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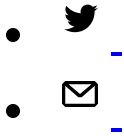
**The goal is to automate us:
welcome to the age of
surveillance capitalism**

[The Observer
Technology](#)

Shoshana Zuboff's new book is a chilling exposé of the business model that underpins the digital world. Observer tech columnist John Naughton explains the importance of Zuboff's work and asks the author 10 key questions

[John Naughton](#)

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▲ 'Technology is the puppet, but surveillance capitalism is the puppet master.' Photograph: Getty Images

We're living through the most profound transformation in our information environment since Johannes Gutenberg's invention of printing in circa 1439. And the problem with living through a revolution is that it's impossible to take the long view of what's happening. Hindsight is the only exact science in this business, and in that long run we're all dead. Printing shaped and transformed societies over the next four centuries, but nobody in Mainz (Gutenberg's home town) in, say, 1495 could have known that his technology would (among other things): fuel the Reformation and [undermine the authority of the mighty Catholic church](#); enable the rise of what we now recognise as modern science; create unheard-of professions and industries; [change the shape of our brains](#); and [even recalibrate](#) our conceptions of childhood. And yet printing did all this and more.



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Why choose 1495? Because we're about the same distance into our revolution, the one kicked off by digital technology and networking. And although it's now gradually dawning on us that this really is a big deal and that epochal social and economic changes are under way, we're as clueless about where it's heading and what's driving it as the citizens of Mainz were in 1495.

That's not for want of trying, mind. Library shelves groan under the weight of books about what digital technology is doing to us and our world. Lots of scholars are thinking, researching and writing about this stuff. But they're like the [blind men trying to describe the elephant](#) in the old fable: everyone has only a partial view, and nobody has the whole picture. So our contemporary state of awareness is – as Manuel Castells, the great scholar of cyberspace once put it – one of “informed bewilderment”.

Which is why the arrival of Shoshana Zuboff's new book is such a big event. Many years ago – in 1988, to be precise – as one of the first female professors at Harvard Business School to hold an endowed chair she published a landmark book, *The Age of the Smart Machine: The Future of Work and Power*, which changed the way we thought about the impact of computerisation on organisations and on work. It provided the most insightful

account up to that time of how digital technology was changing the work of both managers and workers. And then Zuboff appeared to go quiet, though she was clearly incubating something bigger. The first hint of what was to come was a pair of startling essays – [one in an academic journal](#) in 2015, the [other in a German newspaper](#) in 2016. What these revealed was that she had come up with a new lens through which to view what Google, Facebook et al were doing – nothing less than spawning a new variant of capitalism. Those essays promised a more comprehensive expansion of this Big Idea.

And now it has arrived – the most ambitious attempt yet to paint the bigger picture and to explain how the effects of digitisation that we are now experiencing as individuals and citizens have come about.

The headline story is that it's not so much about the nature of digital technology as about a new mutant form of capitalism that has found a way to use tech for its purposes. The name Zuboff has given to the new variant is "surveillance capitalism". It works by providing free services that billions of people cheerfully use, enabling the providers of those services to monitor the behaviour of those users in astonishing detail – often without their explicit consent.

"Surveillance capitalism," she writes, "unilaterally claims human experience as free raw material for translation into behavioural data. Although some of these data are applied to service improvement, the rest are declared as a proprietary *behavioural surplus*, fed into advanced manufacturing processes known as 'machine intelligence', and fabricated into *prediction products* that anticipate what you will do now, soon, and later. Finally, these

prediction products are traded in a new kind of marketplace that I call *behavioural futures markets*. Surveillance capitalists have grown immensely wealthy from these trading operations, for many companies are willing to lay bets on our future behaviour.”

While the general modus operandi of [Google](#), Facebook et al has been known and understood (at least by some people) for a while, what has been missing – and what Zuboff provides – is the insight and scholarship to situate them in a wider context. She points out that while most of us think that we are dealing merely with algorithmic inscrutability, in fact what confronts us is the latest phase in capitalism’s long evolution – from the making of products, to mass production, to managerial capitalism, to services, to financial capitalism, and now to the exploitation of behavioural predictions covertly derived from the surveillance of users. In that sense, her vast (660-page) book is a continuation of a tradition that includes Adam Smith, Max Weber, Karl Polanyi and – dare I say it – Karl Marx.



