot a ‘Universal Training Income’, where citizens have the right to be paid by the state to retrain in certain industries. This is a way to encourage people to keep developing professionally in order to pick up the skills needed for the future.

- **WORKERS’ RIGHTS**

- As more jobs become precarious, the middle class will depend increasingly on secure rights and decent pay. Enforcement of minimum wages and sick pay in the gig or broader ‘precarious’ sector is derisory and needs to be toughened up. We also need to reverse the trend of profit accruing disproportionately to capital rather than labour. One way to do that is for governments to make it easier for members of the gig economy – drivers, cyclists, handymen – to become unionised, for example requiring gig economy companies to support a platform for their workers to organise.

A competitive economy and an independent civil society

- **FAIR TRADE BROWSING**

- We users have built the modern mega-monopolies, and our ongoing addiction to free digital services (and cheap taxis) is making them stronger. Some of the responsibility lies with people who use these apps or services. We need to be aware that cheap or free services have invisible costs: whether that’s your own rights or those of the workers who are employed by the companies that run them. We need to break the monopolies through our online choices – we can stop

feeding the data monsters. There are lots of smaller, ethical companies providing social media, internet search engines, taxis or home rentals. Research them and be responsible in your decisions – look out for those that have ethical data usage, share profits fairly with workers and are peer-to-peer or open source. They might be more expensive and less efficient, but we should realise this is a price worth paying. And remember that good journalism needs to be paid for, so make a point of subscribing or donating to it. That includes local newspapers, which are both a source of local accountability and a training ground for the next generation of journalists.

- ANTI-TRUST

- There needs to be a re-conception of the modern monopoly, based on some combination of data, market share or cross-market holdings – price or consumer welfare are no longer sufficient metrics. Governments need to be more confident in bringing anti-trust cases to break up these new monopolies where appropriate, and in creating local regulations and tough privacy controls to prevent exploitation. The General Data Protection Regulation (GDPR) which is due to come into law across Europe shortly after this book goes to print, is a good example and must be enforced with vigour.

- SAFE AI FOR GOOD

- Artificial Intelligence must not become a proprietary operating system owned and run by a single winner-takes-all company. However, we cannot fall behind in the international race to develop strong AI. Non-democracies must not get an edge on us. We should encourage the sector, but it must be subject to democratic control and, above all, tough regulation to ensure it works in the public interest and is not subject to being hacked or misused. 2 Just as the inventors of the atomic bomb realised the power of their creation and so dedicated themselves to creating arms control and nuclear reactor safety, so AI inventors should take similar responsibility. Max Tegmark's research into AI safety is a good example of this.

A sovereign authority that can enforce the people's will – but remains accountable to them

- THE TRANSPARENT LEVIATHAN

- Maintaining law and order in the coming years will require a significant increase in law enforcement agencies' budgets, capabilities and staff numbers. This means recruiting a new wave of 'digital police' to patrol the virtual streets and developing new forms of online intelligence, engagement and forensics. This will make civil liberties groups understandably worried. Therefore, any increases in policing powers will need a commensurate increase in oversight and scrutiny. For example, in the UK, security-cleared members of the public should sit on the

Intelligence and Security Committee and the Independent Police Complaints Commission.

- **REGULATE BITCOIN**

- Bitcoin and blockchain technologies are exciting but currently running out of control. Where possible, cryptocurrencies should be regulated by the financial authorities (especially so-called 'initial coin offerings' and coin exchanges, where money is first raised or exchanged). They should be subject to the same regulations that currently exist to combat money laundering and the financing of terrorism. This would require coin exchanges and wallet services to report suspicious transactions where possible, and to even carry out due diligence for customers trading over certain levels. 3 The tax authorities also need to urgently update tax guidance for how to pay tax on crypto-assets, and to enforce it. This experimentation must include tax raising: blockchain databases could potentially make tax raising far smoother and more efficient. The Bank of England should create its own 'official' cryptocurrency, which could be used by vendors for fast and efficient payments – but in a way that's regulated.

