

The Economist

How Xi's stinginess hurts the economy

Will AI supercharge Microsoft?

The real budget crunch is on Wall St

The fad for assassination

SEPTEMBER 30TH-OCTOBER 6TH 2023

LIVING TO 120

A SPECIAL REPORT ON HOW TO SLOW AGEING



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The world this week

Politics

Sep 28th 2023



EPA

Tens of thousands of ethnic Armenians fled [Nagorno-Karabakh](#), a disputed Armenian-majority enclave in Azerbaijan that the Azeri army has taken control of. Azerbaijan's president, Ilham Aliyev, promised to protect ethnic Armenians, but said that Karabakh's decades-long status as an independent entity was over. At least 68 people were killed by an explosion at a fuel depot. The episode underlines the waning of Russian influence in the Caucasus. Armenia, long an ally of Russia, is pivoting towards the West. America said the Azeri show of force was unacceptable and told Azerbaijan to observe a ceasefire and allow aid into the area.

Turkey's president, Recep Tayyip Erdogan, met Mr Aliyev to discuss the crisis and to hail the Azeri victory. Separately, Mr Erdogan reiterated his pledge to ratify [Sweden's](#) membership of NATO if America sells F-16 fighter jets to Turkey. Hungary's president, Viktor Orban, the other hold out on confirming Sweden's membership, said he was in no hurry to ratify.

Balkan bust-up

Tensions remained high in **Kosovo**, after 30 gunmen barricaded themselves in a monastery during a shoot-out with police. Three of the gunmen and a policeman were killed. Ethnic-Serb politicians said the militants were rebelling against the Kosovan government's refusal to create Serb municipalities in northern Kosovo, where ethnic Serbs dominate. Kosovo said the men were "Serbian state-supported troops" and that some had fled to Serbia.

Ukraine's special forces claimed to have killed dozens of Russian naval officers in a missile attack on Russian headquarters in Sevastopol, Crimea's biggest port. It seems that Admiral Viktor Sokolov, the commander of Russia's Black Sea Fleet, was not one of them. He popped up on videos released by Russia's defence ministry apparently to show he is still alive. Meanwhile the first American-made M1 Abrams tanks arrived in Ukraine to help with its counter-offensive against the Russians.

A UN commission of inquiry on Ukraine said that Russia had **tortured** people to death in areas it had occupied, and that Russian soldiers had raped or committed sexual violence against women ranging in age from 19 to 83. Russia denies targeting civilians.

Spain's conservative leader, Alberto Núñez Feijóo, narrowly failed to get enough votes in the lower house of parliament to become prime minister. His People's Party won the most seats in an election in July, but he could not persuade smaller parties to give him an absolute majority. Spanish law allows him a second attempt on September 29th.

The British government upset greens again, when a regulator gave approval for a Norwegian company to develop the Rosebank oil-and-gas field in the **North Sea**. The energy security minister said that Britain would still need fossil fuels as part of a mix on the path to net zero over the coming decades.

France is to withdraw its ambassador and troops from **Niger**, ending a months-long stand-off since a coup in July. France, which had 1,500 soldiers fighting jihadists in Niger, has refused to recognise the legitimacy of the junta that overthrew Mohamed Bazoum, the elected president.

Elsewhere in the coup-belt across the Sahel, **Mali's** military government indefinitely postponed elections scheduled for February, breaching a promise to return to civilian rule for the first time since 2020.

Haim Katz, **Israel's** tourism minister, became the country's first cabinet minister to publicly visit **Saudi Arabia**. Meanwhile a high-level Saudi delegation travelled to the occupied West Bank for the first time since Israel captured the territory in 1967. Saudi Arabia's inaugural official envoy to the **Palestinians** also visited the area. The meetings come after recent comments from the leaders of both Israel and Saudi Arabia on the likelihood of normalising relations between the two countries.

The chairman of **Egypt's** National Election Authority announced that the country would hold a presidential election from the 10th to the 12th of December, earlier than had been expected. Abdel-Fattah al-Sisi, the incumbent, has not yet formally announced he will stand but he is expected to do so. So far few opponents have said they will challenge him.

At least 100 people were killed in a fire at a wedding in **Iraq**. Some reports suggest the inferno in Qaraqosh, Iraq's biggest Christian town, was started by fireworks.

Joe Biden hosted a summit of **Pacific island countries** at the White House, and announced that America would establish diplomatic relations with Niue and the Cook Islands. America is showering South Pacific states with promises of aid and support to counter the rise of Chinese influence.

A long-running dispute over the Scarborough Shoal in the **South China Sea** flared up again when the Philippines removed a 300-metre floating barrier that China had only recently installed. The Philippines claimed that the barrier was impinging on Filipino fishing rights. China, which captured the atoll from the Philippines in 2012, warned the country "not to provoke and cause trouble".

A prominent human-rights lawyer and activist was imprisoned for four years in **Thailand** for calling for a national debate about the monarchy. Arnon Nampa, who made the comments at a protest in 2020, fell foul of the country's draconian *lèse-majesté* laws, which ban any criticism of the royal

family. A call by the Move Forward party, which came first in an election in May, to reform the law was one reason why it was blocked from taking power by the conservative-military establishment that dominates Thailand's Senate.

North Korea expelled Travis King, an American soldier who crossed over from South Korea on a guided tour of the demilitarised zone between the two countries in July. He was handed over to American custody in China.

In **South Korea** a court declined to issue an arrest warrant for [Lee Jae-myung](#), the leader of the opposition Democratic Party, who stands accused of corruption. The court issued its ruling on the basis that he was unlikely to flee the country or destroy evidence. Mr Lee, who came a close second in the presidential election of 2022, says the charges are politically motivated and denies any wrongdoing.

Bob Menendez, a Democratic senator from New Jersey, pleaded not guilty in a court appearance to charges of accepting bribes, some of it in bars of gold, from businessmen acting as go-betweens with officials in Egypt. It is the second time Mr Menendez has been indicted for bribery. A separate case ended with a hung jury in 2017.

The flying pickets



Getty Images

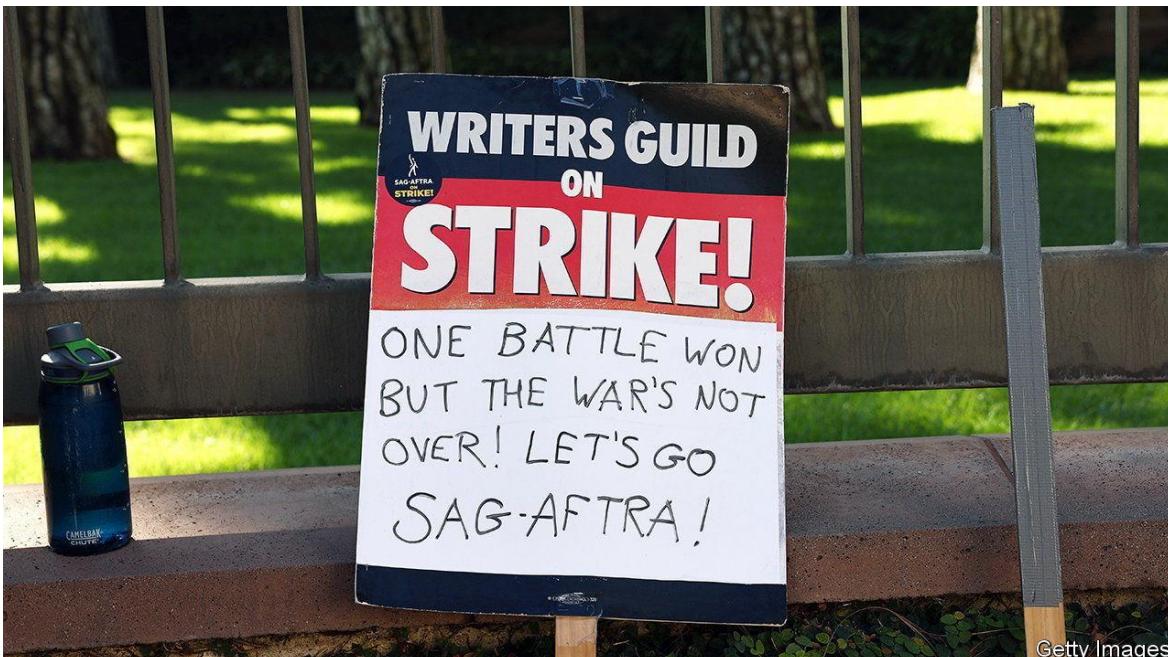
Joe Biden visited a picket line of striking car workers in Michigan, the first time an American president has joined a union picket. The United Auto Workers are demanding a 36% pay increase over four years, which Mr Biden endorsed. **Donald Trump**, fresh from being found liable for fraud by a judge in New York, also took a trip to Michigan to court the state's blue-collar voters, though he went to a non-union factory near Detroit.

The speaker of **Canada's** Parliament, Anthony Rota, resigned, after he introduced a 98-year-old Ukrainian-Canadian to a parliamentary session as a war “hero” for fighting for Ukrainian independence. After the session, which was attended by Volodymyr Zelensky, Ukraine’s president, it emerged that the man had fought in a unit under SS Nazi command against the Russians.

The world this week

Business

Sep 28th 2023



Getty Images

[Hollywood's](#) striking film and television screenwriters returned to work after their union, the Writers Guild of America, reached a tentative agreement with entertainment companies. They had been on strike since May 2nd. The deal with the studios includes bonuses for writers based on viewing figures on streaming services, and guarantees that artificial intelligence can't write or rewrite literary material or be used as a source. It is hoped that the pact will entice actors to end their strike. The industrial action has already delayed the release of many movies next year, including a Lord of the Rings prequel.

A legal-package delivery

America's Federal Trade Commission lodged a lawsuit against **Amazon**, accusing the online retailer of using "unfair strategies to illegally maintain its monopoly power". The FTC claims Amazon does this by burying sellers on its site that offer cheaper goods elsewhere and by replacing relevant search results with paid ads, among other things. Amazon said the lawsuit was "misguided" and a "fundamental misunderstanding of retail".

Meanwhile, Amazon boosted the other, more profitable, side of its business, when it struck a deal to invest up to \$4bn in **Anthropic**, an AI startup. Amazon also announced that it will start introducing ads to its **Prime Video** content from next year. As with other streaming services, users will be able to sign up for a costlier ad-free subscription.

Alibaba said it would list its logistics arm, Cainiao, in an IPO in Hong Kong, the first spin-off in a restructuring plan that will split the Chinese tech giant into six entities. Alibaba will still own more than 50% of Cainiao after its flotation.

Microsoft's takeover of **Activision Blizzard** came a step closer, after Britain's competition regulator dropped its opposition to the deal. Microsoft had submitted a revised offer for the video-game maker that attended to the regulator's concerns.

Evergrande missed another debt payment on a bond, casting more doubt about the future of the embattled Chinese property developer. Hui Ka Yan, Evergrande's chairman, has reportedly been put under surveillance by the police, a move that stops just short of an arrest or detention. Trading in Evergrande's shares was suspended in Hong Kong.

The International Energy Agency said that "bolder action" was required if the world was to reach **net-zero emissions** by 2050. The agency said that global renewable-energy capacity needed to triple by 2030 and sales of electric cars and heat pumps would have to rise sharply.

Turkey's finance minister, Mehmet Simsek, asked markets to be patient with the government's efforts to rebalance the economy after years of unorthodox economic policies. The central bank recently raised its key interest rate from 25% to 30%, the fourth consecutive increase, as it tries to tackle the resurgence of sky-high inflation.

World trade volumes were 3.2% lower in July than a year earlier, according to a closely watched index from the Netherlands Bureau for Economic Policy Analysis. That is the sharpest decline since August 2020, amid the pandemic, and driven to a large extent by the slowdown in China and the knock-on effects to trade in Asia.

A big act to follow



Getty Images

Lachlan Murdoch started to put his stamp on **Fox Corporation**, nominating Tony Abbott, a former Australian prime minister and climate-change sceptic, to the board. This came soon after Rupert Murdoch announced that he was stepping down as chairman of both Fox and News Corporation, giving his son complete control over the businesses. Mr Murdoch built his television and newspaper empire over 70 years, and is widely considered to be the last media mogul. However, as “chairman emeritus” of Fox and News Corp he could still wield considerable clout.

Ford said it was suspending construction of a factory in Michigan that would make batteries for electric vehicles, citing concerns about whether it would be competitive. The plant has become politically controversial because it would license technology from a Chinese company, CATL, the world’s largest battery-maker for EVs. Meanwhile, the United Auto Workers said Ford had improved its pay offer in their dispute, and did not include any of the carmaker’s other factories when it extended its strike, hitting General Motors and Stellantis instead.

Target is to close nine stores in Portland, New York, San Francisco and Seattle because of criminal theft and threats to its staff. In an annual study

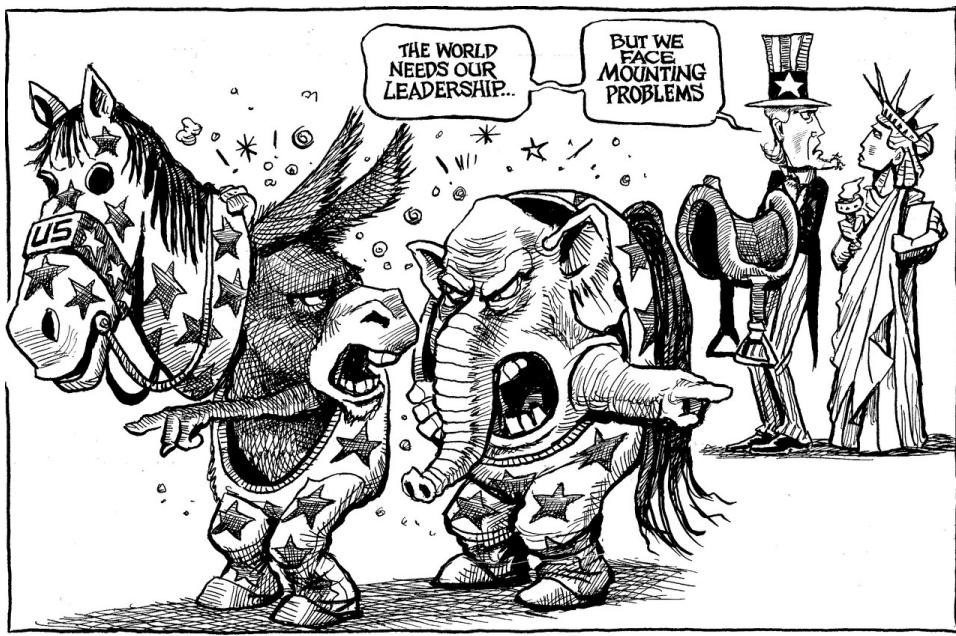
the National Retail Foundation said that crime, violence and theft were at “unprecedented levels” in the industry. American **retailers** lost \$112bn from theft last year. More than 78% said that organised retail crime was more of a priority this year than in 2022.

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The world this week

KAL's cartoon

Sep 28th 2023



Economist.com

Kal

Dig deeper into the subject of this week's cartoon:

[The federal government will probably shut down, again, on October 1st](#)

[What happens if America's government shuts down this weekend?](#)

[The new Supreme Court term takes aim at the administrative state](#)

KAL's cartoon appears weekly in The Economist. You can see last week's here.

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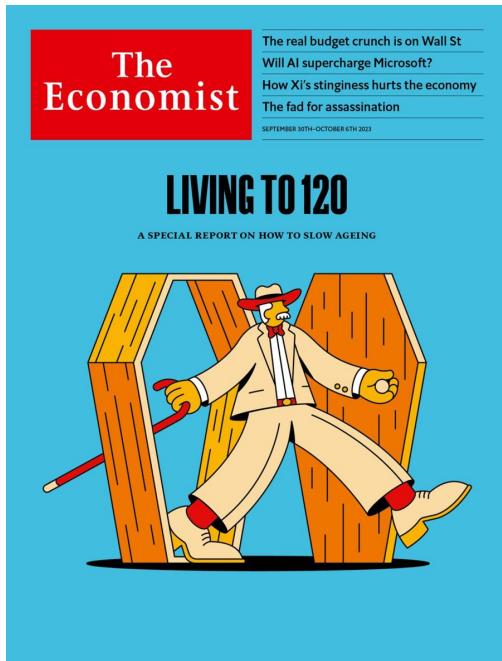
The Economist

This week's covers

How we saw the world

Sep 28th 2023

SOME WEEKS, including this one, we publish more than one cover. In most of the world we consider the growing attempts to stop ageing. After years of false starts, the idea of a genuine elixir of longevity is taking wing. Behind it is a coterie of fascinated and ambitious scientists and enthusiastic and self-interested billionaires. Increasingly, they are being joined by ordinary folk who have come to think that the right behaviour and drugs could add years, maybe decades, to their lives.



Leader: [Living to 120 is becoming an imaginable prospect](#)

Technology Quarterly: [Slowing human ageing is now the subject of serious research](#)

In mainland Europe we explain how the war in Ukraine is giving fresh momentum to calls to enlarge the European Union. Nine countries, including Ukraine, are now vying to join the bloc. For the EU their admission would

be nothing short of historic, completing a grand continental union and marking the end of a process that started with Allied victory over the Nazis. But the way the union works would have to change.



Leader: The war in Ukraine is a powerful reason to enlarge—and improve—the EU

Europe: The EU is—at last—rebooting the enlargement machine

Charlemagne: The definition of Europe has always been both inspiring and incoherent

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Leaders

- Living to 120 is becoming an imaginable prospect
- The war in Ukraine is a powerful reason to enlarge—and improve—the EU
- Joe Biden may come to regret his claim to be pro-union
- A humanitarian disaster is under way in Nagorno-Karabakh
- Forget the shutdown. America's real fiscal worry is rising bond yields
- The lessons from Microsoft's startling comeback

Elixir of life

Living to 120 is becoming an imaginable prospect

Efforts to slow ageing are taking wing

Sep 28th 2023



Till Lauer

WANT TO LIVE longer? For centuries the attempt to stop ageing was the preserve of charlatans touting the benefits of mercury and arsenic, or assortments of herbs and pills, often to disastrous effect. Yet after years of false starts, the idea of a genuine elixir of longevity is taking wing. Behind it is a coterie of fascinated and ambitious [scientists](#) and enthusiastic and self-interested billionaires. Increasingly, they are being joined by ordinary folk who have come to think that the right behaviour and drugs could add years, maybe decades, to their lives.

Living to 100 today is not unheard of, but is still rare. In America and Britain centenarians make up around 0.03% of the population. Should the latest efforts to prolong life reach their potential, living to see your 100th birthday could become the norm; making it to 120 could become a perfectly reasonable aspiration.

More exciting still, those extra years would be healthy. What progress has been made in expanding lifespans has so far come by countering the causes

of death, especially infectious disease. The process of ageing itself, with its attendant ills such as dementia, has not yet been slowed. This time, that is the intention.

The idea, as we set out in our [Technology Quarterly](#), is to manipulate biological processes associated with ageing that, when dampened in laboratory animals, seem to extend their lives. Some of these are familiar, such as severely restricting the number of calories an animal consumes as part of an otherwise balanced diet. Living such a calorie-restricted life is too much to ask of most people; but drugs that affect the relevant biological pathways appear to bring similar results. One is metformin, which has been approved for use against type-2 diabetes; another is rapamycin, an immunosuppressant used in organ transplants. Early adopters are starting to take these drugs “off label”, off their own bat or by signing what amount to servicing contracts with a new class of longevity firms.

Another path is to develop drugs that kill “senescent” cells for which the body has no further use. The natural means for disposing of these cells, like a number of other repair mechanisms, themselves weaken with age. Giving them a helping hand is not just a matter of tidying up. Senescent cells cause all sorts of malfunctions in their healthy neighbours. “Senolytic” drugs which target them pose obvious risks: it is hard to kill off one type of cell without inconveniencing others. But the promise is clear.

For true believers that is just the beginning. Groups of academic and commercial researchers are studying how to rejuvenate cells and tissues by changing the “epigenetic” markers on chromosomes, which tell cells which genes they should activate. These markers accumulate with age; strip them back and you might produce the cells of a 20-year-old body inside one that is in fact 65. Mimicking calorie restriction and clearing out senescent cells would delay ageing. Boosters claim that epigenetic rejuvenation could halt or reverse it.

One cause for concern is people’s brains. Slowing bodily ageing will not change the fact that the brain has a finite capacity, and is presumably adapted by natural selection to conventional lifespans. This is quite separate from worries about dementia, which is caused by specific diseases. Society will thus have to find ways to adapt to the normal ageing in brains:

centenarians may, for instance, find themselves increasingly occupied with asking their AI diary assistants questions for which once they would have remembered the answer.

An even greater concern is that none of these ideas has yet been tested formally on people. That is partly because drug-approval agencies do not yet recognise old age as a treatable condition, making trials hard to register. By their very nature, such trials must follow thousands of people over many years, adding to their cost and complexity. The lack of testing is also partly because many of the initial proposals use out-of-patent molecules that are of little interest to drug companies. Nevertheless some trials are now in the works. The Targeting Ageing with Metformin trial (TAME) will follow 3,000 Americans in their 60s and 70s to see whether the drug does in fact aid survival overall. Such studies will necessarily take time. But more of them are needed, and governments should be helping bring them about.

Any development that causes people to live healthily for longer, and to take fuller advantage of what the world has to offer, is cause for cheer. Some people, observing billionaires' interest in longevity-promoting startups, worry that the benefits will be captured mainly by the rich, leading to a class of long-lived Übermenschen lording it over short-lived ordinary folk. But technologies have a record of spreading, and cheapening as they do so. It is hard to imagine a privilege more likely to spark rebellion than a ruling class that hoards age-treatments to escape the great leveller.

The fact of many people living much longer would have wide ramifications. Most obviously, working lives will be extended, as they have already as life expectancies have lengthened, and possibly even more so for women, who will lose less of their careers to having children, perhaps narrowing inequality in the workplace. Over time there could be deeper shifts. People who live longer may care more about threats that are further away, such as the state of the world in 2100. Longevity permits the patient accumulation of capital, a factor in the emergence of a middle class. And times when political power is exercised mainly by young men, such as the Middle Ages in Europe, tend to be more violent than when older, cooler heads prevail. Families will span even more generations and, presumably, larger networks of exes, half-siblings and quarter-cousins. Will that atomise them, or bring

them together? Will a surfeit of centenarians marginalise the young, create a cult of youth—or both?

For ever and a day

People will seize on the elixir of life if it becomes available. Natural selection has no interest in indefinite longevity per se: the traits that spread best are those that make organisms fit in their prime; those that help them live on when reproduction is a distant memory must work through children and grandchildren. Yet the visceral drive to cling to life is the most basic trait of all. Indeed, it is prevailing today—to tantalising effect. ■

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A bigger, better EU

The war in Ukraine is a powerful reason to enlarge—and improve—the EU

Nine new countries, including Ukraine, are vying to join

Sep 28th 2023



THE HORROR of two world wars prompted France, West Germany and others to link arms and create what is today the European Union. Seventy years on, war has returned to the continent. Out of the rubble in [Ukraine](#), something akin to the sentiment that moved the EU's founding fathers is stirring again. The talk now is of admitting as many as nine new members, including Ukraine. Joining the world's most successful club of peaceful, prosperous democracies would set that war-ravaged country—and fellow aspirant members in the Western Balkans, Georgia and Moldova—on a new and promising path.

For the EU itself it would also be nothing short of historic, completing a [grand continental union](#) and marking the end of a process that started with victory over the Nazis. Bar one or two future applicants (perhaps one day including Britain), the shape of the EU would broadly be settled. But the way the EU works [would have to change](#).

Expanding the EU from 27 to, say, 36 will be tricky. But after a long time when the idea of enlargement was dormant—Croatia, the most recent new entrant, joined a decade ago—it is back on the agenda. Leaders from across the continent, including aspiring new members, will meet in the Spanish city of Granada on October 5th. The next day, those already in the club will lay out what reforms will be needed to keep the show running with more (and more diverse) members. An arduous process will follow. The applicants and the EU machine will both have to change. A mooted date of 2030 for the completed enlargement is optimistic, but worth striving for.

Leaders considering the union's future shape should remember that enlargement has been its most successful policy. *Grands projets* like the euro, the single market and the regulation of tech giants matter, but much of their value comes from the fact that their scope extends beyond France and Germany to Finland, Greece, Slovakia and Spain. Imagine how much less muscular the EU would have been in helping Ukraine had it not already embraced four countries that border the war zone. Further enlargement could increase Europe's geopolitical heft, as France's president, Emmanuel Macron, once a sceptic of expansion, now seems to acknowledge.

The EU can no longer afford to string the nine would-be members along by letting their applications drag on without a realistic hope of them joining. Leaving European neighbours in a grey zone opens the door to those who would destabilise the continent, starting with Russia's Vladimir Putin. This unhealthy dynamic has fed the cynical and sometimes dysfunctional politics of the six countries of the Western Balkans and the other three applicants. None of them will be easy to integrate. Georgia, Moldova and Ukraine all have Russian troops occupying chunks of their territory (as did Germany until 1990). All the current countries bidding to join are deemed only “partly free” by Freedom House, an American think-tank. (Turkey, though technically still a candidate, is a long way from being ready, alas.)

As it embarks on this mission, the EU should make three firm commitments. The first is a message of hope to the applicants: as long as they undertake the reforms necessary to be worthy members, they will be let in. A similar promise was made to the Western Balkans in 2003, but was promptly forgotten. Applicants must still meet the same criteria that others have met to join the EU, in particular by upholding democracy. Conditions to join the

euro should be stringent. But those who make a good-faith effort should be offered more help as their journey progresses. Some benefits of membership could be granted gradually as economic reforms take root, including access to the single market. At the same time it must remain clear that the final destination is full EU membership, not limbo on the outside.

The second commitment is that the EU's own internal reforms must not delay the accession of those ready to join. Yes, the union has to rethink its inner workings: a bigger EU will not be a better one if it becomes gridlocked. Once it is enlarged to 36, it would be foolish to allow a single country's government to veto collective action, as is the case now for foreign affairs and taxation. The common agricultural policy, which gobbles up a third of the bloc's budget, will need drastic reform and slimming to stop too many subsidies flowing to Ukrainian oligarchs running farms the size of some EU countries. Letting in poorer members will shift development funds away from some current recipients. But the EU should not keep the door shut while it gets its own house in order.

The final imperative is to learn from past enlargements. Most countries that reform in order to get into the EU stay on the right track, and grow both freer and more prosperous. But a handful have taken a bad turn: Hungary and Poland have defied EU norms they signed up to. If the club is to take a chance on newcomers with a shaky record of governance, it must have mechanisms to punish bad behaviour. A good place to start would be to make it easier for EU funds to be withheld from dodgy regimes. This has rightly begun to happen.

Growing, growing, grown

The prospect of welcoming a batch of newcomers is daunting. But Europe, after thinking hard, has leapt into the unknown before—and made it work. Greece, Portugal and Spain were all brought in around a decade after they had toppled nasty dictatorships, and now thrive as vigorous democracies. Between 2004 and 2007, the bloc took in a dozen new members, most of which had been under the Soviet yoke. That nearly doubled the number of EU countries, and upped the club's population by 27%—nearly twice what is being proposed now. What then seemed impossible is remembered now as inevitable and vital.

More than anything, if Europe is to count as a force in the world, it needs to show that it has the capacity to act. Delaying enlargement because it is too difficult to carry out would weaken the continent and thus the union at its heart, not least if Russian aggression today is followed by American isolationism tomorrow. Dreadful as the circumstances of war are, they have created the impetus for an EU that is both bigger and better. Europe must find a way to build it. ■

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Striking contradictions

Joe Biden may come to regret his claim to be pro-union

The UAW strike highlights the deep strains in Bidenomics

Sep 27th 2023



Reuters

BOTH THE Democratic and Republican parties are already fairly sure who their nominees will be in 2024, so the general election campaign will begin unusually early. Perhaps it started this week: President Joe Biden joined a [picket line](#) in Michigan, becoming the first sitting president to do so; the next day Donald Trump was in the same state, also courting car workers. As befits a campaign in which the two candidates have a combined age of 157, it has a retro feel. High inflation and striking union workers in Detroit recall races from the 1970s.

The United Auto Workers Union (UAW) wants a 36% pay increase over four years, better pensions, health care for those who have retired and sweeter terms for those hired since two of the “big three” carmakers received a federal bail-out in 2008 (one of them is Stellantis, whose biggest shareholder part-owns *The Economist*'s parent company). That is a lot to ask, particularly given that the labour market is softer than a year ago.

Average pay and benefits at the big three in Detroit currently range from \$112,000 a year at Ford to \$134,000 at GM. The unions counter that the firms are making record profits and CEO pay has soared. However, this is a cyclical business that seems to be at a high point: demand that built up when supply chains were disrupted is keeping prices unusually high.

None of this matters much to Mr Trump or Mr Biden, whose focus is on 2024. Mr Trump promises to protect manufacturing workers with tariffs. So does Mr Biden in a more targeted way, to accompany subsidies he has introduced to encourage electric vehicles (EVs). Both hope to appeal to working-class families in the Midwest, home to two of next year's six swing states.

This is popular. Democrats have allied with unions ever since Franklin Roosevelt enshrined collective-bargaining rights in law. More recently, Republicans have tried to become the party of the working class. Mr Trump beat Mr Biden easily among white working-class voters in 2020. A recent poll by YouGov for American Compass, a think-tank, found that 77% of Republican primary voters support tariffs to boost manufacturing at home.

That consensus needs skewering, and not only for the sake of America's consumers. It was this same combination—striking unions and protection from foreign competition—that sent carmaking downhill in the 1970s. Detroit became bloated and uncompetitive. American brands became a shorthand for low quality. Now, with strikes raging and the federal government keeping Chinese- or European-made EVs out of the market with tariffs and subsidies, the conditions are in place for a repeat.

Mr Biden's policy is an answer to a political problem: how to pursue the green transition, which a key group of voters does not care much about, and still get re-elected. He squares the circle by wrapping up [domestic manufacturing and greenery](#) in a single package, supporting both with tariffs and subsidies. Alas, this policy is riven with contradictions.

One of the UAW's worries is that electric vehicles require fewer workers to build. The union sees its influence slipping away to non-union plants in the South and to non-union battery factories. For the carmakers, pivoting from gas-guzzlers to volt-voracious vehicles, as the federal and some state

governments prod them to, will require a lot of capital. A generous settlement with the UAW would make it harder. Moreover, the green transition would be faster and cheaper if firms made full use of global supply chains, importing batteries and solar panels. But that is a non-starter in Washington because of overblown fears of China as a supplier. In short, Mr Biden's policy undermines itself—though Mr Trump's could be even worse.

If the unions and carmakers reach a deal in a few weeks' time, Mr Biden will come out of the clash looking stronger. But if it drags on, the Midwest's economy suffers and Americans cannot get new parts for their cars, he may yet come to regret his claim to be the most pro-union president in American history. ■

Stay on top of American politics with [Checks and Balance](#), our weekly subscriber-only newsletter, which examines the state of American democracy and the issues that matter to voters. For more coverage of Joe Biden's presidency, visit our [dedicated hub](#).

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A short war with a long shadow

A humanitarian disaster is under way in Nagorno-Karabakh

And Russia may also be destabilising its old ally, Armenia

Sep 28th 2023



Reuters

THE WAR unleashed on September 19th by Azerbaijan against [Nagorno-Karabakh](#), a separatist ethnic-Armenian enclave, lasted less than a day. But it has ended a hostile stand-off that had lasted more than 30 years, and prompted an exodus of tens of thousands of terrified people. It has also placed Azerbaijan's backer, Turkey, in a stronger position in the Caucasus as Russia's [influence there withers](#).

Overwhelmed by Azerbaijan's modern army, [exhausted and starved](#) by a nine-month blockade, isolated from its Armenian motherland and betrayed by Russia, which took it upon itself to provide security in the region, Nagorno-Karabakh had no option but to capitulate. As *The Economist* went to press, around 65,000 of the enclave's ethnic Armenians (from a pre-war population of perhaps 120,000) had fled. Azerbaijan's choice to attack the region rather than pursue a Western-backed deal guaranteeing the civil rights of its Armenian minority means that it is guilty of ethnic cleansing.



The Economist

Not everyone has left, though many more will. For those who remain, it is vital that Azerbaijan is held to account for any violation of human rights in the region now under its control. The West needs to use whatever leverage it has. Azerbaijan's elite likes to spend time and money in Europe and America, so the threat of sanctions should speedily be made. Time is of the essence. Too much has already been wasted.

The consequences of this one-day war, however, will stretch far beyond Nagorno-Karabakh. The episode marks a shift in the balance of power in the Caucasus. Armenia's sovereignty looks more fragile than it has since the Soviet collapse in 1991. Russia, the regional hegemon since the early 19th century, has been exposed as an impotent and treacherous friend to Armenia, with which it has long had a military alliance. The West tried to work with Azerbaijan to avert the outbreak and now looks thwarted. And Turkey, which backed this month's assault by its fellow Turkic state, is in the ascendant.

One cause of all this is changes within Armenia. Its rulers were once close to Vladimir Putin's Kremlin. But the ground shifted in 2018, when young protesters took to the streets of Yerevan, its capital, and swept away a Russia-backed regime run by corrupt politicians, many of them former warlords from Karabakh. Nikol Pashinyan, who led that velvet revolution

and is now prime minister, pledged to stay close to Russia. But Mr Putin never forgave him for coming to power on the back of yet another popular uprising in the post-Soviet space. In 2020 Mr Putin's implicit acquiescence and Turkey's explicit backing for Azerbaijan allowed Ilham Aliyev, its leader, to launch a military attack against the enclave that left its status unresolved.

But the immediate cause of the chaos is Russia's weakness. As Mr Putin floundered in his war against Ukraine, Turkey and Azerbaijan saw an opportunity to press their advantage. Russia's president did nothing when Azerbaijan made a military incursion into the sovereign territory of Armenia last year. Feeling betrayed, Armenia began to pivot to the West. It also conceded to most of Azerbaijan's demands and accepted Azerbaijani sovereignty over Nagorno-Karabakh.

Mr Putin's rage against Armenia has grown as it has tilted to the West. In his eyes Armenia's latest sin is its plan to sign up to the International Criminal Court, which has indicted Mr Putin for his crimes in Ukraine. He may already be stirring up unrest in Yerevan. An even bigger risk is that Azerbaijan will press on against Armenia itself and collude with Russia and Turkey to impose a corridor across the south of the country. This would link Turkey and Azerbaijan's mainland, deprive Armenia of sovereignty and isolate it from its crucial border with Iran.

Desperate times

In the short run Western governments should help Armenia cope with the big influx of refugees from Nagorno-Karabakh, and also help negotiate a fair—and hence enduring—peace deal between Armenia and Azerbaijan. In the long run, the West should back Armenia's efforts to reduce its dependency on Russia and urge Turkey to normalise relations with Armenia and open the countries' long-closed border. That would bring trade and ease Armenia's isolation. With diplomatic skill, and good fortune, the chaos in the Caucasus may yet be contained. ■

The budget bust-up

Forget the shutdown. America's real fiscal worry is rising bond yields

Watch Wall Street, not Washington

Sep 28th 2023



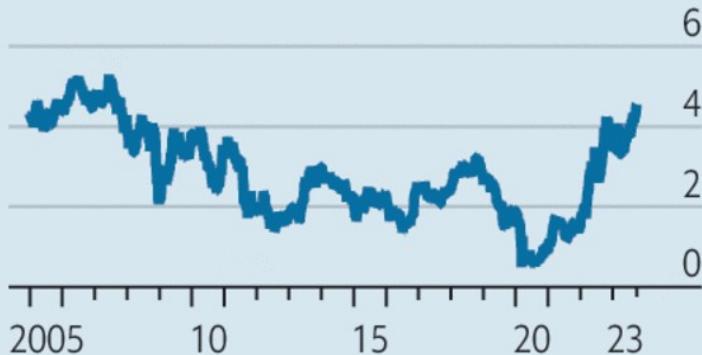
Satoshi Kambayashi

AMERICA'S CONGRESS is once again locked in a battle that could [shut down](#) the government—and once again the fight is a costly addition to the country's economic problems. If Congress and the Biden administration do not strike a deal to fund the federal government, from October 1st it may need to furlough employees and freeze non-essential payments. House Republicans cannot even agree among themselves about what spending cuts to demand of the Senate and the White House, with hardliners seeking to [sabotage](#) a bipartisan deal struck in the summer.

Yet the reckless brinkmanship in Washington is not even the main threat to America. It concerns only the roughly 25% of America's budget that is left when you set aside "mandatory" spending, such as public pensions and health care. The country's budget problems are far broader—and they are getting worse by the month. To see why, you need to look not to Washington but to worrying movements in bond markets.

United States

Ten-year government-bond yield, %



Source: Refinitiv Datastream

The Economist

The annual cost to America's government of borrowing for ten years has risen to 4.6%, the highest since 2007. Bond yields have been trending up since the spring, as investors have begun to anticipate that the [Federal Reserve](#) will keep interest rates "higher for longer" to keep inflation down—the opposite of the monetary-policy paradigm that prevailed before the pandemic. But whereas the last time yields were this high the federal government had debts of 35% of GDP, today the ratio is 98%. Rising interest rates are therefore nearly three times as painful for the budget.

As a result, the latest official projections show that this year the federal government will spend 2.5% of GDP on servicing its debts, a doubling in a decade. By 2030 the bill will be 3.2%, equalling an all-time high and more than the cost of defence. Even this estimate is too optimistic, because it was made before recent moves in bond markets, and so assumed that ten-year yields would stay below 4%. A past estimate by the Manhattan Institute, a think-tank, shows that rates at around today's level would lead debt interest to consume nearly half of federal tax revenues by 2051 unless taxes rise or spending is cut.

The rising interest bill is already contributing to a gaping annual hole in the books. Astonishingly, over the past year the free-spending Biden administration has presided over a deficit of more than 7%—a level that is

typically associated with war or recession. That binge explains why interest rates are increasingly expected to stay high. Government borrowing stimulates the economy, increasing the risk of inflation, leading the Federal Reserve to set higher rates. A rule of thumb from one literature review suggests that America's deficit is supporting its interest rates by nearly three percentage points. Whether or not you believe that, the vast deficit helps explain both why America's economy has proved surprisingly resilient to tighter monetary policy, and why its bond yields have risen more than those of the euro zone, where deficits are lower; Germany's ten-year bond yield is only 2.9%.

