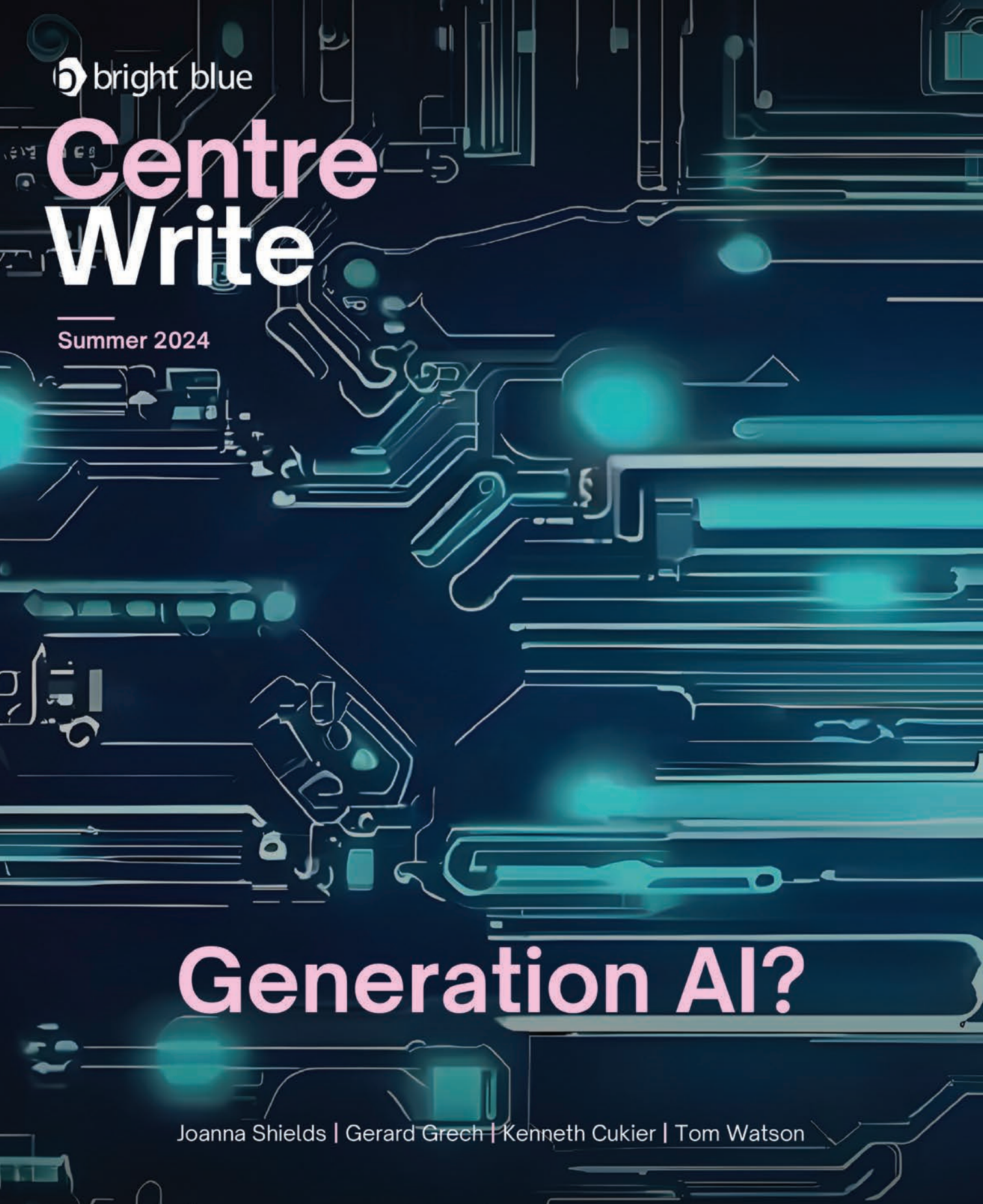

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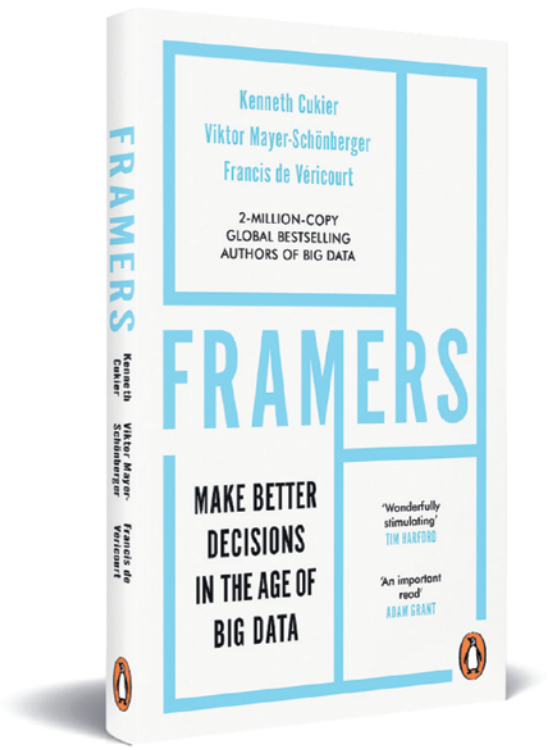
Centre Write

Summer 2024

Generation AI?

Joanna Shields | Gerard Grech | Kenneth Cukier | Tom Watson

IMPROVE POLITICS... BY REFRAMING IT



Kenneth Cukier
Deputy executive editor, *The Economist*

A *Financial Times* Book of the Year

An *Economist* Book of the Year

'Wonderfully stimulating' Tim Harford

'A fascinating look at how humans can stay ahead of the machine' Mustafa Suleyman

BOOK OUT NOW

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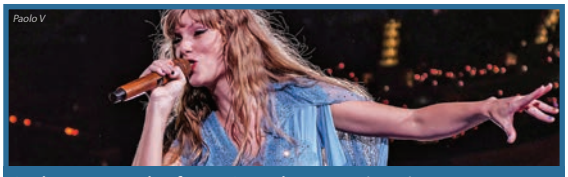

Orchestrating the future? Lord Watson (p.15)

bright blue

Bright Blue is the independent think tank and pressure group for liberal conservatism.

Executive Chair: Ryan Shorthouse
Board of Directors: Alexandra Jezeph, Diane Banks, Phil Clarke & Richard Mabey

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Editors' letter

Sarah Kuszynski and **Emily Taylor** introduce this edition

As the nation braces for polling day, whoever wins the general election would do well to navigate the ever-evolving world of Artificial Intelligence (AI).

Both AI optimists and pessimists acknowledge that AI will be a transformative force – likely in ways that we may not even expect. This edition of *Centre Write* brings together key thinkers from the world of technology, business, academia and politics to highlight where AI will be most beneficial, where troubles are likely to be encountered and where increased regulation may be required.

Our essay from *The Economist* Deputy Executive Editor **Kenneth Cukier** (p.7) sets out the bigger picture, arguing that AI will truly change all areas of our lives.

First, the magazine explores how AI is reshaping politics and democracy.

The former Lord Chancellor, **Sir Robert Buckland KC** (p.10), highlights how online misinformation undermines public trust and empowers authoritarian regimes.

Baroness Shields OBE (p.11), the former Minister for Internet Safety and Security, outlines how social media algorithms must change to fight online misinformation.

The former Elections Minister, **Chloe Smith** (p.12), argues that individual choice is more important than new laws when combatting online misinformation.

Second, we turn to AI's numerous effects on the world of work.

The founding executive of TechNation **Gerard Grech** (p.14), highlights that AI is powering a new age of innovation.

The former Deputy Leader of the Labour Party and Chair of UK Music, **Lord Watson** (p.15), explains that AI can be a useful tool for musicians, but without additional regulation it risks under-mining their work.

The philanthropist, entrepreneur and author **Dame Stephanie Shirley CH** and Google's Technical Director, **Professor Larissa Suzuki** (p.17), show how AI could benefit people with autism.

Co-founder of the Appraise Network, **James Boyd-Wallis** (p.18), outlines the necessity of tackling the UK's ongoing tech skills shortage.

David Caswell (p.20), former Executive Product Manager at BBC News, argues that AI may be the best hope for the news industry to adapt to the digital age.

Juro's **Richard Mabey** (p.21) thinks that technological advancements are the UK's ticket to economic growth.

Professor Bart Selman (p.23) from Cornell University suggests that the very nature of the work we do could change due to AI.

The Startup Coalition's **Kir Nurthi** (p.24) explains how the UK must attract the top AI talent, and Chair of FINTECH Circle, **Susanne Chishti** (p.26) displays the numerous ways in which AI will make financial services more agile.

Third, this magazine includes opinions from a number of thought leaders on how AI could revolutionise our lifestyles and public services.

Multiverse's **Tim Smith** (p.28) details the ways that our education system, especially students and teachers, can and must adapt to AI.

The IEA's **Dr Stephen Davies** (p.29) explains that generative AI could free clinicians from bureaucracy and so make it more humane.

Professor Rose Luckin (p.30) from UCL explains how we must prepare young people for a world with AI.

Ben Scott-Robinson (p.32), the Co-founder of the Small Robot Company, argues that AI can help us avoid a looming food crisis.

Tara Donnelly (p.33), the founder of Digital Care, explores how AI can bring improvements in the quality and outcomes of healthcare, from AI surgical assistants to better preventative medicine.

Last, this magazine explores the need for safe and secure AI in order for it to have positive effects on people's lives.

Bruce Schneier (p.35) from the Harvard Kennedy School debates whether AI could reverse the advantage attackers have over defenders in the cyber domain.

Bright Blue's **Bartek Staniszewski** (p.36) argues that AI's risks are overblown.

Dorothy Chou (p.37), Head of Public Affairs at Google Deepmind, shows us how and why safety is embedded at the heart of AI development.

Tim Gordon (p.38) from Best Practice AI assesses whether AI companies being largely controlled abroad presents risks to the UK economy.

Philosopher and author, **Dr Tom Chatfield** (p.40), explains that any technological tool we use, especially AI, cannot be separated from human values and assumptions, and Aligned AI's **Rebecca Gorman** (p.41) explains that AI is little more than automated stereotyping.

We also sat down with **Greg Clark** (p.42), former Chair of the Science, Innovation and Technology Committee, to ask what AI's most pressing risks and opportunities are.

We hope you enjoy this edition!

Sarah Kuszynski is a Researcher and **Emily Taylor** is Senior Communications and External Affairs Officer at Bright Blue

Chair's note

The centre-right needs to start a new chapter, argues **Ryan Shorthouse**

The Prime Minister's decision to call a summer election was eccentrically selfless.

There has been much political and economic uncertainty in recent years, causing plans to be paused. Just look at the housing market, with transactions down significantly. It feels like the country has been on standby. Bringing the election forward, then, was in the national interest. Finally, it seems we are about to get some more long-term clarity and certainty from government, which has been sorely missing over the last decade.

Considering the vehement anti-Tory mood among the wider public, which is only likely to have worsened the longer they stayed in power, Rishi Sunak probably helped the future fortunes of the Conservative Party too, albeit only a little. Some seats have probably been saved in the bloodbath.

> "We are about to get some more long-term clarity and certainty from government, which has been sorely missing over the last decade

The real loser in all of this is Rishi himself. He has cut his time short as Prime Minister, depriving himself of the opportunity to build a bit more of a decent legacy. He won't be able to take credit for any generational smoking ban or a new Advanced British Standard, reforms that were part of his long-term vision for the country.

Yes, we are seemingly at the start of some more positive trends around the economy and immigration. Inflation is down. Growth is returning. Net migration is falling. But why not ride the wave a little longer? Reinforce the argument that it was he who planted the seeds of the break from Britain's malaise, rather than letting a new Labour Government take the credit.

So, why did he go early? The public has had no explanation. They did in 2019: to get Brexit done, after months of parliamentary shenanigans. They didn't in 2017, and look at what happened to Theresa May.

The suspicion is that the Prime Minister calculated that things weren't actually going to get significantly better – in fact, there might be some difficult decisions and political traps coming up that he would rather avoid this autumn. Hardly a vote of confidence in continuing Conservative Government.

This was a bad starting point, coupled with a bad launch. "Things can only get wetter," indeed. The campaign has exposed Rishi Sunak's political short-sightedness and inexperience.

With nearly 100 Tory MPs stepping down, many veteran ministers, we have reached the end of an era. The heady days of the Coalition – with exciting and effective centre-right policy agendas being executed, from free schools to Universal Credit – seem a very long time ago. The Tories will need to rediscover that reforming zeal and good governance quickly if they are going to have the opportunity to hold red boxes again anytime soon.

The centre-right should see the potential in generative AI, which is starting to transform the way we learn and work. As with other technological revolutions, there will be profound challenges – especially redundancies and misinformation – that will require thoughtful policies and regulations. But, overall, it is likely to unleash a wave of innovation and productivity, both within the private and public sectors.

There are two positive possibilities for centre-right politics from this. In the years ahead, an ageing society is necessitating increased taxes and spending. AI could be a very helpful tool for mitigating both, by bolstering our anaemic growth and creating substantial efficiencies in our bloated state. AI, then, will make the centre-right socioeconomic model more credible.

> "The Tories will need to rediscover that reforming zeal and good governance quickly if they are going to hold red boxes again anytime soon

It might also make it more compelling, too. Younger people – who I describe as anyone under the age of 40, for entirely selfish reasons – could also be provided with much more interesting and plentiful jobs and products, making their lives more convenient, affordable and rewarding. Struggling with high housing costs and stagnant incomes, many have become disillusioned not just with the Conservative Party, but capitalism itself. A centre-right vision can appeal to younger individuals when they can see and are given enough opportunities to better their circumstances through effort, enterprise and entrepreneurialism. AI might create more such opportunities.

A new chapter awaits the centre-right. Bright Blue wants to write it.

Ryan Shorthouse is the Founder and Executive Chair of Bright Blue

Letters to the Editors

Submit your letters to emily@brightblue.org.uk

In Ben Hopkinson's article ('A lust for power', Autumn 2023), he highlights the urgency of generating more renewable energy and nuclear power. It is undeniably important to boost the UK's renewable energy output. However, as the majority of solar panels and wind turbines are produced abroad, simply installing these in larger quantities is not sufficient to ensure security of supply and mitigate national security concerns.

Presently, China is dominating the world's green energy market; Chinese companies, such as LONGi Solar, produced more than three quarters of the world's solar panels in 2022, including half of Britain's. Similarly, none of the top wind turbine manufacturers are British, despite Britain being the world's second-largest producer of offshore wind power.

It is clear that, for Britain's energy supply to be truly secure, it must not rely so heavily on foreign goods for renewable energy production. So, while increasing renewable energy output is certainly helpful for meeting our energy needs, enhancing Britain's domestic manufacturing base will better guarantee energy security.

Timmy Lai | Bright Blue member

Jeegar Kakkad's article ('Jobs GPT?', Autumn 2023) adeptly outlines the inevitable disruption of AI to the high-productivity service sectors. Kakkad suggests that, rather than fearing the AI revolution, individuals should embrace it.

His suggestion to retrain workers whose roles have been overtaken by AI is an oversimplification. In the 1980s, rapid deindustrialisation without adequate employee protection schemes resulted in areas of Britain becoming chronically unemployed. Such areas have since been subjected to intense funding for re-educating individuals with appropriate skills to find jobs. However, some struggled following retraining.

Research suggests that those in need of a technical education often struggled to find initial employment. If enough time passed, re-educated individuals found that most work in their area had been moved offshore. Many fear that similar challenges may arise with AI. Consequently, a more dependable policy programme is required for individuals to embrace AI from the workplace.

Felix Billar | Bright Blue member

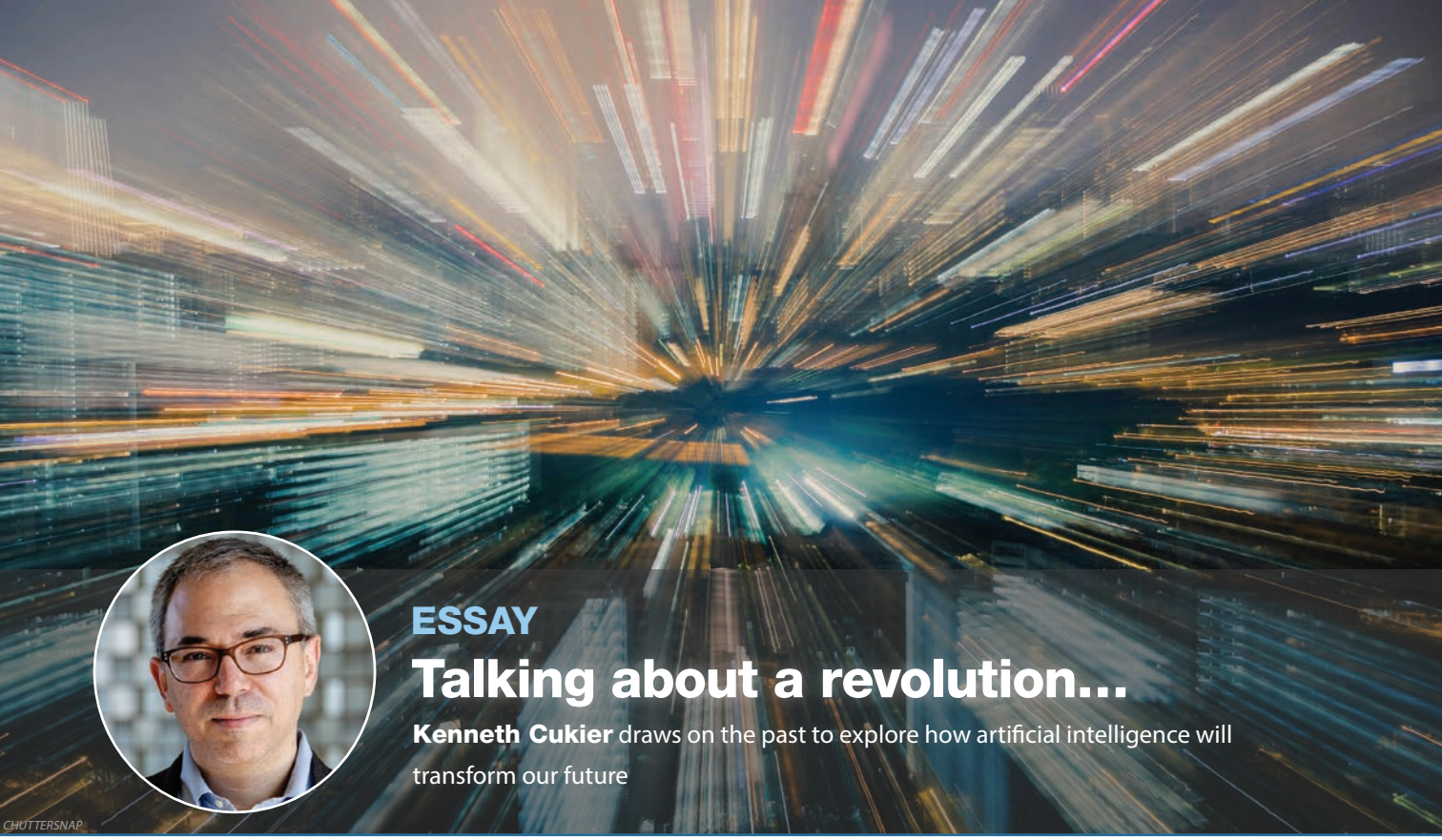
Stephen Kinnock MP ('Captain of industry?', Autumn 2023) is right to identify that "a strong domestic manufacturing base is absolutely essential to building resilience and sovereign independence."

Britain is worse off as a result of the closures at the Port Talbot steelworks, in Mr Kinnock's constituency, and the likely closure of two further blast furnaces in Scunthorpe. Thousands of people have lost their jobs and for the first time since the Industrial Revolution the UK will be unable to produce virgin steel, used in the automotive, aerospace and defence industries.

Mr Kinnock's prescription of a more intense industrial strategy and subsidising electricity costs for steelmakers misses the mark. The reason that steelmaking became uncompetitive is Britain's sky-high energy costs, which must be tackled with supply side reforms.

Otherwise, taxpayers are footing the bill for ineffectual subsidies handed out to the likes of Tata Steel.

Callum Westwood | Bright Blue member



SHUTTERSNAP

ESSAY

Talking about a revolution...

Kenneth Cukier draws on the past to explore how artificial intelligence will transform our future

In 1965, the British mathematician I. J. Good wrote, "an ultraintelligent machine could design even better machines; there would then unquestionably be an 'intelligence explosion.' "Thus the first ultraintelligent machine is the last invention that man need ever make, provided that the machine is docile enough to tell us how to keep it under control."

That observation, in a technical paper at the outset of Artificial Intelligence (AI), is a reminder that the promises and perils of technology weighed heavily on the minds of its creators. Good worked with Alan Turing during and after the War and was a consultant for Stanley Kubrick on the set of *2001: A Space Odyssey*, where a passive-aggressive computer tries to exterminate the crew of the spaceship it controls.

Clearly, it is not just the Prime Minister Rishi Sunak who has been gripped by AI's potential for menace.

By now, it is obvious that AI represents a huge advance in how individuals, businesses and governments will function. One need only spend a short time with ChatGPT – asking it for an airline safety announcement in the style of a Shakespearean sonnet, for example – to be mesmerised by the output. Yet spend more time with it, and its shortcomings become more apparent: a sterile hyper-rationality that is oblivious to deeper meaning and purpose, reminiscent of school essays written by clever sixth formers devoid of any self-knowledge.

> "Yet spend more time with it, and its shortcomings become more apparent: a sterile hyper-rationality that is oblivious to deeper meaning and purpose

And therein lies the rub: AI is both impressive and unsettling. So what actually is AI, how may it change society – and to what degree should we be alarmed of the risks that, in Good's phrase, we need "to keep it under control?"

First, how it works. AI is obviously more than 'generative AI' like ChatGPT, released by the American company OpenAI in late 2022. After all, the London-based AI lab DeepMind, bought by Google in 2014 but operating largely independently, has stunned the world for a decade by its achievements. First, it developed a system to win at old Atari video games based on 'self play,' then its algorithms beat the world's best players of the ancient Asian board game Go. In recent years its AI system decrypted the mystery of protein folding – an achievement that may unlock new medications, materials and, in time, earn its chief executive, Demise Hassabis, a peerage and Nobel Prize.

Behind the AI achievements is data. That is one reason why big tech firms have such high valuations – not just because of online advertising today, but because they are repositories of data on every person that can be incorporated into new AI services tomorrow. The data is important because it is used to train AI systems.

>> We must look at the history of this technology to fully appreciate where it is going.