- **FUTURE GOVERNMENT**

- The technologies in this book might be currently undermining democracy, but they also offer exciting opportunities to dramatically improve the way that government works. We need a bold programme of reform, which brings democracies up to speed. First, there's scope for government departments to make better and more efficient decisions using data and AI. Smart meters could help save energy bills for people, welfare payments could be better targeted and police resources better allocated – provided this is all done ethically, with public involvement and with humans in the loop. Similarly, powerful AI used in the public interest could yield remarkable benefits in health research, spending decisions, intelligence, strategy and much more. Beyond that, technology like blockchain could dramatically improve how people can hold their governments to account. Central and local governments should explore ways to use blockchains to improve the functions of democracy. For example, we're used to governments making regular spending pledges at election time, which then simply evaporate. Blockchain-based accounting and contracts could help connect pledges with actual outputs – transforming how the public can track the way our taxes are spent. The UK Government should investigate whether blockchain-based identity systems – whether for land ownership, health records or passports – could improve citizen data security and efficiency, without the government accruing too much power. 4 There are many exciting new ways to involve people more in political decision-making too, including secure online voting; but these need to be adopted cautiously – votes every week on every subject is a bad idea. Taken together, these suggestions all amount to a defence of politics over technology. Rapid technological change can empower, liberate and enrich us, but only if it is subject to powerful democratic systems which have the authority and power to act – but are also accountable to people and the public interest. It's easy to forget

when surrounded by iPhones and VR headsets what can be achieved when democratic governments embrace powerful technologies and shape them in the public interest. In July 1969, as the private sector in the US was obsessing over advertising on colour television, a human first set foot on the moon, thanks to government scientists, government research and public funding. And just three months later, to far less fanfare, another group of government-funded academics, working on a computer-sharing project, transmitted a message from the University of California Los Angeles Sigma 7 Host Computer to the SDS 940 Host Computer at the Stanford Research Institute. It was the first time two computers had remotely communicated, and the 'ARPANET' was born. A decade and a few adjustments later this government research project had a new name: the internet.

Manoj's summary

Democracy and tech are incompatible

- Democracy was built during a time of nation-states, hierarchies, deference and industrialised economies.
- Tech is non-geographical, decentralised, data-driven, subject to network effects and exponential growth.
- Put simply: democracy wasn't designed for this.
- Six key pillars that make democracy work
 - Active Citizens: Alert, independent-minded citizens who are capable of making important moral judgements.
 - A Shared Culture: A democratic culture which rests on a commonly agreed reality, a shared identity and a spirit of compromise.
 - Free Elections: Elections that are free, fair and trusted.
 - Stakeholder Equality: Manageable levels of equality, including a sizeable middle class.
 - Competitive Economy And Civic Freedom: A competitive economy and an independent civil society.
 - Trust In Authority: A sovereign authority that can enforce the people's will, but remains trustworthy and accountable to them. In the following chapters I will examine

From psychology, to big data algorithms

- The birth of psychology
 - Psychology had been developing in Europe – and especially Germany – for some years, and was imported to the US before the First World War. (1914)

- American psychology emerged as a serious academic discipline alongside the beginnings of mass consumer culture. (1920s)
- The American variety diverged from the European fascination with philosophical whimsies like 'free will' and 'the mind'. It looked instead at how to turn the question of human decision-making into a hard science that could be used by business.
- Algorithms & big data take over
 - In 2008 the editor-in-chief of Wired Chris Anderson hailed the 'end of theory'.
 - Scientific theories were unnecessary, he said, now that we have big data.
 - Who knows why people do what they do?
 - The point is they do it, and we can track and measure it with unprecedented fidelity.'
 - The Holy Grail for the social media giants, just as it always has been for all ad men, is to understand you better than you understand yourself.
 - Humans are often quite predictable, and with enough data – even trivial or meaningless scraps such as what songs you play – algorithms can learn very important things about what sort of person you are.
 - The notion that with enough data the mysteries of the human mind can be understood and influenced is perhaps the dominant philosophy in Silicon Valley.
- Unintended consequences
 - The loss of free will
 - Big data algorithms throw up important questions regarding new locations of power, influence and control.
 - If data analysts or algorithms understand us better than we do, they can manipulate or control us in ways we can't understand or uncover.
 - For centuries we have believed that we are the ultimate source of meaning, and that human free will is the highest form of authority. That is our own founding myth: that we didn't conquer the world because we were stronger and bigger than other animals, but because we were smarter.
 - We consider that democracy has a special moral value and purpose because we regard human judgement and moral choices as uniquely valuable.
 - The loss of power
 - The modern equivalent of the recipe for Coca-Cola – most regulators have no idea where injustice might occur, and much less how to keep on top of it.
 - tech is just the latest vehicle for very rich people to use well-tested techniques of buying political influence, monopolistic behaviour and regulation avoidance, to help them become even richer.
 - An unjust world