It would be foolish to expect interest rates to fall much while Uncle Sam continues to borrow indiscriminately. Unfortunately, reckless fiscal policy seems likely to continue. Some tightening is happening this year, as student-loan repayments resume. Yet that is only because a judgment by the Supreme Court forced the Biden administration's hand. Do not be fooled, either, by Republicans clamouring to cut spending. Most of the long-term pressure on America's budget comes from rising mandatory spending, which nobody is willing to confront. Owing in part to an ageing population, for example, the cost of Medicare, health care for the over-65s, will increase by 30% relative to GDP over the next ten years.

The next big fiscal decision will be whether or not to renew Donald Trump's income-tax cuts which were passed in 2017 and which are due to expire in 2025—another factor that flatters official forecasts for debt. Republicans will want to extend them; even Democrats will find it hard to preside over tax rises that include a rough halving of the standard deduction (the amount that can be earned before paying tax) and less generous tax credits for parents. If Mr Trump is re-elected president, he will probably seek fresh tax cuts, too.

For the time being, America's rising bond yields reflect only rising expectations for interest rates, not the risk of prolonged inflation or default. But if politicians of all stripes continue to act as if deficits do not matter even as borrowing costs rise, they will eventually find themselves with an unpalatable choice between prolonged austerity and forcing the Fed to set monetary policy with one eye on the budget—unleashing further inflation

and compromising the stability of the economy. Next to that, today's shutdown skirmish would seem piddling. ■

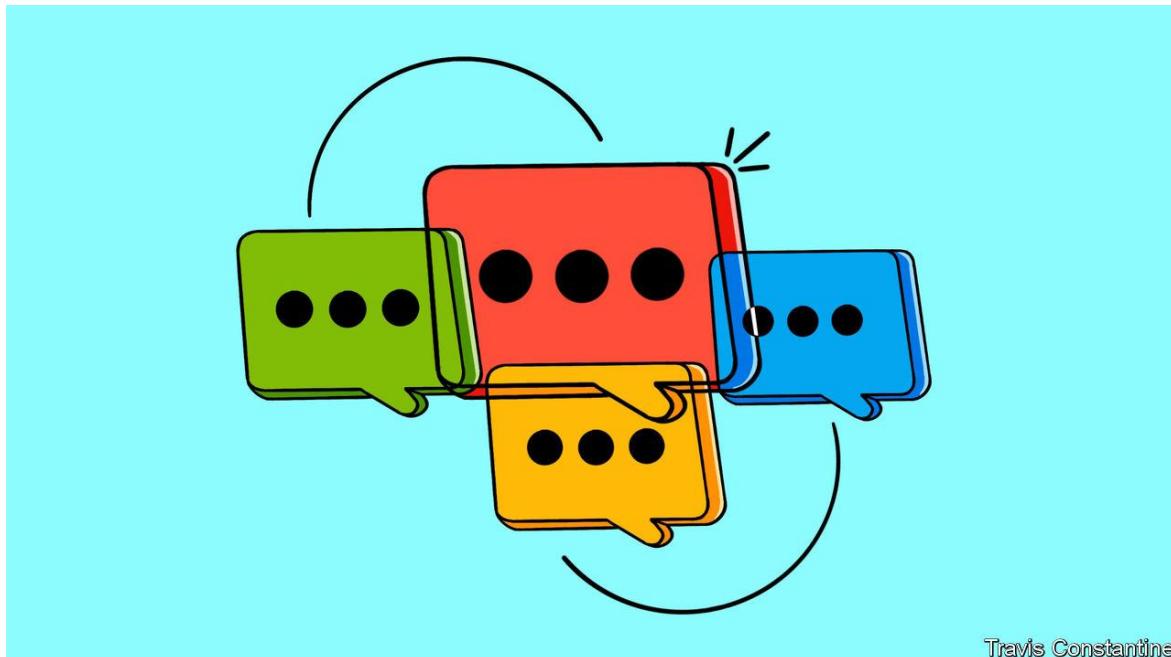
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Reboot successful

The lessons from Microsoft's startling comeback

A bold bet on AI could help it overtake Apple as the world's most valuable firm

Sep 28th 2023



Travis Constantine

“IT IS KINDA like the Nineties are back,” crowed Satya Nadella, the boss of Microsoft, at a product launch in New York on September 21st. He was referring to the glory days of the software giant, when its Windows operating system was ubiquitous, profits were soaring and revenues routinely grew by more than 30% a year. For a while Microsoft became the most valuable company in the world. But success bred complacency. By the early 2010s sales growth had slowed and profit margins had shrunk.



The Economist

In the 2020s Microsoft enjoyed a new heyday. Mr Nadella has put cloud computing at the centre of the firm, rather than Windows, which has helped trim costs and boost profits. The company's operating margin has fattened from 29% in 2014 to 43%, the highest among America's biggest 50 non-financial firms by revenue. Investors seem happy. Since the prospect of tighter monetary policy triggered a sell-off in tech stocks in November 2021, Microsoft's share price has beaten all its big rivals bar Apple.

Now Mr Nadella is charging ahead with another bold reorganisation, this time around artificial intelligence (AI). Thanks in large part to its investment in OpenAI, the startup behind [ChatGPT](#), Microsoft has become the go-to firm for AI tools. A year ago most observers would have said that was Alphabet, Google's parent company, or Meta, Facebook's parent. And AI may propel Microsoft higher still, helping it [reclaim the crown](#) as the world's biggest company from Apple. Its remarkable reinvention holds wider lessons for businesses.

One is to be paranoid. When Steve Ballmer took over from Bill Gates in 2000, Windows was sacrosanct at the firm. As a result, Microsoft failed to exploit big shifts in technology, such as the emergence of the smartphone and cloud computing. It could have easily gone the way of Kodak or BlackBerry. But under Mr Nadella, who was painfully conscious of the

company's laggardly status, Microsoft became hyper-alert to promising new technologies. That prepared it to move quickly on AI.

Another lesson is that firms do not need to do the inventing themselves. Microsoft has been adept at working out how to bundle and sell technologies created elsewhere. At the event in New York the firm launched "Copilots", ChatGPT-like assistants, for various software offerings. At their core sit the capabilities of OpenAI's tools combined with a cloud-computing business model pioneered by Amazon.

Microsoft now wants to apply a similar formula to its gaming business. It plans to combine its cloud technology with the gaming assets and expertise of Activision Blizzard, its acquisition of which seems more likely now that Britain's trustbusters have signalled that they are happy with the deal.

Compare this approach with that of invention-obsessed [Google](#), which has made a cumulative operating loss of \$24bn in its moonshot "Other Bets" business since 2018. Amazon, too, has invested heavily in technologies that have sci-fi appeal, but have so far failed to win over customers. Three-dimensional screens for its smartphone were a flop, and take-up of its palm-scanning technology at its grocery stores is sluggish. Both it and Google have thrown money at delivery drones.

A final lesson is that exposure to the stockmarket creates the discipline needed to rein in founders. Mark Zuckerberg, the boss of Meta, has already lost \$40bn building his virtual-reality dreams and plans to spend even more. He can do this because dual share classes give him 61% of voting rights. Similarly the founders of Google, Sergey Brin and Larry Page, hold 51% of the voting rights at Alphabet, which may explain why the company has struggled to thrive beyond search. Apple and Microsoft, by contrast, are older, no longer dominated by their founders—and far more valuable.

There are, inevitably, counter-examples. Sometimes a founder's obsession turns into a money-spinner. And too much paranoia can be a distraction. Yet Microsoft is the rare example of a behemoth that has already carried out one successful reinvention and—if its bet on AI pays off—could yet pull ahead further still. Its remarkable comeback is worth studying. ■

This article was downloaded by [zlibrary](#) from <https://www.economist.com/leaders/2023/09/28/the-lessons-from-microsofts-startling-comeback>

Letters

- [Letters to the editor](#)

**On America and China, household costs, mining, Indonesia, cannabis
Airbnb, children's books**

Letters to the editor

A selection of correspondence

Sep 28th 2023



America must persuade

Condoleezza Rice and Niall Ferguson are right about one thing: China is America's greatest geopolitical competitor, by far ([By Invitation](#), September 7th). America's policy elite is scrambling to contain China's military, economic and diplomatic power. Joe Biden and Donald Trump may disagree on a lot of things, but both implemented a relatively hawkish strategy against China, which they have asked other countries to follow.

The strategy has borne some fruit. America has struck a number of bilateral and multilateral arrangements with allies and partners, in particular along China's periphery. America and India boast a military logistics agreement; the US, Australia and Britain are well on their way to implementing the AUKUS plan; the Philippines has consented to four additional access sites for the American military; and Mr Biden has devoted significant diplomatic

capital to improving the relationship between South Korea and Japan. China, understandably, is wary about all of these developments.

Yet America needs to be humble and not overreach or alienate the very countries it hopes to strike deeper relationships with. Not every country wants to choose sides. Some have maritime and territorial disputes with China but, because of the whims of geography or trade ties, don't see a mutually antagonistic relationship with Beijing as in their interest. Vietnam has been on the receiving end of Chinese aggression, yet Vietnamese leaders still have a strategic partnership with China. The Philippines is strengthening defence ties with Washington but has made it clear that it won't be pushed into a war by a foreign power. India's relations with China have soured considerably, but Delhi is still highly unlikely to outsource its China policy to Washington or get involved militarily in the event of a conflict over Taiwan.

In other words, middle and emerging powers are doing what middle and emerging powers have done throughout history: preserving their geopolitical flexibility and maximising their choices. America is seeking to enlarge the roster of an anti-China coalition. What it will get instead is selective co-operation depending on the issue at hand.

DANIEL DEPETRIS

Fellow

Defence Priorities

New York



Nate Kitch

Measuring household costs

I don't think anyone would disagree that the cost-of-living crisis has impacted some less than others ([Bagehot](#), August 26th). However, Britain's main measure of inflation, the consumer-price index, tells us very little about how different social groups have been affected, given it is a macroeconomic rather than household measure. That is why we welcome the decision by the Office of National Statistics to start quarterly publication of the household-costs indices, which will tell us about the impact of inflation on different households. With this potentially being the biggest issue for next year's general election our policymakers must know the real state of "cozzie livs".

PAUL ALLIN

Honorary officer for national statistics

Royal Statistical Society

London



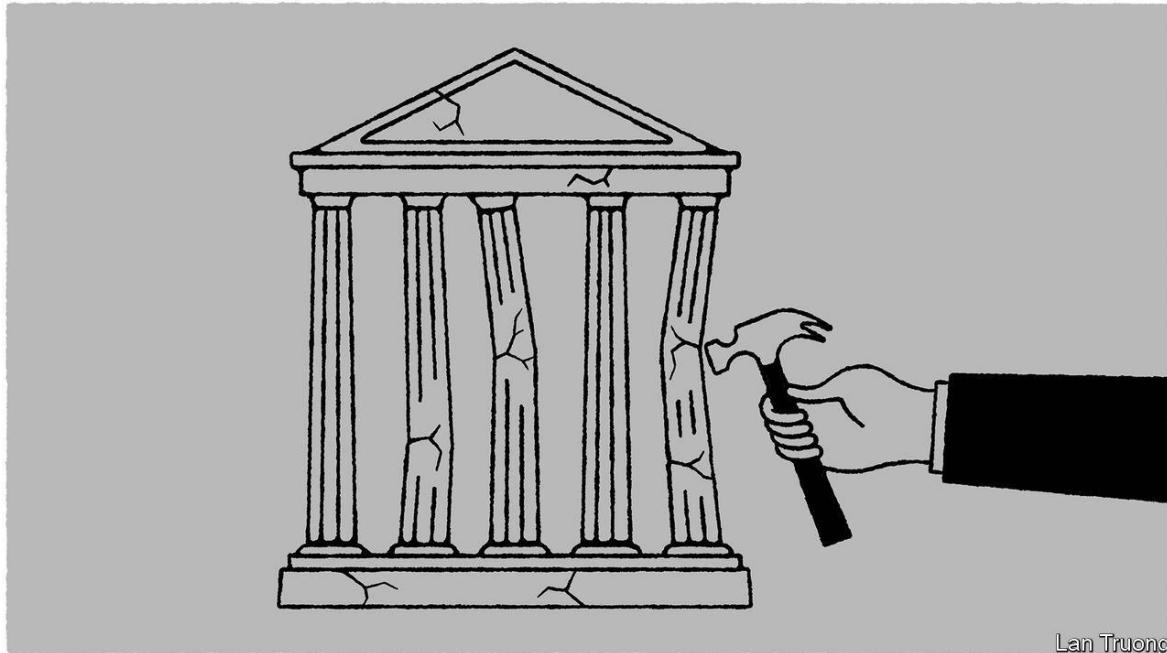
Getty Images

Training mining engineers

It does not help when the people in charge of the world's economies do not understand the reality and complexity of the mining cycle when thinking about the issue of critical minerals ("[Keep digging](#)", September 16th). The protracted timeline from exploration to production in metal mining averages around 10-15 years, posing significant challenges in light of an ever-increasing need for mineral resources. But increasing mine production is not just a matter of pumping more minerals out of the ground. A faulty intersection of regulatory practices and political dynamics keeps erecting barriers to the timely development of crucial mineral resources, including recycling plants.

When it comes to human resources in mining, the silence of Western governments is even more disturbing. Students entering mining engineering programmes in 2023 will not reach the status of intermediate engineers until 2033. That is a decade from now. Can Western economies wait that long? As the industry confronts the impending retirement of a substantial portion of its workforce, the question of supply-chain resilience should extend beyond equipment and materials to include the replenishment of skilled mining professionals. If we want to avoid a green-metals crunch, actions to solve these problems must be taken now.

DR DAVIDE ELMO
Professor of rock engineering
NBK Institute of Mining Engineering
University of British Columbia
Vancouver



Indonesia's dynastic politics

Banyan wrote about dynastic politics and the return of personalised rule as symptoms of democratic backsliding in Indonesia ([September 2nd](#)). A lot of the ills he mentioned are remnants of Suharto's three-decades long and highly personalised rule, rather than the fault of the current president, Joko Widodo, known as "Jokowi". A suitable fix would be a strong, impersonal state, but that could take many decades of political development. In that context Indonesian democracy, now at 25, is doing well enough for itself.

In any case, there is reason to be optimistic. Prabowo Subianto may be a former general and son-in-law of Suharto. But the other two contenders for next year's presidential election are outsiders, rising through the ranks of local government as Jokowi once did. Sure, patronage networks are back in vogue. But Indonesia's growing middle classes are rowdy and critical, and they make their disapproval of patronage politics known on social media.

Even if Jokowi decides to go down the road of dynastic politics, his successors will have to contend with an electoral democracy that is as vibrant as ever.

ELANG ADHYAKSA

Jakarta



Panos

Thailand's stoners cannot rest easy to come

I found it amusing that your story on the fate of the nascent recreational cannabis industry in Thailand concluded that the new government was unlikely to reverse the old administration's policies ("[Budding growth](#)", September 2nd). In fact, Srettha Thavisin, the new prime minister, has said recently that he would not support the recreational use of cannabis of any kind. The new government plans to revise the laws and tighten regulations. It has support. Most Thais, even the Westernised liberal ones, see recreational cannabis as a hastily implemented policy that is leading to an outbreak of addiction and unrest. The media broadcasts shocking stories of school children abusing cannabis and portray stoners as lazy parasites.

Why must we criminalise the recreational use of cannabis again? The root of the problem is Thais' lack of moderation. Criminalisation will push current

users underground again. Potential users will not be able to learn openly about the risks and benefits. This will give rise to more cases of abuse—the opposite of what the government wants. Lastly, many small-time entrepreneurs have staked their savings into what could have been a promising tourist hook. Will the government be able to support them when they take their livelihood away?

Above all, what is lacking in Thailand's debate is any actual research and hard data on cannabis use and its effects. For now, with no clear policy from the government, the fate of Thailand's stoners is quite hazy.

SHAWANWIT POOMSA-AD
Khon Kaen, Thailand



Complaining about Airbnb

Regarding New York's crackdown on Airbnb ("[Blocked bookings](#)", September 9th), it should be acknowledged that all of the negative impacts of short-term rentals are shifted to neighbouring homes and surrounding neighbourhoods. Airbnb and absentee "property managers" take no responsibility. Noise, parking, disrespect, uncertain security, parties, overcrowding, litter, and so on. Short-term rentals don't belong in residential

areas. We didn't buy our houses to live next door to transient hotels. Furthermore, I can say with confidence from the heartland of the American housing crisis, that short-term rentals most certainly have a negative impact on housing inventory and affordability.

STEVE FORT

Santa Barbara, California



It's grim for fairy tales

"Children's books not only sell well, but they also keep selling, year after year," you say ("Pulp fiction", September 2nd). True for a very select few, perhaps, but otherwise at odds with the likelihood of profit in an industry with remarkably low barriers to entry. As one children's author told me, "In a good year I can sell dozens of copies."

DONAL CURTIN

Auckland

By Invitation

- [David Keith on why carbon removal won't save big oil but may help the climate](#)

Climate change

David Keith on why carbon removal won't save big oil but may help the climate

Greens should cheer the blurring of the industry's interests, says the academic

Sep 28th 2023



OCCIDENTAL, AN American oil major, recently agreed to buy Carbon Engineering, a Canadian carbon-removal company, for \$1.6bn. The deal underlines big oil's growing interest in carbon-capture technologies, which suck carbon dioxide from the air. What does it mean for the climate?

Suppose a trucker dumped a load of manure on your front lawn and then demanded a fee to haul it away. Big oil made the fuel that is cooking our planet, so the idea that it might profit from cleaning it up strikes many people as obscene.

Critics argue that big oil is using carbon removal as a tool to protect its core business. As Occidental's chief executive, Vicki Hollub, sees it, carbon removal means "we don't need to ever stop oil." Defenders argue that big oil

can help meet social demands for decarbonisation by pivoting to carbon neutrality while bringing technical expertise to new low-carbon markets.

Greenwash or swords-to-ploughshares? My guess— informed by my experience as a climate-focused academic and as the founder of Carbon Engineering (on whose board I still sit)—is that the oil majors will be unsuccessful at both. Greenwashing will not protect them; nor will they smoothly pivot from being oil suppliers to carbon removers. Yet big oil’s carbon-removal play may nevertheless yield substantial climate benefits, in part because it is unlikely to play out as well as the companies hope.

Big oil will trumpet its green achievements, both real and imaginary. This will dampen public disapproval and help recruit talent, but it is hard to see how it reduces the threat to the core business, which is driven by accelerating climate policies and the decreasing cost of electric vehicles.

A world with large-scale carbon removal is a world with carbon prices high enough and decarbonisation policies strong enough to drive oil demand down sharply. Permanent carbon removal is likely to cost over \$150 per tonne of carbon dioxide for at least a decade or two. That is equivalent to a penalty of almost \$70 per barrel of oil. Though it may provide a green aura, an oil company’s carbon-removal business, however successful, will not protect its legacy oil business from strong carbon prices and policies. Neither greenwashing nor green reality changes the fundamentals.

The feasibility of a swords-to-ploughshares pivot rests on the premise that expertise transfers from oil and gas to carbon removal—or even beyond to solar power and other clean technologies. Although engineering skills are transferable, the business pivot is less plausible. A management culture built to succeed at making risky bets on big hydrocarbon plays such as ultra-deep offshore oil is different from the management culture needed to succeed in clean energy or carbon removal.

When oil companies build thriving carbon-removal businesses, the interests of these business units will be misaligned with the legacy oil business. Legacy oil wants low carbon prices and high energy prices. Carbon removal wants the opposite. Big institutional investors such as pension funds prefer pure plays, so they will push to cleave carbon removal from legacy oil.

History suggests that incumbents rarely survive fundamental shifts in the underlying business. IBM was an exception, but it is now dwarfed by Apple and Microsoft. The benefits of synergy are usually outweighed by the costs and conflicts of maintaining the legacy business.

So even when big oil succeeds in carbon removal the most likely outcome is freestanding cleantech companies alongside legacy oil rather than successfully integrated conglomerates. Environmentalists can thus welcome big oil's move into carbon removal for the skills it brings with guarded optimism that the swords-to-ploughshares pivot will do little to protect the legacy oil business.

And the skills are desperately needed. Building billion-dollar battery factories, hydrogen infrastructure or plants to extract carbon from the air requires engineering and management skills that are concentrated in industries like oil and commodity chemicals. Occidental, for example, plans to build plants that can remove and store up to 30m tonnes of carbon per year at King Ranch in Texas. That is the equivalent of decarbonising 30m-60m transatlantic flights per year. Although Occidental has never built a direct-air-capture plant, Carbon Engineering's technology knits together existing industrial processes to achieve the new goal of carbon removal, and Occidental has experience with almost all the components required for direct air capture, including potassium hydroxide, a chemical used in the process, and CO₂ sequestration. A startup cannot build plants with tens of millions of tonnes of capacity without the skills of a company that has built industrial plants at scale.

Big oil's pivot to clean should be celebrated as a marker of the power of environmental advocacy, not a sign of its weakness. These investments did not happen simply because big oil woke up feeling woke. The driving force is policy. Today's most important driver is Joe Biden's clean-energy incentives. But these incentives did not just happen because the American president woke up green. They are the fruit of decades of environmental advocacy.

Greenwashing is a risk. Environmentalists are right to worry. Big oil will try to use carbon removal to defend the status quo. But there is a political upside. In a decarbonising world in which big oil only does oil and gas, its

only future is extinction and it will fight progress with its back to the wall. If, however, the industry is also in the decarbonisation business, its interests—and the interests of the communities that depend on it—are split, with the low-carbon business units fighting for strong climate policy even as the legacy businesses oppose it. My hope is that this blurring of interests will lubricate the political bargains needed to accelerate climate progress. ■

David Keith is professor of the geophysical sciences at the University of Chicago. He founded Carbon Engineering in 2009 and remains on its board.

This article was downloaded by [zlibrary](#), from <https://www.economist.com/by-invitation/2023/09/28/david-keith-on-why-carbon-removal-wont-save-big-oil-but-may-help-the-climate>

Briefing

- How Microsoft could supplant Apple as the world's most valuable firm

A second flight

How Microsoft could supplant Apple as the world's most valuable firm

It hopes to seize on AI to transform the future of work

Sep 27th 2023 | REDMOND



Ryan Chapman

FOR YEARS Microsoft has been trying to coax office workers to write reports, populate spreadsheets and create slide shows using its office software. No longer: now it wants to do the writing and populating for them. At its headquarters in Redmond, a leafy suburb of Seattle, the firm demonstrates its latest wizardry. Beyond the plate-glass windows, snow-capped mountains glisten and pine trees sway. Inside, a small grey rectangle sits at the top of a blank Word document. With a few words of instruction, a chatbot powered by artificial intelligence (AI)—or “Copilot”, as Microsoft calls it—finds a vast file in a computer folder and summarises its contents. Later, it edits its own work and succinctly answers questions about the material. It can perform plenty of other tricks, too: digging out emails on certain topics, drawing up a to-do list based on a meeting and even whipping up a passable PowerPoint presentation about your correspondent.

This is a glimpse into the future of work. The mind-boggling capabilities of “generative” AI look set to transform many desk jobs. It is also a glimpse into the future of Microsoft, which was once the world’s most valuable public company and hopes to reclaim the title by selling the technology that will power the transformation. Through the firm’s investment in OpenAI, the startup behind ChatGPT, a popular AI chatbot, it is able to inject cutting-edge AI into its products.

Pilot whale

That does not just mean adding the Copilot to its office-work software (previously called “Office”, but recently rebranded as “Microsoft 365”), which will be rolled out in November. This week the firm will launch a Copilot for Windows, its operating system, which will be able to change your computer’s settings, generate images and summarise web pages. Copilots for its sales software and human-resources offerings are already available. One for its security software is in the works. In February Microsoft added ChatGPT-like functions to Bing, its search engine, in effect another Copilot. With its squadron of Copilots, Microsoft is inserting generative AI into almost every aspect of its business.



The Economist

This is perhaps the biggest bet any company is taking on AI. The prize is potentially huge. Copilots could transform the world of work for the 1.2bn people who use Microsoft 365 and the 1.4bn who use Windows. This would allow Microsoft to bring in new customers and charge them more. That, in turn, could drive business to Azure, Microsoft's high-margin cloud business, possibly helping it overtake Amazon Web Services (AWS) to become the world's biggest cloud firm. It could even help Microsoft's valuation above the current \$2.3trn, potentially closing the gap with Apple, currently the world's most valuable firm (see chart 1).

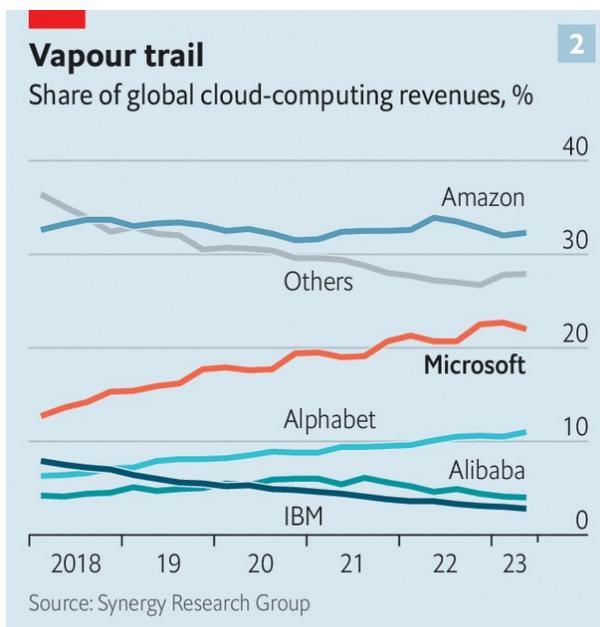
In effect AI offers Microsoft a tantalising chance to do something that has eluded it until now, and bring together all that it offers, argues Mark Moerdler of Bernstein, a broker. Teams, Microsoft's video-conference service, might be more attractive to IT managers than Zoom, a rival, if it features a Copilot that can sort through employees' emails in Outlook and summon up information from their Word documents and PowerPoints. All this wizardry can also be channelled through Azure, further boosting Microsoft's business.

Nonetheless Microsoft is also taking a big gamble. Next year its capital spending is expected to jump by almost two-fifths, to about \$40bn. That is a near-record 16% of the firm's revenue and a higher share than any other tech giant save Meta, the parent of Facebook. Much of this will be spent on new AI chips and high-performance networking to go into the 120-odd extra data centres it plans to bring online. Whether such an investment will pay off is an open question. For all their promise, Copilots still have plenty of problems. At the demonstration in Redmond the AI-generated slide show described your correspondent as "CEO of ABC Inc", which he definitely is not. Competitors, in particular Alphabet (the parent of Google), are eyeing up all the same markets. As the battle over the future of work heats up, Microsoft's position is enviable but not unassailable.

Putting itself in that position has been a long endeavour. Microsoft's heyday was in the 1990s. The dominance of Windows as an operating system combined with a cut-throat business mentality made the firm mighty but roundly despised. A period of stagnation followed, as it lived off the revenue from Windows. When Satya Nadella took over in 2014, he shook things up. Windows would no longer be the firm's main focus. Instead the company

was reorganised around Azure, with blockbuster programmes, such as Office, shifting to the cloud. This involved an enormous build-out of data centres. Microsoft's capital spending went from 6% of revenue in 2014 to 11% five years later. Crucially, the firm moved away from a walled-garden approach. Mr Nadella allowed Microsoft's software to run on other operating systems, such as Google's, Apple's and Linux, an open-source rival to Windows.

All the while Microsoft was also investing in AI. It first announced it was working with OpenAI in 2016; it has since invested \$13bn, for what is reported to be a 49% stake. The deal not only allows Microsoft to use OpenAI's technology, but also stipulates that OpenAI's models and tools run on Azure, in effect making OpenAI's customers into indirect clients of Microsoft. And it isn't just OpenAI. Microsoft has bought 15 AI-related firms since Mr Nadella took over. That includes paying \$20bn for Nuance, a health-care firm with cutting-edge speech-to-text technology, in 2022.



The Economist

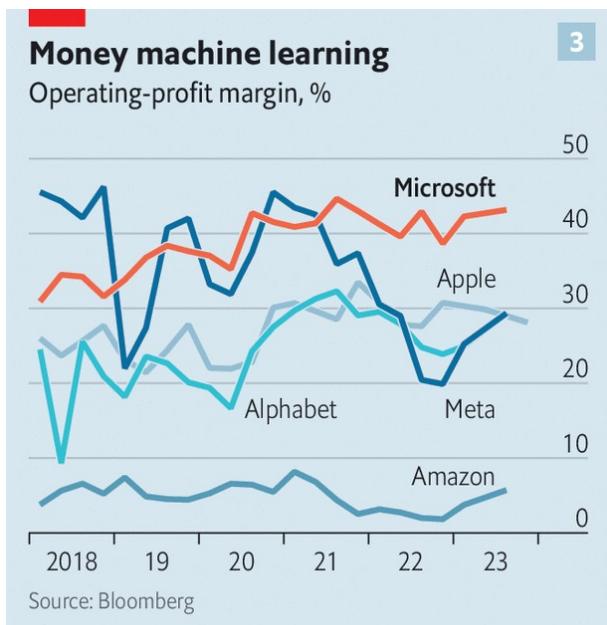
Today Microsoft's business relies on three divisions for growth. The first is Azure. For the past five years it has been closing in on AWS (see chart 2). Cloud spending is slowing as IT managers tighten purse strings. Despite this, in the most recent quarter the business grew by 27% year on year. Microsoft does not reveal Azure's sales, but analysts think that it accounts

for about a quarter of the firm's revenue, which hit \$212bn last year. Gross margins for its cloud business are also secret, but Bernstein puts them at a lofty 60% or so.

Second is Microsoft 365, which also accounts for about a quarter of revenue. That has been growing by about 10% a year of late, thanks to take-up among smaller businesses, especially in service industries such as restaurants. The third source of growth is cybersecurity. In earnings calls Microsoft executives have said it accounts for roughly \$20bn in revenue (about a tenth of the total). That is more than the combined revenues of the five biggest firms that provide only cybersecurity. What is more, revenues are growing by around 30% each year. (Microsoft's video-game arm, which brings in \$15bn a year, is also set to grow substantially now that British antitrust regulators have signalled they will approve the long-delayed acquisition of Activision Blizzard, another gamemaker, for \$69bn.)

Blue fine-tuner

Using Azure as the underlying infrastructure for Microsoft's other businesses has helped spread costs, streamline operations and boost profits. Since 2014 operating margins have risen from 29% to 43%—higher than other titans of tech (see chart 3). That has excited investors. During Mr Nadella's tenure Microsoft's market value has risen by about \$2trn. Microsoft's price-to-earnings ratio, an indication of investors' expectations of future profits, has more than doubled during Mr Nadella's reign, to 32. That is higher than the S&P 500 average, and more than all tech titans bar Amazon, whose figure is skewed by its paltry earnings.



The Economist

Cheerleaders say Microsoft has two big advantages when it comes to generative AI. The first is the range of software it sells. Asking a single chatbot to peruse emails and spreadsheets to pull together a slide show is much easier than dealing with different AI helpers for each programme.

Second, Microsoft has a first-mover advantage. It has been quicker to deploy AI than rivals, thanks to its tie-up with ChatGPT and possibly also because Mr Nadella feels that it was slow to react to smartphones and the cloud. Whatever the reason, Microsoft's speed has made OpenAI the default for big firms trying out the technology. A recent survey of IT managers by JPMorgan Chase, a bank, found that over the next three years they expected 56% of their spending on generative AI to go to Microsoft compared with 13% for AWS and 12% for Google Cloud Platform (GCP).

Another survey by Sequoia, a venture-capital firm, of 33 startups that it invests in, found that 90% of them used OpenAI. Keith Weiss of Morgan Stanley, a bank, argues that an ecosystem is beginning to form around OpenAI's GPT-4 model. That includes consultants who specialise in its tools and recommend that clients use them, as well as software sellers, such as HubSpot, which build bespoke programmes that use OpenAI's models.

There is some evidence for the idea that Copilots could help cement Microsoft's lead. In June 2022 it launched a code-generating Copilot on GitHub, a repository for code which Microsoft had bought in 2018 for \$7.5bn. The model was trained using the reams of code stored on GitHub. It has quickly become an essential tool for software developers. In a survey, 90% of users told GitHub that the Copilot improved their productivity. The firm also conducted a small study that found that coders completed tasks 55% more quickly when using the tool. Some 27,000 businesses have a subscription, twice the number of three months ago. It is so popular in tech circles that the term "copilot" has become shorthand for an AI assistant, whether provided by Microsoft or not.

Microsoft says firms testing a Copilot for its "productivity" software (meaning, for email, spreadsheets, word-processing and the like) report similar benefits. Kate Johnson, the boss of Lumen, a telecoms firm, describes it as a "step function change" in the way her staff work. She uses it to look back at Teams meetings and see whether quieter employees are being given a chance to speak. It also takes instant minutes and draws up to-do lists for attendees. That helps with accountability, adds Ms Johnson: the tasks staff were meant to complete after the last meeting are "right there for everyone to see".

Copilots can also act as software coaches, teaching workers how to insert charts in spreadsheets, for example. The goal is that they will eventually be able to learn users' preferences and even their writing style. "We hope one day to deliver a highly effective alter ego—an agent that knows you deeply," Mr Nadella wrote in his book "Hit Refresh", published in 2017.

All this does not come cheap. At \$30 per user per month, Copilots may mean a 52-83% mark-up, depending on the software package a firm uses. Jason Wong of Gartner, a research firm, says, "That is expensive compared to the licences but cheap if it is going to save you hours a week."

The other way Microsoft will make money from Copilots is from the underlying infrastructure. In May it announced its "Copilot Stack" on Azure. This makes it easy for developers to build Copilots in their own applications or to create "plugins" for Microsoft's Copilots. The hope is that lots of firms use this infrastructure, sending much more business to Azure. Another

advantage of this “platform” approach is that Microsoft may be able to strike deals to use the data of Azure’s clients to bring, say, legal expertise into a Word document or email. That creates an advantage that “competitors are going to find very difficult or impossible to replicate”, a research note from Bernstein argues.

Hammerhead

In the second quarter of the year AI added roughly \$120m to Microsoft’s cloud revenues. That is expected to double in this quarter. In 2025, Mr Weiss estimates, AI could boost revenue by \$40bn, largely through Azure’s AI tools and 365’s Copilots.

Such growth would not be cheap. New Street Research, a firm of stockmarket analysts, reckons that Microsoft is the biggest customer of Nvidia, the world’s largest seller of AI chips. Its research suggests that Microsoft spent roughly \$3bn on Nvidia’s AI chips in the second quarter of 2023, up from about \$1bn in the first quarter. In a call with investors in July, Amy Hood, the chief financial officer, noted that the AI build-out is putting pressure on Microsoft’s puffy margins in the cloud. That is being offset, she says, by more efficient data-crunching. Scott Guthrie, Microsoft’s head of cloud and AI, says, “We are seeing inference costs [those related to asking an AI model a question] going down and expect to see that continue and models get more accurate and more efficient.”

Even if spiralling costs are contained, there are plenty of other risks. Competition is white-hot. One battle is for the \$340bn market for business software. In May Google announced Duet for Workspace, its version of Copilots. Last week it released features allowing Bard, its chatbot, to access user’s Gmail inboxes and Google Docs. Salesforce, a software giant, has Einstein. Slack, a messaging app and one of Salesforce’s subsidiaries, has Slack GPT. ServiceNow, whose software helps firms manage their workflow, has Now Assist. Zoom offers Zoom Companion. Intuit is selling Intuit Assist. Startups such as Adept and Cohere offer AI assistants, too. OpenAI launched its enterprise-focused ChatGPT in August.

Supplying the infrastructure to underpin such AI offerings will be another battlefield. AWS and GCP both offer access to AI models similar to those of

OpenAI. Analysts suspect these rivals have more experience deploying specialist AI chips than Microsoft. In August Google unveiled a new AI chip for training large models.



All generative AI tools, including Copilots, must also be made “enterprise ready”, says Ken Allen of T. Rowe Price, a big investor in Microsoft. One issue is legal. Most AI models are trained on copyrighted materials, which users may inadvertently reproduce. The head of IT at a big oil-and-gas-services firm says he stopped employees from using GitHub’s Copilot after his firm was sued in November for breach of copyright. Microsoft, for its part, has agreed to cover customers’ legal fees related to its Copilots, provided they use Microsoft’s safety features, such as content filters.

Models can also get things wrong. Microsoft has reduced such problems by training them on accurate, up-to-date information and including more citations. But that did not prevent your correspondent’s promotion to CEO. Jared Spataro, who is in charge of Microsoft’s productivity software, says that Copilots entail an “entirely new way of working”, in which the machine helps you produce more “but it isn’t always right”. Humans must be alert to this and, if necessary, make corrections.

A third concern is data governance—making sure that only the right employees get access to the right information. An analyst notes that some early users of Copilots are discovering “really scary” results. Imagine personnel files or confidential emails coming up in a search, say.

There is also the near-certainty that Microsoft will be accused of abusing its market power. (Endless competition headaches plagued its previous period of ascendancy, in the late 1990s.) The firm is already fighting on many fronts. In August it announced that it would “unbundle” Teams from its software packages, after complaints from Slack triggered an EU investigation. Customers have also complained about the way Microsoft’s software licences nudge companies to use Azure, rather than AWS and GCP. Brad Smith, Microsoft’s president, has called this a “valid concern” and the firm says it has made changes. But in June Google submitted comments to a probe by America’s Federal Trade Commission, claiming that Microsoft uses unfair licensing terms to “lock in clients”.

These types of disputes will no doubt intensify as AI-powered software becomes prevalent. If a Windows Copilot steers users to Outlook rather than Gmail, say, trustbusters may cry foul. The upshot of this could be to weaken Microsoft’s ability to use a breadth of software offerings to make Copilots more useful, one of its big competitive advantages.