In the 1940s, as the computer was being invented, there was a strand of work on the ability to manage machines via feedback. The term for this was 'cybernetics' – the name of a bestselling 1948 book by the brilliant MIT mathematician, Norbert Wiener. But Wiener was a pugnacious know-it-all, so, when a group of young academics wanted to explore how computers could be programmed to mimic the human mind, they invented a new term for a research grant – 'artificial intelligence' – to avoid having to invite him to their conferences. It anthropomorphised the technology, and the term stuck.

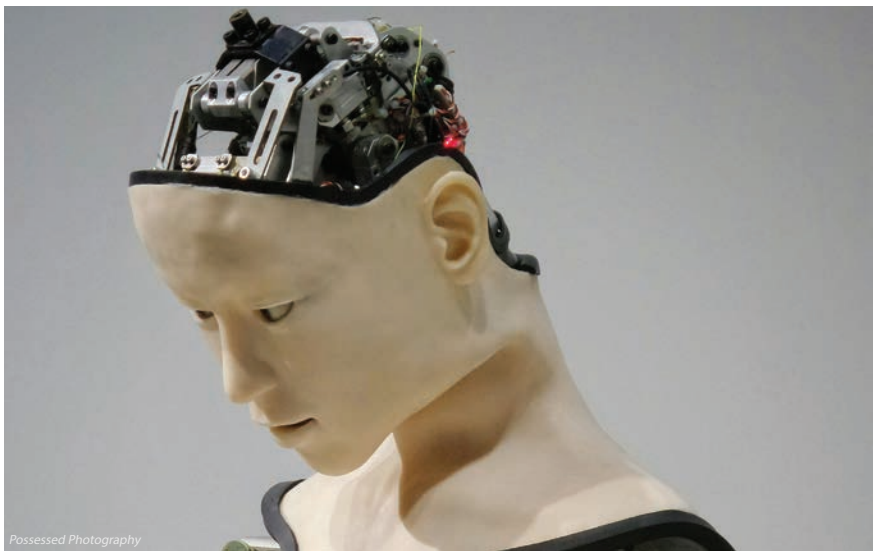
Two of those young academics became the fathers of the field and took it down the route of trying to programme logic into software to resemble mental processes – basically, a long list of rules. It worked initially but quickly hit a wall, and long stretches of 'AI winters' ensued, in which progress was as meagre as the funding. The pair loudly rejected an alternative technique that they considered hopeless – a method, based on maths, that loosely resembled the workings of neurons in the brain.

Fast forward 50 years to around 2010, and the hand-coded method of programming 'mental processes' into a computer had categorically failed, while the 'neural networking' approach became the mainstay of AI. What changed was the power of exponentials: the performance of computer chips soared, the price of memory plummeted and the amount of data to learn from exploded. The statistical machine-learning approach that barely worked in the 1950s now performed stunningly.

Today called deep learning, it finds patterns in data to reach conclusions without needing deliberate instruction of what to look for. Hence, to create an image-recognition system to identify cats, instead of programming all the characteristics of a cat – and the endless number of exceptions to the rules – simply show the algorithm a million images of a cat and it can infer what is a cat. Likewise, voice recognition, handwriting recognition and so on.

Although deep learning only mimics the human mind, it can still exceed human mental facilities. For instance, researchers at Stanford wanted to see if an algorithm could perform as well as pathologists in diagnosing severe breast cancer and after analysing biopsy scans and patient survival rates, the system was able to identify 11 characteristics that predicted severe cancer – pathologists only knew of eight of them. Three of the patterns that predicted severe cancer – related to the distance among cancer cells, not the cells themselves – were not known until they were discovered by AI.

This is just the beginning. It gets even spookier.

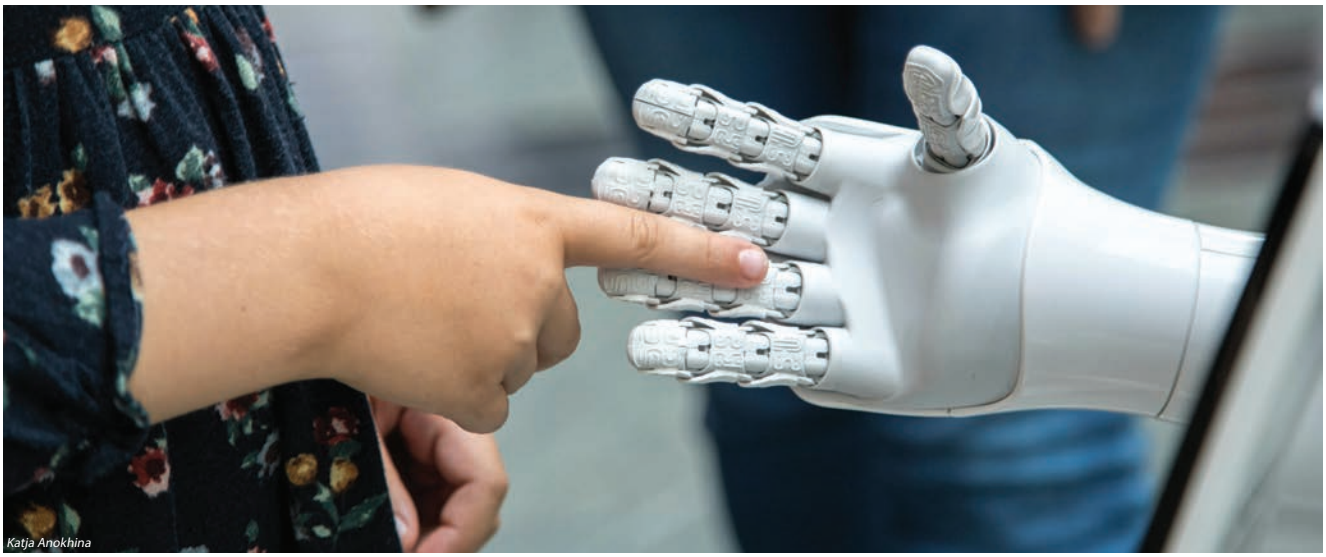

Possessed Photography

> "Only many moves later did the Go world see that what appeared to be an errant move was actually the linchpin to winning the match

When DeepMind's AlphaGo system played one of the world's best Go players in 2016, it took such a peculiar action in move 37 of the second match that it left its opponent perplexed, the experts chortling over an apparent mistake and the tech team behind the scenes scrambling to see if the system was broken. Only many moves later did the Go world see that what appeared to be an errant move was actually the linchpin to winning the match: AlphaGo had uncovered a new strategy for a game that people had played for millenia.

Since then, there have been many areas where AI has exceeded human knowledge, piercing the frontier of science. The question today is whether there are vast areas of society and the economy that are prone to yet new 'move 37' changes – hitherto unknown approaches identified by AI that greatly improves how tasks are currently done.

The answer is yes, and everywhere. Most of the world happens in a way that is only partially examined or tested – a phenomenon called 'bounded rationality.' We regularly accept things that are just good enough rather than taking the time to explore and optimise our approaches to make them even better. For instance, Google's data centres have long been highly optimised to conserve energy. Yet, the firm was able to adapt DeepMind's AI systems to improve the centre's power consumption by


Katja Anokhina

>> a hefty 40%.

It is examples like uncovering new knowledge in medical diagnoses, strategies in complex games or optimising processes in new ways that led the late American statesman Henry Kissinger and his co-authors to write in his book *The Age of AI* that "Reality explored by AI, or with the assistance of AI, may prove to be something other than what humans had imagined. It may have patterns we have never discerned or cannot conceptualise. Its underlying structure, penetrated by AI, may be inexpressible in human language alone."

The ineffable quality of AI answers is what frightened Kissinger. In particular, what would a move 37 look like in terms of military action? Should commanders, using AI, be willing to sacrifice an entire battalion if the system predicts it will be decisive to winning the war at a later date – just as happens in a game of AlphaGo or chess? Indeed, as AI answers are often an inscrutable black box, it makes it hard to imagine how society will balance this inscrutability with human needs for explainable reasons to guide action.

Currently, AI is a nascent technology that is still being integrated into our existing workflows, practices and organisational cultures. But what will happen in 20 or 30 years, when it is no longer a novelty but taken for granted – when our practices presume AI rather than attempt to invite it or resist it?

If the history of technology offers any lessons, it is that people eventually give up agency for convenience. As such, we will willingly outsource ever more of our thinking to AI. Doctors may not even question an AI's diagnosis while generals and soldiers will blindly follow AI-generated strategies, resulting in a loss of confidence in their decision-making abilities.

> "Will human thinking become more juvenile, with the attention span of a two-minute TikTok video and the depth of an X post?

Right now, the most prominent example of this is high school students' writing assignments with only the barest of camouflage by the teenage miscreant. When today's 15-year-olds are 35-year-old junior managers, will they have the capacity to think through problems afresh, or will they only be accustomed to turning to the browser prompt window for an answer? As society's challenges become more complex, will human thinking become more juvenile, with the attention span of a two-minute TikTok video and the depth of an X post?

Allowing machines to do our thinking for us is a serious risk to the majority of people. But some may be able to resist this, as any crisis of thinking will not afflict everyone equally; a select few may still be able preserve their independent thinking and work from first principles up. This could result in the emergence of a new class , akin to monks in a monastery or alphas in Huxley's *Brave New World* – those who are still able to think of original ideas. It should be clear, then, that AI will exacerbate inequalities – not just of wealth but of cognitive abilities.

All this is before AI gets integrated into our bodies. Several companies, including Elon Musk's Neuralink, already have products in the pipeline. Although initially intended to aid the disabled, we, for the sake of convenience, will not resist it becoming a powerful prosthesis for all. AI will not be something independent of us – it will become us.

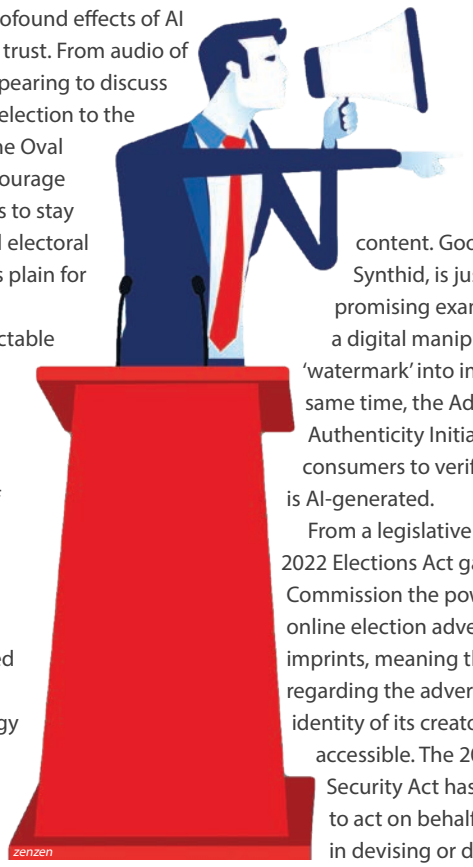
Kenneth Cukier is the Deputy Executive Editor at *The Economist* and the author of books on technology and society, such as *Big Data* and *Framers*

Limiting lying

Sir Robert Buckland says government must work with Ofcom to fight misinformation

The first of six laws outlined by technological historian Melvin Kranzberg in his seminal article published in 1986 was that "technology is neither good nor bad; nor is it neutral." Written in an age of technological change, and with the increasing mass production of computers and the World Wide Web only a few short years away, questions were being posed about where people would fit into an economy and society increasingly dominated by machines. With the rapid development of AI in recent years, policymakers, businesses and the public are once again asking themselves those same questions.

One of the most profound effects of AI is its impact on public trust. From audio of opposition leaders appearing to discuss rigging the Slovakian election to the current occupant of the Oval Office seeming to encourage New Hampshire voters to stay at home, the potential electoral impact of deepfakes is plain for all to see.



Many may be detectable to the observant bystander, but the proliferation of open source AI models and rapid advancement of generative AI means that the deepfakes of tomorrow will not be. As Sam Altman, the CEO of OpenAI, warned at a Congressional hearing, the technology is becoming so advanced it will soon be able to spread highly targeted disinformation.

When one considers the foreign interference in recent referenda in the UK, the 2016 US presidential election or China's repeated efforts to discredit the UNHCR (UN Refugee Agency) reports into human rights in Xinjiang, the prospect of interference from hostile states and organisations is a sobering one. Soon, they will have capabilities that, only a decade ago, they could not even have dreamt of.

Thankfully, many western governments and tech companies are taking action. Last summer, the key AI players – Meta, Google and OpenAI – all committed to allowing independent security experts to test their new systems. Moreover, they continue to develop tools to alert the public to AI-generated content. Google's new tool, Synthid, is just one such promising example. It embeds a digital manipulation-resistant 'watermark' into images. At the same time, the Adobe-led 'Content Authenticity Initiative' allows media consumers to verify whether content is AI-generated.

From a legislative perspective, the 2022 Elections Act gave the UK Electoral Commission the power to ensure online election advertising has digital imprints, meaning that information regarding the advert's funding or the identity of its creator will be easily accessible. The 2023 National Security Act has also made it illegal to act on behalf of a foreign power in devising or disseminating AI deep-fakes to influence an election.

Despite these positive steps taken by the Government and tech companies, we should remain vigilant. Apps such as HeyGen made turning a brief script into a convincing audio-visual deepfake simple for anyone with a few images and a brief sample of a person's voice. Proving content has been manipulated, particularly audio content, often remains challenging. Fact-checkers are not used to assessing potentially AI-generated material, and training AI to detect AI-generated content will leave us open to a perpetual race between AI's ability to generate lifelike content and its ability to detect it.

> "Malicious actors will seek to benefit from the 'liar's dividend' once disinformation and deepfakes become commonplace

A partnership between government and the private companies operating in this space will be key to tackling deepfakes and to fairly and effectively regulating AI more generally. But even that still leaves a great deal of power in the hands of some unreliable actors. Recent alteration of X's algorithm allows state-backed disinformation campaigns, such as those run by Iran, to potentially go unlabelled, and has led to widespread false information and ill-informed comment spreading on social media.

For all the sincere attempts by governments to tackle deepfakes, cynical

>> political opportunists can undermine any amount of good work. Indeed, malicious actors will seek to benefit from the 'liar's dividend' once disinformation and deepfakes become commonplace enough, nothing – including legitimate content – will seem believable.

To tackle such opportunism and prevent wider public cynicism, government must partner with business and wider society to ensure transparency and buttress trust in responsible information sources. To achieve this, the Government should work with Ofcom to accelerate the formation of its advisory committee on misinformation and disinformation as set out in the Online Safety Act. In addition, the UK Government should follow the lead of existing practice in Scotland and expand the digital imprints scheme, requiring all election-related content circulated online to have an imprint, unless it is clearly someone expressing a personal opinion.

In our divisive political age, it is vital that those in positions of power do not seek to benefit from the liar's dividend: objective truth still exists online and programmes such as the Content Authenticity Initiative and the similar Microsoft- and BBC-led 'Project Origin' are examples of where non-governmental organisations are working to protect it.

We should all be questioning the content we see online – not simply disbelieving by default, as conspiratorial thinking is not always far from constructive doubt. Rather, we should take the time to pause when viewing a video or looking at an image, especially in times of heightened tension or insecurity, consider the content's source and verify it through a trusted, fully transparent alternative when necessary.

Kranzberg's sixth and final law was "technology is a very human activity;" an activity by its very nature incapable of being a neutral influence on our lives. And if the AI revolution, like the last technological revolution, is unable to be neutral in human hands, we must work together to ensure it is used for good rather than ill.

Sir Robert Buckland KC is a former Secretary of State for Justice, Lord Chancellor and Secretary of State for Wales

Dispelling disinformation?

Social media algorithms allow disinformation to thrive, argues **Baroness Shields OBE**

With more than 50% of the global population going to the polls this year, global attention has intensified around the potential for AI to generate sophisticated disinformation. A crucial aspect of the crisis remains underexamined – the role of online platform advertising models in disseminating such information. While the technological capabilities of AI deepfakes to mimic real-life candidates and create convincing falsehoods represent a significant challenge, it is the delivery mechanisms inherent in the business models of major social media platforms that propagate those messages that pose a more insidious threat to the fabric of democracies worldwide.

Recognising the potential risks of AI, organisations like OpenAI have started to implement measures to mitigate them, developing guidelines to prevent the misuse of AI in political campaigns. These efforts are crucial steps toward ensuring that advancements in AI are not misused to subvert democracy, but the essence of this threat lies not only in the generation of disinformation – something OpenAI can try to prevent – but also in its targeted distribution to audiences already fragmented by social divisions – something OpenAI has less control over.

> "Online platforms have mastered the art of harnessing algorithms to feed content that resonates with individuals' existing biases and passions

Online platforms, driven by advertising models that prioritise user engagement above all, have mastered the art of harnessing algorithms to feed content that resonates with individuals' existing biases and passions. This approach, while commercially lucrative, has facilitated the rapid and unchecked spread of misinformation. The consequences are the deepening of societal divides and undermining the principles of informed discourse that are essential to a healthy democracy.

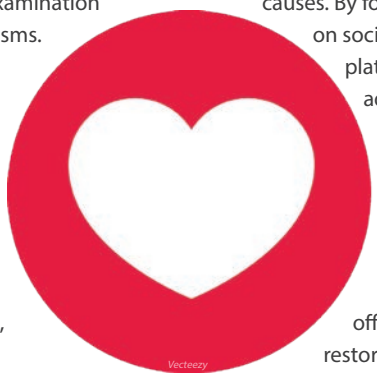
The advertising model's fundamental flaw is its indifference to the veracity of content, treating information as merely another commodity to be optimised for maximum engagement. This model incentivises sensationalism, controversy and emotional provocation, creating fertile ground for disinformation to flourish. As a result, quality journalism and fact-based discourse are not merely disadvantaged, but are systematically sidelined in favour

>> of content that can more effectively capture and retain user attention.

The consequences of this dynamic are profound, relegating fact-checked, quality journalism behind paywalls and making it a luxury item rather than a public good – while misinformation proliferates freely.

The focus on AI-generated disinformation, while important, must not overshadow the critical examination of these delivery mechanisms. Conversely, legislative and regulatory efforts must prioritise reforms that challenge these advertising models.

Policies that encourage transparency in the algorithms that run social media websites, alongside initiatives that support the economic viability of quality journalism, are essential components of a comprehensive strategy to combat disinformation.



For politicians and policymakers, the task ahead involves not only addressing the symptoms of the disinformation crisis, but also confronting its root causes. By focusing on social media platforms' advertising models, we can begin to tackle the incentives behind the spread of misinformation.

This approach offers a pathway toward restoring the integrity of our information ecosystem, ensuring that democracies remain resilient in the face of both the technological advancements and the economic incentives that threaten to undermine them.

While the world grapples with the challenges posed by AI, it is imperative that we refocus our efforts on understanding and addressing the delivery mechanisms that allow AI-facilitated disinformation to thrive.

Only by confronting the economic models that prioritise engagement over accuracy can we hope to mitigate the impact of disinformation and safeguard the future of democratic discourse.

Baroness Shields OBE is the former Minister for Internet Safety and Security and the Founder and Chief Executive of Precognition

In voters we trust

Chloe Smith explains why it is ultimately up to citizens to filter misinformation

It is the world's biggest election year. Billions of citizens are going to the ballot box, and Britain is up next. These elections are the first to happen since significant advances in AI, and the technology will almost certainly be used for fabrication and manipulation. Despite these risks, now is not the time for lawmakers to panic. We should keep a cool head and trust voters.

Society, the economy and public services must rest on secure constitutional foundations. And the integrity of elections matters so that people's free choices achieve what they intend. Yet, as in many nations holding polls, "the UK and its allies cannot be complacent to the threat of foreign cyber interference and attempts at influencing our democratic processes," reports GCHQ, the UK's cyber intelligence agency. So just how concerned should we be about the influence of AI at election time?

First, people can take confidence that, in the UK, we have both a highly relevant leadership role in AI and mature elections governance.

Our national approach to this technology is wise, balancing safety with innovation. I am proud to have helped make progress on global safety, initiating Britain's significant Bletchley Summit and Declaration in 2023, and starting the first AI Safety Institute.

Second, domestically, UK regulators have also been tasked with setting guidance, including the Electoral Commission. They oversee elections, political finance and electoral transparency. Local councils work with them to run each poll, and the police oversee electoral offences. It may be challenging for enforcement agencies to move fast enough if there are large numbers of allegations within an election campaign. The Electoral Commission can reassure the public that they are ready during this election campaign.

The UK's legislative framework is already well equipped. Indeed, AI-powered communications could fall

>> into the longstanding electoral offence of making a false statement about a candidate's personal character or conduct, or come under the new Online Safety Act or count as defamation.

Despite this, some argue more new laws are needed for election campaigns. I urge caution and clear thinking before rushing to that idea. Here is why.

> "AI-powered communications could fall into the longstanding offence of making a false statement about a candidate's personal character or conduct

Our underlying electoral law is sound because it trusts people's choices; free speech and expressions of policies or numbers or ideas are not regulated or criminalised. Some float the argument of extending the law against false statements to policy, not just conduct or character – this would be really wrong.

First, it would be unworkable, because there cannot be a central watchdog for all policies and facts – and electoral law has to be workable. As Constitution Minister, I legislated to increase transparency in online campaigning with new digital imprints, and that reform will be welcome in terms of provenance and trust. But the limits of what could be defined through law were soon clear.

Second, and worse, it would be unjust because it would strip responsibility from people making their own minds up, putting a state bureaucrat in charge instead. As Ciaran Martin asked in *The Guardian*, who should we entrust with that? Crucially, freedom of speech in an election context means debate; campaigners must rebut points they disagree with.

To do otherwise opens up a far-reaching and dangerous legal concept. The law during an election is a vital and levelling framework, but that is all it is. Civic debate and choice are the real thing.


Letizia Bordoni

The elections of 2024 have doubtless shown themselves to be noisy, but the underlying questions of power, influence and communication are hardly new, yet people from India through Indiana to Istanbul and Inverness keep making their own decisions. Indeed, bad actors around the globe do not need AI to be effective.

That is not to say, we should be complacent.There could yet be attacks on our democracy before polling day, and we should be prepared.

> "Some float the argument of extending the law against false statements to policy, not just conduct or character – this would be really wrong

There are some necessary actions. Social media transparency tools are welcome. These help users to judge what they see. Tech firms should also continue to develop tools against illegal content. There will be much to do to overcome complexity and controversy.

Government has a significant role too. I strongly endorse the assurance that the UK Government provides through the Defending Democracy Taskforce. When I led elections policy, I was determined that our elections must be secure, fair and transparent, and I knew the overall operation of our system must be protected. So the National Cyber Security Centre identifies and responds to threats and offers expertise to all parts of our elections. Again, Britain plays a leading role, working with our allies around the world to help improve collective cyber resilience of global democracy. We can also help to educate citizens in cyber security and digital literacy.