Digital technology is separating the citizens in all societies into two groups: the watchers and the watched

Viewed from this perspective, the behaviour of the digital giants looks rather different from the roseate hallucinations of *Wired* magazine. What one sees instead is a colonising ruthlessness of which John D Rockefeller would have been proud. First of all there was the arrogant appropriation of users’ behavioural data – viewed as a free resource, there for the taking. Then the use of patented methods to extract or infer data even when users had

explicitly denied permission, followed by the use of technologies that were opaque by design and fostered user ignorance.

And, of course, there is also the fact that the entire project was conducted in what was effectively lawless – or at any rate law-free – territory. Thus Google decided that it would digitise and store every book ever printed, regardless of copyright issues. Or that it would photograph every street and house on the planet without asking anyone's permission. [Facebook launched its infamous "beacons"](#), which reported a user's online activities and published them to others' news feeds without the knowledge of the user. And so on, in accordance with the disrupter's mantra that "it is easier to ask for forgiveness than for permission".

When the security expert Bruce Schneier wrote that "surveillance is the business model of the internet" he was really only hinting at the reality that Zuboff has now illuminated. The combination of state surveillance and its capitalist counterpart means that digital technology is separating the citizens in all societies into two groups: the watchers (invisible, unknown and unaccountable) and the watched. This has profound consequences for democracy because asymmetry of knowledge translates into asymmetries of power. But whereas most democratic societies have at least some degree of oversight of state surveillance, we currently have almost no regulatory oversight of its privatised counterpart. This is intolerable.

And it won't be easy to fix because it requires us to tackle the essence of the problem – the logic of accumulation implicit in surveillance capitalism. That means that self-regulation is a nonstarter. "Demanding privacy from surveillance capitalists," says Zuboff, "or lobbying for an end to commercial surveillance

on the internet is like asking old Henry Ford to make each Model T by hand. It's like asking a giraffe to shorten its neck, or a cow to give up chewing. These demands are existential threats that violate the basic mechanisms of the entity's survival."

The Age of Surveillance Capital is a striking and illuminating book. A fellow reader remarked to me that it reminded him of Thomas Piketty's magnum opus, [*Capital in the Twenty-First Century*](#), in that it opens one's eyes to things we ought to have noticed, but hadn't. And if we fail to tame the new capitalist mutant rampaging through our societies then we will only have ourselves to blame, for we can no longer plead ignorance.

Ten questions for Shoshana Zuboff: 'Larry Page saw that human experience could be Google's virgin wood'



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▲ Continuing a tradition that includes Adam Smith, Max Weber, Karl Polanyi, Marx... Shoshana Zuboff.

Photograph: Jason Paige Smith for the Observer

John Naughton: At the moment, the world is obsessed with Facebook. But as you tell it, Google was the prime mover.

Shoshana Zuboff: Surveillance capitalism is a human creation. It lives in history, not in technological inevitability. It was pioneered and elaborated through trial and error at Google in much the same way that the Ford Motor Company discovered the new

economics of mass production or General Motors discovered the logic of managerial capitalism.

Surveillance capitalism was invented around 2001 as the solution to financial emergency in the teeth of the dotcom bust when the fledgling company faced the loss of investor confidence. As investor pressure mounted, Google's leaders abandoned their declared antipathy toward advertising. Instead they decided to boost ad revenue by using their exclusive access to user data logs (once known as "data exhaust") in combination with their already substantial analytical capabilities and computational power, to generate predictions of user click-through rates, taken as a signal of an ad's relevance.

Operationally this meant that Google would both repurpose its growing cache of behavioural data, now put to work as a behavioural data surplus, and develop methods to aggressively seek new sources of this surplus.

The company developed new methods of secret surplus capture that could uncover data that users intentionally opted to keep private, as well as to infer extensive personal information that users did not or would not provide. And this surplus would then be analysed for hidden meanings that could predict click-through behaviour. The surplus data became the basis for new prediction markets called targeted advertising.



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▲ Sheryl Sandberg, says Zuboff, played the role of Typhoid Mary, bringing surveillance capitalism from Google to Facebook. Photograph: John Lee for the Guardian

Here was the origin of surveillance capitalism in an unprecedented and lucrative brew: behavioural surplus, data science, material infrastructure, computational power,

algorithmic systems, and automated platforms. As click-through rates skyrocketed, advertising quickly became as important as search. Eventually it became the cornerstone of a new kind of commerce that depended upon online surveillance at scale.