Even so, Microsoft is in a strong position. It failed to seize on the advent of smartphones and was slow to grasp the potential of the cloud. Today it finds itself poised to exploit a technology that could transform the world of work. It must maintain a delicate balance, moving faster than competitors while ensuring that its advance into AI does not upset regulators, sap profits or ruffle clients. If it slips, plenty of rivals are ready to take its place. But if it succeeds, the reward will be huge. The Copilot will be the captain of its fortunes. ■

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Strait up lies

China is flooding Taiwan with disinformation

With elections looming, China wants Taiwanese voters to think America is their greatest threat

Sep 26th 2023 | TAIPEI



Xinmei Liu

IN JULY ONE of Taiwan's top newspapers, *United Daily News*, published a story based on supposedly leaked minutes from a secret government meeting. America had asked [Taiwan](#) to make biological weapons at a lab run by the island's defence ministry, the report claimed. Taiwanese and American officials denied it. The allegedly leaked minutes, it transpired, were not written in the usual style of Taiwanese government records. They were filled with official-sounding phrases that are used in mainland China, but not in Taiwan.

This was probably Chinese disinformation, Taiwanese officials said. Yet the story spread to Taiwanese talk shows and influencers. It soon evolved into a wilder claim: Taiwan was going to collect 150,000 samples of Taiwanese blood and hand them to the Americans, so they could develop a virus to kill Chinese people.

This sort of disinformation is so widespread in Taiwan that analysts have given it a moniker: *yi mei lun*, or the “US scepticism” narrative. Its spread is becoming a major worry for Taiwan’s government and civil society in the run-up to a hugely important presidential election next January. Taiwanese voters will in effect be asked to decide whether Taiwan should remain aligned with America in strengthening deterrence against a possible Chinese invasion, or should move towards building ties with China. The opposition Kuomintang has called the vote a choice between “war and peace”, implying that the ruling Democratic Progressive Party’s hostility towards China will provoke it to attack. Chinese state actors have backed that framing, spreading narratives that portray [America](#), not China, as the island’s biggest threat. Much of the disinformation is intended to reinforce that false message.

Lo Ping-chen, a cabinet minister who since 2018 has been leading a government task force against disinformation, says it has “severely infiltrated” Taiwan’s society. “We used to think there was more during election season. But it’s now become normalised. It happens every day.” Most Taiwanese voters have little idea of this. A recent survey by Doublethink Lab, a Taiwanese group that studies disinformation, found that less than 20% of respondents believed the false information spread in Taiwan during elections came from abroad. Puma Shen, who heads Doublethink Lab, worries about the one-fifth of voters who are not aligned with any party and could be a decisive bloc. “Even if only 15% of voters are truly affected by Chinese disinformation, it takes only 7% of voters to change the election results,” he says.

A recent study of US-scepticism narratives by the Information Environment Research Centre, a Taiwanese research group, found Chinese actors were helping to spread most of them. But more than half appeared to have Taiwanese origins. That suggests China is “piggybacking” on fears in Taiwanese society, says Chihhao Yu, the report’s author. He notes that many Taiwanese have an “orphan mentality”: they fear abandonment by outsiders because of Taiwan’s experience of losing American diplomatic recognition in the 1970s.

Chinese actors are exploiting those worries, just as Russian disinformation exploited America’s racial and cultural cracks to help Donald Trump in

2016. Chinese disinformation also echoes Russian propaganda about the war in Ukraine, which claims America is behind the conflict (and is creating bioweapons in Ukrainian labs).

China has developed systematic means to make falsehoods trend in Taiwan, says Chien Yu-yen, a former journalist and author of a book about Chinese influence on Taiwan's media. She points to a spurious claim that America "wants to blow up" TSMC, a Taiwanese chipmaker. It originated with a misleading video posted on Douyin, the Chinese version of TikTok, which featured an American lawmaker appearing to discuss the possibility. The following morning, a Taiwanese newspaper published a story about the video. Opposition lawmakers and talk-show hosts whipped up outrage. "The journey from China's Douyin to Taiwan's mass media, videos, newspapers and television took less than half a day," says Ms Chien. Chinese state media amplified the narrative, as if merely commenting from the outside on a Taiwanese debate.

Taiwanese officials believe that many of the Taiwanese launching US-scepticism untruths are "local collaborators" taking orders and payments from China. But that is hard to prove, because the suspected Chinese funding is probably funnelled through Taiwanese businesspeople or public-relations firms. Wang Kun-yi, a local commentator who frequently writes US-scepticism narratives for Chinese media and pro-China Taiwanese media, defends his work as a commercial enterprise. All journalists in Taiwan serve the bias of their newspapers' bosses, says Mr Wang, who has worked for both pro-independence and pro-unification newspapers. "Everyone just treats it as a job," he says. "It's a tool to feed yourself."

Taiwan has laws against foreign infiltration and election influence, but they are limited to cases of proven state-sponsored activity. It has additional laws against spreading wilful falsehood in broadcast media, but they do not cover print or digital outlets. In 2020 the government revoked the licence of CTI News, a pro-China channel, citing repeated failures to verify information. CTI simply moved online.

The case sparked accusations of censorship, which Taiwan wants to avoid. So the government has resorted to more liberal methods of fighting disinformation. It has tried to improve media literacy, provide faster official

clarifications and promote fact-checking organisations. But such means cannot match the speed of Chinese propaganda. In August Meta, which owns Facebook, removed a network of more than 7,000 accounts, pages and groups that were spreading Chinese disinformation. But new accounts are easy to set up, a problem that will only accelerate with artificial intelligence, says Mr Lo.

Chinese disinformation has already distorted Taiwan's public conversation. Will it move votes? Meta has noted that the Chinese disinformation network it removed was "high volume, low reach", despite having a veneer of engagement designed to make the accounts look more popular than they were. Studies of Russian disinformation in America have found that it has little impact on voter preferences. Despite all the messaging in Chinese and Taiwanese media against the Democratic Progressive Party, its candidate, William Lai, is leading in the polls. And for all the scepticism about America, Taiwanese are even warier of China. A 2022 survey by Academia Sinica, a Taiwanese research institution, found 34% of respondents agreeing that America is a "credible" country. Only 9% said the same of China.

China is to blame. It recently surrounded Taiwan with warplanes and warships even as its ruling Communist Party unveiled an integration plan promising benefits to Taiwanese people living in Fujian, a southern province near the island. Most Taiwanese know where their real threat comes from. But China's insidious efforts to mislead them are increasing. ■

This article was downloaded by [zlibrary](#) from <https://www.economist.com/asia/2023/09/26/china-is-flooding-taiwan-with-disinformation>

Japanese loos

The world's greatest toilet culture

A fine German film director puts Japan's spotless facilities in the spotlight

Sep 28th 2023 | TOKYO



Torin Boyd/Polaris/Eyevine

THE PROTAGONIST of “Perfect Days”, a new film by Wim Wenders, a German director, is a Japanese sanitary worker. Each day he rises before dawn to clean public toilets in Tokyo. His job of scrubbing urinals and mopping floors is unalluring—yet the toilets are architectural wonders. One has transparent walls which turn opaque when its door is locked. Another is beautifully clad with wood planks. The domed white structure of one resembles a spaceship.



Satoshi Nagare, provided by The Nippon Foundation

Japan's toilet culture is worthy of homage. The film features a real-life project by leading architects, such as Ando Tadao and Kuma Kengo, to renovate 17 public toilets in Tokyo's Shibuya ward. Whereas toilets are often considered "dark, dirty and smelly", says Yamada Akiko of the Nippon Foundation, which launched the project in 2018, "we wanted to transform that image." The ubiquity of Tokyo's loos is also impressive. London has 14 public toilets per 100,000 residents; Tokyo has 53. Their high-tech features are remarkable. Beyond heated seats and "washlets", which spray water and blow air onto users, they include the *oto-hime* or "sound princess", which makes flushing sounds to mask embarrassing noises. Maritomo, a commentator on Japanese toilets (who only uses one name), considers them symbolic of Japanese hospitality.



Satoshi Nagare, provided by The Nippon Foundation

Japanese and foreigners have long considered this lavatorial culture unique. Early European visitors marvelled at Japan's proficiency in repurposing excrement as "night soil" fertiliser. In "In Praise of Shadows", a 1933 essay on Japanese aesthetics, Tanizaki Junichiro declared the loo a "place for spiritual repose". The greatest haiku poets got their best ideas there, he wrote.

Yet, in toilets as otherwise, Japan has also welcomed Western innovations. After the Meiji restoration of 1868, it promoted greater hygiene as a proxy for modernisation. Japanese ceramics firms branched into producing elaborate loos. After the second world war, American occupiers introduced mechanised waste disposal to what remained of the night-soil industry. With Japan's economic recovery came a new wave of high-tech toilets based on Western models, raising the country's toilet culture to its current heights. "I was amazed at how much toilets can be part of everyday culture," said Mr Wenders in an interview.

Politics and the law

South Korea's opposition leader narrowly avoids arrest

Lee Jae-myung claims the charges against him are trumped up

Sep 28th 2023 | SEOUL



AP

WEAKENED BY MORE than three weeks of subsisting on salt and water, Lee Jae-myung (pictured) hobbled into the courtroom in Seoul on a cane on September 26th. The leader of South Korea's opposition Democratic Party (DP) had been on a hunger strike to protest against the country's president, Yoon Suk-yeol, whom he charged with the "destruction of democracy". Not coincidentally, he was summoned to court while a judge considered whether he could be arrested on corruption charges. After a nine-hour hearing, followed by several hours in a detention centre, Mr Lee was told he would not be arrested. Yet the damage this episode has done to his standing and his party's could be profound.

Opposition leaders were often jailed during South Korea's military dictatorship, but none has come as close to arrest as Mr Lee since democracy was restored in 1987 (though four former presidents have been jailed in that time). He claims to be the victim of a witch hunt by Mr Yoon. But it was not

the president who put him before a judge, but rather Mr Lee’s own party. He remains under investigation. His travails seem likely to cloud the DP’s prospects in the general election due in April.

He stands accused of abuse of power and graft, as well as asking a businessman to illegally transfer \$8m to North Korea at the height of the inter-Korean rapprochement in 2019-20. The alleged aim was to facilitate a visit for Mr Lee to the North in order to discuss a potential joint venture with Gyeonggi, the province that surrounds Seoul, which governed at the time. He denies all the charges—claiming that Mr Yoon “can abuse the political prosecution and fabricate and manoeuvre and distort, but he can never hide the truth”. The judge ruled that there was insufficient risk of Mr Lee fleeing or destroying evidence to justify his immediate arrest.

Notwithstanding the seriousness of the charges against him, the fact that Mr Lee came so close to being detained was remarkable. South Korean lawmakers cannot be arrested without parliamentary approval—and Mr Lee’s party has a majority. Its members denied a request for his arrest in February. Yet on September 21st parliament was again asked to vote on the matter, and this time approved the request.

The ballot was secret, so it is unclear how many DP legislators voted against their leader. But at least 29 out of 167 must have done so—a devastating blow to his authority. Mr Lee’s supporters declared war on those “bastards who sold out the country”. A list of suspected traitors circulated online, as did threats of revenge.

At least some of the dissidents want to get rid of Mr Lee because they fear he is leading them to electoral defeat. He has already lost one election against Mr Yoon, having been beaten in a presidential poll last year by 0.7% of the vote. He has since failed to capitalise on the president’s unpopularity. Mr Yoon’s and Mr Lee’s approval ratings are both in the low 30s. According to polling by Gallup Korea, support for the DP and the president’s People Power Party (PPP) is also steady, with both parties favoured by a third of those polled.

Given that the DP is currently preventing Mr Yoon from passing legislation, the stakes are high. If the opposition party can hang on to its majority next

year, it will continue to scupper the president's domestic agenda, perhaps setting itself up well for the next presidential election, due in 2027. But the furore over Mr Lee makes that hard to predict. He may now try to punish the rebels by identifying them and denying them the whip. Yet such a purge risks splitting and weakening his party.

For Mr Yoon and his People Power Party (PPP), the judge's forbearance may turn out to be even more advantageous than Mr Lee's arrest would have been. His removal from politics would at least have given the DP time to rally around a new leader before the election. Instead, it seems likely to limp along under his weak leadership, trying unconvincingly to paint Mr Lee as a martyr to the president's dictatorial tendencies. The PPP will meanwhile egg on the investigations into Mr Lee and insinuate that the DP is a North Korean stooge. Most South Koreans would prefer both parties to address the country's flagging economy and rising cost of living, issues that actually matter to them. ■

This article was downloaded by [zlibrary](#), from <https://www.economist.com/asia/2023/09/28/south-koreas-opposition-leader-narrowly-avoids-arrest>

Losing the Voice

Australians looks set to reject new provisions for Aboriginal people

Advocates of a constitutional “Voice” for Aboriginal people are facing defeat

Sep 28th 2023 | SYDNEY



REX/Shutterstock

AUSTRALIANS WERE united when they last voted in a referendum on indigenous rights in 1967. Over 90% agreed to remove a clause in their constitution that had long excluded Aboriginal people from national population counts, sending a message “that we would be recognised and that we would be able to enjoy equality”, recalls Tom Calma, a Kungarakan elder from Darwin. Another referendum concerning Australia’s relationship with its first people will be held on October 14th. This one poses a more complicated question—and Australians seem unlikely to support it.

Almost 18m, about 70% of Australia’s population, are due to take part in a mandatory vote on whether to enshrine an indigenous advisory group, or “Voice to Parliament”, in the constitution. Doing so would recognise Aboriginal people as Australia’s original inhabitants—killing the old claim that Australia was *terra nullius*, nobody’s land, when Captain James Cook

found it in 1770. Every government this century has supported some form of constitutional recognition, but the centre-left prime minister Anthony Albanese is ambitious. His Labor government wants to establish a Voice that would guarantee Aboriginal people more sway in policymaking, in order to improve the dire conditions of many. Australians initially seemed supportive. Polls last December found 66% backed the Voice; now around 36% do.

Voice proponents are aghast. Mr Albanaese billed the referendum as a “a once-in-a-generation chance to bring our country together”. Unlike Canada, America and New Zealand, Australia never struck treaties with its original inhabitants. The idea for the Voice emerged from months of consultation with indigenous people to address that failure. The process culminated, in 2017, with a statement from Aboriginal elders blaming their community’s poverty on “the torment of our powerlessness”. They called for a treaty and truth-telling process, as well as an advisory body.

What explains the collapse in support for such measures? Most obviously, an aggressive and well-co-ordinated No campaign. Led by most members of the opposition, a centre-right coalition of the Liberal and National parties, these antis say the Voice would weaken Australia. It “will permanently divide us by race”, claims Peter Dutton, leader of the Liberal Party. The antis are against special constitutional rights for any group. In a country where over half the population are first- or second-generation immigrants, some fear that giving a special dispensation to Aboriginal people could invite calls from other communities for similar treatment.

A debate in which race and citizenship are embroiled has raised “very sensitive issues about Australia’s past and its heritage”, says Ian McAllister of the Australian National University. The antis are appealing to “racism and stupidity”, says Marcia Langton, an indigenous academic. Voting Yes would “demonise colonial settlement in its entirety and nurture a national self-loathing”, claims Jacinta Nampijinpa Price, a conservative indigenous senator.

A lack of clarity over how Voice members would be elected or held accountable has aided the No campaign. “The absence of details raises the question: what comes next?” reads its pamphlet. Anti-Voice disinformation

is rife. Predictions of voter fraud and claims that Aboriginal people will “take your land rights” have spread online and at No-vote rallies. Tom Rogers, boss of the Australian Electoral Commission, calls such claims “tin foil-hat-wearing bonkers-mad conspiracy theories”. Pauline Hanson, a hard-right senator, has added to them, suggesting the Voice could lead to the Northern Territory seceding to become “an Aboriginal Black state”.

Lack of bipartisan support alone could nix the proposal; no referendum in Australia has passed without it. And the Voice has relatively few staunch advocates. Even Labor voters consider it a low priority. The government’s efforts to enlist support from celebrities and big business have not persuaded them otherwise. According to Mr McAllister, they have inspired a “populist reaction against the elites telling ordinary people what they should do”.

The Yes campaign needs majorities in the national vote and in four of the six states. Compulsory voting will make this change even harder, says Malcolm Turnbull, a former conservative prime minister, because semi-engaged voters tend to be more risk-averse. A Yes vote, he suggests, would signal that “Australians have overcome concerns about the risks of change and taken a leap of optimism and faith”. They appear much likelier to stick with the status quo. ■

This article was downloaded by [zlibrary](#), from <https://www.economist.com/asia/2023/09/28/australians-looks-set-to-reject-new-provisions-for-aboriginal-people>

Gender politics

Narendra Modi wants a lot more women in Indian politics

India's female political representation is worse than Pakistan's

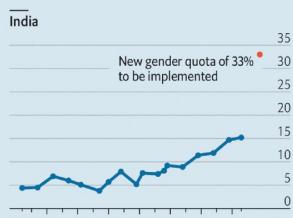
Sep 28th 2023 | SINGAPORE



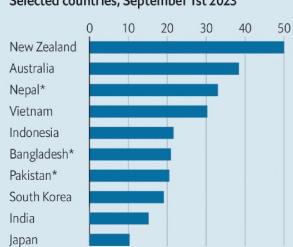
Getty Images

Worse than Pakistan

Women in parliament, % of seats held in lower or single house



Selected countries, September 1st 2023



*Have gender quotas

Sources: Lok Sabha; Inter-Parliamentary Union

The Economist

ON SEPTEMBER 21ST India's parliament passed a bill reserving a third of the seats in its lower house and in state assemblies for women. Though female political representation has improved in India in recent years, it is still miserably low. Only 15% of the members of the lower house, the Lok Sabha, are women, a smaller share than in Nepal and Pakistan (where gender quotas are already in place). The situation is even worse at state level, where women make up just 9% of elected representatives. Implementing the quota could take years, however. Constituencies must be redrawn, for which a long-delayed census must first be completed. ■

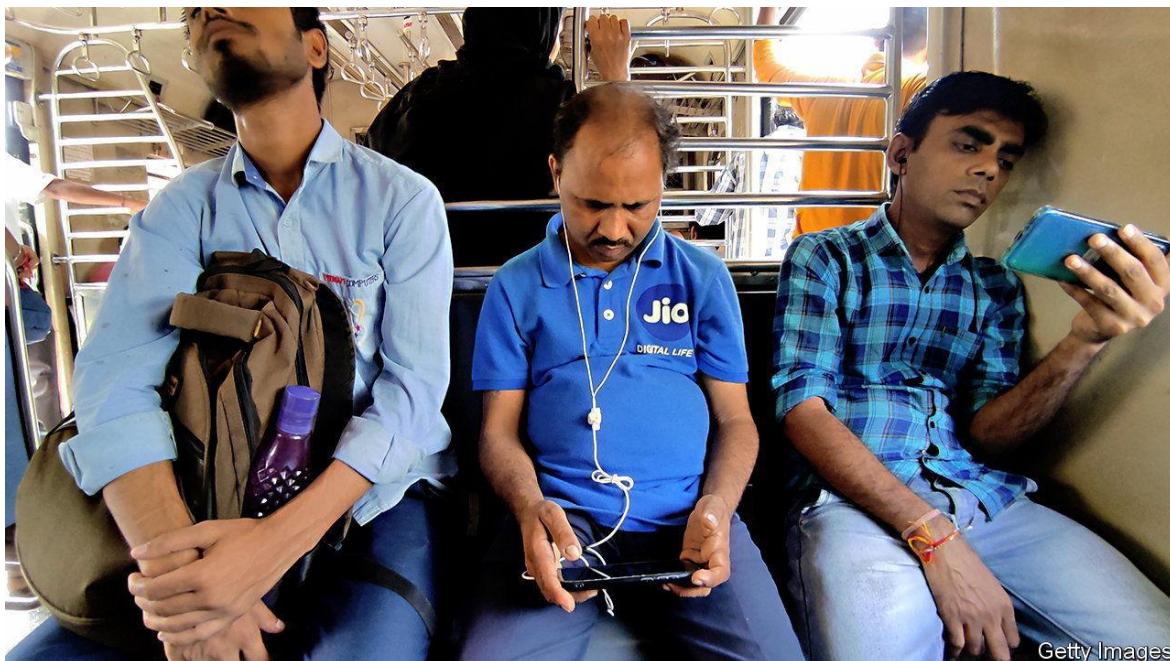
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Digital Jio-graphy

Can a \$12 phone get 300m illiterate Indians online?

India's biggest mobile network is aiming to bridge an America-sized gap in internet access

Sep 28th 2023 | MUMBAI



Getty Images

WHEN MUKESH AMBANI, India's richest man, launched a mobile network in 2016, he offered subscribers free data for the first few months. Tens of millions flocked to the network, named Jio, sparking a fierce price war and expanding India's online population. But keeping those customers once the offer lapsed required a different strategy. Mr Ambani realised that people want to keep in touch with friends and family and be entertained. So Jio phones came bundled with services such as social networks and chat apps as well as music, film and sport streaming. The plan worked: Jio is today India's dominant network, with more than half the country's 825m mobile-data subscribers. Indians' data consumption has exploded.

Yet there are another 322m—about the population of America—voice-only mobile subscribers, most of whom use other networks. The persistence of this multitude is worrying for the government, which is pushing “digital

India” as a way to improve access to public services and boost economic growth. It also represents a business opportunity for Jio, whose share of the overall mobile subscriber base of 1.15bn is an improvable 38%. The company boasts that it will free India from the tyranny of 2G, as the old generation of voice-only networks is known.

In July Jio launched a device designed to entice this voice-only cohort to get online. Priced at just 999 rupees (\$12), “Jio Bharat” phones resemble pre-smartphone handsets, with a keypad and small screen. They come bundled with apps to watch movies and sport, stream music and make digital transactions using India’s widespread Unified Payments Interface (UPI) system. Jio is targeting those who “remain ‘trapped’ in the 2G era, unable to tap into basic features of the internet”, said Akash Ambani, Jio’s chairman (and Mukesh’s son). Subscriptions cost 123 rupees a month for unlimited calls and 14GB of data. To ensure that the devices and plans reach the intended customers, Jio started by selling them in relatively remote areas before expanding availability nationwide.

The strategy draws on the success of 2016, with one big difference: the new devices come without Facebook and Whatsapp pre-installed or any way to install them. The social-network and messaging apps are generally considered essential to appeal to Indians, who outnumber all other nationalities on both services. It is, at first glance, an odd omission. Yet it reflects the diversity of Indian society and the difficulty of reaching into its deepest corners.

“There is a large population, equal to some countries, who don’t know what to do with a smartphone,” notes Navkendar Singh, an analyst with IDC, a market researcher. One in four Indians above the age of 15 are illiterate. Text-based social networks and chat apps are useless to them. Yet they know how to use basic phones to make voice calls, are as keen on entertainment as any Indian—and getting access to UPI is a major attraction for everyone looking to upgrade their phones.

The high cost of a smartphone has kept access out of reach to poor users. Jio is betting the digital-payments option on its ultra-cheap device, even more than the entertainment options, will coax them to sign up. The tiny screen

may prove unsatisfying for consuming content, says Shilpi Jain of Counterpoint, another market-research firm, “but everyone needs UPI.”

The government is especially keen on bringing the last few hundred million holdouts into the digital ecosystem, which it increasingly uses to deliver public services, especially to the neediest. India’s central bank recently said Indians would soon be able to make UPI payments using voice commands, and that it was working on ways to enable payments without internet access, with communication technology used by contactless cards. Jio’s phone, too, offers voice assistance.

UPI, like Jio, was launched in 2016. Both are integral to India’s digital transformation. Yet India’s rural poor have largely missed out on the country’s technological progress. That may be about to change. ■

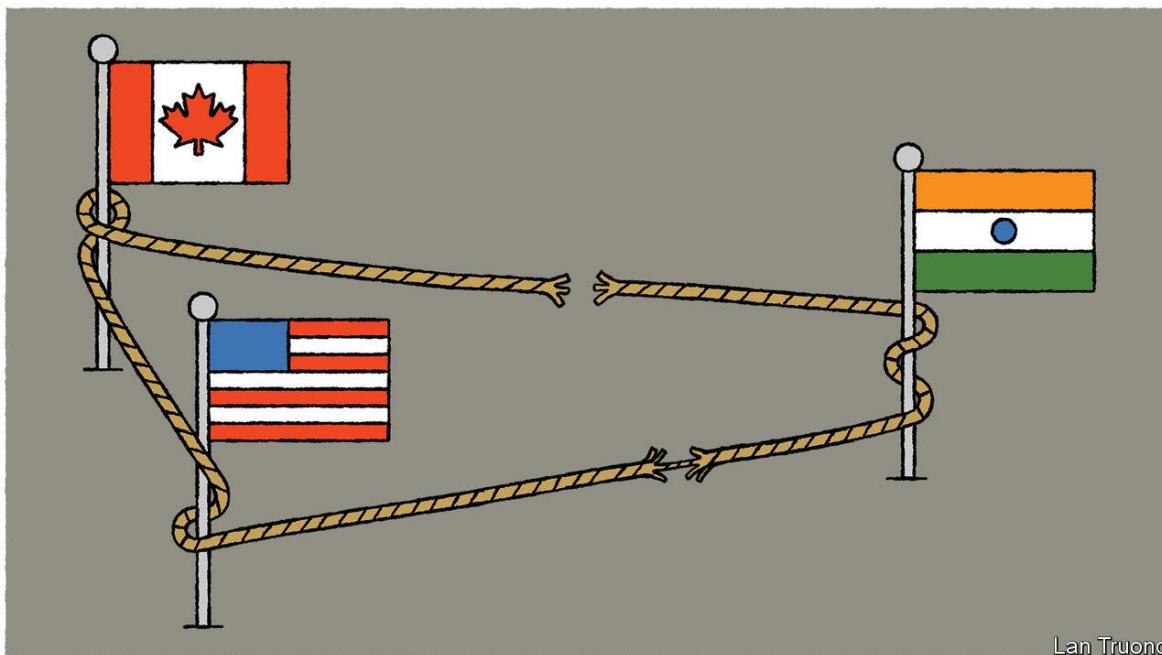
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After the assassination

India is testing America's friendship

Its partnership with the West is strong but not unbreakable

Sep 25th 2023



Lan Truong

A WEEK HAS passed since Canada's prime minister, Justin Trudeau, [told Parliament](#) of "credible intelligence" linking India to the killing in June of a Canadian Sikh activist, Hardeep Singh Nijjar. In those few days, relations between Canada and India have gone from bad to worse. That is serious enough. But the bigger question is what might happen to America's until-now rapidly [deepening ties](#) with the South Asian giant.

Many in India believe the Americans have hung Mr Trudeau out to dry. They note what appeared to be a fairly non-committal response to his allegation by the administration of President Joe Biden. Instead of fulsomely sounding the alarm, it merely expressed concern and called for India to co-operate with the Canadian investigation into the killing.

That perhaps stiffened the resolve of Narendra Modi's government to brazen out the allegations. India angrily denies them, even as it hints that, whoever did for Mr Nijjar, he had it coming. In this, many Indians cheer their government on. It had long branded the dead Canadian a terrorist for

advocating a separate [Sikh homeland](#) in Punjab and associating with violent groups dedicated to that cause. Indians grimly recall—as those in the West generally do not—the bloody insurgency and fierce repression this inspired, from the late 1970s to the early 1990s. It led to tens of thousands of deaths in Punjab and to the assassination in 1984 of Indira Gandhi, India’s then prime minister, by her Sikh bodyguards.

But Canada is now starting to look rather less isolated than Mr Trudeau’s Indian critics assumed it was. It turns out that some of the intelligence pointing to Indian involvement in the killing was collected—and provided to the Canadians—by America. Both countries are part of the “Five Eyes” intelligence-sharing club that also includes Australia, Britain and New Zealand. Mr Biden and other Five Eyes leaders duly raised the killing in private with Mr Modi, earlier in September at the G20 summit in Delhi. Mr Modi saw that confab as the latest great coming-out party for India. The Nijjar row has put a dampener on it.

India seems to have underestimated the strength of Western solidarity. It viewed Canada as a second-order power in which, if the allegation is true, it felt able to meddle egregiously. If the allegation is untrue, it nonetheless felt able to dismiss Canada’s concerns out of hand. Either way, as Tanvi Madan of the Brookings Institution in Washington has noted, this was to underestimate the ties that bind America to Canada. The two countries are hand-in-glove security and intelligence allies as well as neighbours. The assassination also has potential implications for America’s security. The superpower cannot accept foreign-backed hitmen operating in North America. For that matter, there are Sikh communities in America, too.

India is not the only country guilty of miscalculation. Canada has, as the Indians claim, long been too unconcerned about Sikh separatist firebrands operating on its soil. Their movement has few adherents in India these days; but Western countries underestimate the risk of the violence resuming. This blind spot survived even the blowing up of an Air India flight from Montreal to London in 1985. Yet if India thought this Canadian misjudgment justified it in unleashing its assassins, it was woefully naive.

It now seems determined to defy its accusers over the assassination, even if any incriminating evidence is made public. In this it appears to assume that

America will not rupture its strategic commitment to India. That is probably correct. The bilateral partnership, in India's defence, has little to do with the "shared democratic values" Mr Biden and other American politicians proclaim. America hardly criticises Mr Modi for the democratic backsliding he and his party have brought to India. The partnership is based on mutual concern over China.

Still, the row over Mr Nijjar's murder casts the relationship into sharper relief by highlighting what an awkward American partner India is. It is at once pro-Western and resentful of the West. It is eager to deepen security ties with America, yet profoundly reluctant to cede any aspect of its security to another power. If India started throwing its weight about in ways reminiscent of China itself, it would quickly lose some of the bipartisan support that it currently enjoys in Washington. Mr Nijjar's assassination may in this respect come to look like a clarifying moment. If indeed India was responsible for it, as it seems that America as well as Canada believes, Mr Modi should temper his defiance.■

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China

- Politics hamper China's efforts to stimulate the economy
- China's persecution of Uyghurs extends to those it once favoured
- After an unsuccessful boycott, women's tennis is back in China

No time for stinginess

Politics hamper China's efforts to stimulate the economy

The prime minister is weak and the president frugal

Sep 28th 2023 | HONG KONG



Klawa Rzeozy/Getty Images

A DECADE AGO the 200-plus members of the Communist Party's Central Committee gathered in Beijing for the "third plenum", a five-yearly meeting traditionally devoted to the economy. The plenum promised to give markets, not the state, the "decisive role in allocating resources". The failure of Xi Jinping, China's leader since 2012, to embrace that commitment explains much of the disappointment about China's economy in the past ten years.

But the economy's immediate predicament is different. The problem this year is not that the state has too decisive a role at the expense of the market. The most pressing difficulty is that in mobilising and allocating resources neither the market nor the state has been decisive enough.

Consumers have lost confidence. They are reluctant to splash out or invest, preferring instead to accumulate money in bank deposits. They are wary in particular of buying property, once a mainstay of the economy. That has

made it impossible for property developers like Evergrande to find their way back from insolvency.

Combined with a downturn in exports, this consumer hesitation has cut into the economy's post-pandemic recovery. Data released from May to August covering industrial production, retail sales and exports, among other things, fell far short of expectations. Slowing growth has coincided with declining prices.

In the past, China's government has responded forcefully to such downturns. When the global financial crisis struck the country in 2008, policymakers unleashed a lending and spending spree that quickly got growth back on track, even as the rest of the world faltered. But in the face of this year's slowdown, the government has been as tentative and timid as its consumers. Its hesitancy exposes some of the political and ideological constraints that now hamper China's efforts at stimulus.

In most economies, the "first responder" to a slowdown is the central bank. China's monetary authority did cut interest rates in June, but not by much. It lowered its seven-day rate by 0.1 percentage points, followed by a second cut of the same size in August. (Many Western countries are raising rates because of concerns about inflation, a problem China does not have.)

Policymakers in China, like their counterparts in other emerging economies, worry that deep cuts in interest rates will undermine faith in the currency and erode the profitability of banks. But there is another element to this restraint. China's political system has no room for activist, heroic central bankers. There is only one "maestro" in the country (to use a term once bestowed on the chairman of America's Federal Reserve). That is Mr Xi. To retain any autonomy, China's central bankers have to tread cautiously.

Responsibility for the economy traditionally falls to China's number-two official, the prime minister. Past holders of this position have had the clout and gumption to fend off disaster and revive growth. When the Asian financial crisis rocked China in 1998, Zhu Rongji raised morale by vowing to keep growth at 8%. The current prime minister, Li Qiang, is weak by comparison. Installed in March, he owes his position entirely to Mr Xi. His brief—safeguarding prosperity—remains important. But it often plays

second fiddle to safeguarding security, broadly defined. Mr Li is energetic and informed. Still, he sees the State Council (China's cabinet) as a mere implementer of the party's ideas, rather than a source of them, according to Wu Guoguang of Stanford University.

The once-bubbly property market is perhaps the biggest concern. It has been in a slump since mid-2021, when regulatory limits on excessive borrowing by developers began to bite, pushing Evergrande and others into default. Those limits were not merely a technocratic measure. They were part of a fierce, quasi-ideological campaign summed up by Mr Xi's slogan: "Housing is for living in, not for speculation".

That campaign has succeeded only too well. Sales of flats in August were 47% below their level in August 2019. Until the market stabilises, the economy will remain vulnerable. But recalibrating an ideological campaign is difficult. Regulators have loosened the definition of a first-time homebuyer, allowing more people to benefit from easier mortgage terms. They have lowered the cash down-payment people must provide. Some cities have removed price controls on flats. The 24-person Politburo, which helps set policy, dropped Mr Xi's slogan from its communiqué in July.

But neither Mr Xi nor his underlings can easily admit that his campaign went too far. Nor can they loudly champion an alternative slogan that might rally the market without raising eyebrows. The impact on sentiment therefore lingers. On September 22nd Evergrande said that disappointing sales had forced it to delay a debt-restructuring plan. Trading in Evergrande's shares was suspended on September 28th after Bloomberg revealed that the group's chairman, Hui Ka Yan, is under police surveillance. The well-connected Mr Hui is both an author of the group's misfortune and key to its recovery. None of this will inspire confidence in the viability of other distressed developers.

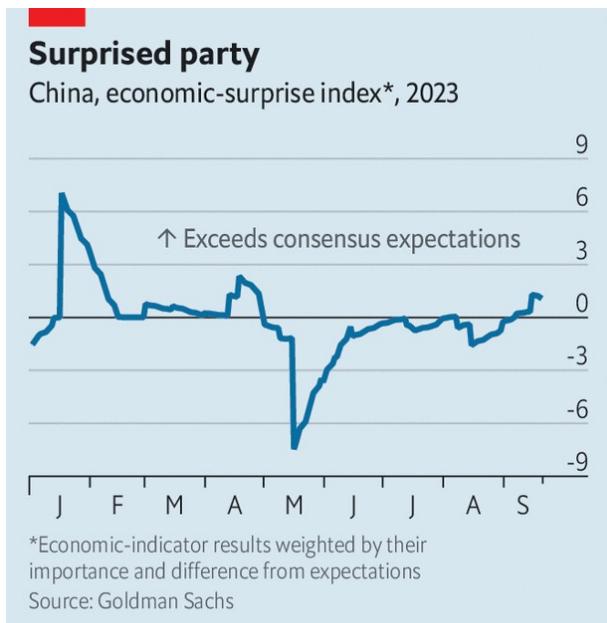
China's successful stimulus effort in 2008 was spearheaded not by officials in Beijing but by local governments. By the time Mr Xi came to power, the successes of this model had been overshadowed by excesses. Local governments had previously competed with each other to promote growth within tight fiscal constraints imposed by the central government. The stimulus upset this delicate political balance. Local governments borrowed

heavily through off-balance-sheet “financing vehicles”, freeing them from their fiscal straitjacket and allowing them to make more expensive mistakes. Their appetite for debt has proved tenacious. These vehicles now owe about 60trn yuan (over \$8trn), says Goldman Sachs, a bank.

Mr Xi has been determined to keep local governments on a tighter financial leash. That means they are in no position to lead another round of stimulus. The central government could instead do more itself. Some economists have urged it to provide consumption vouchers or handouts to the poor. But the state seems reluctant to help households directly.

This may reflect the view that alternative methods of boosting the economy, such as public investment or tax cuts, pack a double punch: they help stimulate demand and also improve the supply side of the economy, by building infrastructure or spurring entrepreneurial vigour. The lack of enthusiasm for handouts may also reflect Mr Xi’s personal distaste for “welfarism”, which, he warns, leads to laziness.

In recent weeks China’s government has begun to respond more forcefully to the slowdown. It has extended a tax break for people trading in their old homes for better ones. It has talked about renovating so-called “urban villages”, once-rural plots swallowed up by China’s big cities as they expanded outward. In August alone, local and central governments between them issued bonds worth about 1.2trn yuan (\$165bn), more than twice the average for the first seven months of the year.



The Economist

The economy also seems to be bottoming out. Exports in August were higher than a month before. Growth of retail sales and industrial production improved. Consumer prices have stopped falling. China's economic data have lately begun to exceed diminished expectations (see chart).

To lift those expectations, Mr Xi could devote the next plenum to revising and elucidating his economic philosophy. He could promise to give greater priority to the market versus the state, prosperity versus security, opening up versus toughening up. In the meantime, his underlings will have to go on muddling through. ■

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An absurd life sentence

China's persecution of Uyghurs extends to those it once favoured

The punishment of Rahile Dawut speaks volumes

Sep 28th 2023 | BEIJING



Lisa Ross

RAHILE DAWUT was once something of an establishment figure in China. The 57-year-old anthropologist from the Uyghur ethnic group was a member of the Communist Party. The state funded some of her work at the University of Xinjiang, the premier college in the region, where she was a professor and founder of a research centre studying ethnic minorities. She was awarded prizes by the Ministry of Culture, had met President Jiang Zemin in 2000 and was featured on the cover of a state-supported magazine in Xinjiang, the Uyghur heartland. But in December 2017, after telling a relative that she had to travel to Beijing, Ms Dawut (pictured) disappeared.

There has been no official explanation of what happened to Ms Dawut. But the Dui Hua Foundation, a group that campaigns on behalf of political prisoners in China, says it has learned of her fate from a government source. According to the foundation, Ms Dawut was arrested for promoting separatism and "endangering national security". At a secret court hearing in

Xinjiang in 2018, she was convicted and sentenced to life in prison. She then appealed the sentence and lost.

Friends and former students of Ms Dawut say the charges against her are absurd. They describe her as a pragmatic scholar who rarely spoke about politics. For years she skilfully navigated the tight constraints on academic research in China. Ms Dawut is not a dissident, they say, but yet another victim of the state's persecution of the Uyghur minority.