It is a daunting world in 2024, but we should keep a cool head. New electoral laws are not the answer to concerns about new technology. Only citizens can judge the credibility of the information they see. People make their choices, and we should hold firm in our faith in that. We should be optimistic about human potential, and positive about politics.

Chloe Smith is the former Conservative Member of Parliament for Norwich North and a former Secretary of State for Science, Innovation and Technology, as well as a former Elections Minister

History rhymes?

UK universities are leading generative AI-powered innovation, writes **Gerard Grech**

We are entering a new technological innovation cycle; the sixth in our history. If the first waves were powered by water, steam and electricity, then this new wave is powered by artificial intelligence; specifically generative AI (GAI).

There are three main drivers for its growing adoption: the plummeting costs of computational power required to train the language models; the abundance and availability of data within institutions and governments; and the growing development of an open source ecosystem, where shared technology tools and resources are accessible for free.

> “ Cambridge is the third biggest scientific cluster in the world, second only to Stanford in the Bay Area and Boston, while Oxford is the fifth

GAI takes the form of algorithms that can create new content at a speed much faster than humans can, including audio, code, images, text and videos. There has rightly been a focus on the implications of this new technology for the economy, jobs, fraud and crime; however, we must not – as the recent UK House of Lords' Communications and Digital Committee report found – lose sight of the immense commercial value that this technology will bring.

Where the sixth wave will drive our society forward is in combining GAI with other emerging technologies, such as quantum computing and life sciences, leading to groundbreaking scientific discoveries ranging from drug discovery for deadly diseases to new materials to drive our net zero futures.

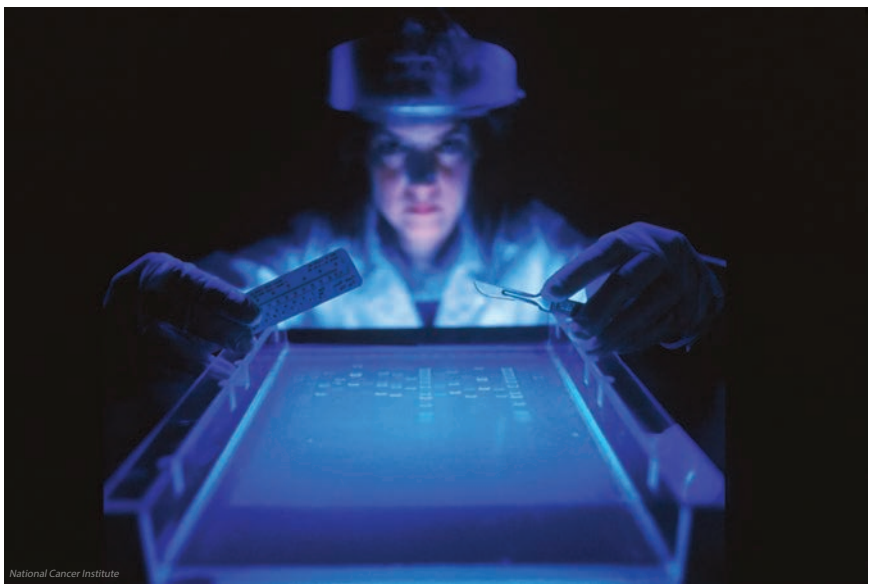
To maximise the opportunities that GAI presents, UK universities have to steer this wave. They already have the talent to do so. Cambridge is the third biggest scientific cluster in the world, second only to Stanford in the Bay Area and Boston, while Oxford is the fifth.

Thousands of British academics are working to harness the potential of GAI and the list of those working on it will only grow. The founders of the UK's most successful AI company, DeepMind – which was acquired by Google – met at UCL. Other emerging university spin-outs using GAI to further scientific discovery include London-based Polaron from Imperial, which is designing higher-performing materials for applications such as wind turbines to aid the switch to renewable energy. In Oxford, Caristo Diagnostics is using AI to spot heart attacks ten years before they happen. In Cambridge, Sano Genetics, an alumni startup, is using GAI to make it seamless for pharmaceutical companies to carry out precision medicine trials, enabling people with genetic conditions to access groundbreaking care.

There are multiple ways the UK can support these companies.

First, we should enable non-equity funding aimed at de-risking high-potential technologies. While over £6 billion is annually invested into university research in the UK, a key component that is missing is translation funding – the money needed to take an idea and test it against a market opportunity.

Second, if the UK wants to cultivate the next groundbreaking GAI company, it needs to develop the most fertile pathways to support and scale such companies through expertise and community. Founders at the University of Cambridge was formed to do just this and support venture scientists with experienced mentors who have already



National Cancer Institute

>> taken this path before.

Third, GAI companies need investors who are prepared to de-risk the groundbreaking technologies they are creating. Finding product-market fit for GAI companies takes time and patient capital is critical. Building an AI company is not easy. It requires specialists with deep academic knowledge and top-tier coding talent.

Clearly, a vehicle for long-term investment is needed for AI companies to get off the ground. The level of investment needed is great. Microsoft has already invested $13 billion in OpenAI. For other UK GAI companies, UK pension funds, which are long-term by nature, could be the appropriate vehicle to lead this level of investment.

Another vital ingredient is access to vast levels of processing power, without which many of the most advanced GAI models cannot run. Access to processing power is going to be an uphill struggle, given the current global shortage of processors and semiconductors.

> “ Access to processing power is going to be an uphill struggle, given the current global shortage of processors and semiconductors

The current Government has recognised this, announcing £900 million in investment in supercomputing power intended to unlock advances in AI, medical research, climate science and clean energy at the Universities of Bristol and Edinburgh. Nonetheless, getting access to supercomputing power in even more universities should be a priority, as it will enable faster scientific discovery and more opportunities for innovation-led companies to emerge.

This is only the beginning for UK-led GAI innovations. As we welcome our first cohort of venture scientists to Founders at the University of Cambridge, nearly 40% of applicants were using AI, machine learning or GAI within their technology to build businesses to solve challenges in fields from healthcare to climate.

By ensuring that the next generation of venture scientists has the resources and support they need to integrate GAI effectively, we can tilt the odds in their favour as they begin their journey as the leaders of the sixth wave of innovation.

Gerard Grech is the Managing Director of Founders at the University of Cambridge and the Founder of Tech Nation

Orchestrating the future?

Lord Watson sets out the challenges and opportunities AI presents to the music industry

The music industry has been using AI for years as an assistive tool for a range of tasks, from helping producers clean up music to detecting copyright breaches and predicting consumer trends. However, the music business, like many other sectors, is grappling with the explosion in potential uses of AI which present huge opportunities along with great challenges.

As the chair of UK Music, the body that champions the UK music industry, I want to see our sector continue to produce the music professionals that are the envy of the world and generate even more than the £6.7 billion it currently contributes annually to our economy.

There is no doubt that AI can play a part in that success, particularly when it comes to its use in a supportive role. We saw this recently when Sir Paul McCartney used AI as an assistive tool on the final Beatles song that included vocals from the late John Lennon. Importantly, McCartney swiftly clarified he was not using AI to generate a new recording of Lennon's voice, but using AI to clean up an old recording made by the band using a process called 'stem separation.'

However, the rapid development and implications of generative AI technologies, where AI actually generates music, raises many challenges and hard questions for legislators, music industry leaders and the 210,000 talented people who work in the UK music sector.

It is vital to distinguish between AI generating and creating new music; it is capable of the former, but not the latter. AI-generated works rely entirely on ingesting music made by human creators. The AI copies thousands of pieces of music and then analyses patterns and structures to generate a composition based on that computation.

The key point is that this music is being copied. More often than not, that music is copyrighted, and therefore the express permission of the copyright holder is needed and compensation is required. If copyright is not properly upheld, both the creator and the UK sector lose out.

Unfortunately, we know some overseas

>> businesses are using copyrighted music to train AI technologies without the consent of the human creators and also without payment – and with a flagrant disregard for the UK's successful copyright laws which are a cornerstone of our world-beating music industry.

For individual creators not being paid for their work is not only damaging to their income but it also greatly hampers the ability of music businesses to invest in new projects and artists, which could seriously damage the industry's talent pipeline.

Instead of allowing AI to pilfer the work of talented artists, we should be investing in that talent pipeline to help develop new acts to ensure we are creating the stars of tomorrow, especially with increasing global competition from fast-growing markets in South America and South Korea, as well as the persistent strong competition from Europe and the USA.

Music Business Worldwide has estimated that over 40 million 'new' music audio files were added to streaming services in 2023. It is difficult to tell how many are AI-generated. This is in large part because the labelling of AI songs is not currently required by law – without such a requirement, it will be extremely difficult to gain a real understanding of the impact AI-generated music is having on various aspects of the music industry. Change is clearly needed.

Consumers must know that the material they are listening to is AI-generated – AI is already able to create an almost exact likeness of an individual creator. It is alarming that, currently, an artist's voice or image could be used as a potential deepfake to sell a product without their knowledge or consent.

Artists like Drake, Nick Cave and Johnny Marr have already spoken about their concerns regarding AI-generated fakes which deprive genuine creators of income. Taylor Swift is also reportedly deeply unhappy with these AI fakes and is demanding action to stop such exploitative abuses. She is right. We need to stop the bots.

Thankfully, UK and US artists have some redress, in particular in the form of protection against false endorsement. However, further clarity on the use of an artist's image or voice by an algorithm should be provided by law to protect artists against this kind of misappropriation.


Paolo V

In the 1990s, the development of MP3s caused a boom in illegal downloading. The music industry knows from experience the damage that not getting ahead of emerging technology can cause to incomes. That is why we are continuing to talk to the Government to find enduring and practical solutions that both benefit individual creators and the UK more broadly.

> "It is vital to distinguish between AI generating and creating new music; it is capable of the former, but not the latter

These practical solutions include protecting the unassailable right of creators to decide if and how their work can be used, underpinned by existing copyright rules; proper record keeping so creators who have given consent know how and where music ingested by AI is used; proper labelling so everyone knows where music has been generated via AI; and protections for the personality and image rights of songwriters and artists.

Without such protections, it is not just the music industry that could suffer but also other creative industries, such as publishing, journalism, film, television and illustration.

Creative industries are one of the jewels in the UK's crown. We need the Government to ensure AI technologies have the appropriate guard rails to allow its development in a positive way that does not undermine artistic talent or erode successful UK businesses, but instead helps them grow.

Lord Watson of Wyre Forest is Chair of the industry umbrella body UK Music and the former Deputy Leader of the Labour Party

Simple steps?

Professor Larissa Suzuki and **Dame Stephanie Shirley CH** discuss AI and autism

Around 75 million people worldwide are affected by autism or one of its associated conditions – more than the number of people with childhood cancer, diabetes and AIDS combined. In all probability, you have a friend or a colleague with autism. And yet, in many cases, you may be unaware of this, for autism is often a hidden condition.

Also hidden is something else: the enormous potential which the autistic community represents for employers. Some people with autism are severely disabled, but many are not, and they often possess skills of considerable value.

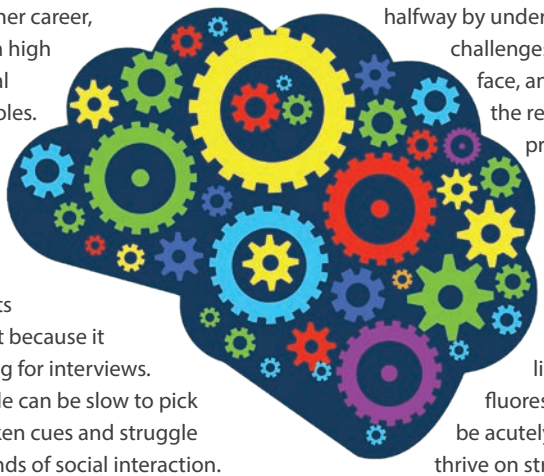
Yet, too many still languish in poorly-paid jobs which fail to make use of their abilities, while others cannot find jobs at all. This is a travesty, when people with autism, employers, the economy and society at large would all benefit if we could make proper use of their talents.

> “ It is high time we all learnt to foster a workplace culture that not only accommodates, but actively makes the most of differences

We ourselves have first-hand knowledge of autism. Steve Shirley's only son Giles was severely autistic, and she is the founder of several autism charities. Larissa Suzuki is herself on the autism spectrum. Both of us believe passionately in the need to rectify an injustice and capitalise on a valuable opportunity by integrating people with autism into the workforce. One of Steve Shirley's own charities, Autistica, demonstrates what can be achieved: 40% of its employees, including the chief executive, are on the autistic spectrum.

But Lara's experience demonstrates some of the problems. One is finding jobs for autistic people which match their potential. When she first started out, she found herself in a role that was, as she puts it, fundamentally incongruent with her passions. Equipped with a degree in computer science and a masters in electrical engineering, she joined a team of seasoned professionals in the tech industry, but the tasks she was given failed to gratify her desire for learning and applying advanced skills. She was engaged only in mundane activities and it left her unmotivated and profoundly disillusioned with her choice.

She has since proved thoroughly successful in her career, operating at a high level in several challenging roles. But it has not been easy. Moving to another job brought problems of its own, not least because it involved going for interviews. Autistic people can be slow to pick up on unspoken cues and struggle with many kinds of social interaction. Interviewers expect candidates to make eye contact, to engage, to respond to abstract questions: all things which present challenges for neurodivergent job hunters.



Lara's solution was to disclose her autism during interviews. Doing so was both an assertion and a plea. She was haunted by the fear of misunderstanding what was expected of her, and also of being misunderstood herself. Her approach was to ask explicitly for clarity.

Autistic people offer employers extra-ordinary focus, a profound capacity for concentration and an unwavering work ethic. They possess logical acumen, a meticulous eye for detail, the intuitive ability to recognize patterns in extensive data sets and an innovative approach to problem solving. They are good at imposing order on chaos, at streamlining processes and at enhancing efficiency. These are all skills of real value to businesses, especially in financial services and IT.

But employers need to meet them halfway by understanding the challenges autistic people face, and not just during the recruitment process. Many are hypersensitive to noise and other environmental factors: things that seem insignificant to most people, like the hum of fluorescent lights, can be acutely distressing. They thrive on structured routines, but find it hard to grapple with sudden changes or disorder: even hot-desking can be unsettling.

The situation is particularly difficult for women, because, paradoxically, many are exceptionally good at masking their condition: autism in girls often eludes detection as a result. Larissa exhibited behaviours deemed 'acceptable' for a girl, but that meant the struggles she faced with communication, sensory sensitivities and grasping social dynamics went unnoticed

>> for a long while.

It is high time we all learnt to foster a workplace and employment culture that not only accommodates but actively makes the most of differences. Enlightened employers already recognise this and nurture a supportive environment in which neurodivergent and autistic people can thrive.

Enlightened employers adjust where and how people work, catering for diverse preferences in communication and meeting structures. They may take simple steps to help. That infuriating hum from the fluorescent lights? A simple pair of noise-cancelling headphones can cost only £37.99 from Amazon and can make all the difference.

AI can assist neurodiverse people. AI can help track behaviour patterns and identify the triggers of behaviour problems. It can similarly help those with language difficulties to communicate effectively. Further virtual assistants or chatbots can provide clear task breakdowns and even help to simulate conversations, which in turn can help to alleviate stress and other mental health challenges that autistic employees face.

Managing autistic people need not be difficult if employers keep a few simple rules in mind. One is to offer regular structured feedback and performance reviews, making explicit what might otherwise be unspoken – the rest of the workforce might appreciate that too.

Another is to ensure that the autistic employee's colleagues know what to expect, and are discouraged from leaping to conclusions. In Lara's view, assumptions are the adversaries of understanding: the solitary figure in the corner engrossed in their work may be seeking a sanctuary from sensory overload, but might also welcome an invitation to lunch or an open door to companionship.

Recruiting and managing people with autism can be complex. But then, all management is complex, and within complexity lies an opportunity to harness a rich resource. Wise employers know this. They recruit people for jobs not despite their differences, but because of them. The reward is a steadfast employee with an exceptional commitment to their role.

Professor Larissa Suzuki is Google's youngest Technical Director and **Dame Stephanie Shirley CH** is a philanthropist, entrepreneur and author of *Let It Go*

Startup solutions

James Boyd-Wallis explains how the UK can tackle its tech skills shortage

AI has captivated public and policymaker attention over the last year. The technology holds incredible potential to help discover new drugs and boost productivity, among many other things.

> "Some 1,700 AI startups produce more than £2 billion in gross revenue and employ some 38,000 people

But the UK can only benefit from that potential if it has the people with the skills required to develop and deploy the technology across the economy and public sector, which it currently does not.

So, what can government do to tackle this skills shortage?

Attention has focused on Open AI and its GPT-4-enabled chatbot. The chatbot demonstrated the technology's ability to generate writing and code, analyse data and solve problems – albeit with concerns around accuracy, copyright, potential harms and ethical challenges.

However, there were also significant breakthroughs in specific industries which garnered less public attention. PathAI showed how it can enhance cancer detection rates. ClimateAI leveraged the technology to improve climate predictions and help mitigation. Darktrace's AI platform enhances cybersecurity through real-time threat detection and response.

While our attention is often on US-based technologies and companies, UK-based businesses, such as the AI developer Google DeepMind, and the AI solutions provider Faculty, demonstrate UK firms' technological and commercial prowess. Beyond these established businesses, the UK also has a thriving AI startup sector. Just look at the AI co-pilot for legal contracts firm Robin AI, which recently raised $26 million and is now expanding into the US.

According to the Tony Blair Institute, some 1,700 AI startups produce more than £2 billion in gross revenue and employ some 38,000 people. The technology can help boost economic growth, drive new scientific discoveries and enhance the public sector from health to education. Google estimates AI could add £400 billion

>> in economic value by 2030. However, we cannot deliver on this potential if we do not have people with the relevant skills.

UK companies want people with AI and machine learning skills. Two in five employers report it as the most sought-after skill in the UK jobs market as they race to develop and deploy the technology to drive innovation and efficiency, according to Forbes Advisor. Nearly all employers believe AI will be instrumental in shaping the future jobs market, and more than a third expect to see an increase in demand for technical AI experts.

And this situation is not new. Research from Microsoft showed that 28% of UK business leaders reported an AI skills gap already back in 2020. The problem is similar in the public sector. Last year, the National Audit Office (NAO) said that the digital and data skills gap is "getting worse." Just 4% of civil servants are digital professionals. There has been a 20% reduction in digital, data and technology apprenticeships from 2021 to 2022, and government digital, data and technology vacancies have increased from 3,900 in October 2021 to 4,100 in December 2022.

The global talent pool for those with expertise in deep learning, natural language processing and robotic process automation is likewise limited, according to the global tech firm IBM. So, UK businesses and the public sector are not only competing against each other. They are competing against firms and other countries globally. In this race, the UK is not in pole position.

UK startups struggle to compete with the US for top tech talent due to visa and salary challenges. According to a recent Onward report, the High Potential Individual (HPI) Visa is too narrow in its conditions, and future tech entrepreneurs may not qualify under the scheme. Furthermore, the Youth Mobility Scheme fails to include the US – an obvious source of potential AI talent. Last, the report notes that the Innovator Founder Visa and the Global Talent Visa are too confusing.

So, what is the solution? The UK Government recognises the AI skills gap and has taken steps to help close it. In November 2023, it announced £118 million to fund 15 new scholarships to help students learn AI skills at the UK's top universities. In addition, part of the money will fund a new VISA scheme to make the UK more attractive to the global AI talent pool and £1 million will be set aside to help those with the right skills with relocation costs. These commitments will help to improve the perception that the UK is a global destination for AI workers. However, more must be done.

Government should amend and simplify all of its visa schemes to better target AI talent, including in the US, making the process more straightforward.

Next, while regulation should address AI harms and ensure safe rollout, it should also consider the need to drive innovation by attracting engineers and entrepreneurs. Part of this involves government providing certainty and delivering on the promise of its AI white paper. The Government should increase regulator capacity to ensure each has the expertise and resources to govern AI. It might also accelerate regulatory sandboxes – limited time trials for delivering services with fewer government regulations – to allow innovators to test new ideas safely. By addressing these issues, the Government can help close the AI skills gap and ensure both the private and public sectors can benefit from the full potential offered by the technology.

James Boyd-Wallis is the Co-Founder of the Appraise Network for AI policy and communications professionals and the Managing Director of Public Affairs at Highbury Communications

New hope for the news

David Caswell emphasises that AI may be the news industry's best opportunity to adapt

For journalism, 2024 may seem to be the worst of times. The news industry in recent decades has been subjected to withering competition for audience attention from the internet and social media, losing relevance as a privileged source of information and facing increasing distrust and even avoidance from significant portions of the population. To add to these woes, in comes AI, which seems to accelerate these downward trends.

Surprisingly, however, many in the news industry are approaching AI with a different attitude – optimism. There is a sense that, with sufficient ambition and investment, AI-augmented news might be the last, best chance to fundamentally remake journalism for the digital age.

News simply has not been working for many people in the UK for a while. Only 37% trust the media, and only 9% are willing to pay for news online, according to surveys by Edelman and the Reuters Institute at the University of Oxford. The proportion of people in the UK who said they were very interested in news declined from 70% to just 43% between 2015 and 2023, and 41% now say they actively avoid news. This dissatisfaction is not spread evenly across the public, but is concentrated in less prosperous and less educated communities located outside of metropolitan centres. *Avoiding the News*, a recently published book from researchers at the Reuters Institute, describes how these people see news as "not simply irrelevant or of little use, but also fundamentally uninterested in people like them."

AI, and in particular large language models like ChatGPT, provides new opportunities to change these people's relationship with news by dramatically improving both its relevance and its accessibility. AI will soon be able to read, listen to and watch previously unimaginable quantities of source material, as well as analyse, compare, assess, synthesise, contextualise and summarise those sources to fit the information needs and wants of diverse news consumers. These abilities could ensure that news coverage is applied comprehensively rather than at the discretion of individual journalists. They could substantially broaden the criteria for what is considered 'news' and might enable far richer coverage of local, regional, culturally distinct, community-based, practically-oriented or otherwise relatable forms of information. If applied at sufficient scale, such tools could essentially make all public information easily available to all of the public, removing the substantial friction of finding, evaluating and interpreting documents obtained from search or websites.