The success of these new mechanisms only became visible when Google went public in 2004. That's when it finally revealed that between 2001 and its 2004 IPO, revenues increased by 3,590%.

JN: So surveillance capitalism started with advertising, but then became more general?

SZ: Surveillance capitalism is no more limited to advertising than mass production was limited to the fabrication of the Ford Model T. It quickly became the default model for capital accumulation in Silicon Valley, embraced by nearly every startup and app. And it was a Google executive – [Sheryl Sandberg](#) – who played the role of Typhoid Mary, bringing surveillance capitalism from Google to Facebook, when she signed on as Mark Zuckerberg's number two in 2008. By now it's no longer restricted to individual companies or even to the internet sector. It has spread across a wide range of products, services, and economic sectors, including insurance, retail, healthcare, finance, entertainment, education, transportation, and more, birthing whole new ecosystems of suppliers, producers, customers, market-makers, and market players. Nearly every product or service that begins with the word "smart" or "personalised", every internet-enabled device, every "digital assistant", is simply a supply-chain interface for the unobstructed flow of behavioural data on its way to predicting our futures in a surveillance economy.

JN: In this story of conquest and appropriation, the term "digital natives" takes on a new meaning...

SZ: Yes, “digital natives” is a tragically ironic phrase. I am fascinated by the structure of colonial conquest, especially the first Spaniards who stumbled into the Caribbean islands. Historians call it the “conquest pattern”, which unfolds in three phases: legalistic measures to provide the invasion with a gloss of justification, a declaration of territorial claims, and the founding of a town to legitimate the declaration. Back then Columbus simply declared the islands as the territory of the Spanish monarchy and the pope.

The sailors could not have imagined that they were writing the first draft of a pattern that would echo across space and time to a digital 21st century. The first surveillance capitalists also conquered by declaration. They simply declared our private experience to be theirs for the taking, for translation into data for their private ownership and their proprietary knowledge. They relied on misdirection and rhetorical camouflage, with secret declarations that we could neither understand nor contest.

Google began by unilaterally declaring that the world wide web was its to take for its search engine. Surveillance capitalism originated in a second declaration that claimed our private experience for its revenues that flow from telling and selling our fortunes to other businesses. In both cases, it took without asking. Page [Larry, Google co-founder] foresaw that surplus operations would move beyond the online milieu to the real world, where data on human experience would be free for the taking. As it turns out his vision perfectly reflected the history of capitalism, marked by taking things that live outside the market sphere and declaring their new life as market commodities.

We were caught off guard by surveillance capitalism because there was no way that we could have imagined its action, any more than the early peoples of the Caribbean could have foreseen the rivers of blood that would flow from their hospitality toward the sailors who appeared out of thin air waving the banner of the Spanish monarchs. Like the Caribbean people, we faced something truly unprecedented.

Once we searched Google, but now Google searches us. Once we thought of digital services as free, but now surveillance capitalists think of us as free.

JN: Then there's the "inevitability" narrative – technological determinism on steroids.

SZ: In my early fieldwork in the computerising offices and factories of the late 1970s and 80s, I discovered the duality of information technology: its capacity to automate but also to "informate", which I use to mean to translate things, processes, behaviours, and so forth into information. This duality set information technology apart from earlier generations of technology: information technology produces new knowledge territories by virtue of its informing capability, always turning the world into information. The result is that these new knowledge territories become the subject of political conflict. The first conflict is over the distribution of knowledge: "Who knows?" The second is about authority: "Who decides who knows?" The third is about power: "Who decides who decides who knows?"

Now the same dilemmas of knowledge, authority and power have surged over the walls of our offices, shops and factories to flood each one of us... and our societies. Surveillance capitalists

were the first movers in this new world. They declared their right to know, to decide who knows, and to decide who decides. In this way they have come to dominate what I call “the division of learning in society”, which is now the central organising principle of the 21st-century social order, just as the division of labour was the key organising principle of society in the industrial age.

JN: So the big story is not really the technology per se but the fact that it has spawned a new variant of capitalism that is enabled by the technology?