Since 2017 perhaps a million Uyghurs and other ethnic minorities have passed through "re-education camps" in Xinjiang, part of a government campaign of forced assimilation. The state has justified its actions by citing concerns about terrorism and separatism. Critics accuse it of cultural genocide. Ms Dawut is among "the long and growing list of Uyghur intellectuals—by one count more than 300—who have been detained, arrested, and imprisoned since 2016", says the Dui Hua Foundation.

Still, the sudden fall of Ms Dawut was odd, causing observers to puzzle over it. Her high profile may have made her a target, says Abduweli Ayup, the founder of a Uyghur rights group in Norway. Perhaps officials wanted to make an example of her, to keep others in line, he suggests.

Ms Dawut's international connections may have also raised concerns among the authorities. She was a visiting scholar at several universities in the West, including Cambridge University and the University of Pennsylvania. Chinese officials claim that foreign powers are trying to destabilise Xinjiang and are suspicious of any contact between Uyghurs and the outside world. Members of the group sometimes struggle to obtain passports. Some have been detained simply for travelling abroad.

Not forgotten

Ms Dawut attended Beijing Normal University, studying folklore, and was one of the first Uyghur women to earn a PhD. Her early work mapping Muslim shrines, called *mazars*, which are scattered around Xinjiang, was lauded by academics. In the ensuing years she documented Uyghur folklore and religious traditions, often focusing on the role of women. She also

mentored younger scholars. Her office at Xinjiang University and house in Urumqi, the region's capital, were hubs for local and visiting researchers.

But in the years before she disappeared, Ms Dawut's research was becoming increasingly sensitive. Her work recording local customs before they were wiped out clashed with official efforts to create a single Chinese identity, based around the majority Han ethnic group. Over the past decade, many *mazars* have been destroyed or desecrated by removing the offerings left by pilgrims. Others have been turned into attractions for mostly Han tourists.

At a recent foreign-ministry press briefing, a spokeswoman, Mao Ning, said she was unaware of Ms Dawut's case. Officials are staying mum. Joshua Freeman, a historian based in Taiwan who has known Ms Dawut for two decades, thinks he knows why. "Their silence speaks volumes," he says. "Her actual crime in the eyes of the state was being born Uyghur." ■

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Return game

After an unsuccessful boycott, women's tennis is back in China

The governing body admits defeat in its push for women's rights

Sep 28th 2023



Getty Images

NOT LONG after Peng Shuai, a Chinese tennis star (pictured), accused a Communist Party grandee of sexual assault in 2021, her sport's governing body, the Women's Tennis Association (WTA), halted all tournaments in China. The WTA, based in America, called for Ms Peng's allegation to be investigated "fully, fairly, transparently and without censorship". That has not happened. Nevertheless, the WTA has returned. The China Open began in late September.

The WTA's boycott is hardly the first of its kind to fail to produce a result from the Chinese government. Western leaders refused to attend the Winter Olympics in Beijing in 2022, citing concerns over human-rights abuses in China. But once the torch was lit, their message was largely forgotten by viewers. Many Chinese were unaware of the WTA's boycott because Ms Peng's allegations were censored. State media said tournaments were on hold because of the pandemic.

Nor is the WTA the first sports league to find out that taking a principled stand against China is costly. In 2019 the general manager of the Houston Rockets, a team in America's National Basketball Association, expressed support for pro-democracy protests in Hong Kong. China responded by temporarily banning the broadcast of NBA games, costing the league hundreds of millions of dollars.

The WTA left millions of dollars on the table with its cancellation of tournaments in mainland China and Hong Kong over the past two years. Commercial interests undoubtedly played a big role in its climbdown. Before the boycott, China had helped boost the WTA, hosting a large number of its events, including the WTA Finals.

The association admits that staying away from the country accomplished little. Since making her allegations, Ms Peng has walked them back. Observers believe she was under pressure from the authorities to do so. Chinese women who come forward with similar claims are often treated poorly. In 2018 a former intern at CCTV, the state broadcaster, went public with allegations that a prominent host had groped her, leading many women to speak up. Yet the former intern not only lost her legal case, but was sued for defamation. (The host withdrew the case on September 25th.)

Gender equality is, theoretically, a central tenet of the Communist Party. But the government has muffled the country's #MeToo movement, lest it turn into political dissent. On September 22nd two well-known supporters of the cause went on trial in southern China for "inciting subversion of state power" (foreign diplomats and journalists were barred from the courthouse). The activists have already been held for two years.

The WTA has been assured that Ms Peng is living safely with her family. She is rarely seen in public. When it announced its boycott, the association said it did not want to let powerful people suppress the voices of women. Yet that is exactly what has happened.■

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United States

- The new Supreme Court term takes aim at the administrative state
- Bob Menendez's indictment is colourful even by Jersey standards
- America's government will probably shut down, again, on October 1st
- DEI initiatives have foundered over the past three years in America
- The flow of migrants into Chicago is a crisis and an opportunity
- Donald Trump is found liable for fraud in his real-estate dealings
- A Trump Party in the Reagan Library

Who has agency?

The new Supreme Court term takes aim at the administrative state

Conflicts over guns, gender bias and abortion are coming up, too

Sep 28th 2023 | NEW YORK



Damon Winter/The New York Times/Redux/Eyevine

AMID A STORM of ethics concerns and an approval rating stuck at historic lows for a second consecutive year, the Supreme Court returns to action on October 2nd. Battles over gun rights, gender-based employment discrimination and social-media use by public officials loom, as do lingering questions about voting rights, abortion pills and affirmative action. A constitutional challenge to Donald Trump's candidacy based on his role in the riot at the Capitol on January 6th 2021 could reach the high court as the presidential campaign heats up. But the stars of the term may be a deceptively bland trio of cases that could transform the way the federal government does its work.

A wonky-but-weighty hearing will greet the justices on their second day back in robes. In the snappily named *Consumer Financial Protection Bureau (CFPB) v Community Financial Services Association of America*, the court will review a decision of the fifth circuit court of appeals, America's most

conservative circuit court, undercutting the consumer-watchdog agency established in the wake of the financial crisis of 2007-08. The fifth circuit ruled that the CFPB has an unconstitutional funding structure. Article I, section 9 of the constitution mandates that “[n]o money shall be drawn from the Treasury, but in consequence of appropriations made by law”. Since the CFPB has a permanent funding stream allocated annually not by Congress but by the Federal Reserve, the plaintiffs argue that its financing is illegitimate.

If the justices find that this arrangement violates the constitution, everything the agency has done over its 12 years—from cracking down on predatory lenders to breaking up fraudulent debt-collection schemes—could be deemed unlawful, too. The fallout from such a ruling would be “deeply destabilising”, the federal government warns. A friend-of-the-court brief from the housing finance industry predicts “catastrophic economic consequences” should challengers to the CFPB prevail, including “severe instability” in the mortgage market from uncertainty about the status of the agency’s lending rules.

Similarly significant effects could flow from *Securities and Exchange Commission (SEC) v Jarkesy*, another fifth-circuit decision coming to the Supreme Court later in the autumn. The case was brought by George Jarkesy after his company, Patriot28, appeared before an administrative-law judge (ALJ) in 2014 for alleged securities fraud involving two hedge funds. After the ALJ found him liable, assessing \$300,000 in civil penalties and disgorging \$685,000 of illicit profits, Mr Jarkesy sued the SEC, contending that its enforcement procedures are unconstitutional. A fifth-circuit panel found that Mr Jarkesy had a seventh-amendment right to a jury trial, that Congress has handed the SEC too much power and that ALJs are too hard to remove. If the Supreme Court agrees, the SEC will become less nimble in its ability to protect investors. Other agencies using ALJs to enforce regulations, including the Equal Employment Opportunity Commission and Environmental Protection Agency (EPA), could get caught in *Jarkesy’s* wake.

A third case threatening the independence of administrative agencies—*Loper Bright Enterprises v Raimondo*—may pull the plug on a precedent that has been on life support for years. When *Chevron v Natural Resources*

Defense Council came down in 1984, conservatives faithfully applied the deference it afforded to administrative agencies' own interpretations of ambiguous laws. As long as agencies like the EPA or the Occupational Safety and Health Administration issued "reasonable" regulations in the face of statutory ambiguity, *Chevron* held, judges should butt out and let the bureaucrats do their work.

But over the decades justices on the right have soured on *Chevron*'s long leash for agencies and their progressive regulations. In 2015, in a case involving enforcement of the Clean Air Act, Justice Clarence Thomas wrote that *Chevron* had enabled the EPA to enact "policy goals"—usurping Congress's job. Last year, Justice Neil Gorsuch characterised *Chevron* as "judicial abdication" and argued that although courts now seldom invoke it, the ruling "deserves a tombstone no one can miss".

With three opportunities to rein in federal agencies—thereby reallocating power to the judiciary—the justices also face a tough case testing the reach of a revolutionary gun-rights decision, *New York State Rifle & Pistol Association v Bruen*, issued in 2022. According to that ruling, the only limits on firearms allowed by the second amendment today are those with historical analogues that were in place when the amendment was ratified in 1791 or extended to the states through the 14th amendment in 1868. *United States v Rahimi* asks whether a federal ban on guns for domestic abusers under restraining orders passes constitutional muster despite, as the fifth circuit found, "no tradition" of such prohibitions in the 18th or 19th centuries.

Racial gerrymandering returns to the Supreme Court on October 11th, when the justices look into a claim that South Carolina shuttled black voters in and out of districts when drawing its congressional map after the 2020 census. On October 31st the justices will hear two cases asking whether the first amendment bars public officials—a city manager in Michigan and two school-board members in San Diego—from blocking constituents on their social-media accounts. Later in the autumn, they will ask whether Title VII of the Civil Rights Act was violated when a female police officer was transferred to a less interesting position because her supervisor allegedly wanted a man for her job.

The justices have aftershocks to confront from several recent decisions related to race. They showed no patience for Alabama's defiance of *Allen v Milligan*, a decision from June requiring the state to comply with the Voting Rights Act by drawing a second congressional district where black voters have an opportunity to elect a candidate of their choice. *Students for Fair Admissions v Harvard*, the decision from June ending race-based affirmative action in university admissions, has put wind in the sails of a lawsuit against a race-blind policy designed to enhance diversity at an elite high school in Virginia. In August opponents of the policy asked the Supreme Court to hear their case. And a new challenge to the consideration of race at West Point, a military academy, could eventually end up in the justices' laps.

The hottest-button issue in American politics—abortion—is also likely to end up back at the high court. In the coming months, they may have the final say on a district court's decision severely limiting access to mifepristone, a widely used drug to end early pregnancies. ■

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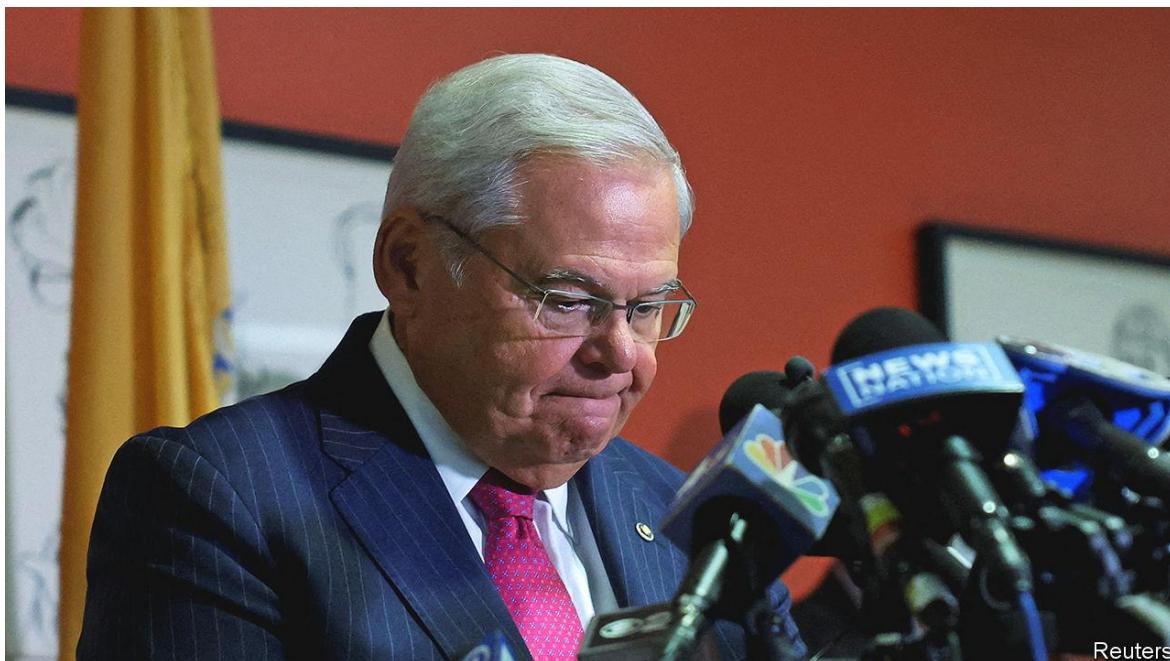
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Stars and gold bars

Bob Menendez's indictment is colourful even by Jersey standards

A New Jersey senator and his unusual saving habits

Sep 28th 2023 | UNION CITY, NEW JERSEY



Reuters

CORRUPTION IS “not unique to New Jersey”, says Elizabeth Matto of the Eagleton Institute of Politics at Rutgers University. “But the state does seem to have a knack for it.” Even so, the 39-page indictment charging Bob Menendez, the state’s Democratic senior senator, with three counts of corruption is impressive. Mr Menendez has pleaded not guilty and was released on a \$100,000 bond and told to surrender his passport. He asserts that the federal prosecutors have “misrepresented the normal work of a congressional office”.

The indictment, unsealed on September 22nd, accuses Mr Menendez of using his position to provide help for three associates. This alleged assistance included attempting to interfere in a criminal prosecution against one of them and protecting a business monopoly owned by another. Prosecutors allege he used his position as head of the Senate Foreign Relations Committee to share sensitive and non-public information with

Egyptian government officials through one of his associates. This information included that an American ban on sales of arms and ammunition to Egypt had been lifted. He is also accused of ghostwriting a letter lobbying other senators to support lifting a hold on \$300m in aid to Egypt.

Prosecutors accused Mr Menendez and his wife Nadine of accepting bribes in the form of cash, gold, a Mercedes-Benz and mortgage payments. When searching the senator's home, FBI agents found \$100,000 in gold bars and \$480,000 in cash. Some of the money was hidden in clothes, including jackets with Mr Menendez's name stitched on the front. His wife and his three friends have also been charged. A defiant Mr Menendez again denied any wrongdoing during a press conference in Union City, where he once served as mayor. He explained he had earned the money lawfully and that he had withdrawn the cash from his savings accounts "for emergencies and because of the history of my family facing confiscation in Cuba". He did not explain the gold bars.

More than two dozen Democratic senators, including his friend Cory Booker, his fellow New Jersey senator, have called on Mr Menendez to resign, as has Phil Murphy, New Jersey's governor. There are state elections in November and "nobody was willing to bleed for him", says Micah Rasmussen of the Rebovich Institute for New Jersey Politics. Much of south New Jersey is part of the Philadelphia media market, so Pennsylvania swing voters could see ads about Mr Menendez. "Democrats are trying to make the argument that it's Donald Trump who is corrupt," says Jessica Taylor of the *Cook Political Report*, a newsletter. "Republicans can point to [Mr Menendez] and say, 'You have your guy here'."

This is not Mr Menendez's first indictment. In 2006 Chris Christie, then the state federal attorney and later New Jersey's Republican governor, investigated him, but those inquiries went nowhere. Mr Menendez was also indicted in 2015 on corruption charges; the trial ended with a hung jury in 2017. Yet he was re-elected in 2018, perhaps because New Jersey's voters are so used to allegations against their politicians.

In 2017 Atlantic City's mayor resigned in disgrace, the sixth mayor since the 1970s to do so. In 2014 Trenton's mayor was convicted for extortion and bribery. In 2010 two Democratic mayors were convicted of bribery. Mr

Christie convicted more than 130 corrupt officials between 2002 and 2009, including the mayor of Newark. Bob Torricelli resigned as senator amid ethics violations in 2002.

Going further back, another federal attorney prosecuted two secretaries of state, two state legislators, a congressman and 64 other public officials in the 1970s. A separate FBI sting operation in the 1970s, known as ABSCAM, led to the convictions of a New Jersey senator and the mayor of Camden, among others. And plenty have, presumably, got away with it. Harold Hoffman, governor in the 1930s, confessed in a letter opened upon his death that he had plundered \$300,000 from the state treasury. Still, as Mr Rasmussen says of Mr Menendez: “Even by New Jersey standards, this feels different.” ■

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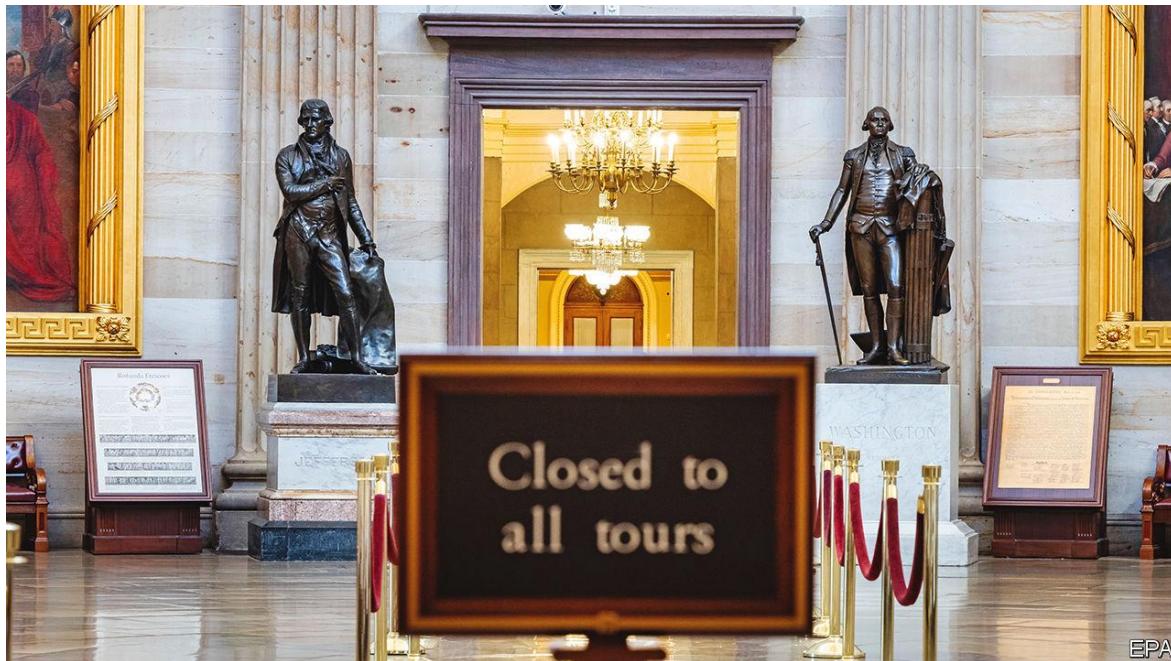
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Nihilists in Washington

America's government will probably shut down, again, on October 1st

This episode is a bit different from previous ones

Sep 28th 2023 | WASHINGTON, DC



WITH ANOTHER government shutdown looming, it is easy to assume that this particular governance failure is happening more often. Yet far fewer shutdowns have taken place in the past two decades than in the 1980s and 1990s. While funding gaps remain relatively rare, they now tend to last longer and the politics behind them are increasingly bizarre. The next shutdown could be [the strangest yet](#).

About two-thirds of federal spending is mandatory and dedicated to entitlement programmes, but discretionary spending requires annual authorisation. In theory, the process is simple. The president proposes a budget, Congress negotiates and legislation is signed into law ahead of the new fiscal year, which begins on October 1st. In practice, Congress has met this deadline only three times in the past half-century. Lawmakers often buy time with temporary resolutions to keep current funding levels. Since the 1980s, funding gaps have led to government shutdowns.

Ronald Reagan sparred with a Democrat-controlled House of Representatives and oversaw several shutdowns. Republicans led by House Speaker Newt Gingrich took on Bill Clinton twice. Today much of Washington expects a shutdown stemming not from partisan division but because of disagreements within the House Republican conference.

With a Democrat in the White House, Republicans have regained interest in reducing federal spending, a consensus that disappeared during the Trump presidency. Yet House Speaker Kevin McCarthy has struggled to get his conference to agree on how to reopen spending negotiations after a debt-ceiling deal set spending levels earlier this year. “This is a high-wire act over the Grand Canyon during a thunderstorm,” Mr Gingrich says, adding that his larger majority let him manoeuvre more freely during bitter political fights. By comparison, Mr McCarthy is beholden to congressmen like Florida’s Matt Gaetz who, Mr Gingrich says, “would probably vote against anything that McCarthy was for just because he hates McCarthy”.

The current speaker bowed to the hardliners’ wishes and spent days leading up to the deadline trying to pass separate appropriations bills and so-called policy riders. These would drastically cut spending across the government and advance unrelated policies such as immigration enforcement. They stand no chance of passing the Senate or being signed into law by Joe Biden, making a shutdown inevitable.

The alternative is to pass the Senate’s bipartisan legislation to avert a shutdown. But were Mr McCarthy to side with a reasonable, bipartisan majority in the House, that would prompt a “motion to vacate”, or vote on Mr McCarthy’s speakership. Donald Trump is not helping much. His contribution to the debate was: “UNLESS YOU GET EVERYTHING, SHUT IT DOWN!”

Meanwhile, some members of the hardline House Freedom Caucus have shifted their ire from Mr McCarthy to each other. “I honestly don’t know what to say to my fellow Republicans other than ‘You’re gonna eat a shit sandwich, and you probably deserve to eat it’,” Chip Roy, a Freedom Caucus member who earlier tried to negotiate a compromise funding package rejected by his erstwhile allies, told Fox News. Mr McCarthy’s best hope at keeping the speakership may be these emerging divisions.

If and when the shutdown begins, the White House will have some discretion over what remains open, but many services will cease automatically. Whereas pensioners will still receive benefits, soldiers and sailors will not receive pay-cheques without legislative action. Some federal programmes have contingency funds that can cover payments into the new fiscal year, but no one knows how long this shutdown would last.

How does this seemingly intractable conflict end? Paul Winfree, a former congressional staffer now at the Economic Policy Innovation Centre, a think-tank, notes that after several weeks congressional staffers will not be getting paid. “At some point in this, the pain is felt at a very local level,” he explains. “They’ve got to pay rent. They’ve got to buy groceries.” ■

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Woke and broke

DEI initiatives have founded over the past three years in America

Joe Biden's election sapped energy from the diversity business

Sep 28th 2023 | NEW YORK



Eyevine

LOFTY GOALS are admirable in any organisation; just don't forget the deliverables. Ibram X. Kendi managed the first part in pledging to "solve seemingly intractable racial problems of our time" when Boston University (BU) hired him in 2020. The scholar-activist—who says that racial disparities result from racist policies, and that a policy is racist if it yields racial disparities—was given the mandate and money to build an academic centre. He promised degree programmes, racial-justice training modules and more. But with a piddling output, despite having raised nearly \$55m, his Centre for Antiracist Research has sacked about half its 40-odd staff and said it will scale back.

"I don't know where the money is," said Saida Grundy, a sociology professor at BU who briefly worked for the centre, to the *Boston Globe*. The university is investigating the centre's use of grant money and "management culture". Even those who once supported Mr Kendi's hiring now see the

enterprise as posturing flim-flam on the part of BU. “We marched for change and what did we get? Murals, right? The centre is the equivalent of a mural,” says Phillip Copeland, a professor of social work at BU who was at the centre for two years.

The dust-up comes amid a re-evaluation of diversity, equity and inclusion (DEI) initiatives in higher education, which exploded during Donald Trump’s presidency and after George Floyd’s murder in 2020. One push involved hiring more administrators focused on diversity. In 2021 the Heritage Foundation, a conservative think-tank, found that 65 universities representing 16% of four-year students employed 3.4 DEI staff for every 100 tenured faculty. Many also started requiring tenure candidates to [submit statements describing their commitment to DEI](#).

Since Joe Biden’s election, Democrats have been less focused on racial injustice. Meanwhile, self-styled anti-woke politicians have pushed back. In May Ron DeSantis, Florida’s Republican governor, approved a law barring public universities in the state from funding DEI programmes with government money. Miffed students, he said, should “go to Berkeley”. In June his counterpart in Texas banned public universities there from requiring DEI statements. The public-university systems in Missouri, North Carolina and Wisconsin have taken similar action. “In states where the rollback has happened, there’s been pressure from politicians to confront the excesses of DEI policies,” says John Sailer of the National Association of Scholars, a conservative advocacy group.

Companies are also facing pushback over their DEI initiatives, which range from hiring targets to mentorship schemes for minority employees. Though the Supreme Court’s ban on affirmative action in June applied only to university admissions, conservative lawyers hope their challenges to such policies in the workplace will get a sympathetic hearing too. An outfit founded by Stephen Miller, who previously worked for the Trump administration, has asked the Equal Employment Opportunity Commission to investigate more than a dozen big firms for “policies that punish Americans for being white, Asian or male”. Edward Blum, who brought the affirmative-action case, is suing law firms over their recruitment programmes.

Offering, say, leadership training exclusively to minorities may be riskier after the Supreme Court ruling, but companies should be able to defend themselves if they make those opportunities available to everyone in other contexts, reckons Joan Williams of UC Law San Francisco. And under current law federal contractors—which include many large companies—are actually required to take steps to improve the diversity of their workforce.

Some firms may pare back DEI programmes to avoid being sued. But for others, playing up DEI efforts is good business—even if it does not actually yield more diversity. A working paper by Edward Watts of Yale and his colleagues found a large and growing number of “diversity washers”: listed firms that make hay of their DEI commitments in financial filings despite not having many diverse employees. They got more money from funds geared towards environmental, social and governance investing. ■

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Sanctuary in the city

The flow of migrants into Chicago is a crisis and an opportunity

Will the new arrivals eventually settle in the Windy City?

Sep 28th 2023 | CHICAGO

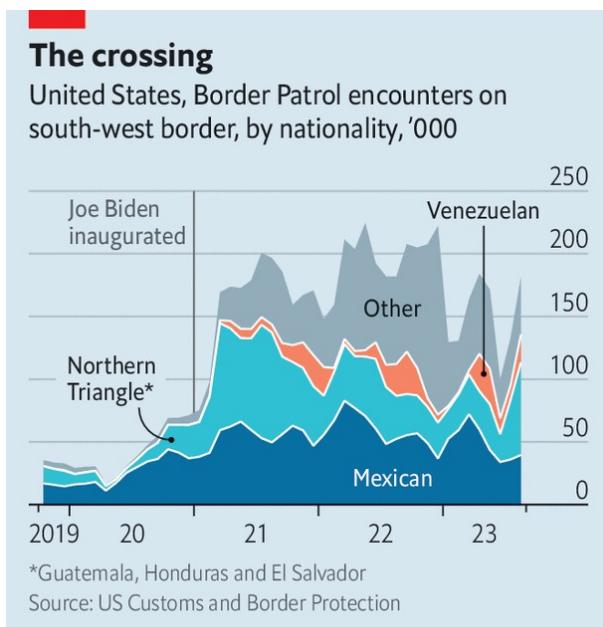


Getty Images

THE ENTRANCEWAY OF Chicago's 19th district police station, just a couple of blocks east of Wrigley Field, the city's pre-eminent baseball stadium, is no place to live. Yet enter it, and it is clear that people are managing it. Suitcases and bags of clothes are pushed up against the windows; mattresses and sleeping mats cover most of the available space. Small children run around, while adults watch soap operas on their phones. Amid it all, two police officers standing behind the desk try to listen to a woman who has come in to report some criminal behaviour. For the past few months, as many as 90 people have slept in this police station each night. When your correspondent visited, almost all there were Venezuelan migrants who had arrived in Chicago on buses as little as a day or two before.

In the past few months, police stations have become the most visible evidence of how the wave of asylum seekers arriving in Chicago are stretching the city. Since August last year, when the first busload sent by the

state of Texas arrived in the Windy City, over 15,000 people have turned up. By September 22nd, roughly 10,500 people were in city accommodation, up from 7,600 less than a month before. Of those, around 1,500 were living on the floors of police stations, with another 500 or so on floors at O'Hare airport (the rest are mostly in shelters or hotels). Only New York City is hosting more. The flood of new arrivals is the first major crisis that Brandon Johnson, the city's leftist mayor who took office in May, has to deal with. It is already showing what happens when progressive ideals crash into fiscal realities.



The Economist

Chicago's misfortune began over a year ago when Greg Abbott, the governor of Texas, began taking newly arrived migrants in border towns and loading them onto buses to be transported to "sanctuary cities", almost all in Democrat-run states in the north far from the border. Since April last year, the state has shipped around 40,000 migrants out, including 8,700 to Chicago. The idea, Mr Abbott told the Manhattan Institute, a right-leaning think tank in New York, on September 27th, has been to give liberal places that claim to like undocumented immigrants "a tiny fraction of what's happening every single day in the state of Texas." That it has certainly done. Cristina Pacione-Zayas, Mr Johnson's deputy chief-of-staff, says that the flow constitutes an "attack."

The big problem is money. By the end of this year, Chicago expects to have spent \$255m accommodating the new arrivals. Next year, the city is projecting a deficit of \$538m, over a third of which is down to the money it is now budgeting to take care of the migrants. Ms Pacione-Zayas says that the city has no idea when migrants are likely to arrive—the only advance notice that her office gets is usually from contacts at the bus companies. But the flow seems to be accelerating. “This is a federal responsibility”, she says, adding that the problem “comes from failed US foreign policy.” But since the city will not let people live on the streets, it has little choice but to find ways to house them.

In theory, the police stations are meant to be just temporary holding places where people crash for at most a few days. In practice however, according to Erika Villegas, a real-estate agent turned activist who organises hundreds of volunteers, many are staying far longer—some people have slept on police station floors for months. “In every police station there are officers welcoming and helping out”, she says. But most stations lack anywhere to wash, or to cook food, or means to access other services, leaving migrants dependent on help from volunteers. Worse, in July, the Civilian Office of Police Accountability, a city watchdog, opened an investigation into allegations that a number of police officers had sex with women under their care.

To get people out of police stations, on September 12th, Mr Johnson signed a \$29m deal with a firm to provide a “winterised base camp”, to take in new arrivals. The idea is that instead of being put into lobbies, migrants will be housed in tents, a little like army barracks. But that is already drawing criticism. The city has not named a site yet, perhaps because it knows locals might oppose it. Nor is it clear exactly how keeping people in tents, including families with children, will hold up in Chicago’s brutal winter. It is “nowhere near what we understand to be ideal”, admits Ms Pacione-Zayas from the mayor’s office.

One hope is that migrants will be able to get jobs and move out of the shelters more quickly. On September 20th, Alejandro Mayorkas, the secretary of homeland security, announced that Venezuelans who arrived in America before July 31st would qualify for temporary protected status, which allows them to apply for work permits. Julia Gelatt, of the Migration

Policy Institute, a Washington DC-based think tank, says that it will take time before many can work. At the moment work permits can take months to be issued even to those who qualify. But the administration is under immense political pressure to speed things up, she says.

For all of the costs, if they can work, the new arrivals could yet prove helpful. Their children are already refilling emptying schools, notes Ms Villegas, the volunteer. Her grandfather came to Chicago from Mexico half a century ago. Then, it was easier: “Mexicans would come here because their brother, their neighbour, their cousin was already here,” she says. That is not true of those bused from Texas. But eventually they will settle. At the police station, a newly arrived couple say they knew almost nothing about Chicago. But asked whether they will stay if they can, the answer is an emphatic yes.

■

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Summary smackdown

Donald Trump is found liable for fraud in his real-estate dealings

Eventually, that could cost him his business

Sep 27th 2023 | New York



Getty Images

THE PURPOSE of a trial is to find facts and assign fault. But for civil lawsuits in which the evidence is unassailable, parties can ask a judge to skip the fact-finding and cut to the punishment. So it was in [the fraud case](#) brought by New York's attorney-general, Letitia James, against Donald Trump in state court. On September 26th the presiding judge agreed with prosecutors that for years Mr Trump had misled lenders about the value of his [properties](#) in Florida, New York and Scotland to secure better terms on his loans. Inaccuracies of the kind unearthed by prosecutors and backed up with “indisputable” evidence, wrote Arthur Engoron in a withering judgment, “can only be considered fraud”. This was, he ruled, not a matter of “rounding errors or reasonable experts disagreeing”.

Mr Trump denies all allegations and will appeal against the ruling; his lawyer called it “outrageous” and “completely disconnected from the facts”. The process of appeal will probably drag out over years. But if the judgment

is ultimately upheld, parts of Mr Trump's [business operation](#) may be dismantled. Judge Engoron ordered the cancellation of corporate licences that enable the Trump Organisation to operate in New York. Mr Trump's properties would come under the control of a receiver and "could be put up for forfeiture by the state", says Catherine Christian, a lawyer at Liston Abramson and former prosecutor in the Manhattan district-attorney's office.

The judge has yet to describe how that process would actually play out. Mr Trump's lawyer, for his part, seethed about attempts to "nationalise one of the most successful corporate empires in the United States". Not for nothing is the punishment that has been ordered by Judge Engoron known, in legal circles, as a corporate death penalty.

Judge Engoron cited six assets whose values Mr Trump inflated on financial disclosures. Between 2012 and 2016 he claimed that his triplex apartment at Trump Tower in Manhattan was three times bigger than it was, resulting in an overvaluation of \$114m-207m. His lawyers had argued that his square-footage calculations were subjective. But "good-faith measurements", wrote Judge Engoron, do not vary by 200%.

Mr Trump also ignored outside appraisals, according to the ruling. He reported the value of rent-stabilised apartments at the price they would fetch if their rents were not capped; and he reported that of his Florida estate as if it had no development restrictions (which it had, lowering its worth). Judge Engoron said that Mr Trump existed in a "fantasy world, not the real world".

The judge is not done with the case. He determined that several of the alleged offences—that business records were falsified, for example—warrant a trial. Ms James, the state attorney-general, wants to fine Mr Trump \$250m and bar him from serving as a director of a corporation in New York. Her burden of proof is lower than if it were a criminal trial (he [faces four of those](#), in federal and state courts, over separate allegations). ■

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Lexington

A Trump Party in the Reagan Library

The second Republican debate, like the former president's speech, showed how much has changed

Sep 28th 2023



“EVERY TIME I hear you, I feel a little dumber.” It might have been Jerry Seinfeld, after one of his mouth-agape pauses, responding to George Constanza’s latest theory of life. Better yet, accompanied by a lonesome guitar and rhymed, perhaps, with “plumber” or “warm beer”, the line might have made for a fine country-and-western lyric.

They were in fact the words of Nikki Haley, a former ambassador to the United Nations and governor of South Carolina, speaking during the second Republican debate, on September 27th. And though she was once again squashing Vivek Ramaswamy, a former biotech entrepreneur, after gritting her teeth through another of his peppy paeans to himself, she might well have been speaking for the viewers at home as they thought back on their whole dismal evening in front of the tube.

The debate was held at the Ronald Reagan Presidential Library in Simi Valley, California, and so, inevitably, one of the moderators opened it by

invoking Reagan's cherished description of America as a "shining city on a hill". Equally inevitably, given the state of the Republican field and possibly of the city itself, from there things went downhill. Time may have softened Reagan's edges and blurred his flaws, bathing him in a rosy glow as it lengthened his shadow across the land. Yet even at his most peevish and least coherent, it is impossible to imagine him degrading himself to participate in the bickerfest that the seven serious Republican candidates not named Donald Trump chose to conduct, insulting and talking over each other in the hilltop shrine dedicated to Reagan's loftiest conception of his party and country.

Mr Trump once again won the debate by skipping it. With some efforts at adjustments, the other candidates played what have already become their familiar roles: vice-president Mike Pence assumed his sombre, sorry-for-your-loss undertaker's mien, while Chris Christie, the former governor of New Jersey, presented himself as a brawler on the prowl for Mr Trump.

Staring into the camera, Mr Christie taunted the former president as being afraid to defend his record. "You keep doing that—no one up here is going to call you Donald Trump," he said, smugly pausing for what was obviously prepared as a devastating put-down. "We're going to call you Donald Duck." Reagan might not have admired the humour—who could?—but he would have appreciated the G-rating.

While Mr Ramaswamy did his Uriah Heep ("You see a young man who's in a bit of a hurry, maybe a little ambitious, bit of a know-it-all?" he rattled off with his ingratiating grin), Ms Haley did her brisk-nanny number, disciplining almost every other candidate onstage—this time not excepting Ron DeSantis, the governor of Florida, whom she accused of banning fracking. Mr DeSantis, true to robotic form, reacted by ejecting a speech-chunk about his policy for "energy dominance", under which "we're going to choose Midland over Moscow" and "the Marcellus over the Molas", and by which, evidently, he hoped to choose alliteration over responding to Ms Haley. Mr DeSantis had a better outing than in the first debate, and his campaign still has plenty of money, but he did not tower over the other candidates.

All the candidates acted like Reagan disciples in vying to sound toughest on China. But Mr DeSantis temporised on support for Ukraine against Russia, promising that, like Mr Trump, he would somehow “end this war” as president. And though Reagan signed a law granting amnesty to nearly 3m people who had entered America illegally, these Republicans competed to sound most like Mr Trump, pledging to finish his wall or send soldiers in pursuit of Mexican drug cartels.

Although Mr Trump chose to ignore his rivals for the nomination and act like a general-election candidate, he offered his own backhanded homage to Reagan on the evening of the debate. He spoke at a non-union parts-maker in Macomb County, Michigan, made famous during the Reagan years as the prototypical home of the white working-class Democrats who became key to his national coalition. Such voters have been critical to Mr Trump as well. Though Barack Obama won Macomb County in 2008 and 2012, four years later Mr Trump became the first Republican to win Michigan since 1988, partly by carrying the county.

MAGA, before it was uncool

Like Mr Trump, Reagan was no friend to organised labour, but he won workers over by summoning their patriotism: “Make America great again” was his line first. He also promised prosperity and appealed to their grievances, including with racially coded messages about welfare cheats and crime. When he ran for president in 1980, Reagan, like Mr Trump later, was reviled by Democrats and his own party’s establishment as a lightweight, a teller of tall tales and a warmonger without foreign-policy experience.