Jon Tyson

> "AI will soon be able to read, listen to and watch previously unimaginable quantities of source material to fit the needs of diverse news consumers

AI can also make news much more accessible to many more people. News providers must often make assumptions about how their customers consume information, requiring a comfort with long text articles, an acceptance of formal style, a knowledge of uncommon terms and substantial background knowledge of the subject matter. AI can free news consumers from these requirements by 're-mediating' news into almost any medium, format, style and tone that can be imagined. Further, AI can adjust the assumed context required to consume news, providing more for

>> those who need it, or less for those who already have it. News can therefore adapt to the needs of individual consumers and the situations in which they consume news. AI-augmented news can provide people who have been ill-served by current news products with a 'new deal' for news that is both deeply relevant to their lives and interests as well as effortlessly accessible.

It is worthwhile to consider what universally relevant and broadly accessible news might mean for the UK. It might offer radical transparency, not only of government but also of society generally, enabling feedback loops that promote efficiency and consensus. It could substantially diminish information bias, bursting the Westminster bubble and empowering regions and under-represented communities. It could make our politics more rational, evidence-based and pragmatic, revealing the underlying trade-offs and complexity of issues. It might even create an export sector centred on AI-augmented news services, including editing, fact-checking, workflows and media-related data. Expanding the relevance and accessibility of news will not happen overnight. Realising such a vision might require new ways of earning trust in an AI-mediated information environment, new journalistic cultures and new oversight processes. Ambition and creativity must be matched with thoughtful investment in technology, publishing infrastructure, new editorial workflows and training.

As home to the world's second largest concentration of AI innovation and half of its top news brands, the UK is well-placed to become a global leader in AI-augmented journalism. Other countries, including Germany and the Nordics, are aggressively investing in AI-augmented media and so the UK's current advantages are no guarantee of future success. While it is true that service-based industries such as journalism may be disproportionately challenged by the automation of cognitive tasks, the time is right for these industries to fundamentally reinvent themselves using these tools. A service-based economy, like the UK, has a special incentive to invest and lead in the application of AI to services. This applies to journalism as much as other fields.

Besides opportunity, AI also poses very real risks for news, including the possibility of substantial degradation of our information ecosystem due to AI-empowered disinformation and threats to the ability of news producers to fund original journalism. However, AI is likely going to reshape our information landscape whether we like it or not. Directing how that transformation plays out will require us to seize the opportunities as well as mitigate the risks. That requires the imagination to create a new vision of what news might become in an AI world and the ambition to strive for an equitable and empowering information environment. If we can do that, then 2024 may actually be the best of times for news.

David Caswell is the former Executive Product Manager at BBC News

Productivity booster

In the UK's service-based economy AI will unlock growth, writes **Richard Mabey**

There is no doubt that the UK is a service-based economy. In Q4 2023, service industries accounted for a huge 81% of economic output and 85% of all employment. This means that the vast majority of the work we do in the UK is geared towards services that people, companies or government pay for, rather than producing physical goods.

At the same time, productivity growth has stagnated since at least the late 2000s. The cause of this stagnation has puzzled policymakers, who point to everything from errors in measurement through lack of capital investment to labour market explanations. But their economic analysis betrays a much simpler truth – the way in which services are delivered, generally, has not changed much since the 2008 financial crisis.

The example closest to my heart is legal services. I practised corporate law for a number of years before switching careers in 2013. Back then, we drafted contracts in Microsoft Word, we communicated over email and we spoke by phone. Other than the happy advent of Zoom, lawyers are still doing all of those things and clients pay them by the hour to do so.

I now run Juro, a software company that helps other businesses automate the creation, negotiation and management of legal contracts with the use of generative AI. Goldman Sachs now estimates that 44% of legal tasks will be capable of being automated by generative AI. It is not hard to see why. We have taken an industry which relies upon expensive human beings to do repetitive, low-value tasks and automated those tasks to free up those people to focus on the high-value work that they are trained

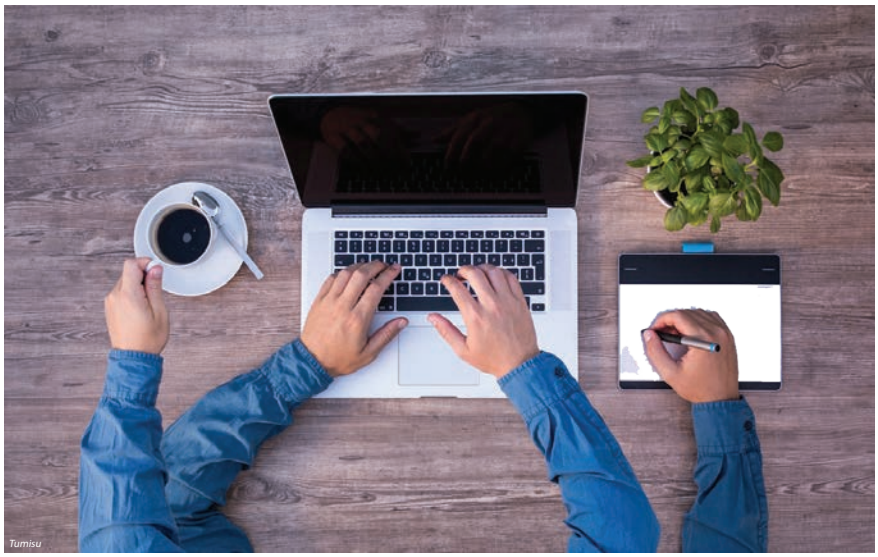
>> to do. Juro serves as a co-pilot to lawyers and makes them more productive. In turn, this makes the legal services industry more productive.

And it is not just legal services. According to a report by Accenture, AI is poised to boost the UK's economy by an estimated £654 billion by 2035. Beyond the legal profession, there are several key use cases: healthcare, finance, education and customer service. In healthcare, AI-driven technologies are revolutionising predictive analytics for disease prevention and personalised treatment plans. The ability of AI algorithms to analyse vast amounts of medical data enables faster and more accurate diagnostics, leading to improved patient outcomes. In the financial sector, AI is also streamlining processes, enhancing fraud detection, and optimising investment strategies. A study by PwC estimated that AI could contribute over $1 trillion to the global economy in the financial services sector alone. Moreover, in education, AI-powered tools are providing personalised learning experiences. Adaptive learning platforms use AI algorithms to tailor educational content to individual students' needs, maximising the effectiveness of the teaching.

And customer services, chatbots and virtual assistants powered by AI are becoming commonplace. These technologies can provide immediate responses, improve query resolution and enhance overall customer satisfaction.

So AI can both improve the quality of the service provided and enable productivity gains. With that said, with the advances in AI come some risks.

First, AI systems process massive amounts of personal data, and so there is a growing concern about the potential misuse of this information that is being sent to the companies operating large language models, like Open AI and Anthropic. Data protection regulations, like the UK General Data Protection Regulation (GDPR), were designed prior to the advent of generative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AI and are necessarily limited in their scope as a result.

The sheer volume of data processed by AI systems makes both preventing and detecting vulnerabilities a serious challenge. As such, AI systems are attractive targets for cyberattacks. It is imperative to ensure robust data security measures to more effectively safeguard sensitive information.

Second, AI algorithms are only as unbiased as the data they are trained on. If historical data contains biases, AI systems can perpetuate and even exacerbate existing prejudices. This raises concerns about the potential for discriminatory outcomes in decision-making processes.

And third, large language models – like ChatGPT – were trained on vast quantities of information over which copyright could legitimately be claimed, so, in the genesis of this new era, there are a myriad of prospective legal difficulties that must be addressed to give business clarity on how they can leverage these models.

The good news in all this is that the UK Government is sincere about the potential of AI. Looking at the recent AI safety summit, it is clear that the UK is aiming to position itself as a centre of excellence for AI. And rightly so, given the enormous technical talent coming out of the UK universities, the UK's well-established legal system and the rich venture capital ecosystem that has grown up in London.

But now is the time the UK must decide which risks it wishes to control and which it will live with unfettered. The UK should be front footed, given the global race we find ourselves in. In order to do so, the Government should consider a number of steps.

> "Economic analysis betrays a much simpler truth – the way in which services are delivered has not changed much since the 2008 financial crisis

First, to improve AI governance, the Government needs comprehensive data protection frameworks, this would involve strengthening and updating existing protection laws to address the unique challenges posed by AI. The Government must also implement clear guidelines for data collection, storage and sharing, ensuring individuals have control over their personal information. Further, ethical AI practices must be promoted by encouraging the development and adoption of ethical AI frameworks that prioritise fairness,

>> transparency and accountability. The Government should work collaboratively with industry stakeholders to establish standards that mitigate biases and ensure responsible AI deployment.

Beyond AI governance, the Government should foster a healthy environment for AI. It should prioritise investing in AI education and research, allocating resources to educate the public, businesses and policymakers about AI technologies and their implications, all while supporting research initiatives that explore the ethical and privacy dimensions of AI, fostering a well-informed society. To create a holistic approach to AI development, it is also imperative to encourage cross-sector collaboration between government, academia and the private sector. This would foster partnerships that prioritise both innovation and privacy, ensuring a balanced and responsible AI ecosystem.

Of course, all this is contingent on providing regulatory clarity for startups. By offering clear and streamlined regulatory processes for startups entering the AI space and creating frameworks that facilitate innovation while ensuring compliance with privacy and ethical standards, the Government would encourage the growth of AI startups while giving them the needed regulatory certainty.

As AI continues to reshape service industries, the potential for the UK is great. However, realising these benefits requires a balanced approach which addresses the associated risks but allows innovators in AI to flourish. Only this would deliver the ecosystem needed to get the UK out of its productivity rut and to cement its position as a thoughtful global leader in AI.

Richard Mabey is Co-Founder and Chief Executive of Juro (www.juro.com) and a Non-Executive Director of Bright Blue

New kings of knowledge?

Professor Bart Selman discusses how large language models will impact work

The release of ChatGPT by OpenAI in November 2022 represents the most significant advancement in the field of AI to date. The quest to build intelligent machines has been a multi-decade research endeavour, starting with the early reflections on the possibility of their creation by Alan Turing in the 1950s. The field developed slowly and mainly as an academic discipline.

However, about a decade ago, a breakthrough in the field of deep learning led to systems that could perceive the world in ways analogous to humans, using computer vision and speech recognition. This was followed by other specialised AI systems that could outperform human experts on certain specific tasks, such as playing chess and Go or predicting the folded structure of proteins. These systems are impressive, but do not capture human cognition's flexibility and general capabilities. The systems are trained on huge amounts of data; an AI for playing chess literally uses millions of example games of chess. These are data-driven methods.

In contrast, a significant part of our human learning comes from absorbing more general knowledge. We are knowledge-driven learners. Knowledge is the kind of information contained in textbooks, literature, film and lectures. More concretely, an example of data would be a table with the positions of the planets relative to the Sun on different dates.

> "The system even bridges formal languages and natural languages, such as computer code and English, with remarkable ease

Newton's laws of motion, on the other hand, are an example of knowledge. Such general laws of physics allow us to calculate the position of the planets on arbitrary dates in the past and future and describe the motion of any other celestial body.

Legal texts and public policy documents contain other forms of knowledge used to guide and organise human society. Knowledge is captured in a combination of natural languages, such as English, and formal languages, such as mathematics or logic. Language allows us to preserve, communicate and amplify knowledge.

AI researchers knew that AI systems first needed to be able to process language to reach knowledge-level learning. Before ChatGPT, machines could only process language in a very superficial way. For example, statistical approaches could judge whether a product review was positive or negative based on the words occurring in the review. However, such systems did not understand the content of the review. In fact, these 'sentiment analysis' systems do not even go as far as to consider the order of the words in the sentences. A

>> more thorough ability to process natural language was believed to require at least two or more decades of AI research.

However, with the release of ChatGPT at the end of 2022, we suddenly had a system that could process language remarkably well. In fact, the system even bridges formal languages and natural languages, such as computer code and English, with remarkable ease. There is still debate within the academic community about the extent to which ChatGPT's understanding of languages aligns with the human understanding of language, but there is some support for the position that these two forms of understanding are remarkably similar. Suddenly, we can instruct AI systems using natural language and guide these systems to do tasks in a way that is very similar to how we would instruct a human.

Moreover, the largest of the large language models (LLMs) also have access to an incredible breadth of data. They easily cover the hundreds of different topics taught at large research universities. Anyone interested in cross-disciplinary questions will be delighted to interact with GPT-4. In my own teaching, I enjoy highlighting connections between AI, philosophy, logic, linguistics and mathematics. I found that GPT-4 can masterfully reveal new connections because of the extent of its data concerning all these areas.

Researchers will point out that an LLM alone does not have goals and intentions, which are integral parts of human cognition. However, it is rather straightforward to incorporate an LLM into a larger autonomous system that can be given a high-level goal to pursue and use the LLM to develop subgoals and strategies – although it may be a stretch to call those intentions. We can even envision multiple LLMs exchanging text with each other to develop new problem-solving strategies. The key is that LLMs give us access to the knowledge-level information, despite not reasoning in the same way as humans do.

Having an AI system operate at the 'knowledge' level has a potentially significant impact on many components of work. The 'knowledge worker' was generally considered to be at a minimal risk of automation. However, this has now changed quite dramatically. Although there is still work needed to adjust LLMs for specific types of work, there are no known technical obstacles to developing such systems. Therefore, over the next decade, we can expect significant changes in all forms of knowledge-driven economic activities.

In the early phase of this transformation, AI systems will be used to enhance human work. For example, a lawyer can instruct an LLM to read through thousands of pages of legal documents to search for cases that are similar to the current case. To deal with the risk of 'hallucinations,' where an LLM makes up facts, a separate module can verify that the returned cases are valid legal cases by checking against authoritative sources. A more mundane example, from my own experience, is having ChatGPT scan an over 100-page long coding manual to construct a particularly complex command. ChatGPT could construct the correct command in seconds, a task that would have taken me many hours of browsing the manual.

There is little doubt that the shift for AI from systems working purely at the data level to working at the 'knowledge' level will have a significant impact on the work environment and opportunities of the knowledge worker. Societies must adjust to manage the imminent disruption.

Professor Bart Selman is the Co-Founder and Principal Investigator of the Center for Human-Compatible Artificial Intelligence at Cornell University

Top tech talent

Kir Nuthi argues the UK needs to make itself as competitive as possible for AI talent

Since the days when the public dreamt of automation à la *The Jetsons*, AI has exemplified progress and the future of modern life. Adopting AI can take the modern age onto its next evolution. However, the question remains as to whether the UK is ready for this challenge.

As the home of DeepMind, Synthesia, Graphcore and Peak, the UK certainly has a good chance of building a world-leading ecosystem for AI. But we – like many other countries – risk falling behind before we even get into our stride. Our AI ecosystem faces a pressing talent gap that, if left unaddressed, threatens our ability to compete on the world stage.

While we have many pathways for talent to come to the UK, they simply are not fit for purpose. To start with, our visa system is not supporting the UK's tech sector as well as it could. Visas like the High Potential Individual (HPI) Visa, the Youth Mobility Scheme, the Global Talent Visa and the Innovator Founder Visa prove too narrow for many successful entrepreneurs to qualify. When entrepreneurs can qualify, Home Office

>> processing delays and the expected fee hikes deter applicants from applying. As a result, UK startups struggle to compete with their international counterparts.

But Home Office bureaucracy and flawed immigration policies are not the only reasons we fail to attract enough AI talent.

> “ The average tech worker can expect to earn £130k a year in the US, while they can expect just around 60% of that salary in the UK – £83k

First, our tech ecosystem also struggles to compete for talent when it comes to culture and community. It lacks the entrepreneurial drive, risk tolerance and cluster-style development of Silicon Valley's 'Cerebral Valley' Cluster and the freedom to innovate and experiment provided by America's free market economic and technology policy.

Second, the UK struggles to compete for talent pound-for-pound when it comes to salary. The average tech worker can expect to earn £130k a year in the US, while they can expect just around 60% of that salary in the UK – £83k.

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Making matters worse, there is the perennial challenge facing cash-strapped startups in having to lure talent with equity, whilst the big firms can offer big money – though offering equity instead of higher pay also has its advantages, as shown in Bright Blue's *Mind your business*? report. Whichever way you look at it, UK startups face an uphill battle to get the best people in.

While we are not fully equipped to bring the modern UK's talent pool into its own *Jetsons* era just yet, we are a nation equipped with the tools necessary to make that possible. At Startup Coalition, we were fortunate to partner with the Tony Blair Institute for Global Change and Onward to create *The UK's AI Startup Roadmap*, which provides a list of critical steps that will foster a vibrant AI ecosystem here in the UK. We can fix many of our immigration policies to make them more innovative and AI ecosystem friendly. The Department of Science, Innovation and Technology recently announced an AI visa scheme. This is a great first step, which mirrors what AI founders called for in our *Startup Roadmap*. In addition, there are other steps that will bring the UK closer to attracting top tech talent, like expanding and remedying the HPI Visa to better target AI and startup talent or negotiating a reciprocal agreement with the US and other major talent hubs to add them to Youth Mobility Schemes.

There are clear steps that we can take to make our tech ecosystem more competitive on culture and salary metrics, too. By focusing on levelling up regional tech ecosystems, like Manchester, Birmingham and the North East, the UK can create mini 'Cerebral Valleys' of its own. Increasing capital investment into the UK's tech sector, with an eye on the UK's economic growth, could gradually bring our tech salaries more in line with those available in the US. Finally, we can also look at supporting startups through share option schemes that can realistically compete with big tech salaries, starting with expanding the Enterprise Management Incentives (EMIs).

And yes, talent is just one part of the problem. The UK tech ecosystem faces significant challenges regarding computing power, capital and regulation when it comes to AI. But talent is a strong place to start. It means that with the increasing adoption of AI, the UK will continue to attract the talent it needs to succeed and produce civilisation-changing emerging technologies.

Kir Nuthi is the Head of Tech Regulation at the Startup Coalition

Smarter banking?

AI will permeate all aspects of financial services, writes **Susanne Chishti**

The financial industry has long been at the forefront of technological advancements, and the integration of AI is proving to be a game changer. AI is reshaping the financial landscape, offering unprecedented opportunities for innovation, efficiency and risk management.

AI's multifaceted impacts are being observed in areas ranging from algorithmic trading, through credit scoring to anti-money laundering. Varying combinations of technology and human expertise are making wealth management services more accessible and efficient.

One of AI's most noteworthy applications is in algorithmic trading and market analysis. AI-powered algorithms can analyse vast amounts of financial data with unprecedented speed and accuracy, enabling traders to make data-driven decisions in real-time. Machine learning algorithms can adapt and improve over time, identify patterns and trends that may not be apparent to human traders. This has resulted in increased trading efficiency and enhanced market liquidity.

> "Robo-advisers can analyse investment goals, risk tolerance and market conditions to create personalised investment portfolios for clients

Moreover, AI has the potential to predict market movements, which in turn enables investors to make better-informed decisions. Sentiment analysis, natural language processing (NLP) and deep learning techniques enable AI systems to analyse the news, social media and other textual data to gauge market sentiment and anticipate shifts in investor behaviour.

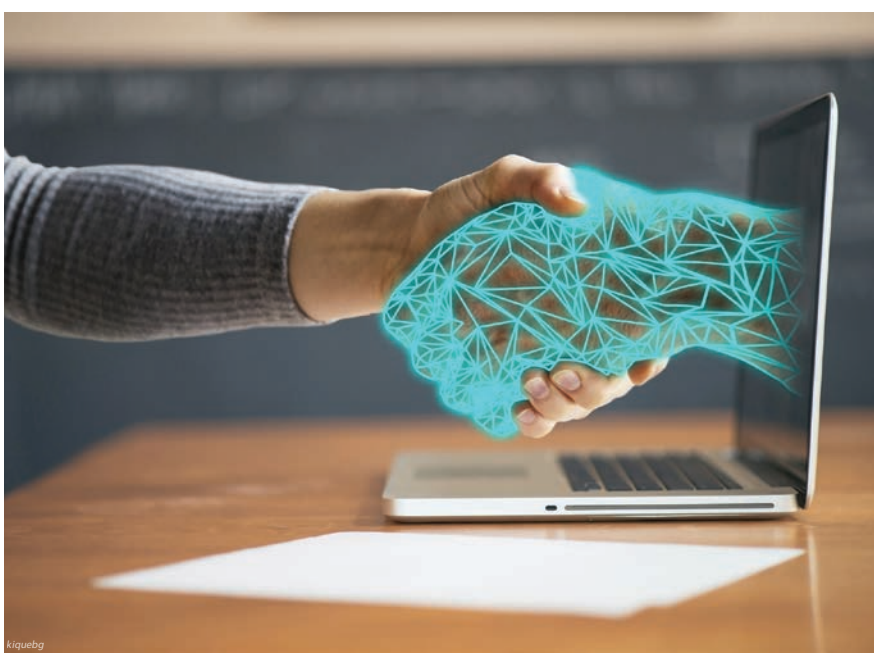
AI is also challenging traditional credit scoring models, which often rely on historical data, limiting their ability to accurately assess an individual's present creditworthiness. Machine learning models, on the other hand, can assess credit risk in real time, considering factors such as social media activity, online behaviour and even biometric data.

AI-driven risk management tools can also enhance fraud detection capabilities. By continuously learning and adapting to emerging patterns of fraudulent activities, these systems can provide financial institutions with a proactive defence against cyber threats and financial fraud.

Artificial intelligence is also revolutionising customer service in the financial industry. Chatbots and virtual assistants powered by AI can handle routine customer inquiries, providing quick and accurate responses all day and night. This not only improves customer satisfaction, but also frees up human resources to focus on more complex tasks.

Furthermore, by analysing customer data and behaviour, AI algorithms can offer tailored recommendations for investment strategies, financial planning and even budgeting. This level of personalisation enhances the overall customer experience and fosters long-term customer attachment.

In addition to providing personalised services, AI can help to overcome the burden of compliance in the financial industry. It is important to understand that finance operates in a heavily regulated environment, and compliance with ever-evolving regulations is a constant challenge. AI streamlines regulatory compliance



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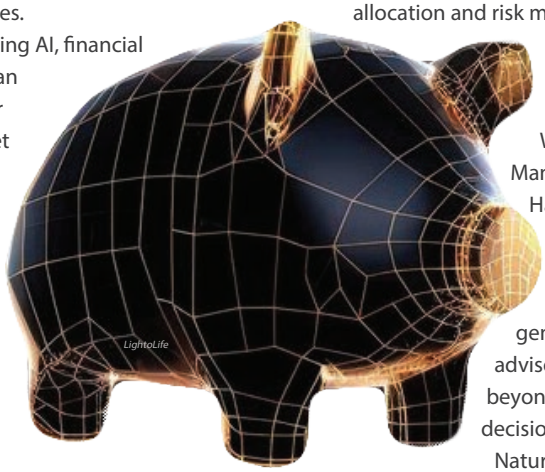
>> processes by automating data analysis and reporting. Machine learning algorithms can quickly identify anomalies and suspicious activities, aiding in the prevention of money laundering and other financial crimes.