SZ: Larry Page grasped that human experience could be Google’s virgin wood, that it could be extracted at no extra cost online and at very low cost out in the real world. For today’s owners of surveillance capital the experiential realities of bodies, thoughts and feelings are as virgin and blameless as nature’s once-plentiful meadows, rivers, oceans and forests before they fell to the market dynamic. We have no formal control over these processes because we are not essential to the new market action. Instead we are exiles from our own behaviour, denied access to or control over knowledge derived from its dispossession by others for others. Knowledge, authority and power rest with surveillance capital, for which we are merely “human natural resources”. We are the native peoples now whose claims to self-determination have vanished from the maps of our own experience.

While it is impossible to imagine surveillance capitalism without the digital, it is easy to imagine the digital without surveillance capitalism. The point cannot be emphasised enough: surveillance capitalism is not technology. Digital technologies can take many forms and have many effects, depending upon

the social and economic logics that bring them to life. Surveillance capitalism relies on algorithms and sensors, machine intelligence and platforms, but it is not the same as any of those.

JN: Where does surveillance capitalism go from here?

SZ: Surveillance capitalism moves from a focus on individual users to a focus on populations, like cities, and eventually on society as a whole. Think of the capital that can be attracted to futures markets in which population predictions evolve to approximate certainty.

This has been a learning curve for surveillance capitalists, driven by competition over prediction products. First they learned that the more surplus the better the prediction, which led to economies of scale in supply efforts. Then they learned that the more varied the surplus the higher its predictive value. This new drive toward economies of scope sent them from the desktop to mobile, out into the world: your drive, run, shopping, search for a parking space, your blood and face, and always... location, location, location.

The evolution did not stop there. Ultimately they understood that the most predictive behavioural data comes from what I call “economies of action”, as systems are designed to intervene in the state of play and actually modify behaviour, shaping it toward desired commercial outcomes. We saw the experimental development of this new “means of behavioural modification” in [Facebook’s contagion experiments](#) and the Google-incubated augmented reality game *Pokémon Go*.



Democracy has slept, while surveillance capitalists amassed unprecedented concentrations of knowledge and power

Shoshana Zuboff

It is no longer enough to automate information flows about us; the goal now is to automate us. These processes are meticulously designed to produce ignorance by circumventing individual awareness and thus eliminate any possibility of self-determination. As one data scientist explained to me, “We can engineer the context around a particular behaviour and force change that way... We are learning how to write the music, and then we let the music make them dance.”

This power to shape behaviour for others’ profit or power is entirely self-authorising. It has no foundation in democratic or moral legitimacy, as it usurps decision rights and erodes the processes of individual autonomy that are essential to the function of a democratic society. The message here is simple: Once I was mine. Now I am theirs.

JN: What are the implications for democracy?

SZ: During the past two decades surveillance capitalists have had a pretty free run, with hardly any interference from laws and regulations. Democracy has slept while surveillance capitalists amassed unprecedented concentrations of knowledge and power. These dangerous asymmetries are institutionalised in their monopolies of data science, their dominance of machine intelligence, which is surveillance capitalism’s “means of

production”, their ecosystems of suppliers and customers, their lucrative prediction markets, their ability to shape the behaviour of individuals and populations, their ownership and control of our channels for social participation, and their vast capital reserves. We enter the 21st century marked by this stark inequality in the division of learning: they know more about us than we know about ourselves or than we know about them. These new forms of social inequality are inherently antidemocratic.

At the same time, surveillance capitalism diverges from the history of market capitalism in key ways, and this has inhibited democracy’s normal response mechanisms. One of these is that surveillance capitalism abandons the organic reciprocities with people that in the past have helped to embed capitalism in society and tether it, however imperfectly, to society’s interests. First, surveillance capitalists no longer rely on people as consumers. Instead, supply and demand orients the surveillance capitalist firm to businesses intent on anticipating the behaviour of populations, groups and individuals. Second, by historical standards the large surveillance capitalists employ relatively few people compared with their unprecedented computational resources. General Motors employed more people during the height of the Great Depression than either Google or Facebook employs at their heights of market capitalisation. Finally, surveillance capitalism depends upon undermining individual self-determination, autonomy and decision rights for the sake of an unobstructed flow of behavioural data to feed markets that are about us but not for us.

This antidemocratic and anti-egalitarian juggernaut is best described as a market-driven coup from above: an overthrow of

the people concealed as the technological Trojan horse of digital technology. On the strength of its annexation of human experience, this coup achieves exclusive concentrations of knowledge and power that sustain privileged influence over the division of learning in society. It is a form of tyranny that feeds on people but is not of the people. Paradoxically, this coup is celebrated as “personalisation”, although it defiles, ignores, overrides, and displaces everything about you and me that is personal.