But though Reagan could be a fierce partisan, he was never as sulphurous, crude or hyperbolic as Mr Trump. He also, not coincidentally, commanded majority support, something Mr Trump has never accomplished and probably never will. In his speech, Mr Trump repeatedly urged the crowd to get the leadership of the United Auto Workers to endorse him, an unlikely proposition. He said negotiations under way between the UAW and the Big Three auto companies would not matter, because Mr Biden’s subsidies for electric vehicles would destroy the industry in two years. “Crooked Joe Biden” and the “radical left Marxists” and “fascists” around him, he warned, were “selling you out to China.”

“For we must consider that we shall be as a city upon a hill,” runs the source of Reagan’s quotation, from the sermon John Winthrop delivered in 1630 as he prepared to sail with other settlers to found Boston. The line was less a boast than a goad, even a warning. “The eyes of all people are upon us,” Winthrop continued. Kind of an embarrassing thought, these days. ■

Read more from Lexington, our columnist on American politics:

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[Why some GOP candidates don't act as aggrieved as Donald Trump](#) (Sept 14th)

[What Democrats can learn from Bobby Kennedy](#) (Sep 7th)

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Middle East & Africa

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Trip hazards

America, Israel and Saudi are “at the cusp of a deal”

Joe Biden’s diplomacy could upset the Middle East, and give the Saudis nuclear technology

Sep 24th 2023 | JERUSALEM



MUHAMMAD BIN SALMAN does little to hide his relish at the prospect of a [strategic pact](#) between America, Israel and Saudi Arabia. In a rare television interview on September 20th, Saudi Arabia’s crown prince and the country’s de facto ruler acknowledged with a smile that an [agreement](#) is on the cards. “Every day we get closer. It seems it’s for the first time real, serious.” A pact would, he said, be “the biggest historical deal since the cold war”. On September 22nd Binyamin Netanyahu, Israel’s prime minister, confirmed that the trio of countries were “at the cusp” of a deal. It would, he said, be a “quantum leap”. Four days later Israel’s tourism minister landed in Riyadh for a conference. He arrived to little fanfare, but as the first-ever public visit by an Israeli cabinet minister to the kingdom, it was a historic moment.

Formal diplomatic relations between Saudi Arabia, the richest and arguably most influential Arab state, and Israel, the Jewish state which the kingdom has long ostracised, have been a long time coming. Since becoming crown prince in 2017, MBS, as Prince Muhammad is known, has held at least one secret meeting with Mr Netanyahu. Both countries have a shared rival in Iran and quietly do business deals. But in 2020 the Abraham accords were signed between Israel and several Arab states, without Saudi Arabia. Few expected Israel-Saudi ties to be formalised during the lifetime of the prince's father, King Salman, who is of a generation for whom any relationship with Israel was unthinkable.

Yet the incentives to do a deal have sharpened. For the Saudis, the motivation is a new strategic alliance with America. The two countries have a security relationship, but the kingdom wants a more formal defence pact, not least because Iran's intensifying nuclear programme means it is on the threshold of having nuclear weapons, upending the region's security balance. The talks include the possibility of a Saudi civilian nuclear-energy programme, with a uranium-enrichment facility run by Americans on Saudi soil, according to the *Wall Street Journal*, rather as Aramco, the Saudi oil giant, was originally American-run. While this effort would be civilian in nature, and America's unspoken goal is to prevent a nuclear arms race in the Middle East, MBS says he reserves the right to pursue nuclear weapons if Iran crosses the threshold. "If they get one, we have to get one...but we don't want to see that," he said in his TV interview.

For President Joe Biden, a new American-backed diplomatic and defence framework in the Middle East, built around the two regional powers, would be a major foreign-policy achievement with which to enter an election year. During his election campaign several years ago he promised to treat Saudi Arabia as "the pariah that they are" following the murder of Jamal Khashoggi, a journalist. But today realpolitik rules. His administration sees a deal as a way for America to adapt to a new geopolitical era, in which it remains the ultimate guarantor of the Gulf states' security even as their economies tilt towards Asia. This would thwart Iran, calm energy markets and prevent China from pulling the Middle East into its sphere of influence.

The domestic obstacles remain significant. On the Saudi side, even a near-absolute monarchy must take some account of public opinion. Only 2% of

young Saudi Arabians support normalisation of relations with Israel, according to the 2023 Arab Youth Survey, compared with 75% in the United Arab Emirates and 73% in Egypt (both countries have formal ties with the Jewish state). That explains the crown prince's repeated references in his interview to Israel's military occupation of the Palestinian territories. "For us, the Palestinian issue is very important. We need to solve that part," he emphasised. Parallel talks between the Saudis and Palestinians are intensifying. Palestinian officials have been visiting the Saudi capital almost every week in the past few months, according to one source in the West Bank. And on September 26th the Saudis' first envoy to the Palestinians travelled to the West Bank.

In his TV interview the prince did not, however, mention the Arab Peace Initiative, a plan endorsed in 2002 by Saudi Arabia and other Arab states. That envisaged relations with Israel only after an Israeli retreat from all the territories it captured in the 1967 six-day war, including East Jerusalem, and the establishment of a Palestinian state. Instead, the crown prince made vague promises of a deal that would give the Palestinians "their needs" and ensure "a good life" for them. All sides paint a picture of a new Middle East where economic opportunity transcends old hatreds.

MBS's vagueness on Palestinian rights is a recognition of Mr Netanyahu's domestic travails. Every Israeli leader has yearned to end their country's regional isolation, which has lasted since its foundation in 1948. For Mr Netanyahu, who is facing widespread protests against the policies of his far-right government as well as corruption charges (which he denies), peace with the Saudis is also a golden opportunity to polish his tarnished legacy. The chaotic first nine months of his latest premiership may explain why the politician who has been so vocal for so many years on the dire dangers of Iran's burgeoning nuclear programme seems willing to countenance Saudi uranium enrichment.

A deal could create shock waves in Israeli politics. Mr Netanyahu's hardline coalition includes parties which represent the religious Jewish settlers in the occupied West Bank, who oppose any concessions to the Palestinians. The settlers are well represented within his own Likud party as well. All warn they will oppose any compromise or deal in which Israel has to relinquish control over any territory.

Mahmoud Abbas, the Palestinian president, seems to have realised that the Saudis will no longer wait for a Palestinian state before establishing ties with Israel. But he would like Israel at least to cease building new settlements and guarantee greater Palestinian autonomy in the West Bank. Even that would bring down Mr Netanyahu's current coalition. "The only formula the coalition will stand for is the Palestinians getting Saudi money for their needs, but no more rights," says a senior right-wing Israeli politician.

If MBS backs even part of the Palestinian demands, Mr Netanyahu will probably lose the support of some of his coalition, and with it his majority in the Knesset. His only option would be to use the prospect of a historic deal to gain the support of the centrist parties, which have hitherto refused to join his government and would demand serious policy changes to do so now. Mr Netanyahu might welcome the opportunity to rejig his coalition, replacing the far-right with centrists. But while the centrist parties led by Benny Gantz and Yair Lapid are in favour of a Saudi deal (though Mr Lapid has expressed serious reservations at the prospect of Saudi nuclear enrichment), both have bitter experience of serving in his previous governments and remain justifiably reluctant to relive that.

Even Mr Biden may find the deal hard to sell at home. The prospect of a Saudi nuclear programme will worry Americans wary of regional proliferation. Both progressives in his own Democratic Party, who abhor the Saudis' human-rights record, and the Republicans, who will fight anything his administration proposes, may obstruct it. His hope is that Mr Netanyahu, who remains popular among Republicans, can sway his opponents. The potential for an American-Saudi-Israeli agreement may be vast, but the political window for securing it is small. "If we don't achieve it in the next few months," said Mr Netanhayu, "we might delay it by quite a few years."



Powering up

Saudi Arabia wants to become a force in electric-vehicle manufacturing

Its ambitions may yet meet a number of obstacles

Sep 28th 2023 | DUBAI



WHEN SAUDI ARABIA'S autocratic crown prince, Muhammad bin Salman (known as MBS), last year launched Ceer, the kingdom's first electric-vehicle (EV) brand, his ambition was clear. His country was not just building a new automotive company, he gushed, it was "igniting a new industry". Saudi Arabia is powering up its efforts to become a force in manufacturing EVs. If this project is a success, it could mark a significant step towards diversifying its economy away from oil. But big potholes remain.

Saudi officials have long talked of becoming a manufacturing hub for both petrol-powered and electric cars as part of the kingdom's wider industrial strategy and its plans to tackle climate change. It says it wants to make 500,000 EVs a year by 2030, roughly equivalent to annual demand for cars in Saudi Arabia today.

Now the Saudis are pushing money towards these ambitions. Of \$32bn targeted by the ministry of industry and mineral resources for nine projects in mining, \$6bn will be invested in a steel-plate mill and a plant for battery metals for EVs. They have made it faster and easier for companies to get licences and permits, which are often a hassle elsewhere in the world.

Saudi Arabia is making some progress. Hyundai, a big South Korean carmaker, has agreed to build a factory to assemble its vehicles in the country. Tesla, the world's largest full EV producer, is said to be in talks about setting up a manufacturing facility in the kingdom, though the company's boss, Elon Musk, has denied the rumours. The Saudis have signed a \$5.6bn deal with Human Horizons, a Chinese firm that makes luxury EVs, to collaborate on development, manufacturing and sales.

Ceer, a joint venture between the Saudi sovereign-wealth fund and Foxconn, one of the world's biggest electronics manufacturers, is working with BMW, a German carmaker, to produce electric cars in Saudi Arabia. And Lucid, a loss-making American new entrant majority-owned by the fund, opened a factory near Jeddah on September 27th. Its annual production will be 5,000 cars; the firm claims production capacity will eventually rise to 155,000.

Saudi may have to find other ways to boost its appeal. Carmakers everywhere face rising costs, tariffs and geopolitical worries. To attract EV manufacturing at scale, the kingdom may have to offer cheap renewable energy. It will also have to draw in suppliers to the big manufacturers. Hyundai Kefico, a component maker, recently signed a deal with Ceer.

Saudi Arabia has rivals in trying to develop an EV industry. Hungary has used its labour-cost advantage to attract battery-cell makers. Indonesia reckons that its nickel reserves mean it can do something similar, though its success is far from assured. Closer to the kingdom, Turkey and Morocco already have well-established auto industries that make internal-combustion-engine cars, so investors may be drawn to those countries instead.

Meanwhile, Saudi Arabia's blistering temperatures and limited supplies of water mean that building and running factories there will be complicated. It does not yet have much of an industrial base. The kingdom has plenty of cash and a determined ruler but money gets you only so far. China owes its

success to the fact that it moved early—and strategically—on EVs before the rest of the world’s carmakers (Tesla excepted). That has given it an advantage that Saudi Arabia cannot hope to replicate. And the kingdom’s domestic car market is small.

The automotive industry is hard to enter even if the advent of electric cars has lowered the barriers. The claims being made are extraordinary. Ceer alone, the company suggests, could generate \$8bn of gross value-added by 2034 (equivalent to 0.7% of GDP in 2022). It is easy to be sceptical of Saudi’s EV aspirations, especially since other hyperbolic targets are being set in the kingdom across many industries. Nonetheless its EV efforts are a serious attempt on the part of the world’s biggest oil exporter to diversify its economy and create new industries in anticipation of the bigger changes coming down the road. ■

For more coverage of climate change, sign up for the [Climate Issue](#), our fortnightly subscriber-only newsletter, or visit our [climate-change hub](#).

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France and Africa

Why Emmanuel Macron is pulling French troops out of Niger

France's decision to quit leaves its Africa policy in disarray

Sep 25th 2023 | PARIS



WHEN ON July 26th soldiers from Niger's presidential guard [detained and overthrew](#) the leader they were supposed to be protecting, France insisted that it would not take orders from the new junta. When the coup leaders told France's ambassador and its 1,500 soldiers stationed in the country to get out, the [former colonial power](#) dug in its heels, citing a point of democratic principle. Emmanuel Macron, the French president, declared that Mohamed Bazoum, Niger's captive president, had been democratically elected and so France would recognise only his authority.

But in an abrupt reversal on September 24th, Mr Macron announced that not only was France's ambassador, Sylvain Itté, being recalled to Paris but all troops in Niger would leave by the end of the year. France, declared its president, would thus put an end to bilateral military co-operation with Niger.

The official explanation for this about-turn is that the new authorities “no longer want to fight against terrorism”, said Mr Macron. Between 2013 and 2022 France led an anti-jihadist operation in the countries of the Sahel—Burkina Faso, Chad, Mali, Mauritania and Niger—initiated at their request. Backed by other European countries, including Britain, Estonia and Sweden, the operation at its peak counted over 5,000 French soldiers. Last year France decided to wind down Operation Barkhane and quit Mali after military leaders there staged a second military coup, and hired mercenaries from Russia’s Wagner group. French forces withdrew to what then seemed to be the relative stability of neighbouring Niger, where France maintains a military base, complete with fighter jets and Reaper drones.

As it happens, Mr Macron has a point about counter-terrorism. Niger’s junta justified its putsch in July as a response to rising insecurity. In reality political violence has surged since the coup leaders took over. According to the Armed Conflict Location and Event Data Project, a research group based in America, political violence increased by 42% in the first month of rule under the junta in Niger compared with the previous month. In the first six months of 2023, when Mr Bazoum held office, by contrast, it fell by 39% compared with the previous six months.

Yet the French decision to quit Niger is about much more than this. It is partly a pragmatic recognition that the junta was not going to budge, and that regional countries, despite their threats, were unlikely to try to dislodge it from power. The decision also marks a reluctant and painful realisation in Paris that its influence on the continent has taken a severe knock.

In the eyes of a generation of younger Nigers, and partly thanks to the efficiency of Russian disinformation campaigns, France is now regarded as the problem, not the solution. In 2013 François Hollande, Mr Macron’s predecessor, was feted in Bamako, Mali’s capital, after he dispatched French troops to beat back a jihadist incursion. Today crowds wave hastily stitched Russian flags, and call for France to get out.

The uncomfortable truth is that, however much the French point to their tactical successes in the Sahel, the broader picture since 2013 is one of spreading political violence. This has rapidly spilled over into West Africa’s coastal states. Unlike other former colonial powers, France keeps a strong

military presence on the continent, which consists of four other permanent bases, in Djibouti, Gabon, Ivory Coast and Senegal. This makes it a ready target to blame, and to accuse of neo-colonial occupation. The decision to leave Niger, declared the junta after Mr Macron's declaration, was a "historic moment" for the country's sovereignty.

The weight of France's history casts a long shadow of suspicion over its broader activities on the continent. In a landmark speech in Burkina Faso in 2017, Mr Macron laid out his plans for a Franco-African reset. France would turn the page on "françafrique", the web of cosy links between Paris and French-speaking African leaders that kept them in office and business deals flowing north. To make the point, he returned works of art from French museums, and asked forgiveness for France's role in the genocide in Rwanda. Yet this new approach, combined with its colonial past, means that France is held to standards not applied to other outside powers, including Russia, China and Turkey. America too attracts little dissent. It runs a drone base out of Agadez in Niger, and has quietly decided to stay despite the change of regime, to little outcry.

France had no good options in Niger. Had its troops and diplomats stayed in spite of the junta's demands, this could have precipitated a nasty confrontation. By leaving, as François Heisbourg of the Foundation for Strategic Research in Paris, puts it, "France's bluff has been called, which we could pay a heavy price for down the line." For France, a serious rethink of its Africa policy and the sustainability of its military presence on the continent is now in order. For the people of Niger, the likely consequence of this sorry episode is that political violence will only get worse. ■

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The horn laws

Why there is a bear market in rhinos

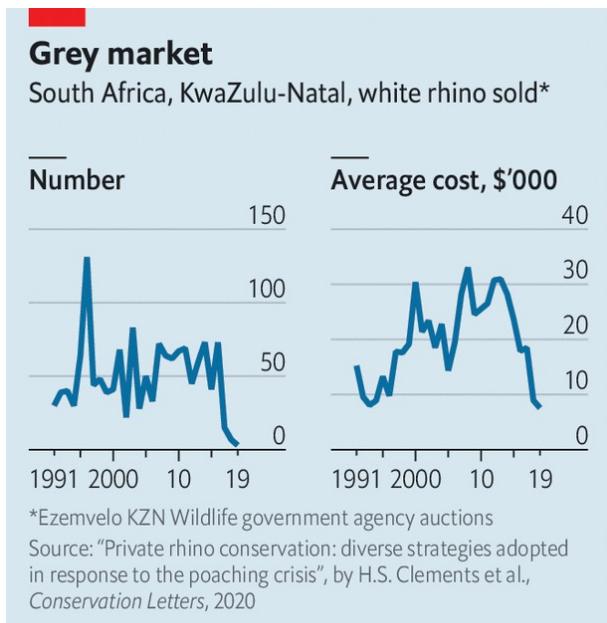
It is too expensive to protect them from poachers

Sep 26th 2023 | NORTHERN CAPE



Getty Images

HOW MANY people does it take to move a rhinoceros? Your correspondent suspects that the answer is “as many as you can find”. On a recent morning in the Northern Cape, South Africa’s largest province by area, a veterinarian fired a tranquilliser dart out of a helicopter into a female rhino’s rump. It then took 19 rangers, an electric prod and a lot of corralling to get the pachyderm into a crate. Once inside the animal was trucked to its new owner, another private game reserve.



The Economist

The buying and selling of live rhinos is not an easy business. Nor, these days, is it a lucrative one. The average price in dollars for a southern white rhinoceros in 2019 was almost 70% less than a decade earlier, according to Hayley Clements of Stellenbosch University (see chart). Today a male rhino costs about 150,000 rand (\$7,900). Earlier this year John Hume, the owner of 2,000 southern whites—some 15% of the global wild population—received no bids when he put them up for sale. African Parks, a conservation NGO funded by international donors, stepped in to buy the rhinos at a fraction of his asking price.

The bear market in rhinos is ultimately about economics. Call it the horn laws. The southern white, the commonest type, is a South African success story. It was hunted to near-oblivion. By 1929 there were just 150 left. “Operation Rhino”, launched in 1960 by Ian Player, a conservationist, revived numbers by distributing rhinos from a national park to private reserves.

Further boosts came after the introduction of auctions for rhinos in the 1980s and stronger ownership rights over the animals in the 1990s. Both improved the financial incentives for conserving them. “Creating property rights and market institutions was a game-changer,” argues Michael ‘t Sas-Rolfes of

Oxford University. Today more than half of southern whites in South Africa graze on private land.

Reserve-owners make money from tourism and hunting. The latter offends many, yet charging dentists from the Cotswolds or Connecticut to pretend to be Ernest Hemingway keeps many reserves afloat. And since the scores of rhinos hunted every year are old bulls who would otherwise compete for resources, regulated hunts can in fact help increase numbers.

Over the past 15 years, however, rhinos have turned from assets into liabilities. The main reason is the cost of protecting them from poaching. After reaching 18,796 in 2010, the number of southern white rhinos in South Africa—home to around 80% of the global total—fell to 12,968 in 2021. Most were killed in state-run parks.

Less than 10% of annual losses from poaching happen on private land. This is because private owners spend at least four times as much on security as national parks do. They cannot pass on all the costs: safari-goers can opt for the beach instead. “The economics of rhino ownership is a disaster. It’s a bottomless pit,” says Pelham Jones, the head of the Private Rhino Owners Association, a lobby group.

There are non-financial costs, too. “There is a lot of heartache,” says Peter Oberem, a veterinarian and reserve-owner. In 2008 he found a dead matriarch whose face had been hacked with an axe; her one-month-old was forlornly trying to suckle. He and his wife raised the calf. “He’s a big bastard now,” says Mr Oberem, proudly. But the stress and costs are too much for some. The number of reserves with rhinos has fallen from 330 to 280 over the past 15 years, according to the association.

There are many creative efforts afoot to boost rhino populations. African Parks organises donor-funded trans-shipments to other African countries. Last year the World Bank issued the first “rhino bonds”, which raised money for two South African state-run parks with black rhinos. Another idea is “biodiversity credits”, which would pay those preserving flora and fauna.

Rhino-owners argue that the simplest solution would be to legalise the international trade in rhino horn. A rhino can grow 1-1.5kg of horn a year.

Those that have theirs chopped off sport spiky snouts again within just a few years. This means owners could sustainably provide more horn to the market than currently reaches it even in peak-poaching years.

Yet last year the signatories to CITES, an international treaty, upheld a ban in place since 1977. Its proponents insist that legalisation would create more demand than can be met through legal supply and that it is better, therefore, to dampen demand through an outright ban. In fact the surge in poaching since 1977 suggests prohibition has had little effect on demand.

Above all, owners resent being told what to do by outsiders. “I consider myself a greenie—but then I meet these greenies who don’t know what they are talking about,” says Mr Oberem. He and others speak of a “colonial” approach from some NGOs and rulemakers from rich countries. (Perhaps if most owners of southern whites were not southern whites themselves, they would make for more formidable foes of the self-styled progressives in global conservation.)

Ultimately conservation is expensive. Sometimes the costs can be met through philanthropy or from taxpayers funding national parks. Yet such is the current logic of the horn laws: the animals are worth more dead than alive. ■

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Crime fiction

Kenya's cops are spinning wild tales

When people don't trust you, try cartoons and creative writing

Sep 28th 2023



“ONE OF THEM fired at the detective, missing his ear by a whisker. But in a quick rejoinder, the detective...chambered a round and gave the thug a taste of his own medicine, fixing the thug’s appointment with his creator instantly.” One could be forgiven for thinking these words are from a fast-paced (if trashy) action thriller. In fact they are an account of a fatal shooting released on social media by Kenya’s Directorate of Criminal Investigations (DCI), part of the national police.

The DCI’s communications strategy confounds expectations in other ways, too. Last year three Kenyan police officers were convicted of torturing and brutally murdering a human-rights lawyer, his client (who had filed a complaint against the police after they had wrongfully shot him) and their taxi driver. At the height of this trial, one might have expected the DCI’s keyboard warriors to be talking up how careful its officers are with their guns.

Instead they posted a breathless account—with comic-book illustrations—of how four officers had opened fire on armed cattle thieves with a general-purpose machinegun (GPMG), a weapon normally used in war, not community policing. “What followed was an avalanche of fire as the gunner unleashed the machine’s ferocious firepower clearing all the bushes used by the thugs for cover,” the DCI posted on X (previously Twitter). “As the GPMG flattened the area, its scary sound reverberated across the hills and valleys.”

There is some reason to this rhyme, as the police have a less than sparkling image. Nearly 70% of Kenyans say that “most” or “all” cops are corrupt, according to Afrobarometer, a pollster. Nor, it seems, are its sleuths very good at solving crimes. There are roughly 3,000 murders a year in Kenya, but only around a third of them make it to court. There are fewer than 500 successful prosecutions for murder a year.

Alas, not even bombast lasts for ever. The dispatches have become clipped and dull of late. This may be because the DCI has fallen foul of the new government. Last year William Ruto, the president, disbanded its elite special unit, accusing it of “killing Kenyans arbitrarily”. That is a charge that even the most creative of writers would struggle to spin in its favour. ■

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The Americas

- [The spat with India only adds to Justin Trudeau's woes](#)
- [Mexico's gangs could be the country's fifth-biggest employer](#)
- [Andrés Manuel López Obrador puts his stamp on Mexico's schools](#)

Canada's embattled prime minister

The spat with India only adds to Justin Trudeau's woes

Support for his government was faltering even before the squabble

Sep 27th 2023 | Ottawa



Reuters

ON SEPTEMBER 18TH Justin Trudeau, the prime minister of Canada, lobbed a [diplomatic grenade](#) into his combustive relationship with Narendra Modi, the Indian prime minister. Mr Trudeau accused “agents of the government of India” of killing Hardeep Singh Nijjar, a Canadian citizen and Sikh separatist leader, earlier this year. Mr Modi has responded by calling the allegation “absurd”, ordering the Canadian government to cut the number of its diplomats in New Delhi and suspending new visas for visiting Canadians.

Mr Trudeau’s call for India to co-operate with an investigation into the killing has been [endorsed](#) by President Joe Biden and has received calibrated backing from the British government. But support for Mr Trudeau at home is less enthusiastic. Some on the right have suggested that the prime minister released half-baked intelligence to distract from his domestic political troubles. That seems unlikely. “There’s no upside to his doing it,” says

Richard Fadden, who was Mr Trudeau's first national security adviser and intelligence chief.

However, the spat with India does come at a difficult time for the prime minister, who insists he will seek a fourth consecutive term some time in the next 24 months. This is a feat achieved only twice before in Canada. Although Mr Trudeau has won three successive mandates since 2015, it has been with diminishing support each time, leaving him in a minority position in parliament in 2021. An unlikely pact with the socialist New Democratic Party gave Mr Trudeau a working majority and the possibility of governing until 2025.

Many doubt he will last that long. After eight years in power, Mr Trudeau's approval ratings are at a historic low of 27%. During 2021 his ratings were at or near 40%. His energised Conservative rival, Pierre Poilievre, has gained ground peddling the theme that "Canada is broken". Mr Poilievre is polling at 37%.

The sense from some of the countries in the G20 is that Canada is a country in decline. In many ways that is surprising. During Mr Trudeau's stint in power Canada's GDP has grown by 13%, only slightly less than the United States during the same period, and more than much of Europe. But several key concerns, such as over the cost of living and housing, remain problematic.

Some of Mr Trudeau's policies have benefited Canadians. A child benefit introduced in 2016 helped cut child-poverty rates by half. Between 2015 and 2020 overall poverty rates fell by 45%. Mr Trudeau managed to wrestle Donald Trump to a draw after the then American president vowed to overturn NAFTA, a free-trade agreement signed between Canada, the United States and Mexico in 1992. It was replaced by a similar deal, USMCA, in 2018.

Several factors are to blame for Mr Trudeau's waning fortunes. Many middle-class Canadians—those he vowed to champion when he first ran for election—feel squeezed. Annual inflation is still among the lowest in G20 countries, and has fallen from its peak of 8% in June 2022. But it recently went up again, to 4%, double what it was when Mr Trudeau came to power.

Canada ranks among the toughest countries in the world in which to buy a home. Since Mr Trudeau was elected the home-price-to-income ratio has increased by 45% compared with an average of 25% across the OECD, a club of mostly rich countries.

“Canada may be the worst country in the OECD when it comes to the disconnect between home prices and incomes,” says Mike Moffat, an economist who has briefed Mr Trudeau’s cabinet on the housing crisis. Canada has the lowest housing supply per person of any G7 country. Mr Moffat thinks a “wartime effort” is needed to build almost 5.8m homes over the next decade, more than twice as many built in any previous decade.

Migration is also hurting the prime minister. This year Canada’s population surpassed 40m people for the first time. Nearly all of the rise was caused by migration: Canada welcomed 432,000 newcomers in 2022, the largest number ever. Mr Trudeau wants to boost this number more. The government has a target of an additional 465,000 immigrants this year, increasing to half a million in 2025. Although most Canadians remain pro-migrant, they are less sure of Mr Trudeau’s plans, particularly in light of the housing crunch. Some 61% of those asked in a recent poll think the migrant target is too high.

Meanwhile Canada’s universal health-care system is creaking. A survey by Ipsos taken at the end of 2021 suggested that two-thirds of those polled were satisfied with their free government-funded medical care. When the same question was asked earlier this year that share was 48%. Backlogs for operations such as hip or knee replacements mean that patients are waiting for years before they are treated. Millions do not have access to family doctors. Earlier this year, the Liberals made a song-and-dance about pouring C\$46bn (\$34bn) into health care over the next decade, the equivalent of 0.2% of GDP a year. But the Ipsos poll suggests that 38% of Canadians believe health-care investments made in the last decade have made no impact.

Climate change is a big issue for voters. Mr Trudeau takes it seriously. Since 2018 the country has had a carbon tax, currently C\$65 per tonne. That tax is scheduled to rise to C\$170 in 2030. However, forest fires have been raging since May, and are still continuing to burn coast to coast.

Mr Trudeau's foreign-policy troubles are not confined to India. NATO allies resent the country's puny defence spending, of just 1.29% of GDP this year. Canada's relationship with China has worsened ever since two Canadians were arrested in China in 2018 and held in jail for almost three years on specious charges of spying. In March he sought outside advice on whether to hold an inquiry into Chinese interference in Canadian elections.

Similarly, the relationship between Saudi Arabia and Canada is only just beginning to thaw after Chrystia Freeland, the deputy prime minister, criticised Saudi Arabia's human-rights record in 2018. That prompted the expulsion of the Canadian ambassador, the sale of all Saudi assets in Canada and an end to imports of Canadian wheat. The credibility of the intelligence over Mr Nijjar is largely thanks to Canada's allies, which have backed Mr Trudeau's allegation, says Mr Fadden. He needs their support in order to win the diplomatic tussle. "I don't think Canada is going to move India on its own," he adds.

Although Mr Trudeau has sought to insulate Canada from the culture wars that are raging in the United States, it has not proven immune. His response to a protest by lorry-drivers in Ottawa last year, which started against covid-vaccine mandates and evolved into a larger protest against him, irked many on the right.

"The Liberals won on hope," says Greg Lyle, of Innovative Research, a pollster, of Mr Trudeau's win in 2015. That is now in short supply. The economy is on track for two consecutive quarters of negative growth (technically a recession). Mr Lyle thinks it would be a mistake to dismiss the prime minister entirely, with by-election results in June demonstrating the resilience of the Liberals. But the light from the man once considered a beacon for progressives burns far less brightly. ■

Criminal enterprise

Mexico's gangs could be the country's fifth-biggest employer

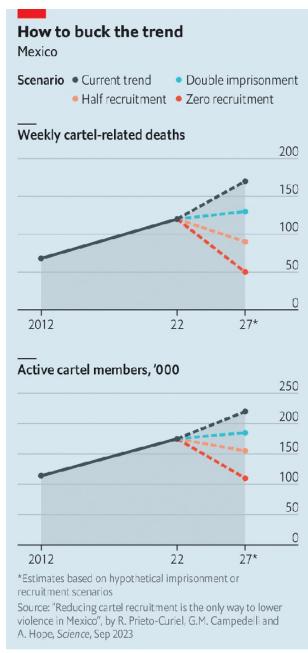
A recent paper suggests a novel way to curb their power

Sep 28th 2023 | Mexico City



Giovanni Porzio/Contrasto/Eyevine

WHAT WOULD it take to tackle Mexico's criminal organisations? That is a question that successive governments have tried and failed to answer. A crackdown on gangs from 2006 caused them to splinter. Violence increased. President Andrés Manuel López Obrador's policy to deal with the root causes of crime is known as "Hugs not bullets". A new paper published in *Science* by Rafael Prieto-Curiel, who previously worked in a government department forecasting crime in the capital, suggests a novel answer: stop them recruiting.



The Economist

Mr Prieto-Curiel started by using data on murders, arrests and other variables affecting gangs' manpower to estimate total gang membership at 175,000. He then estimated how that number might change under different conditions. His work suggests that stopping gangs from hiring fresh recruits is the most effective way to shrink them and reduce violence. If gangs were to take on only half of the 350 to 370 new people they currently need each week, by 2027 membership would be 155,000. If they faced a complete interdiction of new recruits, their numbers would fall to 110,000 by 2027.

Focusing on recruitment would be a shift from long-standing Mexican policy, backed by the United States, that focuses on arresting *honchos*. To make it, Mexico would need a better understanding of how gangs go about hiring. Some people are forced into the job, either by being kidnapped or by applying for fake job advertisements, often that of security guard. Other young men (it is almost always men) willingly sign up, perhaps because of a lack of other opportunities or, Mr Prieto-Curiel reckons, the glamorising of cartels in TV shows.

If counted as a single organisation, Mexico's gangs are the fifth-biggest private-sector employer in the country, after the likes of FEMSA, a sprawling company best known for its "Oxxo" convenience stores, and Walmart, an American supermarket chain. Between them the two big cartels,

Sinaloa and Jalisco New Generation, employ over a quarter of the total number of gangsters. By contrast Mexico's National Guard, a militarised federal police force, has just over 100,000 members. ■

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A textbook row

Andrés Manuel López Obrador puts his stamp on Mexico's schools

Some parents and politicians are putting up a fight

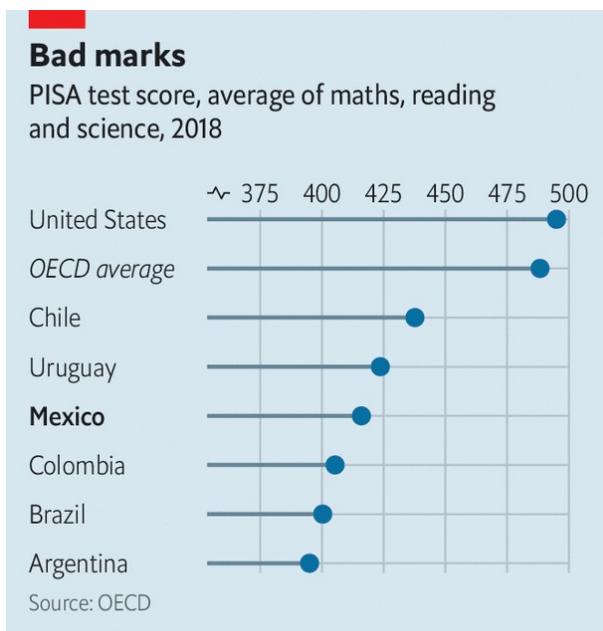
Sep 28th 2023 | Mexico City



TEXTBOOKS OFTEN cause controversy. Parents object to what they teach children about sex. History can be ideologically charged. Maps sometimes provoke anger in neighbouring countries. But rarely have textbooks caused such an uproar as in Mexico, when the government issued new books for the start of the school year on August 28th. The governors of several states refused to distribute them. Parents have burned them.

Mexico is among the few countries in which the national government produces the approved textbooks for all schools, public and private. Cuba, North Korea and Nicaragua, all dictatorships, are among the others. Mexico began its policy in 1959, saying that obliging schools to use the same books, and providing them free, would help reduce inequality in a stratified society. Most six- to 15-year-olds study in the public system: some 21.5m compared with just 2.7m in private schools.

When the state writes the textbooks, the government can impose its ideology on schools. That has been especially true since 1980, when the education ministry took over direct responsibility for writing the books from a semi-independent body (which now prints them).



The Economist

It is perhaps no surprise that Mexico's populist president, Andrés Manuel López Obrador, is taking full advantage of the opportunity. He sees himself as a transformational leader, and textbooks are a cheap way to bring about big changes. This year, the fifth of his six-year term, he has introduced a shake-up of the curriculum, textbooks included, that he calls the "New Mexican School". Mexico needs education reform. It performs poorly on PISA, an international test of the reading, maths and science skills of 15- and 16-year-olds (see chart). But experts doubt that the New Mexican School is what the country needs.

The new library mirrors the president's obsessions while incorporating modern ideas about diversity. Children will learn more about pre-Hispanic civilisations, a change that has been widely welcomed. Pronouns are now gender-neutral.

More contentiously, students will now be schooled in Mr López Obrador's ideology. The books denounce individualism, capitalism and

“neoliberalism”, which allegedly “has eliminated worker gains”, says one. They extol the president’s pet building projects, including a museum and an airport in Mexico City. One of the officials who directed the textbooks’ composition is a Venezuelan who used to work for Hugo Chávez, that country’s late left-wing dictator. A guide for teachers urges them to ask themselves whether they are “oppressed or an oppressor”.

The new textbooks are full of mistakes. One suggests that herbal tea can treat covid-19. Another puts a Mexican state in the wrong place on a map; another gets the birthdate of Benito Juárez, a president of the 19th century, wrong.

The new curriculum is also a pedagogical mess, says Marco Fernández of México Evalúa, a think-tank. Subjects will no longer be taught separately. Instead, children are to learn through interdisciplinary projects. More interactive learning is a good thing, says Eugenia Roldán of Cinvestav, a research body on education, but not everything can be taught that way. The new curriculum drastically reduces the teaching of maths and Spanish.

Another brick in the wall

Teachers have received little training for the new content. That is not surprising, since Mr López Obrador has slashed the budget for teacher training, from 1,644 pesos (\$88) per teacher per year in 2016 to just 85 pesos today. “I had to do a lot by myself and still have many questions,” says Vianney Narváez, a history teacher.

Mr López Obrador has weakened education in other ways. On taking office in 2018 he reversed a reform by the previous government that curbed the power of the teachers’ union and introduced performance reviews. He disbanded a body that evaluated the quality and performance of public education (there are no plans to assess his new curriculum). His government does give out more scholarships than the previous one did; but they help children attend badly performing schools. Some parents send their children to fee-paying schools as soon as they have enough money. Schooling is “really so basic”, says Julia Arlette Huerta, who wants to move her eight-year-old to a private school.

A debate that is still to be held is “whether the government should be writing the textbooks at all”, says Ms Roldán. Private schools have long ignored the official textbooks, which means that prosperous and poor children have not been learning the same things. The new curriculum and books are likely to increase the inequality that uniform textbooks sought to lessen. For a government whose motto is “first the poor”, that would be a failure. ■

This article was downloaded by [zlibrary](#) from <https://www.economist.com/the-americas/2023/09/28/andres-manuel-lopez-obrador-puts-his-stamp-on-mexicos-schools>

Europe

- The EU is finally rebooting the enlargement machine
- War has arrived in Crimea
- Seven years after a terrorist attack, Nice has rebuilt itself
- The definition of Europe has always been both inspiring and incoherent

One last push

The EU is finally rebooting the enlargement machine

Going from 27 to 36 members will require reform of the bloc

Sep 28th 2023 | BRUSSELS



Reuters

RUSSIA'S INVASION of Ukraine has prompted a slew of geopolitical realignments, from China to India by way of Turkey. Many are likely to prove fleeting. But one that may prove durable is a new European order now being actively considered. Some 2,000km from the front lines, in Brussels, the war on its continent has prompted the European Union to give serious consideration to bringing new countries into the club for the first time in over a decade—and to adapt the union for what is likely to be its last big enlargement.