- They might look and sound very objective but algorithms always start with a question framed by whoever is in charge. As a result they tend to reproduce the biases of their creators.
- Once we start relying on it, we'll never stop.
- To give in to this urge (of handing power to AI) will be easy, but it would condemn us to losing the ability to think freely, and to spiral into ever greater reliance on machines.
- Government surveillance
 - Intelligence agencies don't need to spy on you anymore; they can simply go to the technology companies and prise out of them what they need.
 - Being always under surveillance and knowing that the things you say are collected and shared creates a soft but constant self-censorship.
 - This is damaging to the citizen's ability to exercise moral judgement in their lives. Developing the faculties to think for oneself requires that people say controversial things, make mistakes and learn from them.
 - The ability to forget is an important part of self-development, because changing one's mind is how we are able to mature and grow.

How the internet broke democracy

- Tribalism
 - Faced with infinite connection, we find the like-minded people and ideas, and huddle together.
 - The result is a fragmentation of singular, stable identities – like membership of a political party – and its replacement by ever-smaller units of like-minded people.
 - The key thing is that the more possible connections, the greater the opportunities to cluster with ever more refined and precise groups.
 - This produces a powerful sense of belonging and solidarity with a group they never even thought about until they kept reading how oppressed they were.
 - Tribalism is understandable, but ultimately it is damaging to democracy, because it has the effect of magnifying the small differences between us, and transforming them into enormous, unsurpassable gulfs.
- 'System one' thinking
 - There are two basic systems that govern human behaviour.
 - System one thinking is fast, instinctive and emotional. It's the reptilian brain, running on instinct.
 - System two thinking is slow, deliberative and more logical. It sometimes, but not always, acts as a check on those wilder rages.
 - Modern democracies aspire to run on 'system two' logic,
 - The internet, by contrast, more closely resembles 'system one': everyone and everything is immediate, instinctive and emotional.

- The modern citizen is expected to sift through an insane torrent of competing facts, networks, friend requests, claims, blogs, data, propaganda, misinformation, investigative journalism, charts, different charts, commentary and reportage.
- This is confusing and stressful, and so we lean on easy and simple emotional heuristics to make sense of the noise.
- The internet has not created this problem. We've always had our affiliations and always been roused by emotion... But the internet has taken this to a whole new level.
- Consequences
 - System one political thinking
 - Tribalism and 'system one' thinking are the direct products of information overload.
 - Bubbles
 - The internet doesn't only create small tribes: it also gives easy access to enemy tribes. I see opposing views to mine online all the time; they rarely change my mind, and more often simply confirm my belief that I am the only sane person in a sea of internet idiots.
 - Fake news
 - Algorithms aren't there to optimise what is truthful or honest – but to optimise watch-time. 'Everything else was considered a distraction,'
 - Sensationalist news
 - The problem is that no one is intentionally programming it to be sensationalistic – it's just a mathematical response to our general preference for edgy and outrageous videos.
 - Manipulation
 - Tech giants have turned these psychological weaknesses into a structural feature of news consumption and exploited them for money. Their financial incentives sometimes run directly contrary to the democratic need for people to be informed and draw from a wide range of accurate sources and ideas.
 - Lack of compromise during political debate
 - The nature of digital communication rarely allows for understanding of other people's mindset or background, because interaction with rivals or opponents is typically swift, fleeting and emotionally heightened.
 - Because we don't know or see the people we are speaking to (and they don't know or see us), because communication is instant, seemingly without rules or accountability, and because it all takes place in what feels like an alternative reality, we do things we wouldn't in real life.