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▲ 'The power to shape behaviour for others' profit or power is entirely self-authorising,' says Zuboff. 'It has no foundation in democratic or moral legitimacy.'

JN: Our societies seem transfixed by all this: we are like rabbits paralysed in the headlights of an oncoming car.

SZ: Despite surveillance capitalism's domination of the digital milieu and its illegitimate power to take private experience and to shape human behaviour, most people find it difficult to withdraw, and many ponder if it is even possible. This does not mean, however, that we are foolish, lazy, or hapless. On the contrary, in my book I explore numerous reasons that explain how surveillance capitalists got away with creating the strategies that keep us paralysed. These include the historical, political and economic conditions that allowed them to succeed. And we've already discussed some of the other key reasons, including the nature of the unprecedented, conquest by declaration. Other significant reasons are the need for inclusion, identification with tech leaders and their projects, social persuasion dynamics, and a sense of inevitability, helplessness and resignation.

We are trapped in an involuntary merger of personal necessity and economic extraction, as the same channels that we rely upon for daily logistics, social interaction, work, education, healthcare, access to products and services, and much more,

now double as supply chain operations for surveillance capitalism's surplus flows. The result is that the choice mechanisms we have traditionally associated with the private realm are eroded or vitiated. There can be no exit from processes that are intentionally designed to bypass individual awareness and produce ignorance, especially when these are the very same processes upon which we must depend for effective daily life. So our participation is best explained in terms of necessity, dependency, the foreclosure of alternatives, and enforced ignorance.

JN: Doesn't all this mean that regulation that just focuses on the technology is misguided and doomed to fail? What should we be doing to get a grip on this before it's too late?

SZ: The tech leaders desperately want us to believe that technology is the inevitable force here, and their hands are tied. But there is a rich history of digital applications before surveillance capitalism that really were empowering and consistent with democratic values. Technology is the puppet, but surveillance capitalism is the puppet master.

Surveillance capitalism is a human-made phenomenon and it is in the realm of politics that it must be confronted. The resources of our democratic institutions must be mobilised, including our elected officials. [GDPR](#) [a recent EU law on data protection and privacy for all individuals within the EU] is a good start, and time will tell if we can build on that sufficiently to help found and enforce a new paradigm of information capitalism. Our societies have tamed the dangerous excesses of raw capitalism before, and we must do it again.

While there is no simple five-year action plan, much as we yearn for that, there are some things we know. Despite existing economic, legal and collective-action models such as antitrust, privacy laws and trade unions, surveillance capitalism has had a relatively unimpeded two decades to root and flourish. We need new paradigms born of a close understanding of surveillance capitalism's economic imperatives and foundational mechanisms."

For example, the idea of "data ownership" is often championed as a solution. But what is the point of owning data that should not exist in the first place? All that does is further institutionalise and legitimate data capture. It's like negotiating how many hours a day a seven-year-old should be allowed to work, rather than contesting the fundamental legitimacy of child labour. Data ownership also fails to reckon with the realities of behavioural surplus. Surveillance capitalists extract predictive value from the exclamation points in your post, not merely the content of what you write, or from how you walk and not merely where you walk. Users might get "ownership" of the data that they give to surveillance capitalists in the first place, but they will not get ownership of the surplus or the predictions gleaned from it – not without new legal concepts built on an understanding of these operations.

Another example: there may be sound antitrust reasons to break up the largest tech firms, but this alone will not eliminate surveillance capitalism. Instead it will produce smaller surveillance capitalist firms and open the field for more surveillance capitalist competitors.

So what is to be done? In any confrontation with the unprecedented, the first work begins with naming. Speaking for myself, this is why I've devoted the past seven years to this work... to move forward the project of naming as the first necessary step toward taming. My hope is that careful naming will give us all a better understanding of the true nature of this rogue mutation of capitalism and contribute to a sea change in public opinion, most of all among the young.

- *The Age of Surveillance Capitalism* by Shoshana Zuboff is published by Profile (£25). To order a copy for £22 go to guardianbookshop.com or call 0330 333 6846. Free UK p&p over £15, online orders only. Phone orders min p&p of £1.99