On October 6th the EU's 27 national leaders will meet in the Spanish city of Granada to lay out a path to this enlargement, and ponder how a reshaped union would work. The road to EU membership for up to nine new countries—including Serbia, Albania and four others in the Western Balkans, as well as Ukraine, Moldova and possibly Georgia—will be tortuous. Joining what would become the world's largest economic bloc, on a par with America,

will require deep reforms of the sort current aspirants have so far shunned, or those that Russian invaders make hard to pull off.

From the EU's perspective, morphing from a club of 27 today to perhaps 36 tomorrow will be possible only if its inner workings are revisited. That will include changing the balance of power between the bloc's central institutions and its national capitals, for example making the club less hostage to a single country's whims. Such internal reorganisations can easily prompt squabbling at the all-night summits the union is known for.

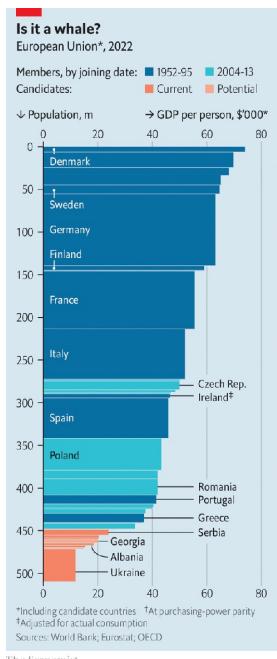


Nobody expects the process to be quick: a target date of 2030 that is being considered for both applicants and the EU to be ready is ambitious. But the fact that bringing more countries into the bloc is on the agenda at all is remarkable, seeing how enthusiasm for any newcomers has waned in recent years. Enlargement had once been a red thread running through the history of the club, which started off with just six members and ended up with 28 (before Britain left). But by 2013, when Croatia was let in, the process seemed to have run its course; no one has joined since then, and the previous entrants, Bulgaria and Romania, arrived as far back as 2007.

Some of this reflected “enlargement fatigue” among Europe’s old guard, for example France, which feared that widening the EU had come at the

expense of deepening its integration. Others came to agree, especially after the behaviour of some of the new member states, former Soviet-bloc countries granted entry mainly in 2004. Hungary and Poland have at times been run by governments accused of flouting core EU values concerning the rule of law. For much of the 2010s the EU was embroiled in the euro-zone crisis and was not much in the mood to take on new challenges. Ukraine for its part was too big, too poor, too corrupt and too agrarian to enter a club that mollycoddles its farmers.

The war in Ukraine has changed the calculus. “Enlargement used to be driven by hope; now it is driven by fear,” as a diplomat from an aspiring country puts it. Strung along for years with promises of accession, some countries have turned to new patrons, including Russia, Turkey and China, which have showered the region with aid and investment. That used to be merely annoying for the EU. Now it is an intolerable incursion into its back yard.



The Economist

When thinking of Ukraine, by far the biggest aspiring entrant (see chart), officials from EU countries wonder if having a neighbour with lots of battle-hardened men left outside the bloc looking in may be a recipe for future strife. The EU is on the hook for reconstructing the country anyway. The costs of bringing Ukraine and others into the club will be heavy, for they are

still poor, corrupt and agrarian in varying degrees. Yet there is a good case to be made that it would prove even costlier to keep them out.

Nowhere has this new reality dawned so clearly as in France. As recently as May 2022 Emmanuel Macron seemed to write off the prospect of Ukraine becoming a member, saying it would take “several decades”; he had previously thrown sand in the gears of Balkan accession. Now France has become an unexpected champion of enlargement. Other existing EU members were always keener on the idea: Germany’s governing coalition agreement, signed in 2021, commits it to letting in the West Balkans. Central Europe also wants Ukraine and others to join—on security grounds. That is as much of a consensus as is likely to be reached on any EU issue.

Two hefty obstacles lie in the way of Europe formally welcoming nine new members. The first concerns the applicants. The second is the readiness of the club they want to join.

Start with the applicants. In short: there is a good reason why Bosnia-Herzegovina, Montenegro and the others are not already in the EU. None of them is particularly well run. All suffer from a mix of autocracy, corruption and weak rule of law. Moldova, Georgia and Ukraine have Russian troops on their territory. The EU prides itself as a “peace project”, yet simmering tensions endure between two putative members, Serbia and Kosovo, including periodic armed scuffles. Serbia has refused to apply sanctions against Russia; its president, Aleksandar Vucic, used his recent address to the UN General Assembly to blast the West over old grievances. Kosovo for its part is not even recognised as a state by five current EU members.

Bosnia is still riven by the ethnic tensions that broke up Yugoslavia in the 1990s. Montenegro, once a front-runner for EU membership, has had a caretaker government for over a year. Even when pro-EU leaders seem to be undertaking useful reforms, for example Maia Sandu in Moldova or Edi Rama in Albania, fears abound over whether the next election’s winner will be suitable to sit at the top table of the European Council. The same is true of Ukraine and whoever might succeed Volodymyr Zelensky. Teams of EU officials visiting Kyiv have been impressed by how much effort the country is putting into ticking all the boxes required to keep the accession process jogging along. But who will be Ukraine’s president in 2030, or 2035?

Balking at the Balkans

The obstacles may seem insurmountable, particularly in the Western Balkans, which have been promised EU membership as a reward for reforms since 2003. But enlargement optimists—now in the ascendant across the EU—think all that is needed is a new dynamic. Up till now, applicant countries sensed that even if they reformed, the doors to the club would remain shut. This bred a vicious cycle of cynicism: they pretended to reform, and the EU pretended to want them in.

The latest signals from Brussels are different. “The EU is ready. The EU is serious this time,” says Miroslav Lajcak, the club’s point man for the Western Balkans. He adds a caveat: “But I feel that the region is still not convinced about that.” For now, there are few signs that the distrust and despondency that have characterised the Balkans’ relations with the EU—and its messy internal politics—are being overcome.

Two things are being done to break this cycle. The first is a new consensus in Brussels that applicant countries should feel the benefits of the EU before getting full membership. The aim is to provide immediate returns for reforms, and not promise a large but distant carrot only once membership is secured. Beyond participating in EU policies, such as energy interconnections or student exchanges, the applicant countries would get cash—a time-honoured way to spur reforms.

More chunky are the EU’s efforts to show that the club is undertaking its own reorganisation, necessary for enlargement to happen. The buzzword in Brussels is “absorption capacity”, so that a union of 27 does not collapse under its own weight when it swells to 36. Not only would enlargement alter the shape of the EU, but it will have to modify its inner workings, too.

Discussions are at an early stage and will take years. But two big changes will have to take place. The first concerns the EU budget. The bloc normally spends only about 1.2% of its combined members’ GDP, €1.8trn (\$1.9trn) over its seven-year budget cycle. That is both not very much and yet enough to create winners and losers—and more all-night wrangling at summits.

The common agricultural policy hoovers up around a third of the bloc's budget, as do "cohesion" and regional-aid funds flowing to poorer countries and regions. Under current rules, such funds would be soaked up by the newcomers, in particular by Ukraine and its vast farms. The upshot would be stark: 18 current EU members now receive more money than they put in, including all of central Europe. Unless existing policies are overhauled, quite possibly all today's members would become net contributors. Mere tweaks to farming subsidies are usually enough to send protesting farmers on their tractors into the streets of Brussels spreading manure. A more radical overhaul might be politically unpalatable in several countries. Poland, once Ukraine's most steadfast ally within the EU, recently blockaded grain imports from its embattled neighbour, straining its relationship with the government in Kyiv.

The other huge challenge is to adjust the EU's basic rules over how decisions are made. This is where the wrangling will prove most divisive. Some issues are easy to handle: at the moment, the European Commission, the bloc's executive arm in Brussels, is composed of one appointee from each country. In a union of 36, some (smaller) countries might have to give up the right to a commissioner.

A more contentious but necessary change would be for more decisions to be made by qualified-majority voting, whereby big countries carry more weight than small ones. At present important swathes of policymaking—including foreign policy, economic sanctions, policing matters and taxation—must be agreed unanimously by all 27 member states. France and Germany are keen for more areas to be impervious to veto by just one or two recalcitrant countries. But many small countries feel that such vetoes preserve their sovereignty. And much of central Europe already distrusts decisions crafted in Paris and Berlin that would be foisted on them.

Hence a lot of cogitation. A group of think-tankers commissioned by the governments of France and Germany has suggested a "multi-tier" structure for Europe, with more projects (like the euro) adopted by only some member states. Others want to make it easier to punish governments that flout democratic norms, like Hungary today, for example by suspending their voting rights on EU matters.

Few of the suggestions put forward today are likely to survive intact. Many member states, including Poland, suspect the entire debate around EU reforms is being cooked up to make it harder, not easier, to bring in new members. These fears are accentuated when those who want lots of changes say the process must involve a reform of the EU's treaties—a cumbersome exercise last attempted in the 2000s.

The topic of when and how enlargement will happen will dominate the European political discourse for years. The final destination remains unclear. But the fact that the prospect of a bigger EU is at last being taken seriously is a mark of how much the war in Ukraine has reverberated far beyond the front lines. ■

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Black and Blue Sea

War has arrived in Crimea

Slowly but methodically, Ukraine is chipping away at Russia's firepower in the peninsula

Sep 25th 2023 | KYIV



Reuters

Editor's note (September 26th): The commander of Russia's Black Sea fleet, whom the Ukrainians claimed to have killed in its raid on Sevastopol, reappeared on September 26th. The article has been amended accordingly.

TWO UKRAINIAN missiles smashed into the headquarters of [Russia's Black Sea fleet](#) before noon on September 22nd. This time, there could be no cover-up. After a Ukrainian attack on a nearby command post two days earlier, censors had scrubbed most social-media posts written by locals. But the daytime strike in central Sevastopol, timed to coincide with a meeting of senior generals, was impossible to hush up. Local chatrooms buzzed with gossip. "Day 576 of a three-day war to take Kyiv," read one. "What about our red lines? Time to wipe these bloody Ukrines from the face of the earth," another. Amid Ukrainian claims that dozens of officers had been killed, Russian authorities even started turning on early-warning air-raid sirens—something they had previously tried to avoid.



The Economist

One and a half years in, Vladimir Putin's war has come to Crimea in earnest. Since the beginning of summer, Ukraine has massively stepped up strikes on the peninsula annexed by the Kremlin in a largely bloodless coup in 2014. Using a mix of new [home-made drones](#) and foreign-supplied [cruise missiles](#), it has hit military bases, air bases, and command-and-control centres.

On September 13th a strike on the Sevmorzavod dry dock in Sevastopol took out an amphibious landing ship and one of just six kilo-class submarines capable of launching cruise missiles near the Ukrainian shore. A day later drones and Ukrainian cruise missiles destroyed a cutting-edge S-400 air-defence system that had an export price tag of over \$1bn. On September 23rd, a day after the strike on the headquarters, another salvo of cruise missiles hit a pier in Sevastopol. Slowly, and methodically, Ukraine is chipping away at Russia's Crimean firepower.

Ukrainian military sources say the operations are not necessarily ends in themselves. They should rather be seen as auxiliaries to two more important efforts. The first is Ukraine's ongoing land counter-offensive, focused on the [Zaporizhia region](#) to the north-east of Crimea. Any Ukrainian success in degrading air power, railways and logistics, they say, undermines the Russian troops there who are directly supplied from the peninsula.

The second focus is a naval contest in the Black Sea. Here, Ukraine is trying to deny Russia a monopoly of the sea and to regain control of vital shipping routes. It is destroying Russian warships wherever it can, and pushing the rest out to a distance that makes striking ports, cities and a new sea corridor as difficult as possible. The process began in April 2022 with the sinking of Russia's flagship *Moskva*, hit with a home-produced Neptune cruise missile that the navy wasn't sure even worked. Since then Ukraine has sunk or damaged at least 19 Russian ships.

Ukraine's economy rests on the success of a new sea corridor in and out of Odessa, announced in August in the wake of Russia's refusal to extend a grain deal. The safety of the route, which hugs the shoreline inside Ukrainian territorial waters, depends on two things: a bet that Russia will not target civilian ships sailing under neutral flags; and a viable threat of retaliation should that not prove enough.

The latter is already real. At the start of the war Russian warships were positioned menacingly close to Odessa. Today, they rarely enter the north-western Black Sea—a remarkable achievement for a Ukrainian navy without a single operational warship. “The Ukrainians have adapted to become a mosquito fleet [using naval drones, missiles and artillery],” says John Foreman, a former British defence attaché in Moscow and Kyiv. “It’s a classic sea-denial strategy that others used against the [British] Royal Navy in the past.”

Ukraine's strategists have consistently identified Crimea as Russia's Achilles heel: crucial to its ability to project power and hold on to occupied territories, but vulnerable to being cut off. An article co-written in September 2022 by Ukraine's commander-in-chief, Valery Zaluzhny, highlighted the need to make “feelings [of discomfort in Crimea] more acute, natural and tangible.” New circumstances have added urgency to that aim. The counter-offensive has yet to produce the breakthrough many had hoped for—specifically, it has not brought Crimea into artillery range from the north. The pressure is on to show results in another way.

Even more important are the new capabilities in the hands of Ukrainian planners. Lines of finance provided to drone manufacturers in early 2023 are making available new aerial and sea drones. Some of the naval drones, like

the “Sea Baby”, used for strikes on the Kerch bridge that links Russia directly to Crimea, had been in development for years. But others, like the torpedo-style, underwater “Marichka”, which packs a 450kg explosive punch, have appeared more recently.

Ukraine also has new missiles at its disposal: steady flows of Storm Shadow/SCALP cruise missiles from Britain and France, and a new surface-to-surface version of the Neptune that sank the *Moskva*. “The big change is that we received new missiles and intelligence,” says a source in Ukraine’s general staff. “As soon as we have a target and we can hit it, this is exactly what we do.” Other cruise missiles are in the pipeline. “We want an analogue of the Russian Kalibr and Kh-101s,” says the source, noting that these weapons’ speed, manoeuvrability and stealth makes them hard to intercept.

Hanna Shelest, a security expert based in Odessa, says Ukraine will not have to look far for expertise. The one-time missile superpower had a handful of “crazy...world-class” projects under development before 2014, she says. They were mothballed because of lack of finance or, in some cases, sabotage. “There were many cases where documents disappeared or were not signed.” Some of these projects have been dusted off. Creating a new missile usually takes around ten years, but bringing older prototypes to market will be much quicker.

Yet although Ukraine continues to score successes against its more powerful adversary, it is unclear if a tipping-point will ever come. Andrii Ryzhenko, a retired Ukrainian navy captain, says the campaign to make Crimea unsustainable will continue well into the winter. The anticipated arrival of [American ATACMS missiles](#), promised by President Joe Biden last week, will help stretch the barrage out. “We will keep searching out Russia’s weak points, and keep degrading Russian defences and logistics,” says Mr Ryzhenko.

Russia is adjusting its tactics in response to the new threat. It has moved some of its ships to safer ports, like Novorossiysk across the Black Sea. But the psychological importance of Crimea to Mr Putin’s rule means he is likely to cling on. Ukraine has significantly degraded Russia’s “naval power ratio,” an operational measure it uses to take account of drones, radar, shore-based

artillery and so forth, as well as warships, though it is still a long way from parity. At the start of the war its navy put that ratio at 12:1. Today it stands at 4:1. “The Russians still have the upper hand,” admits Captain Ryzhenko. ■

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Good from evil

Seven years after a terrorist attack, Nice has rebuilt itself

“You have made us stronger,” says the mayor

Sep 24th 2023 | Nice



Getty Images

WHEN THE Tour de France, a gruelling multi-stage cycling race, takes place in July 2024, it will for the first time in its 120-year history end not in Paris, but in Nice. Instead of finishing on the Champs-Elysées, cyclists will complete the final stage along the palm-fringed Promenade des Anglais, on the Riviera. For the city of Nice, the event will be moving as well as being a source of pride. July will also mark eight years since a lorry ploughed into a festive crowd in a [terrorist attack](#) that killed 86 people, and left the city in shock. Today Nice is trying to turn its response to that horror into a way to reinvent the city.

The attack of 2016 took place on France’s national holiday, Bastille Day, when locals and holidaymakers were out celebrating on the promenade. Mohamed Lahouaiej-Bouhlel, a Tunisian citizen resident in France, drove a 19-tonne lorry for 2km into crowds of families, before being shot dead by the police. Islamic State claimed the attack as an act of jihad, although

investigators never found a direct link to the perpetrator. In the following days, the beachfront was turned into a shrine to the dead. Pebbles, teddy bears, dolls, drawings, candles and flowers were laid all along the promenade where victims fell. A place of revelry was turned into one of grief.

Nice has not forgotten that dark day. Last year the city unveiled a statue in memory of the dead, depicting an angel perched atop a breaking wave, its head inclined towards the sea. Yet in the aftermath of the attack, when the local authorities were working out how to reinforce security along the promenade, they decided to incorporate in their plans a broader effort: to make the city safer, greener, younger and more dynamic. The idea, says Christian Estrosi, the centrist mayor of Nice, who is close to Edouard Philippe, a former prime minister and a [potential presidential candidate](#) in 2027, was “for people to forget the place as it was and discover a new one.”

The focus was initially on the seafront. Joggers and walkers, as well as cyclists, now enjoy dedicated lanes protected by white bollards of reinforced concrete, linked by steel cabling. Since 2018 Nice has opened two new tram lines, one of which links the airport with the city and has reduced by 20,000 cars a day the traffic along the promenade. The extra tram lines have also helped to breathe new life into neglected areas, including the once-shabby port. Two more tram lines are planned. A “green corridor” of trees and parks, still partly under construction, now stretches from the beachfront into the city’s interior.

Heavily dependent on tourism, with its image as a favoured spot for such luminaries as Ernest Hemingway or Louis Armstrong, Nice also earned a reputation as a sun-drenched place for retirees. Now the city is trying to show that it can lure youth and innovation too. An “Eco-valley” is under construction along the Var river, from the airport and past the Allianz Riviera football stadium. ISART Digital, a school for video-game developers, is opening a new campus there. Start-ups specialising in “clean tech” have moved in. In 2025 Nice will host the United Nations oceans summit, a big jamboree. The city’s student population has doubled since 2008. In the evening, bars and restaurants are packed. “The city has said to its enemies: ‘you thought that you could floor us? In fact you have made us stronger,’” says Mr Estrosi.

Just along the road from the site of the attack, however, stands the Lerval Foundation children's hospital. Years later, it continues to monitor 692 adults and children. On the night the attack happened, seven mobile psychological stations were opened on or near the promenade. These kept operating for over three weeks, and carried out over 4,000 consultations. Everyone in the city, says a psychiatrist, knew someone who was on the promenade that evening. In the run-up to a trial last autumn, in which eight people were found guilty of links to the attack, the hospital noted an increase in post-traumatic symptoms. Of the patients monitored by the Lerval hospital today, a third still have debilitating symptoms such as anxiety.

City leaders are well aware that Nice will continue to bear the scars. It also faces plenty of other issues unrelated to the attack. The jobless rate in Nice is higher than the national average. Poverty crowds into the tower blocks that stretch inland, far from the chic Riviera and its private yachts. The south of France more broadly has become a stronghold for Marine Le Pen's hard right, and the Côte d'Azur is no exception. At the second round run-off of the presidential election in 2022, won by Emmanuel Macron, she scored three points more in Nice than she did on average across the country, and did even better in nearby cities such as Cannes.

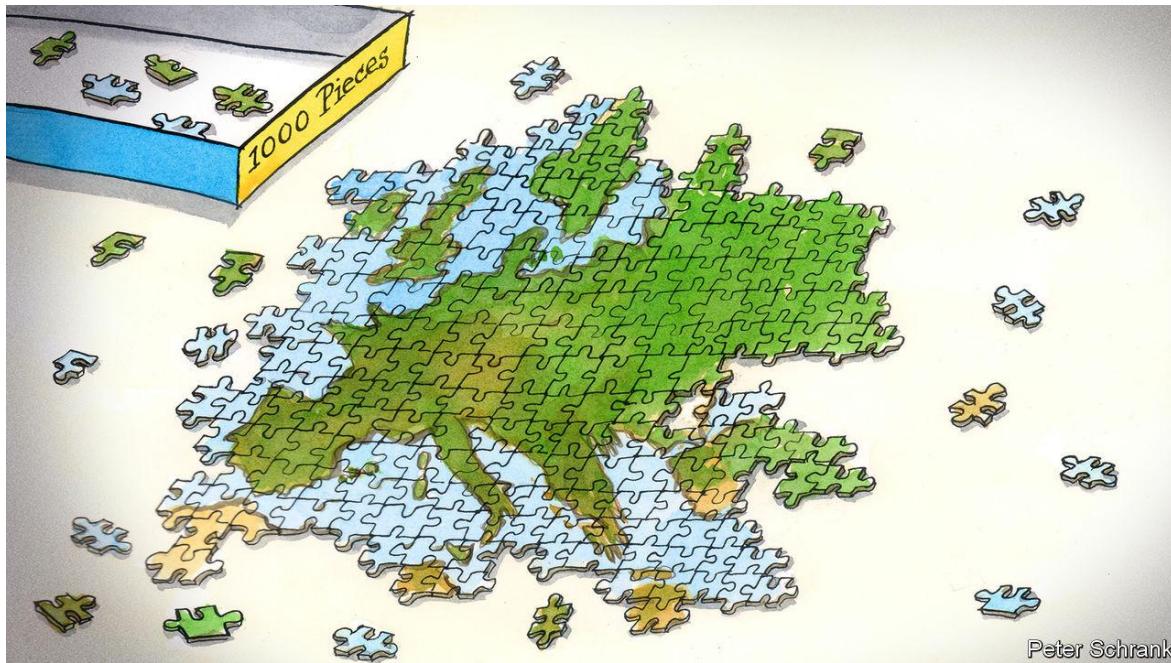
Nor is the city's redesign to everybody's taste. Some opposition leaders are up in arms at the decision to tear down the city's theatre and exhibition centre to make way for the extended urban forest. Motorists grumble about the new one-way system around the headland, designed to leave more space for cycling. Bold urban planning usually has its discontents. Yet on balance Nice is doing a pretty good job of picking itself up and shaping a different sort of future. "Historically we were a bit conservative," acknowledges Mr Estrosi of his city. "Paradoxically, since the attack, we have become a much more open city." ■

Charlemagne

The definition of Europe has always been both inspiring and incoherent

But that has not stopped it growing

Sep 27th 2023



CURIOUSLY, THE only continent to have united under a moderately effective form of multinational government is not actually a continent. English-speakers may call Europe “the continent”, but that is because their language evolved on an island off its coast. In fact it is simply a convoluted promontory of Eurasia. This sets geographers a puzzle: where does Europe end? The eastern border especially is fuzzy. The current consensus holds that it runs through Russia along the Urals, gets vague for a while and then follows the Caucasus mountains’ watershed to the Black Sea. That makes demi-Europeans of not just Russia, Turkey and Georgia but also Kazakhstan and perhaps Azerbaijan. It puts Armenia outside Europe, though many Armenians would disagree.

Clearly, Europe is more than just a geographical concept. But other definitions also lead to confusion. If Europe is wherever European powers hold sway, colonialism has ensured it spans the globe. Cross the

westernmost land border of the Netherlands and you step directly into France, because you are on the Caribbean island of Saint Martin, which they split. Define Europe culturally, meanwhile, and you will notice that polka music sounds more like Mexican *norteño* than like Spanish flamenco, and that Greek ouzo and Lebanese arak are the same drink. Go with political values and you find many democracies outside Europe qualify, while some quasi-dictatorships inside might not. Use religion or race, and you are engaging in bigotry—nowadays seen as un-European.

All this might seem academic, were it not that the question of what defines Europe is vital for countries who want to join the European Union. Of the current serious applicants—six countries in the [western Balkans](#), plus [Georgia](#), [Moldova](#) and [Ukraine](#)—most sit well inside the physical continent. They have not yet got into the EU because they have not met its accession criteria. But those criteria themselves are in part a product of centuries of debate over what it means to be European. And EU voters' gut sense of who belongs in the club is shaped by history.

The idea of Europe started with the ancient Greeks, who contrasted it with despotic, barbarian Asia. After the Roman Empire fell, the dream of reunifying Europe recurred periodically. In the Middle Ages that meant uniting Christendom against Islam. In the 17th and 18th centuries, as religious and imperial wars raged, secular ideas were floated. In 1712 the Abbé de Saint-Pierre called for a “European Union”, and in 1795 Immanuel Kant proposed something similar in his “Perpetual Peace”. Unfortunately the fellow who was busy trying to unite the continent at the time used bloodier means, until he was stopped at Waterloo.

The Enlightenment sense of who belonged in Europe rested on Europeans' alleged rationality and cosmopolitanism. The 19th century added the idea of intrinsically European cultures and peoples—or, most dangerously, races. Such nationalism meant more wars and, in their guilty aftermath, calls for European unity. The modern European movement started after the first world war. Some of its founders saw it as a way for Europe to compete with America and the Soviet Union. That implied that Russia could never join. Nor, some thought, could Britain, which identified more with its empire than with Europe. (They were right that this was an issue.)

When a federal European proto-government finally arrived after the second world war, its mission was political and economic: to make western Europe too integrated for its states to fight each other again, and rich enough to fend off communism. Membership was dictated by cold-war circumstances, not fluffy philosophical concerns. The community's leaders did not get round to defining the "European identity" until 1973. They invoked "the cherished values of their legal, political and moral order" and vowed to preserve "the rich variety of their national cultures". Since the values were universal (democracy, rule of law and so forth) and the cultures varied, there was no principled reason to keep eastern Europe out after communism collapsed. Accession to the EU became, in theory, a matter of technical criteria.

But the very unifying institutions that went along with the EU began to revive divisions. Free movement required the French (and the British, for a time) to accept unlimited numbers of Poles and Bulgarians. Monetary union forced the Germans and Dutch to budget together with the Italians and Greeks. European law meant that when Hungary packed its courts, it was a problem for everyone. Centuries-old faultlines cracked open: Protestant, Catholic and Orthodox; Gallic, Germanic and Slavic. After the euro crisis in 2010-12 and the migration crisis in 2015-16, few European peoples had an appetite for new members.

Finishing the job

Lately Europe's leaders are again enthusing about enlargement. To understand why, it helps to consult arguably the greatest 20th-century European philosopher: Ludwig Wittgenstein. The Austrian once thought that language must refer to distinct things in the real world, and that philosophy should aim to make it exact, like science. Later he came to the view that this was nonsense. Words cannot be defined precisely; they have fuzzy edges. Their meaning lies in the way people use them to get things done.

So too with the word Europe. Europeans' feelings about who belongs in the EU depend on what problems they are discussing. Monetary union and disputes over the rule of law are issues of institutions and culture, and they focus attention on Europeans' different identities and histories. But today's biggest challenges—the war in Ukraine, competition with China, rising migration across the Mediterranean, dealing with climate change—are

geopolitical. This has turned Europe's attention back to geography. French and Albanians may not entirely agree on what civilising traits they share, but they know they are stuck together on the same bit of Eurasian rock. At the moment, that seems more important. ■

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Biden's Britain

Britain's Labour Party takes lessons from Joe Biden

Under Sir Keir Starmer Labour, once again, is infatuated with the Democrats

Sep 28th 2023 | Washington, DC



VISITING WASHINGTON this month, David Lammy, the shadow foreign secretary, and John Healey, his colleague covering defence, paused for a photo by a bronze memorial to President Franklin Roosevelt. It was a nod to another photo taken at the same spot of Tony Blair, then the new prime minister, Bill Clinton, then the president, and their wives. That was in 1998, a time of “third way” politics, when the leaders of the Labour and the Democratic parties hoped to fuse a belief in free markets with social progress.

It is a bond that Labour hopes to revive. The party has long drawn from Democratic waters: even Jeremy Corbyn, the previous leader who loathed American power, found a soulmate in Bernie Sanders. But rarely has it drunk as deeply as today. Polls suggest Sir Keir Starmer is on course to become prime minister in an election that is almost certain next year. Joe

Biden's administration is providing the party with inspiration for its electoral strategy, an economic agenda, and an approach to geopolitics. Its MPs and advisers make pilgrimages to Washington; speeches by Mr Biden's aides are pored over.

But the world has changed since 1998. Britain remains a vital American security partner—underscored by the war in Ukraine—and an important trade partner. Rishi Sunak, the prime minister, has proved to be a more reliable interlocutor than Boris Johnson, a predecessor. But the country's influence in Washington has perceptibly declined. “The whole relationship has weakened steadily over the last 20 years,” says Bronwen Maddox of Chatham House, a think-tank. Wars in Iraq and Afghanistan exposed the limits of Britain's armed forces.

Then came the EU referendum. “I don't think it's been quite appreciated in Britain the cost that Brexit and the political turmoil of the past seven years have had in taking the shine off the ‘special relationship’,” says Max Bergmann of the Centre for Strategic and International Studies, a think-tank. Britain surrendered its role as the “eyes and ears” of America in Brussels, just as the workload shifted from humdrum issues of bilateral trade to strategic competition with China, he says.

Washington, therefore, does not pay much heed to Westminster. But for Labour strategists worrying if stolid Sir Keir could win back industrial heartlands lost to Mr Johnson in 2019, there is much to absorb. The narrow victory of Mr Biden over Donald Trump in much of the American rustbelt the following year brought a shot of hope. Centre-left parties everywhere are engaged in “high-level brainstorming among people wrestling with the same challenge,” says Will Marshall of the Progressive Policy Institute, a think-tank that was the centre of “third way” ferment. At heart, he says, that means addressing “the disconnection between progressive parties and the working class.”

Labour staff have taken lessons from the Biden campaign in how it used data, framed economic policy in terms of job creation, and avoided culture-war fights. “The design of the machine came from the principles we were learning from people like the Democrats,” says a party official. “It gives us a

template, because like us they had drifted off to being just a primarily university-educated electoral coalition.”

Mr Lammy sees a chance for Britain to benefit from a “progressive moment”, if a Labour victory were to coincide with the re-election of Mr Biden and, perhaps fleetingly, centre-left and liberal governments in Australia, Canada, France and Germany. He acknowledges overlaps with Bidenism. His refrain that diplomats should have hard-pressed Britons at the forefront of their minds echoes the administration’s “foreign policy for the middle class,” which holds that those setting policy should discard stale theory and focus on the needs of industrial workers.

Touring Washington’s think-tanks, Mr Lammy’s pitch was that Mr Corbyn’s tenure was history and Labour would uphold Britain’s defence obligations. Military aid to Ukraine, support for NATO, the AUKUS submarine deal with Australia and a fighter-jet deal with Italy and Japan—all will stay. He also proposed a transatlantic anti-kleptocracy push, which was an early priority of the Biden administration. (Given London’s reputation as a laundromat for loot, it is an area where Britain’s government could make a mark). The Biden administration’s agenda for the “health of democracies”—free elections, human rights and so on—may find a more natural partner in Labour, because some Democrats see the Tories “swimming in the same ocean of nationalism” as the Trump movement, argues Ben Rhodes, a former adviser to Barack Obama.

Starmernomics for the people

The biggest change would come in economic policy. Mr Sunak’s government sees aspects of Bidenomics—a mixture of vast subsidies and trade restrictions with the aims of boosting domestic manufacturing, reducing dependency on China and tackling climate change—as dangerous protectionism. Under Labour, Britain would be its loudest cheerleader. In May Rachel Reeves, the shadow chancellor, met Lael Brainard, the director of the National Economic Council, and Janet Yellen, the US treasury secretary. She told Ms Yellen they “are on the same page on economic policy”.



In an address to the Peterson Institute for International Economics, she drew heavily on a speech given by Jake Sullivan, Mr Biden’s national security adviser, a month earlier. “Globalisation, as we once knew it, is dead,” she declared. An “active, strategic, state” should “rebuild our industrial strength”. She is also increasingly sceptical of Britain’s reliance on China. “We must care about where things are made and who owns them,” she said. America and Britain could forge a “green special relationship”, she said, noting that Mr Sullivan had cited a long list of America’s allies, but omitted Britain.

The centrepiece of this is a plan to decarbonise Britain’s electricity supply by 2030, inspired by the Inflation Reduction Act, a programme of direct subsidies and tax credits that is likely to surpass \$1trn. Labour’s version as a share of GDP would be multiple times larger, eventually reaching £28bn (\$34bn; 1.1% of GDP) a year. It would feature national stakes in new industries, handouts to firms that create jobs in poor towns, and regulatory reform.

Visions for green industrial policies have circulated in the British Left for years, but America has rendered them real in steel and concrete. Ed Miliband, the shadow climate secretary, has drawn on work from think-tanks close to the Biden administration, including the Centre for American

Progress and the Roosevelt Institute. (Another, Third Way, is setting up in London to help the effort.) Appearing alongside Heather Boushey, a White House economist, in London on September 14th, Mr Miliband derided those who regard the agenda as protectionist. “It’s a very old-fashioned neoliberal view of economic policy, honestly,” he said.

Others in the shadow cabinet see more clearly how hard it will be to replicate Bidenomics in a midsized country with weak public finances. They know Britain would need to focus on sectors of comparative advantage. In June Ms Reeves delayed the £28bn target to 2027, and stressed it will be subject to her fiscal rules, that require debt to fall as a share of GDP. Less than a third of the money has been publicly earmarked for projects, and there is a moratorium on announcing more until Labour’s fiscal inheritance becomes clear. In Washington, Mr Lammy told Democrats that allies must co-ordinate industrial strategies to avoid them undermining each other.

“The problem with Bidenomics is there is a tension between the Biden administration’s vision of an alliance of democracies getting together, and the economic nationalism of the president saying we want to build stuff here and sell stuff here,” says Adam Posen, the president of the Peterson Institute. The hope of creating thousands of non-graduate industrial jobs via subsidies “defies any sort of realism”, he argues, given Britain’s borrowing capacity, labour-market limitations and small market size. Britain can align with other allies “to try and convince the US and China not to divvy up the world in this way,” he says. “But it sure as heck cannot compete directly in this game.” Some in Labour worry it is rushed. “It is driven by political necessity, not intellectual ferment,” says one figure.

As for Brexit, the largest hit to Britain’s influence in Washington, Labour has ruled out rejoining the bloc, or its single market. But it is growing more ambitious in seeking a diplomatic role. Emmanuel Macron, France’s president, hosted Sir Keir in Paris on September 19th. The prospect of Ukraine joining the EU could mean redrawing the architecture of Europe, and Mr Lammy wants to explore an idea long promoted in France of a continent of concentric circles, with Britain as an active player on its outer rim. The party proposes new and rebooted defence agreements with the EU, Germany and France, and “structured dialogue” to chew over strategic challenges. “We want to be inside of the room when big decisions are being

made around nearshoring, supply chains and rare-earth minerals,” Mr Lammy says. Many EU governments are keen on some sort of formal dialogue, although the bloc will guard its autonomy of decision-making.

The new world

The case for leaning into Europe would strengthen were Donald Trump to return as president next year. His anglophilia is shallow: in his first term, he repeatedly humiliated Theresa May, then prime minister, who stuck tight with France and Germany on climate and Iran policy. For Sir Keir, the “progressive moment” would be dust. A champion of NATO, Ukraine and European co-operation would find a White House indifferent or hostile to all three. Labour figures hope that Mr Trump’s campaign rhetoric remains just that. If need be they will stress their shared security interests, and place their faith in America’s institutional checks. Those are not convincing answers. But on that, at least, they are not alone.■

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Organised retail crime

Why shoplifting is rising in Britain

Gangs are behind more theft from shops

Sep 22nd 2023



Suzie Howell /The New York Times/Redux/Eyevine

THE THIEF was in no hurry. Seeing a pile of electric fans arranged near the front of the shop, on a busy street in Brixton, south London, he sauntered in, tucked one under his arm, and sauntered out. The cashier, fiddling with a broken self-checkout till, didn't notice. If she had, it is unlikely she would have tried to stop him.

In a period of generally falling crime, shoplifting is rising. In the year to March, police reported 342,343 cases of it, up by 24% on the year before. That tally is, doubtless, a small share of all shop thefts. The British Retail Consortium (BRC) has warned shoplifting is soaring across the country. Primark, a fashion chain, said this month that it had dented profits. Dame Sharon White, chair of the John Lewis Partnership (which owns shops and Waitrose, a supermarket), called it an “epidemic”.

The reported statistics are less dramatic than they first appear: they are, more or less, back to pre-pandemic levels. Shoplifting dropped sharply during the

lockdown. Yet the past decade has seen a gradual uptick in such crimes. And the BRC says in some cities retail crime is rising sharply.

Patchy data do not reveal exactly who does the swiping, or why. The high cost of living is often blamed. But anecdotal evidence, including from academics, suggests that plays only a small part. The Association of Convenience Stores (ACS) which represents 33,500 small shops, says most shoplifters are repeat offenders, often with drug or alcohol problems.

Emmeline Taylor, a professor of criminology at City University, says thieves may steal to order, after first getting “a shopping list” from a criminal gang. Popular items include alcohol, baby formula, confectionery and meat, which some shops report are grabbed in bulk, to be sold on. Gangs are less likely to be involved in some other types of theft, notably burglaries, which have been declining for 20 years.

A change to the law in 2014 may have encouraged gangs to recruit shoplifters, while also spurring individuals to steal for themselves. It made shoplifting of goods worth £200 (\$245) or less a summary offence, one tried in a magistrates’ (rather than the crown) court. That has probably discouraged police from investigating such crimes, except when repeat offenders are involved. They are often given brief, successive prison sentences that achieve little. Instead, the government should impose drug rehabilitation orders on those stealing in order to fund addiction. That would help address another trend reported by retailers: shoplifters appear to be getting more aggressive, even ready to threaten violence, which discourages staff from confronting them.

Retailers are working more with police. John Lewis and other shops are funding a project, dubbed “Pegasus”, which will see more CCTV footage and other intelligence passed on to officers. Graham Wynn, the assistant director of business and regulation for the BRC, calls that “worthy”, but says the police should give greater priority to retail crime.

Is that realistic? Graham Farrell, a professor of crime science at the University of Leeds, points out that only around 2% of crimes (of all sorts) result in a conviction. Therefore it makes more sense for shops to focus instead on making them more difficult to commit in the first place. Big

shops full of tempting goods “generate great crime opportunities”, he says. Self-checkouts will not have helped.