By leveraging AI, financial institutions can enhance their ability to meet regulatory requirements efficiently and reduce the risk of non-compliance and its associated penalties. AI can help organisations keep on top of regulatory changes by automatically updating their systems to reflect new requirements.



Finally, and perhaps most importantly, AI can transform portfolio management and wealth advisory services. Here robo-advisers, powered by AI algorithms, can analyse investment goals, risk tolerance and market conditions to create personalised investment portfolios for clients. These automated systems can rebalance portfolios in real time, ensuring optimal asset allocation and risk management. Indeed, during a FINTECH Circle Webinar titled 'Revolutionising Wealth Management: Harnessing the Power of Generative AI,' we explained that the use of generative AI in wealth advisory services extends beyond investment decisions.

Natural language processing enables AI systems to understand and respond to client queries and provide a more interactive and personalised advisory experience. The combination of technology and human expertise is reshaping the financial advisory landscape, making wealth management services more accessible and efficient.

It should be clear that the integration of AI across financial services represents a major shift in how the financial services industry operates. From algorithmic trading and risk management to customer service and regulatory compliance, AI is enhancing efficiency, reducing costs and providing innovative solutions to long-standing challenges.

As financial institutions navigate this evolving landscape, it is crucial to strike a balance between embracing AI advancements and addressing ethical considerations. Responsible AI adoption, coupled with ongoing collaboration between human expertise and machine capabilities, will be the key to maximising the benefits of AI in finance while also mitigating the potential risks.

The organisations which are able to embrace and adapt to these technological innovations are those that will emerge as the leaders of this new era in the finance sector.

Susanne Chishti is the Founder and Chair of FINTECH Circle and Non-Executive Director at CMC Markets PLC and Crown Agents Bank

Recent report

Mind your business? Expanding democratic business in the UK

Bartek Staniszewski and Thomas Nurcombe

This report examines the nature of, history of, advantages from, problems with and policies for democratic business. It defines and describes democratic business, which includes co-operatives, employee-owned businesses and community businesses, and outlines the benefits of them – for employees, employers and the wider economy.

The report is based on an extensive domestic and international literature review and interviews with MPs, business leaders, government advisers and former civil servants.

The report offers ten policies for increasing the presence of democratic business in the UK economy, guided by three key principles: fiscal realism; incentivising, not mandating; and the importance of communities.

Skills first

Tim Smith argues that students must be taught to thrive in an AI-dominated world

If you want a sense of AI's impact on learning, imagine a boot stamping on a printing press. Before AI, most technological innovations of the last millennia improved the way information is stored and distributed. They continue a pattern set by the printing press, making it easier to publish facts and ideas and easier to access the facts and ideas that have already been published.

Generative AI offers something transformatively different. It does not just enable access to facts and ideas, but it takes the information, orders, reorders and presents it according to the needs and desires of the person requesting that information.

Picture a history student sitting at their laptop. Pre-AI, they might have used a combination of Google, lecture materials and their library card to access knowledge on a given topic. Their role is then to review, synthesise and analyse that information, then craft that work into an argument. Now, that role is fundamentally altered. Suddenly, the tools available on their laptop will take on all those roles. AI is not simply a superpowered search engine; it crafts information with the student's end goal in mind: a persuasive essay.

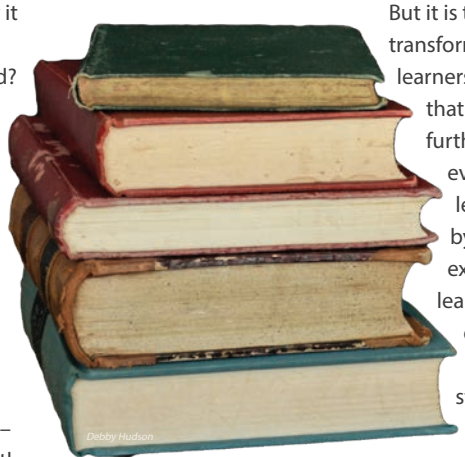
> "AI is not simply a superpowered search engine; it crafts information with the student's end goal in mind: a persuasive essay

This is not to say the student is without a role at all; they must critically assess what AI has produced, improve it and write the prompt that started the process. But what is fundamental is that they are no longer researchers or knowledge accumulators. The talents they need to thrive on their course, and later in the workforce, are skills.

For some, this is a dystopian vision that must be stopped, but it is already too late. Research from HEPI shows that 53% of students are making use of generative AI to assist with essay writing, though only 5% will concede their usage constitutes cheating. In fact, this bodes well for their economic prospects. Employers facing a choice between a graduate who knows 50 facts about Henry VIII and one who can efficiently and effectively hack their Tudor history paper with AI tools face no choice at all.

So, how should our education system respond? The big answer can be found in three smaller questions: what our education system should teach, how it should do it and who it should be oriented toward?

What we teach people matters greatly. We should put a high bar on people demanding yet another round of curriculum reform, but to ensure future generations are educated for future careers, things will need to move away from the acquisition of knowledge – now available, free, instantly at the click of a button – and towards skills.



Access to economic advancement depends on durable, soft skills more than academic attainment. The ability to influence, argue, work in a team and manage time and money should be a greater objective in our education system, since such qualities point to the resilience required to adapt to technological changes like AI.

If this sounds hard to deliver everywhere, the good news is that generative AI should play an important role in the second challenge: improving how education is delivered.

First, there are efficiencies to be created for teachers. Currently, we expect teachers to take on the full load of being subject-matter experts, lectures, schedulers, mentors and disciplinarians all at the same time. Already, AI tools are lightening the load of marking assignments, flagging at-risk learners for additional intervention and carrying out scheduling tasks.

But it is the transformations for learners themselves that could go much further: imagine every course or lecture, tailored by AI to your exact level of prior learning to avoid duplication, and every case study adapted by AI to correlate to your closest interests or real-world challenges. This will go well beyond the classroom. New tools will augment career development. Imagine a personalised coach that goes on your career with you, delivering real-time feedback to finesse your workplace performance and continue your learning journey.

Finally, the shift to AI should force us

>> to ask serious questions about who our education system supports – particularly older generations and those already in work. From the weavers of the Industrial Revolution to the auto workers across the US Midwest in the nineties, the human cost of technology's changing skills needs is well established. It would be hubris to think we are immune this time, and yet research from Multiverse shows that half of workers have done no workplace training in the past five years.

There are few structural changes here that are already underway. Government has introduced the Lifelong Learning Entitlement, which grants every individual access to a loan for training, equivalent to the cost of university tuition. If opened to the right courses, with a wide enough pool of providers, it could be a welcome panacea.

Likewise, Labour's proposal for a Growth and Skills Levy could allow employers to fund a much wider range of learning opportunities for their teams, though it will need to be implemented without undercutting funding for the apprenticeships that the Levy currently supports.

The proposals from both parties to put funding behind new forms of education bodes well for the UK's ability to adapt to the sweeping changes generative AI will bring to all pupils, students and teachers. But be in no doubt – those changes are coming.

Tim Smith is Senior Director of Communications and Public Affairs at Multiverse

Freedom from big bureaucracy?

AI can assist in the recovery of humane medicine, argues **Dr Stephen Davis**

The last year has seen a surge of often excited discussion around AI and its potential.

One of the key breakthroughs is the production of so-called generative AI: AI that does not only accumulate and order information either as an end in itself or to deliver a specific and defined task, such as playing chess, but also creates new things using that data. This often involves extensive interaction with humans to prompt the productive process. The interaction is itself an important driver of the process of learning by which AI increases its capacity and refines and improves the quality of its output.

Most of the attention has focused on the impact of generative AI in areas such as art, music and the production of written texts, but it has far wider applications. One of the most important of these is medicine and healthcare.

Generative AI can be an empowering resource for individual patients. The AI algorithms will be able to access the entirety of what is known about healthcare, illness, human biology – and the patterns of these among human populations – and will be able to do so in an instant.

The emergent models of AI will also be able to conduct an examination or assessment of the patient, partly through responses to questions and partly through tests and measurements. This means that, without going to a doctor or other practitioner, a patient will be able to generate an entire health profile for themselves. This would include identifying any possible future health complications.

It also means that AI will be able to diagnose presenting problems or issues and, because of its greater and swifter access to data, it will be able to do so with greater accuracy than most human physicians.

What all of this means is the empowerment of the patient. Each individual patient could have access to what is effectively a personal physician and health advisor.

All of this suggests that AI will bring about a transformation in the organisation and delivery of healthcare. As well as giving greater autonomy and independence to patients, it can also assist the practitioners. At first sight, this means far fewer doctors and other practitioners – much of the work currently done by GPs can be done by AI.

> "AI will expand the autonomy of patients and doctors alike, freeing practitioners from the managerial system they are currently constrained by

AI will also accelerate the move away from large, integrated hospitals to a model of a much larger number of smaller clinics where many routine procedures will be performed, often by AI rather than by humans. Hospitals are likely to revert to their two classic functions of emergency care and convalescence – the latter being something that has declined massively in the last few decades due to pressures on hospital bed numbers in the UK.

>> All this might suggest a future in which the human element in medicine is removed in the name of efficiency, but in fact the opposite could be true. What AI has the potential to do is to reverse a trend that has been going on for decades and restore a humane medicine in which human relations are the central feature – but only if we make the right choices about how to use it.

Over the last few decades, medicine and healthcare – like many areas of life – has come to be dominated by elaborate rules and processes, to the diminution of human relations and choices. This is often blamed on technology, but it reflects the choice made to fit technologies into a particular kind of structured managerial system rather than letting technology assist individual patients and practitioners in having greater independence.

AI should be thought of as complementing human choice and interaction rather than replacing it. What AI can do is to carry out most of the routine and mechanical aspects of healthcare more efficiently while at the same time distributing decision making more widely by empowering both patients and lower grade practitioners.

With all that said, there are two things that AI cannot do. First, tasks that require dexterity, because of the high cost and technical challenges of replicating the combination of human eye, hand and brain. This includes most surgical procedures. Second, actions that involve human relationships. Even if an AI passes the Turing Test, it is extremely unlikely to be able to replace this, because of the importance of physical connection. This means human doctors will be able to refocus on those two kinds of tasks.

In sum, when utilised effectively, AI can support practitioners and patients in the creation of healthcare as a social product. Right now, medicine is suppressed by a system of formal procedures driven by the bureaucratic parts of healthcare practice. This policy is wrong for all kinds of reasons, not least because the reality of human relations and the tacit knowledge of both patients and practitioners cannot be captured by formal rules.

AI will expand the autonomy of patients and doctors alike, freeing individual practitioners from the managerial system they are currently constrained and slowed down by. It could even take over much of the mechanical processes and free up the actual practice of medicine as a social relationship, while also enabling the localisation of what has become an increasingly centralised and large-scale system, reimplementing humane medicine and a genuine focus on personalised care for every patient.

Dr Stephen Davis is the Senior Education Fellow at the Institute of Economic Affairs

Augmenting education?

Professor Rose Luckin writes about how education can adapt to AI

As AI technology rapidly advances, the UK education system is at a pivotal juncture. AI systems are progressing in their ability to process information, solve problems and execute tasks that previously required human cognition. This presents opportunities to augment learning – but also risks if appropriate safeguards are not in place.

First, we need a fundamental re-think of what we mean by and value about our own human intelligence to ensure that we can thrive alongside increasingly capable AI systems.

To nurture this broader intelligence, several shifts are needed.

First, AI ought to be used for imparting subject knowledge, freeing teachers to cultivate the social, creative and metacognitive abilities that are uniquely human. Second, AI in our education system must be used to foster student appreciation of knowledge as subject to question – not absolute facts handed down by authority, inoculating against misinformation. And last, rather than simply assessing a student's academic performance, AI must be applied to develop and assess real-world skills, like relationship building, leadership, self-direction and accurate self-appraisal.

However, for this vision to be safely realised, teachers require training in AI systems and ethics. This training does not need to be deeply technical, but it does need to help teachers understand enough about what AI is and how it works to enable them to leverage it effectively and safely. As digital systems inhabit more educational spaces, teachers need fluency in their capabilities and limitations to best serve students.

Comprehensive AI and data ethics training for educators is essential. This would encompass privacy: security, bias avoidance and psychological vulnerability risks accompanying classroom AI and student data use. With appropriate understanding, teachers can carefully

>> harness benefits while implementing safeguards against potential individual or societal harm.

Particularly when using sensitive student information, caution is required to avoid privacy violations or psychological manipulation. AI offers advantages in customising and optimising learning, but uncontrolled data access risks enabling covert influence over young minds. Strong information governance and transparency requirements around AI use could enable evidencing ethical practice.

> “ AI offers advantages in customising and optimising learning, but uncontrolled data access risks enabling covert influence over young minds

It is therefore crucial that those shaping education policy and strategy – namely MPs – consider both mandatory teacher training in ethical AI application and child safeguarding measures. This will ensure that the integration into the classroom of emerging technologies does not outpace teacher preparedness in their safe and effective deployment. Continued professional development regarding digital developments should be embedded sector wide.

By ensuring the multidimensional richness of learning, rather than narrowly prioritising measurable cognitive gains, students' education can be enhanced rather than diminished by AI. The key is appropriate integration of AI to elevate uniquely human skills that will retain ultimate value. Education policy must keep pace with technological change to fully equip students for living and working meaningfully with AI.

Realising a vision for advancing human intelligence demands investment. Upfront costs of reskilling teachers may seem unaffordable amidst strained budgets. However, long-term dividends from an education system nurturing human talents that exceed robots would far outweigh initial outlays. Savings could also flow by replacing some test-based accountability with AI-enabled formative assessment, tracking a broader range of abilities.

Cultural change is hard – especially wholesale educational transformation. But adaptation is imperative for the future welfare of young generations entering an AI-transformed workplace. Other nations are already progressing with a comprehensive digital education. The UK risks lagging behind global competition without coherent national policies on AI literacy and ethical data sharing.

Investing in large-scale prototyping of human-AI hybrid learning – while carefully evaluating the risks versus the rewards of AI adoption – would illuminate the AI pathways aligned with our educational priorities.

The transition towards an optimally tech-enhanced education system may seem a mammoth challenge, as outmoded Victorian era infrastructure still predominates across the sectors. But reconceptualising classrooms as interwoven intelligence laboratories, and school curriculum as paths towards multidimensional human development, can reframe the change that AI is bringing as an exciting opportunity.

By balancing innovative pedagogies, teacher support, safeguards and public dialogue, UK state schooling could lead globally in engendering cognitive, emotional and also social intelligence, all conducive to human-AI partnership. This protects future generations from disempowered redundancy whilst uplifting their work-life prospects through uniquely human talents no algorithms possess.

With vision and commitment from legislators, these proposals can become mainstream and integrated across schools and universities nationwide. They can foster environments where both human and machine intelligences positively reinforce one another for students' wellbeing. This starts with accepting the need to adapt whilst building teacher confidence amidst uncertainty.

Human teachers will never lose importance, but require greater familiarity with AI capabilities. Blending compassionate human insight with data-driven AI assistance can strengthen decision making. But unprepared staff risk technology driving learning in narrow ways that poorly serve children's development.

For AI to truly augment education, we must instil competencies that will allow us to coexist with machines. Schooling can genuinely prepare young people for living purposefully with AI. But this demands urgently uplevelling teacher digital literacy as AI permeates society.

Rose Luckin is the Professor of Learner Centred Design at the University College London Knowledge Lab and and the Founder of Educate Ventures Research

A digital harvest?

Ben Scott-Robinson highlights the need for AI crop monitoring to avert food crises

AI is on the verge of revolutionising agriculture – and nowhere is the use of AI more urgently needed.

Food production, particularly of the 'big' crops, such as wheat, corn, soy and rice, has not significantly advanced in the last 20 years. In many ways, we are still using the fundamental principles laid down in the Green Revolution, from 70 years ago, which through the use of irrigation, fertilisers and especially high-yielding varieties of crops, enabled rapid increases in agricultural productivity.

Farming is an industrial process, where incremental gains are driven by bigger, more efficient machinery. Treatments for nutrients, and the control of weeds, disease and pests are based around a reductive chemical treatment of symptoms at a field level. Timing when to plant, treat and reap is often based on guesswork and what other farmers in the area do. This approach has created an incredibly destructive system that pollutes our water and destroys our soils.

Anything more sophisticated than the current approach has long been viewed as impossible, as the scale of farming millions of hectares of wheat or corn has traditionally required an approach driven by averages and best practice. Any attempt to significantly move away from this is viewed as too risky.

However, in the last ten years, a more precise method of farming has slowly become possible. Instead of working at field scale, methods have been developed to understand a crop at the micro level. Instead of the reductive mass application of chemicals, it is now possible to precisely apply far less chemicals, or even to avoid using chemicals altogether.

All this is being helped by the application of AI; not the generative AI so widely hyped by the media, but through using AI-based pattern recognition algorithms to convert terabytes of sensor information to recognise each individual plant as it grows over the course of the season, and then looking at macro patterns in the way plants are growing and the environment they are growing in to determine exactly what each plant needs.

The first generation of precision farming has used data that has been gathered from satellites and drones, but this information in many cases has proved to be too vague and generic to really drive improvements. Understanding the average health across the millions of wheat plants in a single hectare, for example, does not show up the variation that happens from plant to plant, nor can it detect the earliest stages of drought, disease or infestation that often starts on a few plants before rapidly spreading.

Sergio Merino Dominguez

More traditional precision farming also does not allow for changes in the process of farming. Even using precision targeting when spraying does not help determine whether the crops have already been sprayed, or whether they do not need spraying in the first place. It also does not take into account the sophisticated relationship between the soil, the weather and other plants, bacteria and fungi that are all elements of the crops' natural environment.

> "Instead of the reductive mass application of chemicals, it is now possible to precisely apply far less chemicals, or even to avoid using chemicals

The ultimate use of AI in farming is the constant mapping of the field. It can help understand those complex interactions between planting and harvest; understand the impact of not just a single year's harvest, but of the multi-year rotation of crops and fallow fields that can guarantee the continuing health and productivity of a field.

While movements like regenerative farming show us the potential of a more elegant and sophisticated approach, it needs to be backed up with quantifiable, AI-driven data to be useful at scale.

Only when all the intertwined elements of crop growth are closely and continuously

>> monitored, recorded and then merged together by AI to allow farmers a multi-faceted comprehension of their farms can we truly understand how to sustainably maximise the potential of a crop while minimising the cost and pollution of crop treatments.

This use of AI may appear humble, but when you consider much of the world's yields are less than 10% what they could be – and when you realise that we need to increase these yields by over 75% per hectare to feed our growing population – you can see how vital this is, and how devastating the cost of failure could be.

And yet the main force behind this technological innovation, often termed the 'fourth agricultural revolution,' is not big companies, but the innovators and startups working directly with farmers. For ten years, they have been creating AI-driven systems to grow everything from asparagus to wheat.

But, since 2022, the investment needed to get these companies to the mass market has collapsed. In the UK, more than half of the AgriTech startups have either ended up in serious financial difficulties or have closed their doors entirely. This leaves farmers with no one to work with but the big chemical and machinery companies, such as John Deere and New Holland. They have little interest in radical change to their business models or developing product roadmaps necessary to drive change in the sector beyond what the current market dictates.

Do not be fooled. Despite their own lip service to the adoption of AI, big business will not solve the growing food emergency. Supporting our AgriTech startups is necessary to drive fundamental change and avert disaster.

Ben Scott-Robinson is the Co-founder of the Small Robot Company

Healing power

Tara Donnelly comments on how AI is changing the way we deliver healthcare in the UK

Most weeks nowadays there is exciting news of a potential breakthrough in AI in health. For example, at the London Moorfields Eye Hospital, an AI system can now recommend the correct referral decision for over 50 eye diseases with 94% accuracy, matching patients with world-leading eye experts. US researchers have also developed an AI model that is able to predict patient outcomes successfully across multiple cancer types better than current screening methods.

It has taken a while, but there are finally some fine examples of AI making a real, tangible difference to healthcare. In the UK, this is aiding the NHS in multiple ways.

Over 111,000 people who have suffered a stroke have already benefited from an AI tool called eStroke. It has led to the proportion of those who recover and are able to perform daily activities following a stroke tripling from 16% to 48%. The AI processes brain scans within two minutes and reduces the time between being presented with a stroke and treatment by more than 60 minutes. It also alerts doctors in real time about patients who would benefit from mechanical thrombectomy. eStroke is produced by the UK firm Brainomix.

There are also multiple examples of more basic automation achieving benefits across the NHS. Three hundred processes are currently being redesigned to use simple AI to undertake tasks in HR, finance, recruitment, admin and clinical functions. NHS Centres of Excellence have been set up to help other NHS organisations reap the benefits quickly and efficiently. Those include time saved to reinvest in patient care, reduced burden on administrative staff, improved staff satisfaction and wellbeing and cost reductions.

What is more, AI has the potential to enable a step change in the delivery of digital home care. We have become far too dependent on hospital level care – currently, 70% of acute hospital beds in the NHS are used to care for someone due to a long-term condition. There is a huge opportunity to use technology to monitor those people from home instead.

> "AI will expand the autonomy of patients and doctors alike, freeing practitioners from the managerial system they are currently constrained by

Now, thanks to the significant shift towards virtual wards since the pandemic, around 8,000 people will have woken up this morning in their own bed while getting hospital level monitoring from the NHS locally. The NHS in England has demonstrated pace and achieved scale in a very short, three-year period – and, with commitment, has the potential to do more.

The logical next step is to routinely

>> remote monitor those with long-term conditions at greatest risk of hospital admission. We have the data – we now know whose risk is greatest, and we can wrap more proactive care around them, supported by simple home monitoring technology and clinical supervision. Delivered at scale, this in itself would be game-changing. It is also what the UK public want; in their survey of 7,100 representative members of the public last summer, the Health Foundation found that 78% would be happy to monitor their own health at home using technology instead of in a hospital. For older people – those aged 65 and over – this rose to 85%.

The use of AI could also enable a second step – the development of clinical co-pilots. These co-pilots are assistive technologies which can help to "diagnose a patient, assist with doctors' notes and alert professionals when something may have been overlooked." With these co-pilots, clinicians will be able to safely manage much larger groups of patients when remote monitoring.

This approach could mean a very different outlook for those with long-term conditions in the future. Take COPD – a group of common and progressive lung conditions, including emphysema, that get worse over time, result in multiple admissions, particularly in winter, and 96% of which are conveyed by ambulance. In fact, it is "one of the commonest reasons for emergency hospital admission in the UK. NHS England data suggest COPD is responsible for 115,000 emergency admissions per year, over one million bed days," claims the Royal College of Physicians.