The most effective measures include fitting more “hot products” with security tags, moving high-value items away from entrances and arranging aisles so that staff can see down them more easily. Researchers point out that posting someone to greet shoppers at the door can reduce theft, though only high-end shops tend to do this. Not all petty criminals are as shameless as the fan thief in Brixton. ■

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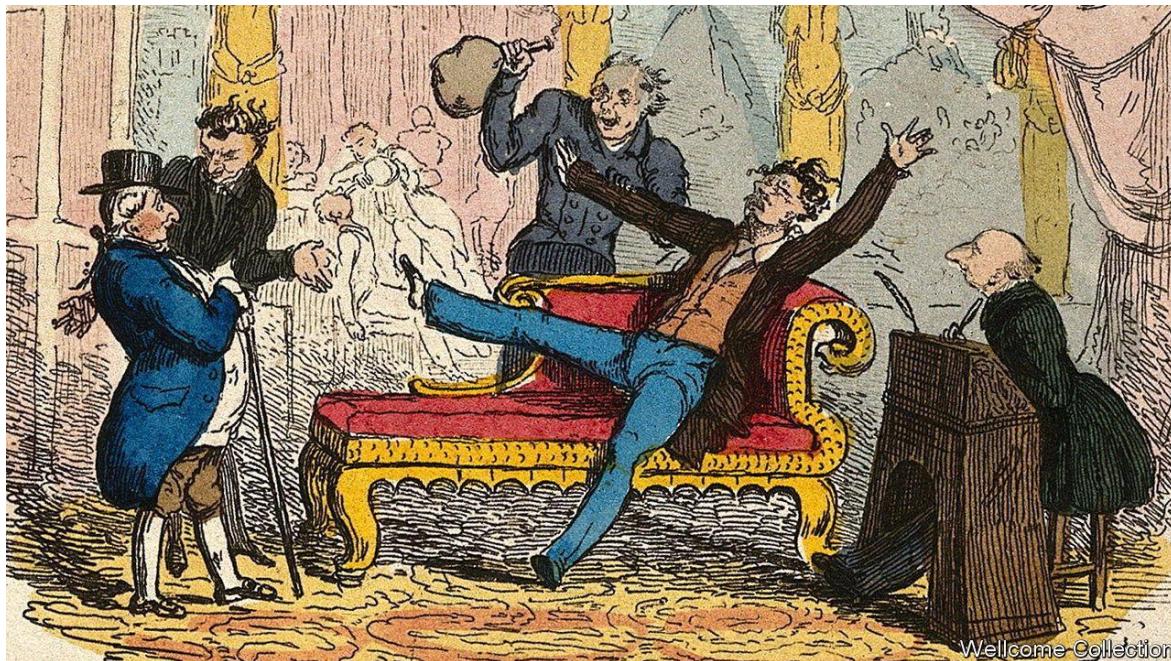
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No laughing matter

Britons take laughing gas merrily. Tories take it more seriously

Using the drug will soon be punishable by two years in jail

Sep 27th 2023



THE BEE seemed to be enjoying itself immensely. First, it was “unable to fly in a straight line”; then it flew in circles; then finally it “fell to the ground as if giddy.” When Humphry Davy gave laughing gas to other animals they reacted similarly: a lizard staggered; a flounder floundered; a butterfly “wrapt [his wings] round his body” before falling senseless. Humans were thrilled. Samuel Taylor Coleridge found laughing gas “highly pleasurable”; another user “felt like the sound of a harp”; a third concluded that “the atmosphere of [the] highest of all possible heavens must be composed of this gas.”

Nitrous oxide has suffered a spectacular fall from grace since those heady early days. The gas that once breathed life into Romantic poets, transformed anaesthetics and let mortal man touch the face of heaven is now condemned by its critics as “hippy crack”, while its canisters are a “plague” and its use is a “terrifying epidemic”. By the end of the year, its recreational use will be

illegal, punishable by two years in prison. Dealing it will be punishable by 14. This, says David Nutt, professor of neuropsychopharmacology at Imperial College London, is “completely fatuous.”

The furore over the gas would have surprised its early advocates. It was discovered in the 18th century, when scientists were starting to realise that the apparently insubstantial air in fact contained multitudes. They found a dangerously fiery gas that, when piped into a jar, made candles burn more brightly; a colourless gas that, when bubbled through water, made it fizz pleasingly and, oddest of all, a gas that, when piped into researchers, made them feel that they had seen the secrets of the universe—and made them talk what the psychologist William James would later call “meaningless drivel”.

It was a fair diagnosis. Davy, after inhaling gallons, declared that “Nothing exists but thoughts!” James, after taking rather less, said: “There are no differences but differences of degree between different degrees of difference and no difference.” A third user gnomically explained that he “felt a thrill in my teeth.” The words might be rubbish but the realisation it inspired—that mere chemistry might manipulate a mind—was profound. Or as James put it: something might “sound...like nonsense, but it is pure *on* sense!”

Modern users have proved as enthusiastic as Davy: laughing gas is now the second most commonly used illicit drug in England and Wales among 16- to 24-year-olds, after cannabis. It is easy to see why: it is simple to buy as its canisters, sold for use in whipped-cream dispensers, can be found on Amazon (reviewers archly praise it as an “excellent” cooking accessory); wears off quickly; and is immensely genial (as your correspondent, who tested it for research and felt somewhere between the bee and the butterfly, can confirm).

There are reasons to be cautious. Heavy, long-term use can cause nerve damage; prolonged exposure can be problematic (some hospitals are removing it for this reason) and, while addiction is unlikely, overenthusiasm is perfectly possible. A recent police crackdown (it was already illegal to deal in it) has moved users from the smaller canisters to larger cylinders; the equivalent, says Professor Nutt, of moving teenagers from “shandy...to neat vodka”. Critics argue the new law will exacerbate this. As so often a ban might sound on sense. But is more likely nonsense. ■

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Up the junction?

Why Britain's government would be wrong to cut HS2

The costs of upgrading the railways have risen, but it is still worth doing

Sep 25th 2023



Getty Images

THE RELATIONSHIP between British politicians and the railways has long been difficult. In 1830 the opening ceremony of the world's first intercity line, between Manchester and Liverpool, was marred by a former cabinet minister being killed by a locomotive. Rumours this week that the government might cancel part of High Speed 2 (HS2), a long-planned upgrade to the rail network, has left less blood on the tracks. But it has provoked a furious reaction from business leaders and politicians, including Conservatives.

Until the pandemic the railways had been enjoying a multi-decade renaissance. The number of journeys more than doubled between the early 1990s and 2019, to over 1.7bn annually. In the late 2010s passenger numbers reached their highest since the early 1920s, before mass ownership of cars. But whereas Britain had over 32,000km of track a century ago, it now has under 16,000km.

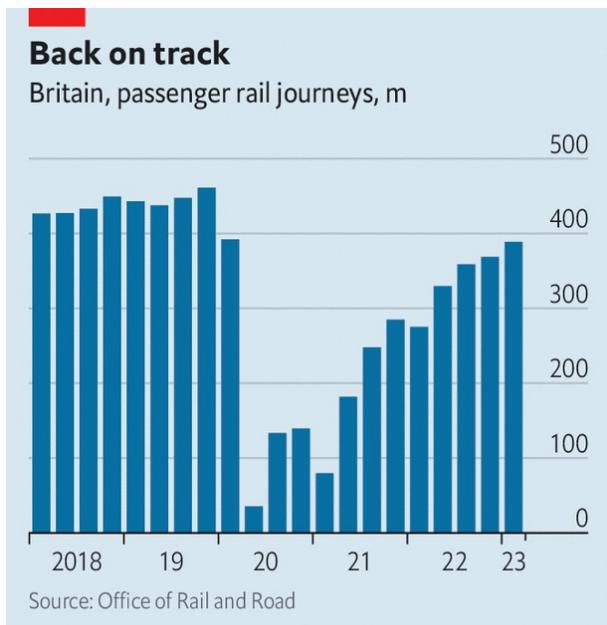
As a result freight, long-distance journeys and shorter commuting travel must all happen on the same few lines. The Railway Industry Association, a trade body, reckons track use in Britain is around 60% higher than the European Union average. Network Rail, the state-owned firm that manages the track, says congestion is behind 70% of all delays.

HS2, despite its name, was never really about speed. The line got its green light in 2009 and was to link London and Manchester, and to open between 2035 and 2041. But the core aim was to get more capacity overall, releasing space for local services by moving more intercity journeys to a purpose-built track. Unfortunately, the project has become a case study in how not to do a long-term infrastructure upgrade.

Residents and MPs in areas subject to digging and tunnelling were quick to complain. Environmental protesters forced stoppages. A labyrinthine planning system caused delays. Roughly a decade ago, detailed surveys revealed ground conditions were poorer than expected, so more reinforcement was needed for tunnels. All that put up costs. The work was first, in 2009, expected to cost £37.5bn (then \$62bn), around 2.4% of GDP. By 2019, the latest official estimate, that was over £70bn (or 3.1%). After inflation, costs are higher now. The benefit-to-cost ratio was first put at 2.4, so for £1 of public money spent on building the economy would gain £2.40. By 2019 independent analysis found a ratio of just 1.3. It may now be worse.

Ambitions have already been pared back. In 2021 an eastern leg of HS2, to Leeds, was cancelled. This year work was delayed on the supposed terminus, at Euston station in London. Trains will be expected to arrive at (and depart from) Old Oak Common, 10km away, at least at first.

More drastic cuts are now being weighed. The government will not confirm that stage two of the project, from Birmingham to Manchester, will happen. BusinessLDN, which represents employers in London, and the Northern Powerhouse Partnership, which speaks for northern firms, say Britain's reputation as an attractive place to invest could be left in tatters. George Osborne, a former chancellor who was fond of austerity, and Boris Johnson, a spendthrift former prime minister, both oppose the rumoured change. Five city mayors say the north risks being stuck with Victorian infrastructure.



The Economist

The case for a rethink is based on an estimate that the overall bill may be close to £100bn. But on the benefit side, the case for creating more capacity remains. Although many commuters began working from home in the pandemic, passenger numbers have risen in seven of the past eight quarters (see chart); overall volumes are at 83% of pre-pandemic levels and rising. Rail capacity is likely to be stretched to breaking-point by the early 2030s.

The opposition Labour Party, wary of being accused of having a multi-billion-pound “black hole” in its fiscal plans, is reluctant to commit itself to the project. But rail insiders believe that HS2 will get built eventually. The alternative is managed decline, more cancellations and higher fares to cut volumes. Dithering by the government will lead contractors to build an extra risk premium into their fees, adding to the spiralling costs. It is hard to see what a proposed compromise of delaying the work by another seven years would achieve. More uncertainty will mean Britain’s pricey new railway only becomes pricier yet. ■

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The Lib Dems

Could Britain's Liberal Democrats matter again?

The party has high hopes for the next election

Sep 28th 2023 | Bournemouth



LIFE IS HARD when you are merely Britain's fourth-biggest political party. Third place—which the Liberal Democrats held until 2015—at least guarantees some exposure: regular slots at Prime Minister's Questions and on the airwaves. Fourth, stuck behind even the Scottish National Party, means obscurity. “Calls from the BBC” dry up, laments Sarah Olney, whom even political nerds struggle to name as the party’s finance spokesperson. Half of Britons have never heard of its leader, Sir Ed Davey.

Could that soon change? At the election in 2019 the Lib Dems scooped up a measly 11 seats, down from a peak of 62 in 2005. But things have started to improve of late. The party has won four by-elections, overturning large Conservative majorities in each constituency. At the party’s conference in Bournemouth on September 26th, Sir Ed talked valiantly of smashing the Blue Wall “for good” at the next general election, almost certainly next year.

The wilderness years were, in effect, self-inflicted. The party joined a coalition with the Conservatives, and then was punished by voters who were

fed up with its embrace of the government's austerity programme and furious that it reneged on election pledges, notably one not to raise university tuition fees. The choppy waters of Brexit proved hard to navigate; three leaders departed in as many years.

Having helped cause the Lib Dems' woes, the Conservatives offered them a route back. Brexit, chaotic government and sloppy behaviour all estranged voters from the Tories. Sensibly, Sir Ed wants to take advantage. He says little about the European Union, to the chagrin of his ardently Europhile members. His campaign will instead focus on the cost of living, the NHS and sewage. The last is already a pungent issue in leafy areas.

Three of the recent by-election victories were in the west of England, the party's heartland. But success in Chesham and Amersham, a commuter seat near London, has excited hopes of winning in suburban, professional areas. Mark Pack, the party's president, suggests a focus on places with "big houses and bigger potholes", where even affluent voters cannot swerve the effects of crumbling services. Rob Ford of Manchester University thinks the party could do well among graduates in seats around London.

The party leadership used the conference to prepare for the campaign, nixing a plan to put a penny on income tax that might have deterred Tory voters. In the conference hall young activists blocked an attempt to drop a national housing target. At the conference bar (mostly older) members grumbled about excessive caution on Europe. Yet the party's strategy of targeting rich Conservative seats is almost certainly the right one.

If Labour were to fall short of a majority, would Sir Ed contemplate joining another coalition? He won't say. Many Lib Dems would prefer to shape the next Parliament in a lower-risk way, either as an outright opposition party, or via ad-hoc support for those in office. A good outcome could prove to be a small majority for Labour. That could leave the party with considerable influence to temper some of Labour's less liberal instincts and to push for its own ambitions.

The holy grail would be electoral reform. Some unions and Labour members are keen but the leadership is opposed, and unlikely to change its stance unless forced. Lib Dems still grouch about Tony Blair breaking a pledge to

hold a referendum on the issue after winning a landslide at the 1997 election. Crucially, though, the Lib Dems hope to enjoy attention again, ideally from their traditional, unglamorous perch in third place. ■

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Cultivated fat

Is lab-grown meat kosher?

How fat grown from stem cells could save the plant-based meat industry

Sep 28th 2023



Getty Images

FOR A WHILE, it seemed everyone was going vegan. In March 2022 almost half of Britons surveyed by Ipsos, a pollster, said they were thinking of eating fewer animal products. But amid high prices and concerns over ultra-processed food, the industry is proving to be more sizzle than steak. In June Meatless Farm, a plant-based company, fell into administration. Demand for patties of rehydrated textured pea protein have flopped. “Meat alternatives don’t taste good enough,” says Max Jamilly, a co-founder of Hoxton Farms, a startup.

The “magic ingredient” is fat: the stuff that makes meat sputter, crisp and brown. So Mr Jamilly’s startup set out to make a lab-grown version of it. In a trendy East London office block, his engineers grow stem cells in a broth of plant-based food. To replicate the warm inside of a pig the cells are grown in cultivators, similar to fermenters for brewing beer. The result is animal fat without the carcass (or animal suffering), to be sold to alternative-meat companies. The target consumers are carnivores, not vegans. If fewer pigs

are reared, that could be good for the planet: over three-quarters of the world's agricultural land is used for livestock.

Would anyone pork out on lab-grown fat? Consumers may recoil at first from the Frankenstein food, versions of which are permitted, for now, only in America and Singapore. Yet people usually come around to new foods because price matters more than how the sausage is made. As long as cultivated meat must be produced with medical-grade equipment it will remain expensive. Once rules are relaxed prices should fall, as could unease about the unfamiliar. A decade ago Mark Post, a Dutch scientist, unveiled a \$330,000 lab-grown burger, made of both muscle and fat. He will soon take his products to market, and has even convinced a New York rabbi to say cultivated pork could be kosher.

To thrive, the cultivated fat industry would have to scale up. Hoxton Farms hopes to be selling fat by 2025, and to lift production from a few kilos now to ten tonnes a year. That's a tiny drop of lard in the fat ocean: global pork production is 115m tonnes a year. One day, however, Shanghai soup dumplings, Swedish meatballs and Filipino *giniling* could all be made with cultivated pork fat. And then, possibly, Hoxton will bring home the lab-grown bacon.■

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Bagehot

Blind optimism is the only bet for Britain's Tories

How magical thinking conquered the Conservative Party

Sep 28th 2023



IN AN OLD joke, a condemned man is begging for clemency from a king. The prisoner makes a rash promise: let me live and I will teach your horse to talk. The king agrees, giving him one year to complete the challenge. An elated inmate returns to his cell. His cellmate asks why he is so happy. "A lot can happen in a year," he replies. "The king might die. The horse might die. I might die. And maybe the horse will talk."

Equine eloquence is in vogue in the Conservative Party. The government is in a dire situation. At the nadir of Liz Truss's 49-day tenure as prime minister, the Conservatives bottomed out at an average of 22% in the polls, which would be a historic hammering were it repeated in a general election. Now, under Rishi Sunak, the party averages 27%, which would be a historic hammering were it repeated in a general election. The Conservatives fell into a hole a year ago. They are still in it. A combination of desperate optimism and magical thinking is the order of the day.

The first strange belief is that Mr Sunak, the prime minister, is popular. In 2020 he emerged as a fresh-faced chancellor, who sprayed about £400bn (\$485bn) at voters at the start of the pandemic, becoming the most liked politician in the country. Voters prefer Mr Sunak to the party he leads. A presidential campaign, in which Mr Sunak is front and centre, would see off Sir Keir Starmer, who is either unknown or unliked by voters, runs the logic.

It has a flaw. Last week Mr Sunak's net approval rating hit minus 45. For context, these are the numbers Boris Johnson posted after it emerged officials in Downing Street had enjoyed wine-soaked parties during lockdown. Sir Tony Blair had to invade Iraq before voters turned against him to anywhere near the same degree. Gordon Brown was in the middle of the Great Recession before voters got as fed up. Mr Sunak still has some way to go to beat Ms Truss's score of minus 70, but is still less popular than Sir Keir (minus 25), whose own unpopularity is at the root of Tory strategy.

When it comes to policy some Conservatives swear they can hear the horse mumbling. A controversial blitz has gone down well. HS2, a high-speed rail link between London and Birmingham and Manchester, is wildly popular among transport nerds but its likely curtailment will be welcomed by voters who never loved it. Mr Sunak scrapped a host of green measures in a high-profile speech, painting himself as a defender of petrol-chugging motors and the only thing standing between voters and Sir Keir forcing them to spend £10,000 on getting a heat pump.

Expecting the popularity of individual policies to provide a path to power is a common error. Jeremy Corbyn, Labour's former leftie leader, offered a slew of policies that the general public liked individually, whether it be rail nationalisation or higher taxes on the rich. And yet Mr Corbyn led Labour to their worst performance since 1935. Likewise, the problems Mr Sunak is trying to solve emerged on his party's watch. HS2 sprawled into a £100bn mess under the Tories. If green measures need repealing or a railway needs scrapping, it is due to previous decisions by Conservative governments. Incompetence is a worse vice than unpopularity.

Many Tories are relying on Labour's incompetence rather than horse hypnosis. Labour is much less popular than it was in the run up to 1997, when Sir Tony posted approval ratings that would make an Uzbek autocrat

blush. Labour has won a majority from opposition only three other times, under Clement Attlee after the second world war and twice under Harold Wilson in the 1960s and 1970s. Rigorous statistical analysis based on a sample size one can count on a single hand ($n=4$) can lead to madness. Assuming Labour needs a stonkingly popular leader to win power is as wrong-headed as assuming it can only do so after helping defeat Hitler.

Rash gambles are discussed in Tory circles as if they were rational. Some think a spring election is likely. Calling an election while up to 20 points behind is as bold a strategy as entertaining a despot with a performing pony. Conservatives point to the general election in 1992, when the party enjoyed a surprise win. Going into the election, the parties had been roughly level in the polls for a year; this time the Conservatives have a big deficit. Sir John Major proved a canny campaigner; Mr Sunak is untested. When challenged, Mr Sunak sometimes has the indignation of a man who could be literally anywhere else on earth doing anything else. Given that he is married to a billionaire, he probably could, but voters see being prime minister as a privilege, not a sacrifice.

From stalking horse to talking horse

Cheerleaders encourage blind optimism. The *Daily Mail* and the *Daily Telegraph* hurrahed as Mr Sunak veered from green targets, much as those papers cheered on Ms Truss's foolhardy budget, which still weighs on the Tory vote. Minor victories are trumpeted while fundamental flaws are ignored. Thus the unlikely path to a recovery is painted as plausible, while the equally probable outcome of a once-in-a-century wipeout is cast as impossible.

It is not just newspapers. Politicos struggle to imagine governments losing until they do. "Tory Nation", a book published this year, argued Britain is an innately Conservative country. Such tomes usually indicate the top of the market. In 1994 academics published "Turning Japanese?", wondering if Britain was becoming a one-party state after a fourth Conservative victory. Three years later, the Conservatives suffered the first of three catastrophic defeats. In the run-up to the third, in 2005, Geoffrey Wheatcroft published "The Strange Death of Tory England". Naturally, the Tories went on to come first in the next four elections.

Wiser Tories appreciate that their time is probably up. Banking on dumb luck is their best bet. Things happen and so mindless optimism becomes the only option. Maybe the public will change their mind on “Rishi”. Maybe the economy will go on a tear. Maybe Sir Keir will be arrested after a five-a-side football punch-up. And maybe the horse will talk. ■

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International

- States are becoming more brazen about killing foes abroad

Assassin's creed

States are becoming more brazen about killing foes abroad

Some countries are finding new justifications for political murders

Sep 26th 2023 | Washington, DC



THE MURDER of Hardeep Singh Nijjar, a Sikh separatist activist who was shot in Canada in June, has caused [an explosive row](#) between Canada and India. It has also brought into sharp relief an incendiary facet of the new world disorder: assassinations. Killings of dissidents and terrorists, and of political or military figures, are as old as politics itself, but their incidence may be rising. Ukraine targets occupiers and collaborators; Russia has tried to kill Ukraine's president. On September 25th Ukraine claimed to have killed the head of Russia's Black Sea Fleet, only for him seemingly to appear in a video a day later.

Beyond the war in Europe a new cohort of rising powers, including India and Saudi Arabia, are projecting force abroad. They resent what they view as Western double standards on state-sponsored killings. New technologies make it easier than ever for governments to strike their enemies with precision, even from great distances.

Yet even as assassinations are becoming easier, and perhaps more frequent, the world has not yet figured out how to respond to them. You only need to look at the West's response to such killings. Russia's assassination of Alexander Litvinenko, a former KGB agent, in Britain in 2006 caused an outcry and led to sanctions. After [the gruesome murder](#) in 2018 in Istanbul of Jamal Khashoggi, an exiled Saudi journalist living in America, Joe Biden said Saudi Arabia should be treated as a pariah. Yet last year he [fist-bumped](#) Muhammad bin Salman, the Saudi crown prince and de facto ruler, and is [seeking to coax him](#) into making peace with Israel. Meanwhile India denies involvement in Mr Nijjar's death and may avoid any serious consequences relating to it. The world's most populous country is important to the West, both as an economic partner and a geopolitical counterweight to China. These inconsistencies reflect a longstanding moral and legal maze over state-backed killings.

The Bible may extol the Israelite Ehud for killing Eglon, the oppressive and “very fat” Moabite king. Yet it also commands obedience to authority, “For rulers are not a terror to good works, but to the evil.” Assassination, in the sense of killing a prominent person for a political motive with no legal process, carries the connotation of perfidy. Dante placed Julius Caesar’s killers in the deepest circle of hell, alongside Judas, their bodies gnawed on by Satan. Yet states kill prominent foes abroad—for different reasons and with varied methods. A paper in 2016 by Warner Schilling and Jonathan Schilling lists 14 possible objectives, from revenge to weakening an enemy or destroying a rival state.

Reliable data on the patterns of assassinations and their causes are hard to come by, given the problems of identifying killings and culprits. Some 298 assassination attempts on national leaders were reported between 1875 and 2004, according to a paper by Benjamin Jones and Benjamin Olken published by the *American Economic Journal* in 2009. Since 1950, they find, a national leader has been assassinated in nearly two out of every three years.

War by other means

For Rory Cormac of the University of Nottingham in Britain, the shooting in Canada is evidence of a weakening of international norms against

assassination: “With every high-profile killing, the taboo erodes a bit,” he says. He offers two big reasons: authoritarian regimes “are becoming more brazen” about challenging liberal norms; and democracies’ resort to targeted killings has “emboldened other states”. Other factors, such as ease of travel and drones that make possible long-distance surveillance and strikes, probably worsen the problem. Over the years America has killed thousands of suspected jihadists—and many civilians, too—with drones.

“Assassination has never changed the history of the world,” the British politician Benjamin Disraeli remarked, after Abraham Lincoln’s killing. Yet some murders can have a dramatic impact. A bullet fired by a Serbian nationalist, killing Austria’s Archduke Franz Ferdinand in June 1914, detonated the first world war. And assassination risks retaliation: both Mike Pompeo and John Bolton, respectively a former American secretary of state and national security adviser, have allegedly been the targets of an Iranian assassination plot. Britain’s domestic-intelligence service, MI5, says Iran has “ambitions to kidnap or even kill British or UK-based individuals perceived as enemies of the regime”.

Cloaks and daggers

When it comes to methods, Russia likes poison. Its agents murdered Litvinenko using radioactive polonium. They nearly killed another former spook in Britain, Sergei Skripal, and his daughter Yulia with Novichok, a nerve agent, in 2018. North Korea favours poison, too. It killed Kim Jong Nam, the half-brother of the country’s leader, Kim Jong Un, by smearing him with VX, another nerve agent, at Kuala Lumpur’s international airport in 2017.

America prefers bombs and bullets. Its special forces raided a safe house in Pakistan and killed Osama bin Laden, al-Qaeda’s leader, in 2011. An American drone strike killed his successor, Ayman al-Zawahiri, in Kabul in 2022. Another one took out Qassem Suleimani, head of the Quds Force, Iran’s foreign-operations outfit, at Baghdad’s airport in 2020.

This is all in spite of the fact that, in 1961, President John Kennedy (who was himself later assassinated) told an aide that he disapproved of the practice: “We can’t get into that kind of thing or we would all be targets.”

Yet America was certainly into that kind of thing, back in the early years of the cold war. Revelations of its secret efforts to kill leaders such as Fidel Castro of Cuba (unsuccessfully) and Rafael Trujillo of the Dominican Republic (successfully) caused a backlash. In 1976 President Gerald Ford issued an executive order stating that no member of the American government “shall engage in, or conspire to engage in, assassination”.

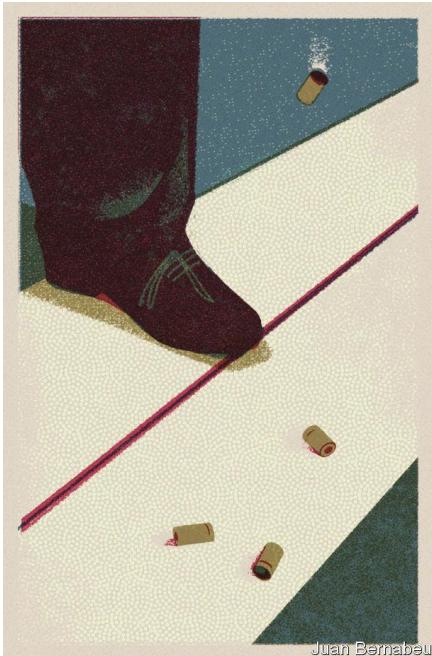
Killing abroad still continues. These days, says Luca Trenta of Swansea University in Wales, autocracies use covert action to give them plausible—or often implausible—deniability. But democracies such as America seek to wrap a veil of plausible legality around “targeted killing”, particularly of suspected terrorists.

The UN Charter enjoins all its members to “refrain in their international relations from the threat or use of force against the territorial integrity or political independence of any state”. At the same time, however, it recognises “the inherent right of individual or collective self-defence if an armed attack occurs”.

International human-rights lawyers take a restrictive view. In peacetime, assassinations and targeted killings are unlawful. In wartime they may be permissible, if they conform to the laws of war. Ukraine targets senior Russian commanders just as the Allies in 1943 shot down a plane carrying a Japanese admiral, Yamamoto Isoroku, over the Solomon Islands.

What about international terrorism, which seems to lie between ordinary policing and war? Mary Ellen O’Connell of the University of Notre Dame in America argues that “there is no grey zone.” Under international law, she says, countries must deal with terrorism through the tools of law enforcement, including international co-operation and extradition; lethal action amounts to “extra-judicial killing”.

Nevertheless America, in particular, has sought greater legal freedom of action. One track has been to qualify sovereignty. Military action, it contends, is permissible where a state is “unwilling or unable” to prevent acts of terrorism. It has also at times designated territories abroad as “areas of active hostilities”, where armed forces can operate more freely.



Another route has been to expand the right to self-defence. One step is to declare that it includes responding to attacks by non-state actors as well as by states. The next is to aver a right to “anticipatory self-defence”, allowing a country to use force to forestall an “imminent” threat of attack. The most widely accepted definition is that the threat should be “instant, overwhelming and leaving no choice of means and no moment for deliberation”. But this, too, has been stretched.

In 2001 President George W. Bush went further, and began adopting ideas of pre-emption and prevention to justify the use of force even before threats are “fully formed”. Barack Obama’s administration also redefined the meaning of “imminent”. Eric Holder, his attorney-general, said it had to consider not only the proximity of the threat, but also the “window of opportunity to act”. Much of this thinking is borrowed from Israel, whose supreme court ruled in 2006 that, in the case of terrorists, “rest between hostilities is nothing more than preparation for the next hostility”.

America’s example has encouraged a similar loosening of rules in Britain, Australia and France, says Dr Trenta. But for Professor O’Connell, it all amounts to the West granting itself rights that do not apply to others, “a rules-based order in violation of international law”.

India could well argue—as government-friendly newspapers do—that Mr Nijjar’s killing falls within the West’s ideas of counter-terrorism. Sikh separatism has led to past bloodshed, not least the assassination in 1984 of the prime minister, Indira Gandhi, and the bombing the following year of an Air India jet flying from Montreal to London. Though it has much abated, Sikh violence could flare up again. India claims that Mr Nijjar was a terrorist and offered a reward for his capture; his supporters say that he was a peaceful activist. In India’s view, the West’s refusal to clamp down on Sikh separatists poses a menace. The government, though, prefers to say it has nothing to do with Mr Nijjar’s death. As for law enforcement, co-operation becomes harder the more India chips away at democratic liberties.

Killer instincts

Developing a long arm for covert operations is not easy. It requires resources and know-how to track a target, organise a hit and avoid arrest. India’s spooks may think they are emulating those of America and Israel as the necessarily harsh defenders of democracy. Some even talk of the “Israelification” of India’s foreign-intelligence service, the Research and Analysis Wing (RAW). But if it is seen to turn from mitigating clear security threats to bumping off political foes, RAW will become the shadowy outward face of repression at home, as Russia’s or Saudi Arabia’s spooks are seen. Assassinations can alert the world to the brutality of the regimes ordering them. ■

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Technology Quarterly

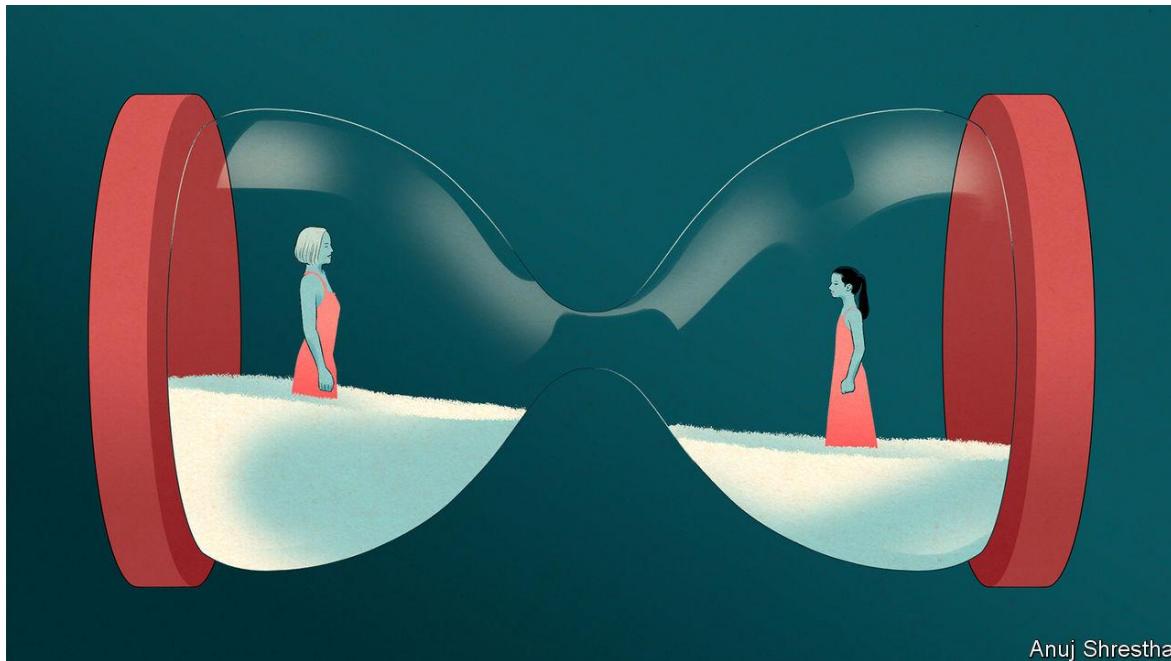
- Slowing human ageing is now the subject of serious research
- Eating fewer calories can ward off ageing
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In search of forever

Slowing human ageing is now the subject of serious research

And some of it is making progress, writes Geoffrey Carr

Sep 25th 2023



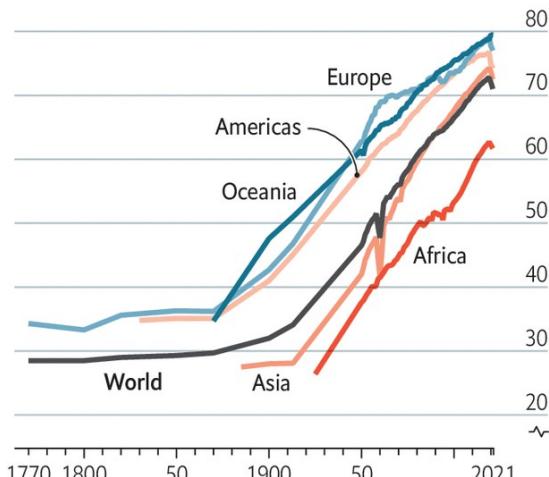
Anuj Shrestha

“ALL MY POSSESSIONS for a moment of time.” Those, supposedly, were the last words of Elizabeth I, who as queen of England had enough possessions to be one of the richest women of her era. Given her patronage of alchemists—who searched, among other things, for an elixir of life—she may have meant it literally. But to no avail. She had her last moment of time in March 1603, a few months short of the three score years and ten asserted by the Bible to be “the days of our years”.

Three months more every year

1

Life expectancy at birth, years



Source: Our World in Data

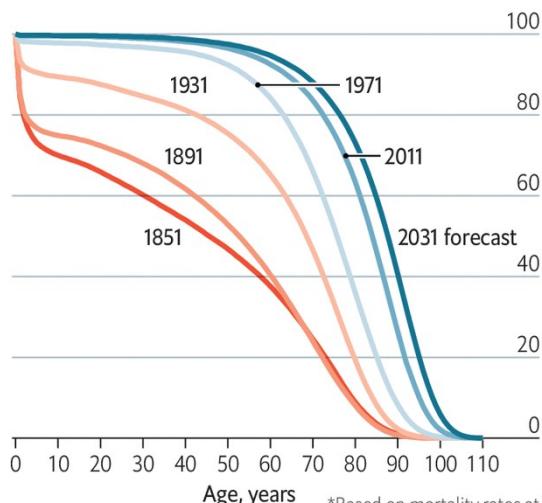
The Economist

Things have improved since the reign of Good Queen Bess. People in the rich world can now reasonably assume that the days of their years will last well beyond 70. Those in poorer countries are catching up (see chart 1). In every year since 1950 average life expectancy around the world has risen by 18 weeks.

Old age is more of life

2

England and Wales, people living to certain ages*, %



*Based on mortality rates at birth for the given year

Source: ONS

The Economist

There are, however, two catches. One is that the increases seem to have a limit. The number of centenarians has been growing and will grow more. The Pew Research Centre predicts there will be 3.7m worldwide by 2050, three times as many per head of population as in 2015. But only one in 1,000 of them lives beyond 110, and no one in history is reliably attested to have got past 120. The average is going up; the maximum, much less so (see chart 2). The other catch is that “healthspan”, the number of healthy, vital years, does not automatically keep pace with lifespan.

Some of Elizabeth’s modern equivalents in wealth, if not majesty, are as desperate as she was for more moments than are currently on offer. In the hope of longer, healthier lives they are offering substantial down payments to today’s alchemists, the wizards of medicine and biotechnology trying to understand, decelerate and, ideally, reverse bodily ageing and its attendant ills.

Peter Thiel, a co-founder of PayPal, Larry Page and Sergey Brin, co-founders of Google, and Jeff Bezos, founder of Amazon, have all invested in, and often been instrumental in the creation of, firms trying to prolong lifespan and healthspan. In March Sam Altman, the head of OpenAI, revealed that two years ago he had invested \$180m in Retro Biosciences, a Silicon Valley firm founded with the goal of adding ten years to healthy human lifespans.

Beneath the forest canopy of firms backed by tech royalty an undergrowth of more conventionally financed startups is working on drugs that might slow or stall some aspects of ageing. Even closer to the ground, the idea is catching on of prolonging lifespan and healthspan using pills and potions that are already available, in addition to (and sometimes instead of) the conventional approach of diet, exercise and early-to-bed. A culture of do-it-yourself lifespan extension is emerging, at least in affluent places endowed with the sort of technical expertise and technological hubris identified with Silicon Valley.

Many in mainstream science and medicine look at all this slightly askance. That is understandable. It is an area which attracts chancers and charlatans as well as those with more decent motives, and its history is littered with “breakthroughs” that have led more or less nowhere. America’s Food and

Drug Administration does not recognise “old age” as a disease state, and thus as a suitable target for therapy. Nevertheless, evidence has been accumulating that such research might have something to offer.

Some established drugs really do seem to extend life, at least in mice. That offers both the possibility that they might do so in people and some insight into the processes involved. The ever-greater ease with which genes can be edited helps such investigations, as does access to large amounts of gene-sequence data. The ability to produce personalised stem cells, which stay forever young, has opened up new therapeutic options. And new diagnostic tools are now offering scientists means to calculate the “biological ages” of bodies and organs and compare them with actual calendar ages. In principle this allows longevity studies to achieve convincing results in less than a lifetime.