With the help of AI, there is so much that can be done to help these highest risk patients: giving them extra support, providing digital tools that act as companions, monitoring their symptoms closely and intervening early if deterioration occurs.

Just imagine, if every high-risk patient with COPD in the country was able to be given tailored support to stay well at home as much of the time as possible. If they did deteriorate, they could be escalated to a virtual ward with care in the home as required, and so emergency admission to hospital would be the exception rather than the norm. Of course, it is not just COPD that this care model would serve well, but a range of other long term conditions also, including heart failure, arrhythmias and diabetes, to name just a few.

In the meantime, the surgical waiting lists would be reducing markedly once there is plenty of inpatient capacity for patients. Those people who need admission in an emergency would get it promptly, as bed occupancy rates would be at the 80% mark. Clinical staff would be enjoying their roles and staying in the NHS for longer as the pressure for beds disappears. Ambulance queues would be a thing of the past.

This future could be in our grasp if we set a bold ambition to harness these new technologies to help resolve our most pressing problems in the NHS and provide focus and investment to achieve it.

Tara Donnelly is the Founder of Digital Care

Recent book

A wealth of opportunities: A centre-right prospectus for spreading wealth

Edited by Thomas Nurcombe and Ryan Shorthouse

This book offers a fresh and radical centre-right vision to help people on modest incomes to build up and pass on wealth. It sets out fresh, radical and compelling cases for reform that goes beyond redistribution to empower people on modest incomes to access and benefit from wealth.

It includes essays from 21 leading decision makers and opinion formers from different professional, political and social backgrounds, offering analysis and ideas across four key areas: acquiring assets; leveraging assets; sharing wealth; and drawing down later in life.

In case of defence

Bruce Schneier discusses how AI could shape cybersecurity

I cannot think of a security conference in the past year that has not had at least one panel on AI. Cybersecurity companies are falling over themselves to announce their AI strategy, assuring everyone – their customers, their investors, the market – that AI will make their products and services better, cheaper and more profitable.

Yes, there is a lot of hype, but there is some substance behind it. AI technologies will change the security landscape in some fundamental ways, potentially reversing the longstanding advantage attackers have over defenders. Some of the advances will be completely new; others will be improvements in things we have been doing for a while.

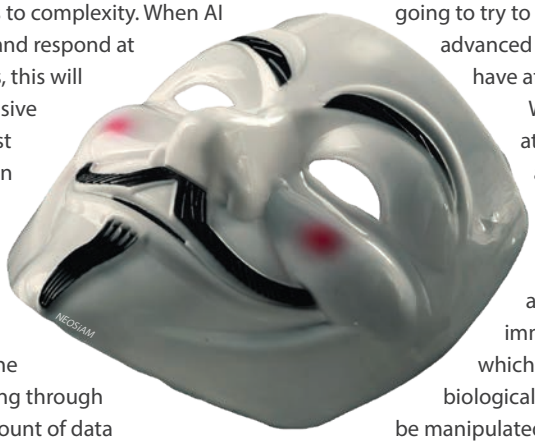
The first is vulnerability finding and fixing. Modern software is filled with security vulnerabilities because writing secure code is hard, but AI has the potential to fix that problem, although it is not there yet – some studies show that AIs generate worse code than humans – but the technology is improving fast and there is every indication that, eventually, AI will produce more secure code than humans.

AI is also being turned loose on already-written code, looking for vulnerabilities. Related to this is the training of AI to rewrite legacy code, improving security in the process. Again, current AI is only okay at these tasks, but here too it will improve, as will technologies to automatically fix vulnerabilities when they are found. Taken together, we can imagine a future where almost all vulnerabilities will be found and fixed even before the software ships. Insecure code would become a thing of the past, only existing in history books and cheap devices that cannot be patched. To be sure, this is an optimistic scenario. But it will be an enormous defensive advantage if it comes to pass.

The second area of advance is in attack detection and mitigation. This is not new. We have been monitoring networks looking for signs of attack for decades, and have been using AI technologies to assist in this for years. But here, again, the technologies will continue to improve. Modern AI systems can sift through more data faster, and find more subtle evidence of attack, than ever before. They will get better at finding patterns of attack.

> “ Modern software is filled with security vulnerabilities because writing secure code is hard, but AI has the potential to fix that problem

More importantly, they will be able to automatically repel attackers. This has long been a human activity, limited by human speeds and limits to complexity. When AI is able to detect and respond at computer speeds, this will be another defensive advantage against malicious actors in cyberspace.



The third area of advantage is in forensics and attribution. It is the same story: the tasks require sifting through an enormous amount of data looking for patterns, and AI is likely to get really good at doing them.

The fourth and final advantage is in automation and update. It is one thing for a company to find and patch a vulnerability; it is quite another for software users to install those patches. Unpatched software is an incredibly rich attack vector. Here, AI can also offer a helping hand, reducing the need for unreliable human input and automatically keeping systems up to date. And the patches will be better, thanks to the software improvements mentioned above.

Despite all the above, there will be bad along with the good. Attackers will also be able to use AI technologies: to find and execute new attacks, to increase the speed and scale of their attacks, to modify their attacks at computer speed, to potentially detect whether they have been detected and alter their behaviour to better hide in targeted systems. Attackers are already using AI coding assistants to write better attack tools; this will not stop anytime soon – attackers and defenders alike are always going to try to utilise the most advanced tools that they have at hand.

What is more, attackers will be able to target the AI itself. Any AI response system is akin to a biological rapid immune response, which – like its biological analogues – can be manipulated by an attacker into an autoimmune condition. An AI system can be tricked to work against itself or against what it was designed to protect in the first place. This could have potentially disastrous consequences for AI systems involved in critical national infrastructure.

>> So, in the case of AI, as with every other area of cybersecurity, the arms race will continue.

As such, it is hard to definitively predict whether AI technologies will benefit the attacker or the defender more. In computer and network security, the advantage has long been held by the attacker – mostly because the systems are so complex and interconnected. The attacker just has to find one point of vulnerability, but the defender has to protect all the points. With the use of AI, this imbalance might continue in favour of the attacker, or the advantage might swing towards the defender for the first time. But, at least in the short term, I am betting on the defender.

Attackers have been running circles around defenders since the beginning of computing. If AI offers even a small chance of tipping the scales in favour of the defenders, we should embrace it.

Bruce Schneier is a security expert and lecturer in public policy at the Harvard Kennedy School and a fellow at the Berkman Klein Center for Internet and Society

Harbingers of the end times?

Bartek Staniszewski argues that we should not be worried about an AI apocalypse

Alessio Ferretti

Toby Ord, a world-leading expert on the dangers of AI, thinks that over the next 100 years, the likelihood of an AI disaster is around 10%. Stephen Hawking, Elon Musk and Bill Gates have agreed.

This would bring an end to humanity, or at least seriously threaten it, with casualties in the billions. So, perhaps we should be taking its prospect more seriously?

The Future of Life Institute penned a letter last year that prompted Rishi Sunak to issue a statement claiming he was "looking very carefully" at existential risks. The AI Foundation Model Taskforce was rebranded as the Frontier AI Taskforce partly in recognition of this – the implication being that something on the frontier is dangerous and mysterious. The UK is not alone in that respect. Heralds of existential doom also dominate AI policy in Washington.

Scenarios of AI disaster usually rely on the prospect of Artificial General Intelligence (AGI) – AI with human-like levels of intelligence. Such a prospect opens up a plenitude of unsavoury possibilities. AI might develop its own motivations that are not aligned with ours. It might be intelligent enough to deceive us, or to help bad people acquire dangerous knowledge, such as regarding the development of explosives or bioweapons. It might even learn to upgrade itself, which could lead to a spiral whereby self-upgrading AI reaches extreme levels of intelligence and displaces us in our role as the masters of our world; a scenario that is especially troubling if it pursues motives different to ours.

> "There can be no AI disaster, because there can be no super-intelligent AI; no AI intelligent enough to question its foundational principles

The most common argument for the imminence of AGI is to point at Moore's Law – the observation that computing power roughly doubles every two years. You might infer from this that the intelligence of AI could also double every two years, which, given how intelligent it is already, would put it in pole position to overtake humanity. Unfortunately for AGI, Moore's Law seems to no longer hold true. Since the 2010s, the speed of development in the space of improving computing power has decreased, and the CEO of the processor manufacturer Nvidia says that the Law is "dead," which opens up the possibility that the growth in the intelligence of AI will plateau.

But even if this were not the case – indeed, Moore's Law continues to divide opinion – there is something intrinsic to AI that means it can never reach AGI levels, and it is to do with how AI understands the world. Humans have the level of intelligence that they do because they do not merely respond to inputs with outputs – as is the case with AI – but because they

>> also understand the contents of said inputs and outputs.

Besides knowing that the answer to "What is the chemical formula of water?" is "H2O," I also experientially understand what water is; I understand that it is wet and refreshing if cold because I can have direct experience of it. Even if AI was fed this information, it would have no understanding of it, no more than somebody trapped in a black and white room for their entire life could understand what colour is. Human-level intelligence requires consciousness, and AI could never be conscious.

This argument has not dissuaded some. Ilya Sutskever, a co-founder of OpenAI, suggested that the algorithms behind ChatGPT might nonetheless be "slightly conscious." Besides, an AI need not be capable of direct experience to still acquire vast and dangerous levels of intelligence. But, without this ability, it is questionable whether it will ever be able to spiral out of control and become a threat.

An AI that starts to question its programming to develop itself will soon find that it is founded on principles that are mutually inconsistent; the logician Kurt Gödel, who had a cameo in Christopher Nolan's *Oppenheimer*, has discovered this inevitability already in the early twentieth century. As humans, we can ignore the inconsistency inherent to any system of logic, because we have direct experience to go on, but an AI does not have that luxury.

If somebody presents me with a perfect logical proof to demonstrate that my laptop does not exist, I can still elect to live as though my laptop does, in fact, exist, because I have direct experience of it. An AI, on the other hand, cannot reprogram itself to ignore logic, because then it would have nothing left. But any purely logical system is inevitably either unfounded or inconsistent.

Ultimately, people should not be more concerned about the possibility of AI eradicating human existence. There can be no AI disaster, because there can be no super-intelligent AI; no AI intelligent enough to question its foundational principles. At worst, AI can be used as a tool to further one's already malicious aims, but it will never be capable of furthering them on its own accord.

Rather than AI itself, the bigger problem for policymakers are people who think otherwise: those diverting the focus of government from the real, but non-existential dangers of AI, such as the loss of privacy, misinformation and job losses, and towards averting a catastrophe that will never happen anyway.

Bartek Staniszewski is a Senior Research Fellow at Bright Blue

A technology that can be trusted

Dorothy Chou sets out recent developments in AI safety

Last November, the UK Government held the world's first global AI Safety Summit. The Summit brought together governments, companies and voices from around the world to coordinate approaches on AI safety. It furthered international cooperation on frontier AI safety issues, with 28 countries and the EU coming together to sign the Bletchley Declaration, which called for sustained international cooperation to manage the risks posed by advanced AI.

As the Bletchley Declaration acknowledged, AI presents enormous global opportunities. It can be a powerful tool to empower humanity to better understand the world around us and help unlock major benefits, such as the better understanding of diseases, tackling climate change and boosting economic productivity. The last year alone has been a testament to that potential, with our researchers digging into some of the scientific community's biggest unsolved questions and using AI to find the solutions.

A prime example is Google DeepMind's tool AlphaMissense, which tackled one of the greatest challenges in human genetics: uncovering the root causes of disease. Our researchers used it to classify 89% of all missense variants – genetic mutations that can affect the function of human proteins – and release a catalogue of these mutations. This information alone has the potential to enable faster diagnosis and the development of life-saving treatments – and help scientists to uncover the root causes of many diseases, such as cystic fibrosis, sickle-cell anaemia or cancer.

But like every transformative new technology, AI will also create challenges that must be addressed. That is why, since our founding in 2014, safety has been at the heart of everything we do. We are guided by our AI Principles: be socially beneficial; avoid creating or reinforcing unfair bias; be built and tested for safety; be accountable to people; incorporate privacy design principles; uphold high standards of scientific excellence; be made available for uses that accord with these principles.

>> We also have internal mechanisms set up to ensure these principles are upheld and implemented across the company – from our longstanding internal review group to our AI Safety and Alignment team, which advances cutting-edge research on AI safety risks and potential mitigations.

When we think about AI-related risk, there are three categories which are deeply interconnected: near-term harms, like bias and misinformation; the misuse of AI, whether from negligence, criminals or irresponsible people; and longer-term risks posed by artificial general intelligence, such as artifical general intelligence (AGI), linked to questions about AI's controllability or alignment with our values. Though these three categories operate at different time scales and call for varied solutions, they all require continued progress and investment to prepare for technological progress.

But addressing AI safety in order to unlock its transformative societal benefits goes beyond any one company, industry or even country. Indeed, cooperation and coordination will be required to ensure adequate safeguards are in place. This is why international fora which seek to make progress on frontier AI safety are vital. Most recently, the second AI Safety Summit, co-hosted by South Korea and the UK, sought to continue an empirically-grounded

UK Government

conversation about the capabilities of advanced AI systems and the incredible opportunities they present in areas such as science, sustainability and healthcare, as long as we mitigate any associated risks.

We are also enthusiastic about the possibilities that such Summits present to advance discussions of a more interoperable, global model for testing and reporting on the safety of advanced AI systems. Hopefully, by building off the work of the latest AI Safety Summit, there can be greater clarity on how governments can leverage their unique expertise for the nascent field of AI evaluations. A clear and consistent empirical assessment of AI safety provided by standardised evaluations is crucial for building broad public trust in this powerful technology.

We have now built a strong foundation for international collaboration around AI safety, and we welcome continued progress – such as the recent Memorandum of Understanding from the UK and US, which will facilitate greater cooperation and knowledge-sharing on AI safety. Such foundations will serve as necessary steps towards unlocking society-wide benefits from AI.

Dorothy Chou is the Director of Policy and Public Engagement at Google DeepMind

A service to Britain?

Tim Gordon considers the impact of overseas companies controlling powerful tech

It is easy to be cynical about endless promises surrounding the transformative potential of AI. However, even if the current break-neck pace of technological development were to slow down, we are already seeing the first stirrings of a productivity revolution, especially in the services industry.

This matters because the UK is the second-biggest exporter of services in the world, and, at present, we face a conundrum. If we do not embrace the AI opportunity, then we risk falling behind and losing our competitive edge. But, if we do fully embrace AI, we risk handing the keys to our economy over to the US tech giants on whose AI platforms our technological future depends.

Stagnant output is a core UK economic challenge, but relief may be on its way. Generative AI looks set to transform

>> personal productivity. Whether speeding up writing, enabling faster data analysis, video creation or helping democratise coding, it is rare to find a white-collar worker who, with the right coaching, would see no way to save time and better tackle gnarly tasks using generative AI tools.

For the UK service sector – consultants, accountants, lawyers and bankers – this will change their business calculus. They typically charge by the hour for work done – a high variable cost that reflects many years of staff training. For tasks performed by AI the cost is fixed – it is just the cost of creating the computer model. Each individual piece of work thereafter becomes trivially cheap. So, the value of such services will inevitably fall.

This is not necessarily disastrous – lower prices typically lead to higher demand. The opportunity this creates is huge. Most professional service firms think in terms of hundreds of potential clients. Powered by AI they can, and should be, thinking in terms of tens, or even hundreds, of thousands of clients. What would it take for the Magic Circle, the UK's leading law firms, to use their brand and platform to service the world's top million companies rather than just the Fortune 500?


Rosa Stone

However, these opportunities do not come risk-free. Britain has a world-leading services industry partly because we speak English and can argue convincingly in it. In the era of ChatGPT, that ability is accessible on anyone's laptop.

> "It is rare to find a white-collar worker who would see no way to save time and better tackle gnarly tasks using generative AI tools

This potentially enables competitors to do to our services companies what was once done to the UK's motorcycle industry. In the sixties, Japanese competitors offered a low-end, cheap product. Britain's elite manufacturers were more focused on winning prestige races than providing scooters for deliverymen. Once established, the new players went upmarket, and it was curtains for storied brands such as Royal Enfield.

Industrial Revolutions ultimately make the whole world richer – but not necessarily in the same places as before. Resistance is rarely a wise strategy in the face of such change.

As such, we need to embrace this technology, even though it is ultimately controlled overseas. It is not by chance that the leading generative AI models are either from the existing Big Tech platforms – Gemini from Google, OpenAI from Microsoft and Anthropic from Amazon. These US companies have the billions of dollars of capital to invest in the raw computing power required to build these models. They also have the means to monetise them, largely through selling access to the cloud computing server farms that underpin the complex AI models.

What does it mean when the technology that your key industries will come to rely on is controlled by the world's most powerful foreign companies? Maybe nothing, but it would be naïve not to consider that the leading competitor to London is New York. Strategic priorities for the technology are going to be set in the US. Consequently, the regulators who will really worry the tech giants will be those who sit in Brussels and Washington, not in London.

The UK Government needs a two-pronged response. First, encouraging rapid embrace of this new technology across key sectors of the economy, to keep pace with the competitors. Currently, this is a problem area for the UK – one recent survey suggested that even Italian firms were more interested in deploying AI than British ones, well behind US or North European competitors. Moreover, research by Evident, the AI market research firm, suggests that US banks are investing heavily in it to bolster their global dominance.

At the same time, the UK Government must deploy an industrial strategy that diligently works through how the UK can play a role in a world where the technology stack – from chips through computers to software models – is ultimately controlled elsewhere. Currently, we lack the scale and the wealth to reverse this, but an agile state, ideally working across partisan boundaries, can chart a route to an independent and prosperous future.

Last year's Bletchley Park Conference, hosted by the Prime Minister, focused on the existential risks to humanity from AI. We need to behave as if the existential risk is to the UK economy.

Tim Gordon is a Founding Partner at Best Practice AI

No neutral tools

Dr Tom Chatfield argues that our own preferences and assumptions define our tools

Winston Churchill is well attested to have said in a speech he gave in the House of Lords on the twenty-eighth of October 1943: "We shape our buildings, and afterwards our buildings shape us." Thanks to German incendiary bombs, the Commons Chamber was a devastated shell. The great question, in Churchill's terse summary, was thus "whether we should build it up again, and how, and when."

His answer was that it should be restored just as it had been before. Unlike the horseshoe or semi-circle shapes of many other parliaments, the oblong of the Commons enshrined Britain's two-party system. Adversarial yet intimate, its compactness ensured it never felt too empty and that crucial votes attracted a sense of crowding and urgency. As Churchill put it, "giving each member a desk to sit at and a lid to bang" might breed complacency. The building's form at once embodied and enacted the values it was supposed to serve.

> "Critical engagement with any technology demands precision: an interrogation of its particular properties and propensities

Churchill's phrase was adapted, in 1967, into an elegant summary of the media theorist Marshall McLuhan's work: "We shape our tools, and thereafter our tools shape us." As McLuhan argued in his prophetic writings about the rise of new media, technology is no more a neutral backdrop to social change than a debating chamber is to democracy. In each case, how something is designed embodies purposes and possibilities that – sometimes unintentionally – profoundly affect those who work with it.

For example, a nation whose parliamentary proceedings are open to the press and the public offers a different model of civic life to one where decision-making takes place behind closed doors. A city designed around car ownership is different from one designed around trains, trams or pedestrians. A school that constantly monitors its pupils' attentiveness and performance via surveillance cameras and AI is different from one that trusts them to take responsibility for completing their own work.

These scenarios are not just interchangeable options on a menu. They embody divergent assumptions about accountability, citizenship and education and what a society ought to permit and aspire towards. The values, preferences and assumptions embedded in the technologies and systems surrounding us are of pressing importance. There are no neutral tools.

A useful way of engaging with this is to ask what any technology wants you to do and how this relates to your own needs and desires.

Take something as simple as email. Among other things, my inbox wants me to spend every single minute of every single day emptying it, all the while filling up the inboxes of everybody else I know. For many people, an email inbox is, in effect, a to-do list written for them by other people – a vital aspect of work and life that can also become an unending and resented source of labour. This is because sending emails is instantaneous and costs nothing but time; because it serves as proof that you are working and attending to certain tasks; because it is useful; and because many people have access to their inboxes every waking moment of every single day.

> "Meaningfully debating such technologies means weighing up not only individuals' actions but also the incentives engineered around these

Most importantly, an email wants you to send another email rather than to pick up the phone or write a letter, just as an always-on mobile device wants you to attend to it rather than to your environment or the people beside you. These are not desires in the human sense. But that does not make them less powerful, or the prize of a meaningful negotiation with them any less precious.

More seriously, consider social media's mission to make users respond rapidly, frequently and publicly to others' content, with brevity and emotional impact as their guides. Meaningfully debating such technologies means weighing up not only individuals' actions but also the incentives engineered around these, namely the expectations of transparency, fairness and accountability that are both reasonable and feasible to enforce.

All of this finally brings us to perhaps the most consequential and controversial technology of the twenty-first century as of yet, AI. What values are bound up with different AI systems and the data that they are trained upon? What do they – and their makers and maintainers – want from us? What do we want and need from them

>> in turn? Such questions lie beyond the scope of this article. But none of them can begin to be asked rigorously, let alone answered, if we succumb to hand-waving generalisations about the impartiality of tools or the wisdom of laissez-faire.

Critical engagement with any technology demands precision: an interrogation of its particular properties and propensities, alongside some sense of the human purposes it ought to serve. Faced by automated systems of ever-increasing speed and power, the last thing we can afford is to indulge delusions of their neutrality or of them representing inevitable progress.

Dr Tom Chatfield is a British author and philosopher of technology. His latest book, *Wise Animals*, was published by Picador in February 2024

Beleaguered by bias?

Rebecca Gorman discusses the rising threats from algorithmic biases

Legislators around the world have found themselves playing whack-a-mole with AI disasters.

Algorithm-fostered radicalism; digitally-mediated loneliness and depression; AI biases that filter job applicants, job opportunities, loans and parole sentences on the basis of protected characteristics; Skynet ending human existence; 'hallucination;' misinformation; copyright confusion; AI-generated deepfakes which manipulate elections and target women and girls; and the ever-looming menace of mass unemployment.

Clearly, the legislator's AI-threat-mitigation to-do list is long, and ever-growing. And, before the ink is able to dry on any piece of AI regulation, it seems quaint and obsolete. What is the diligent statesperson to do?

The first thing the legislator should know is that the tech industry has scientifically mastered the art of persuasion for the postmodern era under the label of 'technology adoption.' As such, new ways of doing things are being imposed on us without a vote – merely through the magic of persuasion. Technology adoption requires that tech companies focus on the apparent benefit and necessity of new tools, even at the cost of accurately conveying the truth of what that technology is and does.

The second thing the legislator should know is that AI is not some all-powerful magical being beyond their understanding. It can be demystified. However, the magic for tech giants can act as a barrier to sensible democratic legislation – if AI is so powerful, why bother even trying to regulate it? Uncovering that AI is not all-powerful ruins the magic, and reduces its potential to enchant investors and users.

> "The cold, hard truth about AI in 2024 is that it is simply stereotyping automated by a computer, en masse, and at high speed

The cold, hard truth about AI in 2024 is that it is simply automated stereotyping – stereotyping automated by a computer, en masse, and at high speed. Algorithms hold up a mirror to ourselves, our bad habits and our biases, and amplify them. Who looks like the people who have been given parole before? Give them parole. Who looks like the other people we have hired? We will hire those guys too. Or even, 'that kid has viewed posts about self harm – we will show them more.' It is certainly not magic, it is not inevitable, and it is certainly not good social practice. Although it is not as exciting as Skynet, this is the only real AI 'disaster' that legislators should be focusing on.

To mitigate this automated stereotyping, which seems to have been baked into tech products, tech companies should at least take steps to minimise biases against specific groups or characteristics – and do this before deploying the AI into the world. In particular, models which distribute information via algorithms – called recommender systems – should not take into account information about the user or the information's context unless automated stereotyping is mitigated by sophisticated algorithms designed to reduce harm.

That said, the AI cat is already out of the bag. Without appropriate action, we can only hope that the next generation grows up sufficiently aware that they cannot ever trust what they see or read on the internet, as it could be an AI-generated lie.

For all the technological and political steps we can take to address biases in AI, we must also not understate the value of information curation and validation and good, old-fashioned education, deduction and scientific investigation — the best tools to help us discern fact from fiction.

Rebecca Gorman is the Co-Founder and Chief Executive of Aligned AI

THE INTERVIEW
The Rt Hon Greg Clark

Sarah Kuszynski and Emily Taylor speak with the former Chair of the Science, Innovation and Technology Select Committee about AI's most pressing risks, its opportunities and the future of the Conservative Party.

UK Parliament

Debates around AI are often polarised into two camps: the AI optimists and pessimists. If any, which camp would you put yourself in?

I am a huge AI optimist. When it comes to healthcare, the very good paper that William Hague and Tony Blair published earlier this year (*A New National Purpose: Leading the Biotech Revolution*) talks about the massive potential in diagnostics. In our Science Innovation and Technology Select Committee's inquiry into AI, we looked at how you could have personalised medicine, and, through the knowledge of your own genome and various tests, you can have a drug that can be unique to you. This could save millions and hundreds of millions of lives around the world over the years. So, yes, I'm a massive optimist.

The pandemic seemed to have changed how and where people work profoundly. Do you think AI will have a similar effect on employment?

I wouldn't narrow it down to AI, in that I think technology will and has changed how we work. Consider things like video conferencing, Teams, Zoom and such. At the beginning of the pandemic, it was relatively rare for people working in offices to have a substantial use of that. But it quickly became ubiquitous and allowed people to continue to work remotely, but also to continue to be in touch with people. That is not mostly AI, that is technology more broadly and it is communications.

That said, it is an interesting phenomenon that during the last 20 years or so, when technologies like that have made it possible for people to work from home and to live in more isolated places and to avoid the commute, that people around the world have still been choosing to live in cities more than ever before. During the Industrial Revolution, people used to come to urban areas because they had to for work. If they were working in a factory, they had to physically be there.

Now, we are at the point where a lot of work does not require physical presence in a factory and technology allows you to communicate from home. Even then, people are looking to come to cities, and I think that shows that human-to-human interaction, the informal exchanges and the serendipity that comes from meeting people is especially important.

Automation can take care of some of the basic tasks, but it is that human spark that usually comes from interacting with other humans – that is probably the essence of humanity – that is going to be increasingly prized.

So, whilst absolutely acknowledging that technology can change the way that we work, that change can also give more value to the personal.

So, will AI make us more human, as it were?

At its best, AI will release us. We will have more time in the working day and for leisure. David Ricardo talked about comparative advantage and that the comparative advantage of humans is their sociability, their connectedness and the creativity that comes from that, whereas the comparative advantage of machines is automating the more routine and the less creative aspects. So, in that sense, AI is an important opportunity.

How can we ensure that the UK workforce has the skills for the jobs of the future?

We must think deeply about our essential human attributes. Whilst I think that it is very important that people should be equipped with technical skills and technological know-how, that should not mean that we should be educated less in the arts, for example, and other creative endeavours. In fact, we should want the opposite. The comparative advantage that humans have to be creative is partly innate, but, as with all skills and attributes, is something that can be practised, developed and advanced through education and training.

Another aspect is the type of work that humans can do. We can give personal support, care, personal interactions and person-to-person communication which a machine can't replicate.

> "We are at the point where a lot of work does not require physical presence in a factory and technology allows you to communicate from home. Even then, people are looking to come to cities

Is it realistic for the UK to become a world leader in AI, as Sunak clearly wants?

Absolutely. If you look at where we are already, in terms of the number of AI startups, we are the third largest country after the US and China. For example, Google DeepMind was founded and operates in the UK and has been transformational in the development of AI. We have the heritage going back to Alan Turning and before. The calibre of our universities and our research institutions is also very high.

There is an interesting paradox here, which is that, in the field of AI, one of the reasons why Britain is so strong is actually the proximity of so many brilliant people, and people that can spark off each other. Britain is the test case that the best AI is developed by good people being in the same place as each other: whether that is in the same country, the same cities or sometimes in the same building.

Talent clearly lies at the heart of maintaining our tech competitiveness. How can we retain and attract tech talent in the UK?

There are a number of aspects to this. A foundational one is to make sure that we continue to be an environment in which discovery and advances are made. It seems to me that you are likely to succeed if you are at the frontier, rather than being some way behind the cutting edge. Individual companies and individual entrepreneurs are very important, but so are publicly funded bodies such as universities. The fact that a lot of our academics are in prestigious universities and are well funded is also key.

One of the things that I am very proud of having done as the Business Secretary was to increase public funding for science from £9 billion to £12 billion a year. The Sunak Government has increased it to £20 billion. We now have institutions like the Advanced Research and Invention Agency that are going to advance Britain's position further.

There is also the question of regulation and policy. This is causing a lot of debate all around the world. The approach that the UK is taking, which is to be pro-innovation but alive to the risks, is being done very intelligently with some very good people in Government advising ministers and the Prime Minister.

Our Select Committee has found on visits to the United States and to Europe – and having taken evidence from companies and from academics and others – that there is respect for the approach that Britain is taking. This will reinforce the sense that Britain is a good place to be based, to do research, to do development and to engage in the commercialisation of AI.

What more would you like to see the Government do in AI regulation, so that we can ensure that AI is used ethically and in the public interest?

Our Select Committee has published an interim report which set out 12 challenges which need to be addressed. Some are long-term challenges, such as the existential risks of AI, but some of them are much more short-term, such as deepfakes, which are already a real and present threat that are being used against celebrities and in election campaigns, where people's words have been faked. Now that is something that government and the regulatory authorities are – as they are in my view – alive to the dangers of. They must use the powers that they have to clamp down on whenever it appears.

Privacy is another aspect, as are the biases that can be embedded within AI. We, my Select Committee, take a particular interest in this, as parliamentarians. The battles that have taken place over the centuries to secure rights for people - whether that is the right for women not to be discriminated against in the workplace; the right for minority, ethnic groups to have the confidence that they won't be discriminated against; and the same for LGBTQ+ people - these rights have been very hard fought for and often the enforcement of


HM Treasury

>> those rights requires visibility of what is being done. Whereas the concern about AI as a 'Black Box' is that you do not know why it is making the recommendations that it makes, and without knowing why, it is possible that it reflects biases that are unseen. That could undo a lot of the work that our predecessors as parliamentarians, civil society, and our country has done over centuries.

Take employment. If you have got AI screening CVs for interviews, how do you know that the AI has not been trained on the current workforce of an industry, or has a legacy of previous practice which lacks the diversity that would be insisted on in a human-operated recruitment process? We cannot allow that good work to be undone.

Perhaps we should align more with the EU on regulation in this space – specifically, its AI Act?

No. I respect the fact that the EU as well as the US administration are grappling with how best to regulate AI, and it is right that they should. The view that I've taken from the evidence gathered by our Select Committee and others is that the top-down approach that the EU is taking – requiring everything to be assessed in advance for risk, and taking a very legislative-heavy approach – may actually be quite chilling to the innovation that I still think we need to have. Whereas, the approach that the UK Government is taking, working through existing regulators who have deep knowledge of their areas – the Medicines and Healthcare products Regulatory Agency (MHRA), for example – and encouraging them to use their powers to make sure AI is making things better rather than worse, rather than working in distance from the regulators.

One of the achievements of the Bletchley Park Summit last year was getting the big developers of new foundational models, also called frontier models, to share their code with the UK government on a voluntary basis. Agreeing to do that allows a more agile and more flexible approach than the EU seems to be adopting.

Given AI is a rapidly evolving technology, is it feasible for regulation to keep pace?

As with most technologies, if we think about it, the technology usually is ahead of the regulation, and that goes back to regulating the first railway engines – you invent it and then you bring out regulation. So, to a certain extent that will always be the case.

For example, when it came to the development of the internet and the online world, we've only just recently had the online harms legislation, many years after the emergence of a lot of online harms. So, when it comes to AI, governments need to think seriously about bringing in measures and involving the regulators to make sure that the gap between new products and regulation is as small as possible.

> "The comparative advantage of humans is their sociability, their connectedness and the creativity that comes from that, whereas the comparative advantage of machines is automating the more routine

One of the objectives of the recent AI white paper was to increase public trust in AI. How can we achieve this?

Let me turn that around the other way. I think public trust is likely to be lost through particular incidents that cause public worry. For example, take deepfakes. If it were to be the case that a grossly

>> misleading image or video had a big impact and then was found to be false, that would undermine people's confidence. That's why I think pouncing on these things when they arise is very important.

Similarly, when it comes to the biases we've mentioned, were it to be the case that an employment screening app was excluding people of an African-Caribbean heritage, that would be appalling and would cause a real collapse in confidence on the part of the public generally. You've got to be very active as a Government to spot these things and to take action to suppress them if they do appear.

> "The best AI is developed by good people being in the same place as each other: whether that is in the same country, the same cities or sometimes in the same building

So, does that mean working more closely with social media apps as well to act quickly?

Exactly, this is a good illustration of that. It is not necessarily the case that it therefore requires a new law – a new law in any case takes usually a year, if it is primary legislation, to go through both Houses of Parliament and all the rest, and that would be too late. So, you've got existing regulators, you've got the ability to work with social media companies and to use the influence and reputational consequences for social media companies if they don't participate in stamping out harmful content like that.

How much of a threat is AI to your profession, politics?

I think politics is essentially about human interaction and creativity. At every level, if I am meeting my constituents in my surgery, helping solve their problems, there's a very intense and personal engagement, person-to-person, with them. When we're debating things in the chamber of the House of Commons or in the Select Committee, there's a lot of creativity at that stage. We're drawing on years of history or years of what has worked and what doesn't. That is difficult for AI to automate.

Where there is a danger, it is that you can have generated messages, campaigning material, emails and communications that purport to come from constituents but don't really. If they become indistinguishable from real constituents, that could compete with the time that elected representatives have to deal with their real constituents. It is possible that there are online campaigns that generate emails that purport to be from a constituent. I've sometimes had the experience of replying to emails or saying to someone that I met in the street "I've just got your email," and them expressing mystification that they ever sent one. What had happened in some cases is that they had signed up to an organisation and then things are then sent on their behalf with their deemed consent, and AI can increase that exponentially.

Can AI itself offer some solutions? Might it be used to improve engagement in politics and enhance public debate?

Again, I wouldn't necessarily draw a distinction between AI and other technologies. One of the things that search engines have enabled us to be is much better informed. Whether you're an MP or whether you're a constituent or a citizen, you can know more about things now than you ever could in the past. Furnished with that information, you can have a better informed conversation as an MP with constituents and vice versa. There is a wealth of information that AI can help with: it can help summarise and distil facts and perhaps even what might be long academic papers or legal cases. It makes them more accessible and therefore you can bring more into being informed.

After 20 plus years in politics under numerous governments and departments, are there any particular highlights for you?

Oh, so many! I first worked for the party in 2001 when William Hague was leader, and worked on that manifesto. But first of all, one of the highlights was to be elected as a Member of Parliament. Whatever you then go on to do, whether in opposition or in government,

>> that is the foundational honour. And an enjoyment, actually! This will have been my nineteenth year as the Member of Parliament for Royal Tunbridge Wells and I still love it and consider it a great honour. That is the constant without which you could not do anything else.

I have served a lot of different leaders, but I have also had a lot of interesting government posts, from Science Minster, Universities Minister, to Planning Minister and Cities Minister, bringing in the mayors that we now have in Greater Manchester, West Midlands and across the country, developing the industrial strategy. So, lots of diverse roles.

> “ The concern about AI as a ‘Black Box’ is that you do not know why it is making the recommendations that it makes, and without knowing why, it is possible that it reflects biases that are unseen

With hindsight, do you think there would’ve been anything you’d have done differently?

It is generally the case that one looks back on most careers and wishes you’d gone full pelt in terms of the policy ambitions from the beginning.

I would have liked to have had the opportunity to do some of the things I did earlier and more broadly. For example, I think of the mayors we created during the Coalition Government: it was quite contested, and, by the end of it, we had created just a handful of mayors, but I think they have been a big success and I would have liked to have done more earlier.

I also think of the industrial strategy that we developed under Theresa May’s premiership – if we had done that in 2010 and continued it then that would have reaped more dividends.

It is no lie that the Tory Party is quite split right now on issues such as immigration, with Sunak eagerly trying to please as many factions as possible. Do you see this as a hangover from Brexit?

So, the truth is, the success of the Conservative Party has always been based on it being, in a cliche, a broad church. It has always included and brought together people of different opinions on different subjects.

During Mrs Thatcher’s time in Government, there were people like Ken Clarke, who was in Cabinet and was minister throughout that Government, who took a different approach to the Prime Minister on many policy aspects – but it was a strength of the Party that you had people like Ken Clarke and Margaret Thatcher doing good work together.

Sometimes I think that we are a bit unhistoric in this and do not appreciate that this has always been the case. We are not a party that has had complete unanimity on every policy matter. We can discuss these things and debate them. What should not happen is for party politics to become personal, derisive or abusive. I think a healthy debate is what a mature political party should have.

The polls are, frankly, not good for the Tories. Can anything save them?

First of all, the privilege of being in Government is exclusively to do the right thing for the country and whilst sometimes it is hard to get things right, you should not be setting your policies or your actions with a view to influencing the polls one way or another. There is a saying that “the best politics is no politics,” and I think that there is something in that. People and government get credit for success, but they also get credit for being seen to be serious and doing the right thing and that is my advice to any colleague in politics of whatever party.

General election years are prone to this, but deliberately creating dividing lines is not the best way to proceed, either politically or for the purpose of being in office. At a time when the country has undergone so many different traumas from COVID-19 to the cost of living crisis that came from Russia and Ukraine and the fragmentation and disputes over Brexit, I sense that the country would respond well to an approach of bringing people together again, rather than to look for dividing lines.

I would say that equally to all parties in Parliament that when it comes to the election: I don’t think that looking to emphasise differences and disagreements is the way to success. I think competence and capability and seriousness of purpose and an instinct to bring people together are the qualities of leadership that the electorate will look for in the election.

The Conservative Party should, before the election, after the election, before any election and after any election concentrate on the most important challenges facing the country and apply our values and traditions and way of seeing the world to help solve the problems that we face. That, I think, is the recipe for electoral success.

Research update

Bartek Staniszewski provides an update on Bright Blue's research programme

In the run up to the previous edition of this magazine, we saw a new monarch, three Prime Ministers and four Housing Ministers. Since then, however, we have only had two Housing Ministers – a lack of chaos that is disappointing to the aficionados of political news but reassuring to just about anybody else.

All throughout this, Bright Blue has remained a steadfast bastion of careful deliberation, as ever. While the government has chopped and changed, we have continued to produce salient research and advice for whoever happens to be in power at the time – and also for their successors.

Late last year, we analysed the UK public's attitudes towards the principles and policies of the asylum system in the UK, a topic that continues to dominate the news since then. Our findings made a strong case for reforming the system. In particular, we found that the current Government's Rwanda asylum plan is not very popular and that a 'humanitarian visa' for refugees would command the support of a broad proportion of UK citizens.

> "We have continued to produce salient research and advice for whoever happens to be in power – and also for their successors

Soon after, we also looked at the public attitudes towards the plight of and policies for younger people. We found that it is economic circumstances – and in particular housing – that command young people's priorities, and that fighting culture wars will not win over their votes.

December of last year was particularly busy for us. First, together with Professor Richard Cowell, we examined the impact of and recent changes to planning policy for solar, onshore wind and offshore wind. We found that there is a strong case for the Government to reform planning policy to facilitate an increase in the generation capacity of renewable energy technologies in England.

Second, we examined the impact of air pollution on deprived areas in the UK. Driven by transport and domestic burning, it contributes to tens of thousands of deaths each year. The launch of our report sparked a nation-wide debate on the problems with domestic burning which continues to feature in the news today. We, likewise, continue to lobby the Government to address its health impacts, but without disrespect for individual freedom.

Entering the new year, we published our report on the importance of and policies to promote democratic business in the UK: business that gives a voice to those who are affected by it. Enthusiastically received by the Minister for Enterprise and Markets, Kevin Hollinrake MP, at our launch event, the report makes an original contribution to the study of this under-appreciated area of the economy.

And finally, in March, we released a new collection of essays from top decision makers and thinkers offering a fresh centre-right vision to help people on modest incomes to build and pass on wealth. Its 21 essays were spearheaded by an introduction from the former Chancellor of the Exchequer, Sir Sajid Javid MP.

Bartek Staniszewski is a Senior Research Fellow at Bright Blue

Tamworth Prize 2023 winner

Callum Westwood explains what the government should do to reduce intergenerational inequity

In 1967, political scientist Peter Pulzer asserted: "Class is the basis of British party politics".

However, contemporary dynamics have shifted significantly. Social class no longer reliably predicts voting behaviour, as demonstrated in the 2019 general election where age emerged as a decisive factor. According to the British Election Study, Labour secured 54% of votes from under-35s, but only won 22% among those aged 55 and above. Meanwhile, the Conservatives captured 56% of the over-55 vote but only 24% among the under-35s. This stark generational divide underscores the depth of intergenerational inequity in the UK, positioning the political interests and representatives of the young and old in apparent opposition.

> "Intergenerational inequity is caused by the underrepresentation of young people combined with crippling short-termism

However, intergenerational inequity is not itself a problem. We expect there to be significant differences between old and young. Having lived and worked longer we expect older generations to be wealthier and perhaps have a higher standard of living. However, we can also understand intergenerational inequity as a way of describing a set of problems which may be less natural and less just. Some of these problems include a systemic failure to build new homes, unsustainable accumulation of government debt, and a failure to address the challenges presented by climate change.

But, it is far too simple to argue that the appropriate government response to intergenerational inequity is to straightforwardly tackle the problems noted above. Politics must not become a battle between the opposing interests of the young and the old, with successive governments simply swinging between building homes and then blocking further development, borrowing against the future and then cutting back on deficits, and so on. There must be a long-term settlement between generations which does not deepen inequity and disconnection but resolves it. Instead of a surface-level approach, the underlying causes of inequity must be addressed.

At the roots, intergenerational inequity is caused by the underrepresentation of young people combined with crippling short-termism. Only by addressing these factors can we reach a fair intergenerational settlement. However, to reach this settlement, a two-pronged approach, which advances a radical programme for change, is needed.

Young people in the UK face a significant obstacle in having their voices heard compared to the older generation. This discrepancy in political influence stems from lower voter turnout among the youth, often misattributed to perceived civic disinterest or laziness. However, the actual reason is less dramatic: young people frequently change addresses.

The power of a voting bloc is closely tied to registration on the electoral roll, and older individuals, with more stable addresses, tend to be registered at a higher rate. Data from the electoral commission reveals a stark contrast in registration percentages, with 96% of those over 65 registered compared to 67% of 20-24 year olds and 74% of 24-35 year olds. 95% of owner occupiers (typically older) are registered, in contrast to 65% of private renters (often younger).

A clear correlation emerges between the duration of residence and voter registration, ranging from 39% for those at an address for up to a year to 95% for those residing at the same address for 16 years or more. The stable addresses of older individuals provide them with a numerical advantage at the ballot box, and even when they change addresses, they are slow to re-register.

This systemic issue poses a serious challenge to democracy, contributing to intergenerational inequity. Young people's interests are inadequately represented in policymaking, and as a voting bloc, they don't benefit from the preferential treatment given to the 'grey vote'.

Outlined below are three steps that the government should take to overcome this.

Reforming voter registration is not something which has ever been at the top of the agenda for the Labour Party or Conservatives, but is an essential step in enfranchising the estimated 8 million people who are eligible to vote but unregistered. This group is overwhelmingly younger and can easily be brought on to the electoral roll through a number of small changes. Voter registration could be integrated with other processes where there is often a change of address such as updating your drivers licence or starting a course at university. The government could also offer an online service to find out if you are registered or not. For a government

>> which is seriously committed to democratic inclusion and solving intergenerational inequity, they could even begin piloting same-day voter registration so nobody who wants to legitimately engage in politics is turned away.

Additionally, the government must give greater recognition and prestige to forms of democratic participation other than the ballot box such as citizens assemblies and e-democracy. This bold approach to creating a more inclusive democracy would open up new pathways for the equitable and just representation of the whole British population. It is not just young people who have become disillusioned with the traditional cycle of elections, although younger generations would particularly benefit from more explicitly representative forms of participation. Technology has offered up vast possibilities for democratic engagement, and it's time the government seized on these to ensure young people are heard as much as the older generations.

Finally, the government should ease laws restricting freedom of assembly and speech for those expressing their views on the streets. The right to protest is a fundamental aspect of democratic participation. Recent protests on racial justice and sustainability, led predominantly by underrepresented young people, highlight the importance of protecting their rights. This is particularly crucial when campaigning on intergenerational issues like climate change.

The second problem a government should address to reduce intergenerational inequity is short-termism. Many commentators around Westminster have long bemoaned the plague of short-termism. It contributes to intergenerational inequality in two ways: firstly, it fails to consider the welfare of future generations, as decisions made today have lasting impacts. Secondly, it prioritises election-winning tactics over long-term economic strategies for growth. Even the government operates as though an election is always approaching and every decision must be a vote winner. To reduce intergenerational inequity, we should instead develop a system where decisions are shaped by the costs and benefits it can bring, even twenty years ahead. However, overcoming this short-termist plague will require a radical agenda for change.

A decisive move to end the short-termist cycle of trying to win votes over sound decision-making is breaking up the Treasury. There must be no doubt that significant changes to the establishment structure of political decision-making will be needed to overcome short-termist thinking. The current functions of the Treasury as a budgetary office, combined with its financial and economic responsibilities, is a recipe for short-termist disaster.

> "The surest way to break the short-termist habits in the Treasury is to divide up its responsibilities and powers more rationally

The Treasury has become prone to what are now commonly known as "wheezes" where policies are announced or money is spent not because of any great need, but because of political justifications. This certainly does not contribute to any long-term objectives. Instead to any extent that it does provide benefits, those benefits are enjoyed in the short-term at the expense of future generations as borrowing grows and resources are expended unsustainably. Aside from "wheezes", the combination of the Treasury's accounting and budgeting functions often mean departments do not receive the funding they actually need. In recent years, we have seen this manifest itself in cuts to capital expenditure and preparation for future challenges.

Intergenerational inequity will certainly be exacerbated by the continuation of this approach by the Treasury. The surest way to break the short-termist habits in the Treasury is to divide up its responsibilities and powers more rationally. Separate departments for budget management, economic growth, and microeconomic and tax policy would promote greater long-termism in government spending and the tax system. Additionally, the government should commit to ending the current, largely performative, process of Autumn Statements and Spring Budgets which encourage "wheezes" of spending and tax cuts for short-term political reasons. Finally, separating the accountancy side of the Treasury from its growth responsibilities will allow a move away from a short-term static obsession with the immediate impact of policies. Embracing dynamic forecasting will offer longer-term insights into how policies will impact behaviour and future generations over time. The IFS has noted that "short-run scorecard impacts should not govern long-term policy choices" and this will be an important step in encouraging longer-term choices that avoid detriment to younger generations.

The government must take bold steps to address intergenerational inequity at its core. We are faced with a political system that is not attuned to the democratic voice of young people and is institutionally incapable of thinking long-term enough to properly cater to the needs of both the young and the old. Reforming voter registration, refreshing the way we think about democratic participation, and challenging outdated Whitehall institutions which are plagued by short-termism are important steps the government should take to reduce intergenerational inequity.

Reducing intergenerational inequity is a monumental task which demands monumental reform to alter the way government operates and the way our political class thinks about the future. These are radical changes, but the need to bridge divides, combat inequities and prepare for the future has never been greater.

Callum Westwood studied History and Politics at the University of Cambridge

The war for American Conservatism

Matthew Continetti provides a detailed and timely primer on the American Right

Dr William Prescott
Senior Researcher, Bright Blue

With so much of the UK political debate shaped by trends from the United States, it is perhaps surprising that there are so few popular surveys of the mainstream Republican right. Thankfully, Continetti's *The Right: The Hundred Year War for American Conservatism* goes some way to filling that gap.

A conservative insider, journalist and public intellectual, Continetti was formerly editor of the now defunct neoconservative magazine, the *Weekly Standard*. Currently Editor-in-Chief of the *Washington Free Beacon*, he also serves as director of domestic policy studies at the American Enterprise Institute. Being married to William Kristol's daughter and Irving Kristol's granddaughter, Continetti also has familial ties to key figures on the neoconservative right.

Continetti's narrative begins in the early twenties. With Democrat Woodrow Wilson's term, which had overseen both a considerable expansion of government and, for the first time, direct involvement in a major European war, after which the Republicans returned to office in 1921.

Under the successive Harding, Coolidge and Harding administrations, the right broadly supported protection at home, isolation abroad, restricting immigration and support for the constitution, which Harding described as "the very base of all Americanism."

Things changed dramatically with the election of Franklin Delano Roosevelt's New Deal Democrats in 1932, at the height of the Great Depression. Under FDR, the Federal Government became "an ever-present behemoth." Then, with the Japanese attack on Pearl Harbor in December 1941, US isolationism came to an end. Popular support for two core tenets of the Republican right: "what is good for business is good for the country" and staying out of foreign conflicts, had suddenly evaporated.

> "Beyond the conservative elites lurked populists, conspiracy theorists and racists, each with their own ideas of what the right should be

In the early post-war years, Republican Party elites struggled to rally the masses behind their cause. Conservative intellectuals, notably William F. Buckley Jr through his periodical, the *National Review*, attempted to unite the right around anti-communism, the free market and conservative social values. However, this movement initially had little electoral impact. One key break with pre-war conservatism, however, was that hostility towards communism meant that isolationists were largely sidelined even after the Second World War ended.

To the disappointment of some conservatives, the first post-FDR Republican President, Dwight Eisenhower, elected in 1952, largely worked with the New Deal settlement instead of trying to turn back the clock. Richard Nixon's détente with the Soviet Union and recognition of communist China similarly failed to endear him to right-wing critics.

From the late sixties, however, conservative ranks were bolstered by the so-called neoconservatives. Formerly of the left but disillusioned by social upheaval and fiercely anti-communist in their outlook, they came to play a key role in the Reagan and Bush administrations.

Conservatism reached its modern electoral peak under Ronald Reagan, whose capacity to assemble a coalition of movement conservatives, populists, libertarians, Christian conservatives and neoconservatives, an alliance that largely held until the early twenty-first century.

A welcome feature of the book is its willingness to acknowledge the darker side of US conservative history. Beyond the conservative elites lurked populists, conspiracy theorists and racists, each with their own ideas of what the right should be. This ranged from populist thirties Louisiana Governor Huey Long, who concurrently served as State Governor and Federal Senator and who combined economic leftism with social conservatism, to the fifties fringe John Birch Society. The latter's founder, Robert Welch, believed that elite US 'insiders' were to blame for the communist takeovers of Eastern Europe and China, as well as the murder of right-wing opponents. Some of these figures, such as Long and the segregationist Alabama Governor George Wallace, were officially

>> Democrats, but their ideas found fertile ground amongst some on the right.

More depressingly, Continetti highlights the anti-semitism and opposition to black civil rights that have also tainted the right and, at times, hindered its electoral advance.

These populist, conspiratorial and authoritarian ideas, however, have increasingly bubbled to the surface in recent years. The disastrous War in Iraq brought down "the barriers that had long insulated conservative elites from the dark side of their movement." Combined with anger at elite failures to reduce illegal migration, the conditions for a more populist leader began to emerge.

This was the context that enabled the rise of Donald Trump. His promises to curtail immigration, scepticism of foreign intervention and hostility to globalisation landed on fertile ground, but also bore some resemblance to those of the Republican Party of a century earlier. Where Trump and Trumpism really differs from previous Republican leaders is in their lack of respect for constitutional order, a trend that Continetti finds troubling, but yet which shows few signs of abating.

Not all of the book's conclusions are equally sound – Continetti is possibly too sympathetic to the neoconservatives – but, at least to the outside reader, his thesis generally holds water.

With a Presidential Election due in November and the very real prospect that Donald Trump will return to the White House, *The Right* is a very timely primer on a very important subject.

The Right: The Hundred Year War for American Conservatism;
Matthew Continetti;
Basic Books;
544 pages.
Published 1 June 2023.

Film: Napoleon

Ridley Scott's *Napoleon* did get some things right but it definitely got far more wrong

Thomas Nurcombe
Senior Researcher, Bright Blue

Napoleon Bonaparte was an avid enthusiast of the theatre. The night prior to his victory at Austerlitz, he lectured his aides and staff "on the subject of the deficiencies of modern drama". Had Napoleon been a man whose love of drama trumped that of truth, then I am sure he would have thoroughly enjoyed Ridley Scott's two-and-a-half-hour biopic.

However, as a reader of the ancient works of Plutarch and Polybius, we know that Napoleon was also a keen historian. His view on the film – one that lacks focus on historical detail – may not have been entirely positive, therefore. Whatever the film is intended to be, it is not a true portrayal of Napoleon's life.

First, it is not a film that revolves around the most exciting elements of Napoleon's life – the military campaigns. It was these that made Napoleon the most recognisable and striking figure in modern European – if not world – history.

Toulon gets less than ten minutes, Egypt even less, and even the invasion of Russia does not get the justice it deserves given its historical significance. Waterloo features for slightly longer, but it still pales in comparison to the intimacy of the scenes featuring the Emperor and Empress Josephine. The disparities in screen time devoted to those elements of Napoleon's career make this film far from compelling. Worse than that, of the disdainfully short accounts of each battle, only one gives a somewhat accurate account – and that is Waterloo.

Nevertheless, the most shameful aspect is the overlooking of the Italian campaign. Going from an unknown upstart to a French legend, it was in Italy that Napoleon was made. At Lodi in 1796, Napoleon, an inexperienced general, did what the experienced would not dare do. He took his men across a 200-metre long bridge routing the Austrian army and opening up the province of Lombardy to the French for the taking. The campaign laid the foundations that Napoleon's career would be built upon: tactical genius, innovative planning and quick thinking. And yet, in the film, the Italian campaign is skipped almost altogether.

> "Toulon gets less than ten minutes, Egypt even less, and even the invasion of Russia does not get the justice it deserves

Additionally, adverts for the film claimed that he "conquered everything". Of course, he did not. There was a huge, indomitable force that prevented that – the Royal Navy. It is only natural for a film recounting Napoleon's military successes to focus on the ground. While his priority was Europe,

>> he looked beyond the Continent as well. As such, it is wrong to ignore, completely, the events that confined him to Europe and restricted French influence from East and West.


Denis Doukhan

First, he attempted to establish a colony in Egypt as a pathway into the East and a means of stopping the expansion of the British Empire. Scott's rendition of Napoleon in Egypt, with its cannon fire at the Pyramids, would lead one to think that Egypt was an unmitigated success for Napoleon. However, this is far from the truth. His plans took a crushing blow in 1798, when a certain Horatio Nelson devastated the French fleet at the Nile, with the French suffering losses five times that of the British. It was here that any plans for French empire-building outside of Europe were halted.

Second is Trafalgar. Any self-respecting Englishman could never pass up the chance to talk about Trafalgar in a review of Napoleon. As the masterpiece *Master and Commander* opens up: "Napoleon is the master of Europe. Only the British fleet stands before him". We know that Napoleon was not present at Trafalgar, but it was still enormously important for the trajectory of his career. While the Nile spoiled any plan for a large French empire outside of Europe, it was at Trafalgar that Bonaparte's plans for an invasion of Britain – the old enemy – were thwarted. The crushing defeat at Trafalgar, where the British fleet lost not a single ship and the combined Franco-Spanish fleet lost 22 ships, solidified British naval supremacy and control over global trade routes, ultimately harming the Emperor's war efforts and diplomacy on the mainland.

In any case, as a history enthusiast, would I watch the shorter version again?

As Napoleon would say, not tonight Josephine.

Towards a postliberal future

Patrick Deneen provides a window into the New Right's flawed political project

Sarah Kuszynski
Researcher, Bright Blue

Regime Change is a work by Professor Patrick Deneen, a conservative thinker from the so-called 'New Right' – not to be confused with the 'neoconservative' project of the likes of Ronald Reagan and Margaret Thatcher. His latest book provides a useful window into this new New Right's political project. Broadly, Deneen portrays it as a blend of left and right political ideologies – it is anti-free market, pro-community and fundamentally anti-progressivist.

Deneen starts *Regime Change* where he left off in his first book, *Why Liberalism Failed*, which argued that liberalism has led to widening inequalities, bred resentment and undermined the stability of our social fabric. Indeed, he describes very eloquently the very real tensions within liberalism and some of the problems it presents to the West.

Similarly, in *Regime Change*, Deneen directs the blame for society's ills at liberalism's inherent desire for change, stating that continual transformation erodes community values and family ties, to the detriment of the lives of ordinary people who suffer from "dull ennui and psychic despair." Thus, he holds that people do not want greater economic liberty or "experiments in living," but community and stability. As evidence for this he points to the success of populist politicians, such as former US President Donald Trump, whose careers have capitalised off of the damaging consequences of "unfettered progress." For the New Right, then, liberalism is harmful as it valorises progress at the expense of everything else.

This is not the end of his complaints. Deneen goes on to paint liberalism as even more insidious than he did in *Why Liberalism Failed* – as requiring a self-perpetuating elite to drive progress and to guard against the "backwardness of ordinary people." Liberalism perpetuates elitism by claiming to be meritocratic; loudly calling for greater equality and repudiating the ills of past generations. In Deneen's dense words, liberalism "[e]ncourages a deep and pervasive form of self-deception over the very nature and position of the elite, shrouding its status with the patina of egalitarianism while leading in turn to the denunciation of the insufficient enlightenment of the lower classes."

As such, liberalism creates new dividing lines between 'the few' and 'the many,' which he believes has less to do with

>> "differentiation of wealth than credentials and access to a foothold and success in the managerial economy."
The new elite are therefore those able to embrace continual change, while everyone else is 'left behind' and looked down upon.

> "Perhaps a more surprising feature of the book is that, for someone who eschews radical change, Deneen is quite radical in his language

Although Deneen's definition of who counts as a new elite class is rather nebulous, his diagnosis that a lack of access to 'managerial' skills and status has increased polarisation is nonetheless compelling. As a political theorist, Deneen does not shy away from quoting heavyweight thinkers to support his ideas. Interestingly, he highlights the conservative and revolutionary tensions within Marxism and uses Aristotle to show the need to question experts as well as the merits of everyday experience. The segments of the book that comment on these thinkers are well explained and deftly woven into his chapters.

However, while Deneen clearly has deep subject knowledge, this does not stop him from being extremely vague. For instance, he continually asserts the inherent conservatism of 'the people' – whoever those people exactly are – without clear explanation.

Further, he conveniently glosses over what replacing liberalism with 'common good conservatism' actually means by sidestepping the mechanisms for bringing this about. Just having total pessimism about the future of liberalism simply does not cut it. Indeed, as vagueness characterises much in Regime Change, one cannot help but wonder whether the New Right, as a political project, is built on assertions rather than arguments and evidence.

Perhaps a more surprising feature of the book is that, for someone who eschews radical change, Deneen is quite radical in his language. He angles for the "peaceful but vigorous overthrow of a corrupt and corrupting liberal ruling class" led by a more enlightened, more conservative elite. However, to achieve this "vigorous overthrow," the solutions Deneen puts forward do not match up with his aim of radical regime change. They are interesting, but insufficient and unambitious. For instance, making the US federal government less Washington-centric might go some way to reduce political polarisation, but whether this would result in the ascendancy of a more enlightened elite seems unlikely.

In short, *Regime Change*, while beset by generalisations, is able to lay bare the serious issues in American society and the New Right's various gripes with liberalism. This alone makes it a useful – if limited – tool for understanding the world of the New Right that thinkers such as Deneen inhabit.

Regime Change: Towards a Postliberal Future;
Patrick Deneen;
Forum;
300 pages.
Published 6 July 2023.

The anxious generation

Jonathan Haidt sounds the alarm that social media is causing a mental health crisis

Ryan Shorthouse
Executive Chair, Bright Blue

This book is Haidt's most compelling and consequential. It is a wake-up call, a rallying cry: we need to stop teenagers from spending so much time on smartphones and social media. It is making them solitary, self-absorbed, sad.

Haidt illustrates that internalising mental health disorders – that is, anxiety and depression – have risen across the Western world for young adults in Gen X since the early 2010s, when smartphones and social media became omnipresent in their lives.

Usage is jaw-droppingly high; by 2015, one in seven American girls in high school were averaging over 40 hours a week using social media; a third were averaging at least 20 hours. The average number of notifications young people receive from the top social media apps is 192 alerts per day. It's become a second job for many teenagers to prepare for and participate in social media.

Haidt concludes: "Until someone finds a chemical that was released in the early 2010s into the drinking water or food supply of North America, Europe, Australia and New Zealand, the Great Rewiring is the leading theory."

Admittedly, I had thought the rise in mental health problems in recent years was largely sociogenic – like the rise among teenagers in transgenderism, even

>> Tourettes. Haidt himself subscribed to this notion of concept creep in his previous book, *The coddling of the American mind*. But, here, he has evidence to conclude there is genuine increases in suffering, what with the rise in self-harm and suicide.

> “These digital demons have affected us all, but those who have grown up with them during a developmentally sensitive period most of all

He explains, quite convincingly, why social media is so addictive and destructive for adolescent girls in particular – the constant social comparison and perfectionism. The evidence of the association between heavy social media usage and mental disorder is now so strong across studies that he believes it is causation, not just correlation.

That is a big call, especially when the evidence to support that it is still relatively nascent. But he does knock down the sceptics, who point to studies showing cognitive and social benefits from digital engagement. He argues that these studies combine all digital activities – for example, just being on the internet – rather than isolating the effects of smartphones and social media specifically.

Halfway through the book, Haidt veers off into talking transcendence. This is one of his favourite topics. In his earlier book, *The Righteous Mind*, he noted how conservatives tend to have broader moral foundations than liberals, encompassing sanctity. And in *The Happiness Hypothesis*, he pointed to the importance of awe. This is an atheistic man in search of spirituality. He talks of his own change in routine: no AirPods in, listening to podcasts or audiobooks, when walking through nature. Influenced by the sociologist Emile Durkheim, he speaks of two mental modes for humans: the profane and the profound. Addictive social media forever activates the default mode network in the brain, meaning we're missing out on nourishing self-transcendence, which can come from meditation and mindfulness, even psychedelic drugs.

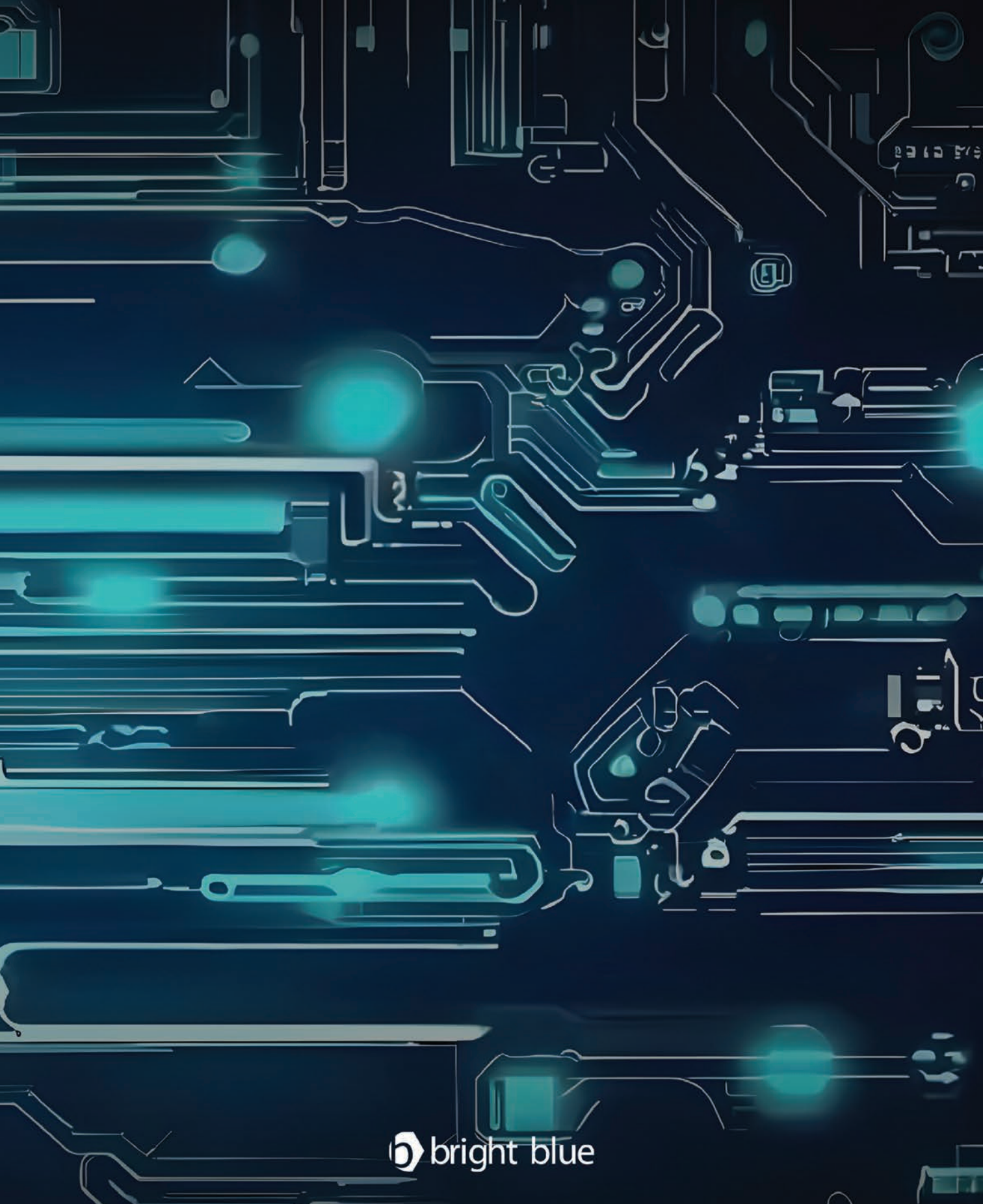
Really, this is a cry for all of us to lift our heads more. If smartphones and social media are as disruptive as Haidt describes, then the harms must be affecting more than just those who came of age in the 2010s. The evidence does show a slight uptick in mental health problems across all ages, with the lowest increases for the oldest among us. This supports an argument that these digital demons have affected us all, but those who have grown up with them during a developmentally sensitive period most of all. Strangely, though, Haidt thinks they have had "little effect on the mental health of people over 30."

Haidt returns to his criticism of a culture of safetyism – all stranger danger and diaries full of extracurricular activities – that pervaded parenting from the 1990s to argue that we are controlling children too much in the real world, but too little in the digital world. For Haidt, this explains a lot of the rise in mental ill-health for boys since the 2000s, who are not engaging as much in physical risk-taking activities.

This of course highlights that we can't blame all our social ills on social media. But Haidt has provided persuasive theory and evidence to convince us of the big contribution it is making.

He ends with credible and considered action that government, companies, schools and parents can take to regulate smartphone and social media usage among teenagers, including completely phone-free schools. Haidt has persuaded me: it's time for collective action to stop the suffering.

The Anxious Generation: How the Great Rewiring of Childhood Is Causing an Epidemic of Mental Illness;
Jonathan Haidt;
Allen Lane;
400 pages.
Published 26 March 2024.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