The machine stops

Ageing seems quite simple. Bodies are machines, and machines wear out. But unlike most machines, bodies both make themselves and repair themselves. So why do they not do so perfectly?

One answer is that the machines’ designer, evolution, is interested in reproduction, not longevity. Life is a matter of genes and environment, and the environment, in the form of accidents, predators and diseases, is what kills most creatures. Genes with benefits that show up only over a longer lifespan than the environment allows are not likely to do particularly well unless they provide other benefits. Genes that offer a successful and fertile youth are onto a winner.

Indeed, evolution may be actively plotting against old age. If a gene helps an animal breed when young but endangers it when it is old, the odds are that it will spread. There is some evidence that one variant of a particular gene involved in Alzheimer’s disease provides reproductive advantages to young people.

More generally, looked at from the evolutionary point of view of the genes involved, an individual is simply a way to make further copies of those genes, rather than an end in itself. Keeping the body’s repair mechanisms in

tip-top condition is worthwhile only if it gets more genes into the next generation. If other uses of those resources do the job better, then repair will lose out. In this “disposable soma” approach, the individual is a means to an end abandoned when it is no longer fit for purpose.



This sort of perspective explains why there are many conditions, such as Alzheimer’s and Parkinson’s diseases, retinal degeneration, type-2 diabetes and various cancers which are rare in early life but quite common in old age. But it also suggests that this need not be the case. The fact that evolution has no interest in keeping the repair systems going does not mean it cannot be done, just that some cunning may be required.

Most genes have variants, known as alleles, which all work, but may have somewhat different effects. Genetic manipulation of laboratory organisms and studies of the genes of human centenarians have identified alleles of particular genes that, in the former, have been proved experimentally to increase lifespan and, in the latter, are associated with longer lives. Such work helps illuminate the processes behind bodily ageing.

It may, for example, lead to an understanding of why, as a study published in 2014 by researchers at King’s College London showed, centenarians are less likely to die of cancer or heart disease than people in their 80s are. This

suggests that people who live a really long time may do so because they have some comparatively rare form of protection against things that kill younger old people. That may be very good news.

Something does still kill them, though. The King's College study found centenarians disproportionately vulnerable to general frailty and "the old man's friend", pneumonia.

Another reason for hope in the face of evolution's callousness is that the physiological details of ageing are becoming clearer. In particular, those researching the question have been able to divide the problem into bite-sized chunks that can, to some extent, be tackled individually. Some of these smaller (if often still huge) problems are attractive targets for intervention in their own right; chronic inflammation, for example, or the build-up of aberrant proteins seen in Alzheimer's disease. George Church of Harvard University, a biotech guru unafraid of the unorthodox, thinks the approach could offer more than that: identify and deal with each of the components separately and you may find you have solved the problem in its entirety.

Several groups have compiled lists of such chunks. One of the most widely consulted was devised by Carlos López-Otín of the University of Oviedo, in Spain, and his colleagues. They propose 12 hallmarks of ageing (see chart) chosen on the basis that they are all things which typically get worse with age, which accelerate ageing if stimulated and which seem to slow it down if treated. Deal with this dirty dozen (Dr Church would make it a baker's dozen by adding cancer to the roll) and you might prolong life indefinitely and healthily. That, at least, is how the optimists look at it.

Oncology is already a well-developed field of research. This report will not address it directly. Nor will it remark on diet, exercise and a good night's sleep, other than to extol their value. They remain as necessary as ever.

Instead, it will look at the progress being made with respect to each of the 12 hallmarks. The resulting picture is not as tidy as one might wish. Biology is a complex, networked affair and many of ageing's hallmarks overlap. Sometimes that means an intervention may do good in more than one area. At other times there may be trade-offs. But even dealing with part of the list will bring people better lives. Deal with all of it and, well, who knows? ■

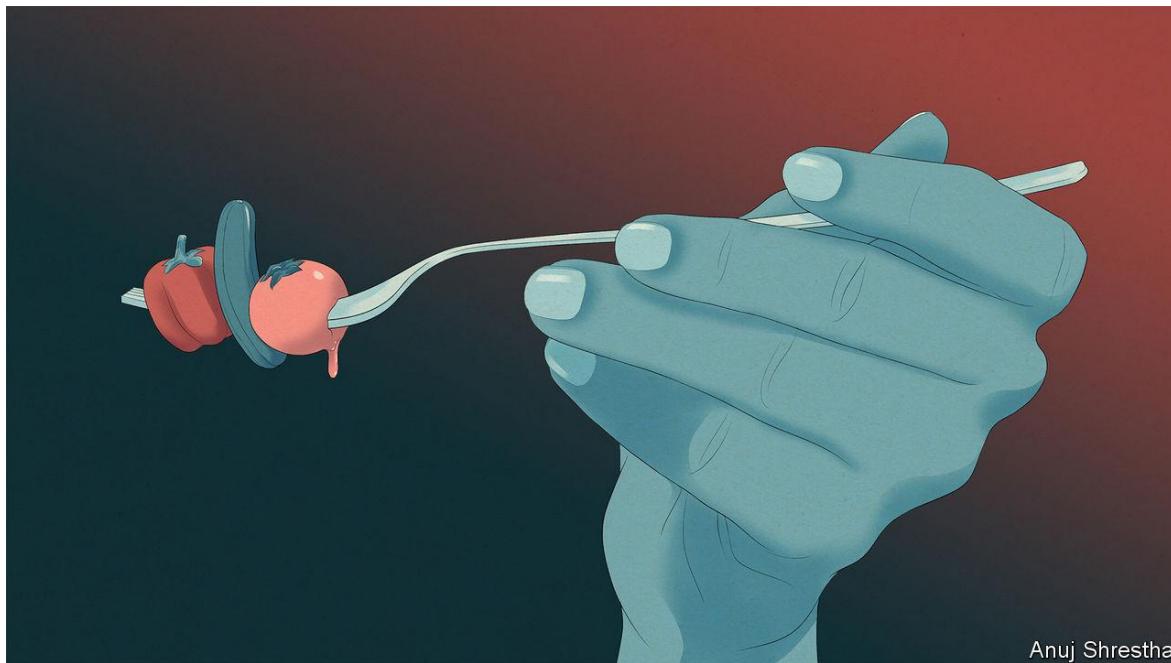
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Don't be greedy

Eating fewer calories can ward off ageing

And various existing medicines may offer similar benefits

Sep 25th 2023



Anuj Shrestha

IN 1991 EIGHT volunteers sealed themselves into a huge greenhouse in the desert near Tucson, Arizona. They were part of an experiment seeking to discover whether a carefully curated selection of plants and animals could develop into a self-sustaining ecosystem: a “Biosphere 2” independent of “Biosphere 1”, aka the outside world.

In terms of proving grand ecological truths the Biosphere 2 experiments were something of a bust. As an illustration of what can happen when somewhat fringe-y science meets extreme wealth they were fascinating. There were fierce fallings-out on both sides of the glass. In 1994 Ed Bass, an oil dynast who had paid for the facility, threw out the management team and handed the reins to Steve Bannon, later a key adviser to Donald Trump. At the same time, though, there was what some took to be a breakthrough in the science of human ageing.

One of the eight biospherians was Roy Walford, a professor of pathology at the University of California, Los Angeles (UCLA). Research by Walford

and others had shown that restricting what animals ate could significantly lengthen their lives. The lifespans of nematode worms, fruit flies, rodents and dogs could be extended as much as 50% by laboratory protocols which gave them a diet with all the nutrients they needed in terms of minerals, vitamins and the like but fewer calories than were seen as normal.

Biosphere 2 allowed him to test the theory on humans in no position to sneak off for snacks. With a daily intake of 1,750-2,100 calories (7,320-8,790 kilojoules) the biospherians, trim to begin with, all slimmed down. But after eight months their weight stabilised. Gaunt as they were, their energy levels remained high. Blood tests showed physiological responses which matched those of calorie-restricted rodents with extended lifespans.

Some people have taken this as a reason to incorporate calorie restriction into their lives, as Walford did. But such diets, which go well beyond the sort of weight-restricting efforts to which any sensible person might aspire, are hard to maintain. That has provoked an interest in finding ways to get the benefits of calorie restriction without having to engage in it.

The garden of forking paths

Calories are a measure of the amount of energy that cells can get from breaking food into its component chemical parts. The precise nature of that breaking down, and what happens with all the parts, is under the control of a range of signalling pathways which have the job of matching what the cell is doing with how much energy the organism needs and has available. Dysfunction in these nutrient-signalling pathways is one of the 12 hallmarks of ageing listed by Dr López-Otín and his colleagues.

If there is a general truth behind the success of calorie restriction, it is that when energy is on the scarce side, the nutrient signalling pathways in cells pay greater attention to what is going on and keep the cell in better shape. What is necessary if the same pathways are to be recruited without the calorie reduction is an understanding of what other cues can have the same effect.

The research would be both easier to do and easier to understand if these pathways all had distinct, clearly understood functions. Alas, this is not the

case. Pathways frequently regulate more than one function, functions are frequently regulated by more than one pathway and the farthest-flung parts of pathways are often obscure. To make things yet less comprehensible, the proteins involved in the pathways have incredibly opaque names.

Take the MTORC1 pathway. The complex of proteins which gives it its name first came to attention because an immune suppressant called rapamycin has a strong effect on it: hence “mechanistic target of rapamycin complex 1”. That gives no real clue, however, to the fact that the signalling pathway in which MTORC1 sits is a complex set of controls and feedbacks designed to regulate metabolism in response both to the availability of nutrients (for example, glucose, which provides energy, and amino acids, from which proteins are made) and impediments to their use (for example, low oxygen levels).

The ambit of this regulatory power is broad; it influences the rate at which cells break down damaged internal structures (“autophagy”), the balance of their protein content (“proteostasis”) and the reproduction of their mitochondria, components responsible for turning the calories it receives into a form of energy its proteins can use. Autophagy, proteostasis and mitochondrial reproduction are three more of the 12 hallmarks of ageing.

Rap of ages

What is more, rapamycin, the effects of which give MTORC1 its name, turns out to lengthen the lives of lab animals even though it curbs their immune responses. This has led some longevity enthusiasts to seek off-label prescriptions for it. But its side-effects, including anaemia and an insensitivity to insulin, make rapamycin ill-suited for widespread use. There is thus a search for “rapalogs” which provide the benefits of a tuned-up MTORC1 pathway without so many costs.

Another pathway which calorie-restriction studies have marked out as promising is named after a protein called AMPK (don’t ask). This regulates the production of ATP, a small energy-carrying molecule produced in mitochondria. When ATP levels fall, the AMPK pathway increases a cell’s sensitivity to insulin.

Metformin, a drug used to treat type-2 diabetes, does so by activating the AMPK pathway. Like rapamycin, it extends the lifespans of healthy mice. It does the same for diabetic humans. A study published in 2014 showed that diabetes patients treated with metformin enjoyed a decreased mortality rate, not just compared with patients who were not treated with it, but also with healthy controls who were not given the drug.

Not surprisingly, metformin is also used off-label, probably more widely than rapamycin. The American Federation for Ageing Research, a not-for-profit organisation, hopes soon to start a six-year, 3,000-person clinical trial to measure its effects in people from 65- to 79-years-old. The Targeting Ageing with Metformin (TAME) trial will see if metformin helps prevent cardiovascular disease, cancer and cognitive decline; it will also test the hypothesis that it reduces all-cause mortality.

A further set of medicines developed to treat diabetes but now used more widely are the GLP-1 receptor agonists. The best known, semaglutide (sold as Wegovy), has been specifically licensed in various places for use in people without diabetes who nevertheless need to lose weight. Whether they might live longer than someone of the same final weight who does not take one of the drugs is an open question. There are no published studies that show the drugs to have an effect on the lifespans of laboratory animals.

One thing that does do the job for lab animals is taurine, an amino acid widely used as a dietary supplement. According to a recent paper by Parminder Singh of the Buck Institute for Research on Ageing in Novato, California, and colleagues, in mice taurine increases lifespan by 10%; some of this seems to be due to nutrient signalling. But there are effects on four or five other hallmarks of ageing, too. Taurine levels drop with age in humans but, in those who live to be over 100, levels stay significantly higher.

Nutrient sensitivity may also be enhanced by a molecule called NAD⁺. Some enzymes—proteins which catalyse chemical reactions—require the presence of a small extra molecule to do their thing. NAD⁺ is such a “co-enzyme”. More than 300 enzymes need it to be present if they are to do their bit for the cell. And if you give mice more of it, they live longer.

Considering that NAD⁺ is so generous with its favours it is difficult to know exactly which of the enzymes it helps are responsible for delivering this effect. But one connection which looks particularly interesting is that with a set of proteins called sirtuins.

La vie en vin rouge

Sirtuins came to prominence two decades ago when David Sinclair, who is now co-director of the Centre for Biology of Ageing Research at Harvard University, showed that stimulating their production prolongs life in a variety of laboratory animals. One form of stimulation is calorie restriction. But Dr Sinclair discovered a chemical alternative: resveratrol, a molecule found, among other places, in the skins of red grapes.

Dr Sinclair is by no means publicity-shy; his discovery saw a great deal of brouhaha. He founded a company, Sirtris, to produce resveratrol derivatives suited to the human body. The work did not amount to much. Sirtris, having been bought by GlaxoSmithKline, ceased to exist as a separate entity in 2013.

That might seem a cautionary tale. But it can also be seen as grounds for hope. Sirtuins got a lot of attention because there had been no similarly credible claims about longevity for some time. Their story set out a blueprint for looking into such things: a mechanism looked interesting, a molecule seemed promising, investigations were carried out, conclusions were drawn. Many more mechanisms and drugs are now being scrutinised in the same way. Some scepticism is warranted. But there is no reason to believe that none of them will get results just because the few looked at so far have not.

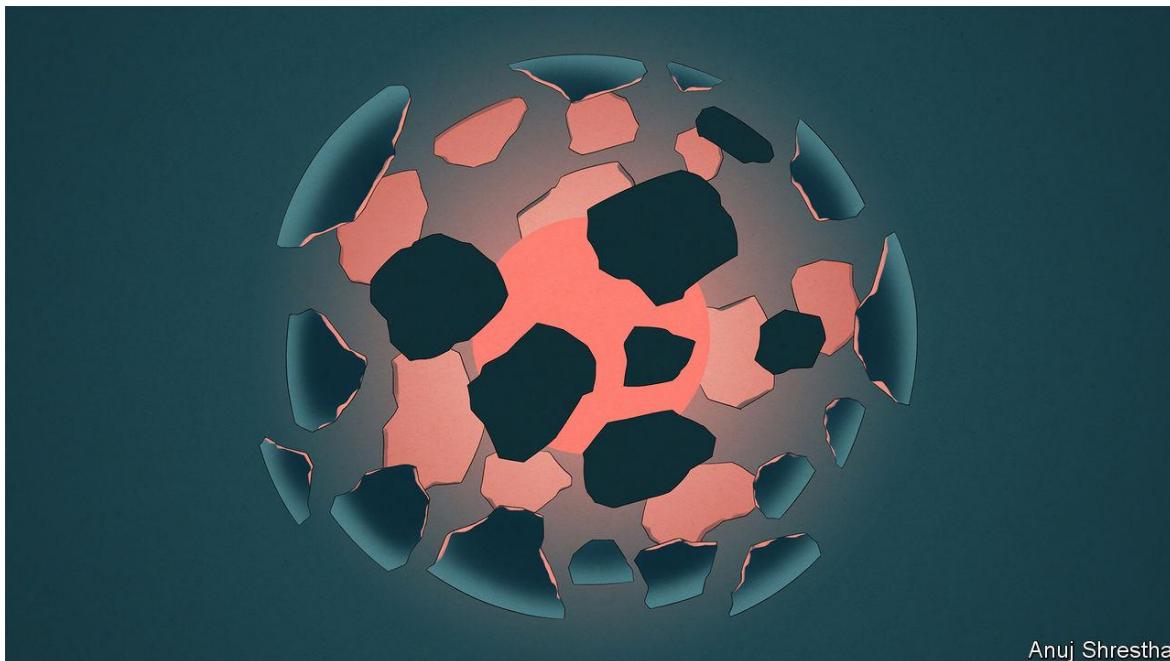


Out with the old

Ageing bodies need to get rid of decrepit cells

Senolytics and cellular rejuvenation could hold the key

Sep 25th 2023



IN 1962 LEONARD HAYFLICK, then at the Wistar Institute in Philadelphia, now retired, made one of the most famous observations in the science of longevity: in laboratories, non-cancerous mammalian cells can reproduce themselves for only a fixed number of times before cell division ceases and they enter a state called senescence. For human cells, this Hayflick limit is 40-60.

Exceeding the Hayflick limit is not the only route to senescence; it can arise in other ways, too, including as a response to DNA damage. The body normally gets rid of these senescent cells either by triggering a genetic self-destruct sequence called apoptosis or by sending the immune system in to dismantle them. Both forms of housekeeping, though, become less efficient with age, allowing senescent cells to persist in a sort of zombie state that makes things difficult for the healthy cells around them.

James Kirkland of the Mayo Clinic, in Rochester, Minnesota, offers a daunting list of the things that go wrong in tissue where zombie cells

accumulate. It includes inflammation, DNA damage, a form of tissue scarring known as fibrosis, disabling aggregations of protein and two of the hallmarks of ageing associated with problems in the MTORC1 nutrient-signalling pathway discussed in the previous article: poor proteostasis and damage to mitochondria. Experiments on mice suggest that senescent cells are involved in Alzheimer's disease; other work suggests they play roles in diabetes, fibrosis of the lungs, osteoarthritis, osteoporosis and several diseases of the eye.

Dr Kirkland is, however, undaunted. For it was he who, in 2011, pioneered what has become an increasingly studied approach to the problem of cellular senescence. This is the development of drugs known as senolytics designed to kill senescent zombie cells.

His initial research discovered four already characterised molecules that looked promisingly senolytic: dasatinib, fisetin, navitoclax and quercetin. All four stimulate apoptosis, though not all by the same mechanism. They can all be taken orally and extend the lives of laboratory animals. Dasatinib is an anti-leukaemia drug available in America and Europe since 2006; navitoclax is currently in trials as a treatment for myelofibrosis, a bone-marrow cancer; quercetin (which is often added to dasatinib in cancer treatment) and fisetin, meanwhile, are natural substances that are found in fruits.

Dr Kirkland is one of the organisers of what is known as the Translational Geroscience Network. It has 14 centres across America and is running 81 clinical trials on compounds that could become drugs for age-related diseases, with the trials done in ways that seek to add to the understanding of ageing in general. About 30 of them are on potential senolytics, including three of the four on his original list. The idea, he says, is to conduct a lot of small trials in parallel, on different molecules and different target diseases. And, though he thinks there is only about a 25% chance of a successful senolytic drug emerging, he says that when he first started in the field he would have put the chances at 0.001%.

In 2020 a survey of the field by *Nature*, a journal, identified more than two dozen startups in the senolytic field. They use a broader range of approaches than those initially identified by Dr Kirkland. There are undoubtedly more

companies, and more approaches, today. And there have already been disappointments. Unity Biotechnology of San Francisco, funded in early years by Jeff Bezos and Peter Thiel as well as the Longevity Fund, a venture-capital operation, went public in 2018 only to see its share price collapse by two-thirds two years later when early trials of a senolytic aimed at osteoarthritis disappointed.

While Unity and other firms build weapons to fight senescence, another set of companies is looking at the Hayflick limit from the other side. Instead of searching for ways to kill cells that are over the limit, these cellular-rejuvenation companies are examining treatments aimed at keeping cells under it and helping them stay in fine fettle while they are there. Their targets are not cells that need to be removed, but organs the cells of which are failing to renew themselves as they should. The two approaches differ in other ways, too. The senolytic approach looks at drugs and supplements already available to try and find those that could help soon. Cellular rejuvenation, made plausible by recent developments in stem-cell science, is more radical and thoroughgoing; it needs, and attracts, those with deeper pockets.

The human body contains hundreds of different types of cell, each with the right properties for a particular sort of job. This differentiation is accomplished by having different sets of genes turned on and off in the different types of cell by means of various “epigenetic” modifications. Some are chemical alterations to the bits of DNA on which specific gene sequences are stored, others affect the proteins around which that DNA is wrapped, still others work in subtler ways. These sorts of epigenetic modification are vital. But the processes which drive and maintain them are another of those bits of life’s workings that get less effective with age. Indeed, the pattern of DNA methylation (a specific type of chemical change to one of the molecule’s genetic letters) can be used to diagnose the age of a cell.

Stem cells are reserves from which new specialised cells of various types can be made. When one divides, one of the two daughter cells sets off down a route of epigenetic specialisation which, a few generations on, will produce a number of cells of specific types. The other daughter will remain a stem cell, ready to produce more daughters when required. In this way the

hematopoietic stem cells in blood marrow, for example, can produce progeny from which all the different sorts of white blood cells are derived, as well as the oxygen-carrying red ones. To keep doing so for a lifetime, though, they need to divide a lot more than 40-60 times.

Factor analysis

Allowing stem cells to keep going is the task of an enzyme complex called telomerase. The physical manifestation of a cell's progress, or descent, towards the Hayflick limit is found in structures at the end of its chromosomes called telomeres. Every time the chromosomes are copied to allow the cell to divide, the telomeres get shorter; after 40-60 divisions they are too short for the chromosome to be copied any more. In stem cells, though, telomerase is used between cell divisions to rebuild the chromosomes' telomeres, resetting the clock. But it does not do so perfectly. And, as time goes by, stem cells can pick up unwanted epigenetic markers, too. Stem cells diminish in number, in capacity, or both.

What if the exhausted cells could be pepped up, or replaced? In 2006 Yamanaka Shinya, of Kyoto University, and others showed that by administering a specific set of four "transcription factors", proteins that affect which genes are used as blueprints for proteins, they could strip the cell-type-specific epigenetic markers off the DNA in a cell and return it to the state of a "pluripotent" stem cell. That opened the prospect that these induced pluripotent stem cells, or iPSCs, if prodded with other chemicals or implanted in the relevant type of tissue, could be used to generate specific cell types on demand. More recently it has been shown that using a subset of those four proteins offers a way to rejuvenate cells to a lesser degree, not stripping them right back to the stem-cell state but nevertheless removing some of the apparently excessive epigenetic markings that come with age.

In mice this transient reprogramming gives old tissues a fresh capacity for self-repair

The biggest player in the cellular de-ageing business is a company called Altos Labs. It was founded in 2022 with \$3bn of initial capital from various sources, including Yuri Milner, a Russian-born billionaire. It has three campuses, two in California, the other in England, just south of Cambridge.

To work in these the company has recruited some luminaries of the field. One such is Steven Horvath, who when at UCLA developed a way of predicting an animal's age based on the amount of methylation it has endured in parts of its DNA. Horvath's clock, as it is known, can be used to see if the age of cells is tracking the age of the animal they find themselves in, lagging it or leading it: in other words, whether the animal is ageing well or badly.

Altos plays its cards close to its chest; it is hard to say quite what approaches it is taking. But the field as a whole is faced with two options. One is to combat stem-cell exhaustion by making fresh stem cells in the lab and transplanting them in. The other is to try to rejuvenate tissues and organs *in situ*, by turning back the Horvath clocks in their cells a little way.

Dr Church at Harvard likes this latter approach, sometimes called transient or partial reprogramming. Researchers at Rejuvenate Bio, a firm in which he has an interest, have described using modified viruses to carry genes for three of the Yamanaka proteins into cells to be rejuvenated. In mice this reprogramming gives old tissues a fresh capacity for self-repair; subsequent damage is set right as efficiently as in young individuals. This has been shown to be true for skeletal muscle, nerve fibres, eyes, skin, hearts, livers and pancreases. It can even ameliorate loss of long-term memory. Rejuvenate's researchers have, however, gone further than that. Their experiment (admittedly not yet peer reviewed) showed that OSK treatment (so-called from the initials of the three Yamanaka proteins involved) can actually extend life in laboratory mice.

The trial in question, posted on a site called bioRxiv, which exists to facilitate the early release of such un-peer-reviewed papers, reported a doubling of the remaining life expectancy of elderly mice given the treatment. Instead of living for less than nine further weeks they soldiered on for more than 18 (the mice were 124 weeks old when treated, an age equivalent to that of a human in their late 70s).

Nothing to offer but blood, nerves and T-cells

Others exploring *in-situ* rejuvenation include Life Biosciences, in Boston, a recent venture of David Sinclair, the prophet of sirtuins. Its first project is an

attempt to use partial reprogramming as a way to repair the damage glaucoma does to the neurons of the optic nerve. The firm's researchers have shown that the approach works on mice. AgeX Therapeutics of Alameda, California, uses a different set of rejuvenating transcription factors, identified by Michael West, one of its founders.

According to Joe Betts-LaCroix, boss of Retro Biosciences, the firm's researchers are looking into rejuvenating the immune system by reprogramming the stem cells which differentiate into blood cells, including the white blood cells which form one branch of that system, and those that turn into the T-cells found in another branch of it.

Some other firms, though, prefer the idea of stem-cell transplants, a branch of a field known as cell therapy. Application of the Yamamaka factors means it is now possible to make stem cells to order—including from a patient's own differentiated tissue, which will thus be recognised as friendly by the immune system and avoid the problem of rejection.

One of the leaders in this field is BlueRock Therapeutics, a subsidiary of Bayer that is based in Cambridge, Massachusetts. It says it has developed a way of making pluripotent human stem cells at scale and then tweaking them with further transcription factors to set them off on various paths that lead, eventually, to nerve cells, cardiac cells, immune-system cells and so on.

Its initial target is Parkinson's disease, a condition caused by a loss of nerve cells in a region of the brain called the *substantia nigra*. This specificity and localisation makes Parkinson's an attractive target for cell therapy, and the firm has embarked on a phase-I clinical trial involving 12 people. If that and subsequent, larger trials work, BlueRock hopes the range of targets can be widened.

Bayer's involvement is a sign that big pharma has hopes for such approaches. So is a collaboration between Lineage Cell Therapeutics, of Carlsbad, California, and Genentech, a subsidiary of Roche, to develop a treatment for dry age-related macular degeneration, a cause of blindness. It is one of the places where the outsiderish field of lifespan and healthspan extension blurs with the medical mainstream; cell therapy is also a coming

thing in cancer treatment, and pharma companies such as AstraZeneca are looking into it for tissue-restoration, too. Success in those fields could feed success in work on ageing—and vice versa. ■

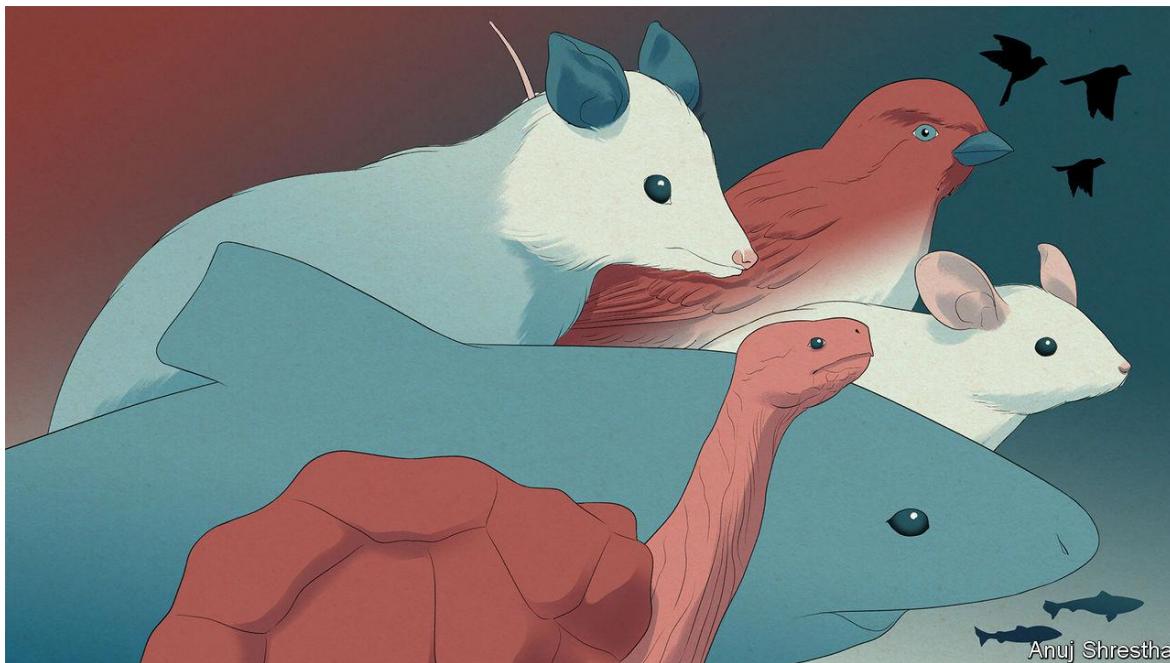
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Of bowheads and borzois

Alternatives to the laboratory mouse

Researchers are looking at whales, sparrows and large dogs

Sep 25th 2023



IT IS ENTIRELY possible that at this point you, the reader, are thinking that a greatly enhanced lifespan would be there for the taking had you only had the good luck or foresight to have been born a laboratory mouse. So many things, after all, seem to extend their life's lease. If so, you should learn from the scepticism of Steven Austad of the University of Alabama, Birmingham.

Laboratory mice are very little help, he thinks, in understanding ageing in animals that have not gone through decades of inbreeding and which live in environments that offer more danger than that inflicted in experiments. Lab mice, he feels, are not just a poor guide to the wider world of animal ageing; they are barely even mice any more. They are, in a phrase coined by one of his colleagues, just “mouse-like objects”.

This scepticism may, in part, come from the fact that Dr Austad took an unusually long and circuitous route to the lab. His first degree was in English literature; as well as making an abortive attempt to write the great American novel he has enjoyed employment as a taxi driver, a newspaper

reporter and an animal trainer. The last job provoked an interest in zoology that led to academia.

In early work on American opossums he observed that those living on an island off the coast of Georgia, where there were no predators, seemed to age less rapidly than those on the mainland. This caused him to be sceptical about how much could be learned from inbred animals leading cushy lives (lab mice tend to live many times longer than their wild relatives). Instead, he seeks to study longevity in wild animals.

With a maximum recorded lifespan of just over 120 years, human beings are at the upper end of the animal longevity scale. But there are a few that outdo them. At an estimated 200 years, bowhead whales are thought to be the longest-living mammals. Greenland sharks can manage double that. Giant tortoises are well-known centenarians. Among invertebrates, red sea urchins are reckoned to be able to clock up 100 years, a type of tube worm called *Escarapia laminate*, 300 years, and ocean quahog clams, 500 years.

In-depth studies of bowhead whales and Greenland sharks obviously pose difficulties. Long-lived invertebrates may not have as much to say about people as one might wish. And working with true methuselahs, backboned or not, might mean working on their timescales, which would hardly be helpful.

As a compromise between longevity and fecundity Dr Austad proposes the house sparrow. In general, animal lifespans increase with size. But whereas wild mice live three or four months wild sparrows, similar in weight, can live almost 20 years. Understanding the physiological differences that grant these birds such long lives might, he reckons, lead to useful ideas for increasing the lifespans and healthspans of people, a species in which he is interested despite its basically domesticated nature.

Another off-kilter approach is to look at ageing not through the lens of animals that lead long lives in the wild, but of animals which lead shorter lives in domesticity. Big breeds of dog live less long than small ones; breeding them for size bred them for short lives, too. The mechanism by which that happened may be more tractable to study than most of those involved in ageing; selective breeding has changed relatively little of the

dogs' genome. And turning understanding thus gathered into a treatment would unleash a flood of dollars and love from people who own Great Danes, Newfoundlands and the like.

That is what Celine Halioua, the founder of Loyal, a San Francisco startup, wants to do. She knows which pathway she wants to target and the company is getting a drug (details of which are not public) into trials. Animal trials are more easily done than human ones, and veterinary approval is far faster than medical approval. Dr Halioua's hope is that by developing a life-lengthening supplement for big dogs she can provide Loyal with a reliable revenue stream quite quickly. With that she can fund her long-term goal, the extension of human life. And it should help with her other heroic ambition—to found a drug company people actually like, even love. What better first step than extra years with a best friend? ■

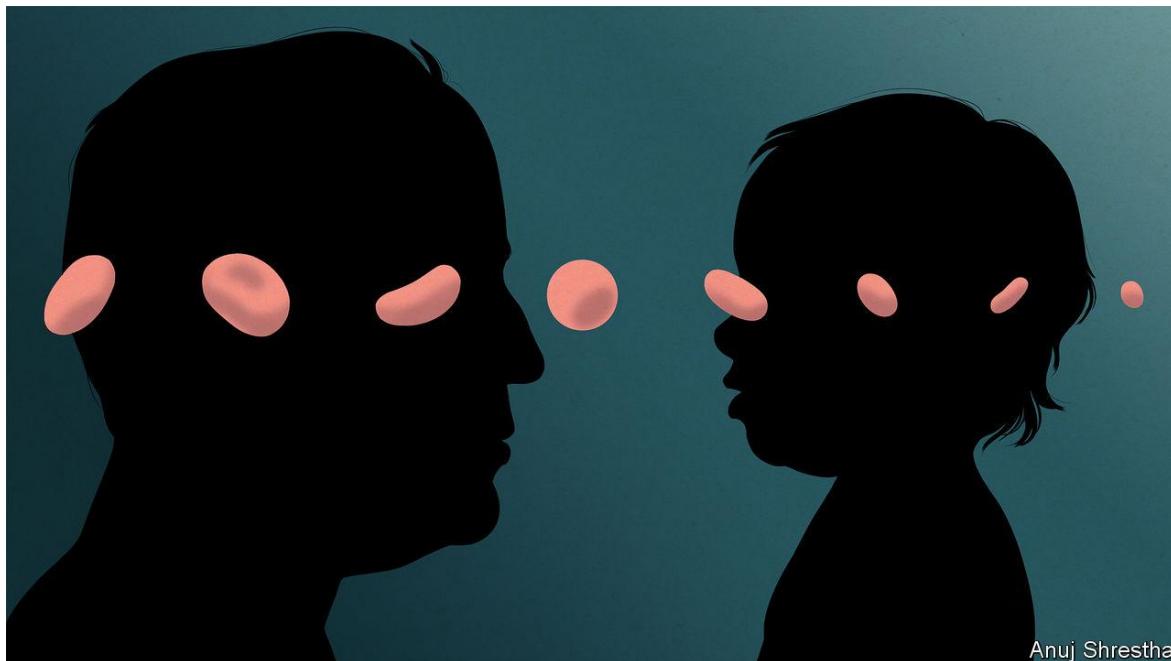
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You can't have everything

Older genomes have more dodgy genes

Can evolution's trade-offs be avoided?

Sep 25th 2023



Anuj Shrestha

NUTRIENT-SENSING systems can be tuned up; senescent cells targeted for destruction; stem cells supplied afresh; epigenomes spruced up. For many of the hallmarks of ageing hope is in the air. But some are more refractory. Perhaps the toughest of all is genomic instability: the persistent accumulation of mutations. By middle age, to take an example published in 2018 by Philip Jones's group at the Wellcome Sanger Institute near Cambridge, England, the cells lining a human oesophagus will each have acquired mutations in an average of 20 genes.

Cells have surveillance and repair mechanisms to correct damage to their DNA. Mutations persist regardless, though, because evolution makes these mechanisms good enough, rather than perfect. The investment required to repair 100% of the mutations would cost the cell more than the damage it sustains to its DNA by letting some mutations slide. This explains the finding that when cells are placed in an environment where one sort of

damage to DNA becomes more common, they give up on repairing other sorts; such repairs are no longer worth it.

The biggest risk comes from mutations which unleash the cell's innate capacity to reproduce without pause or purpose, thereby causing cancer. The body has various ways to react to such mutations; there is a whole set of tumour repressor proteins, of which the most well known are p53 and p16, and there are various ways for the immune system to swoop on the cells in which those safeguards are over-ridden. As a backstop, it also has the Hayflick limit, which gives cells only so many chances to reproduce.

Here again, life's trade-offs are at play. If anti-cancer measures were to be relaxed, ageing might be less of a problem. Less p53 activity would make senescent cells less damaging; the p53 and p16 they leak into the environment cripples any nearby stem cells. Making it easier for cells to resume growth if necessary might allow the slow erosion of non-cancer-causing mutations to be offset, with the dead weight of somewhat clapped-out cells lessened and vigour returned. But the price of creating tissues better suited to growth and rejuvenation would be more cancers.

War of attrition

Some think that price can be circumvented. Rejuvenation Technologies, of Mountain View, California (which like the similarly named and previously mentioned Rejuvenate Bio of La Jolla, California, counts Harvard's Dr Church among its backers), is planning to help cells extend their telomeres and avoid the Hayflick limit. They think telomere attrition (which Dr López-Otín and his colleagues see as important enough to qualify for a hallmark of its own) can be countered if cells make more of a vital sub-component of telomerase. To encourage them to do so they will use mRNA technology like that used in some SARS-CoV-2 vaccines.

Injected into tissues that need rejuvenation the mRNA would provide cells with a temporary ability to make this substance. Various studies have shown that pepping up telomerase increases both the lifespan and the healthspan of mice, with positive effects on insulin levels, neurological function and strength. The initial targets for Rejuvenation Technologies will be two forms of fibrosis, then cirrhosis of the liver.

In mice the approach also had an unlooked-for bonus: it perked up the mitochondria on which cells rely for the production of ATP, the molecule from which proteins get their energy. Why this might be is not clear; though mitochondria have small genomes of their own, they have no telomeres. But it is welcome, because mitochondria are something that ageing specialists have been interested in for decades.

Their initial interest was, it transpired, misplaced. It was based on the idea that the way in which mitochondria use oxygen to get energy out of metabolites exposed them to fearsomely reactive forms of oxygen at levels that damaged their genes. This damage due to “oxidative stress” was held to be a key aspect of ageing.

This turned out to be, at best, only partially true. Damage to mitochondrial genes does matter, but it seems to come about as a result of replication errors rather than reactive forms of oxygen. Those oxygen radicals do, though, have the potential to encourage inflammation—and because mitochondria, like many of us, get a bit more leaky as they age, over time that potential becomes reality. The cell’s systems for getting rid of clapped-out mitochondria also become less efficient over time, making matters yet worse.

Another link between mitochondria and ageing comes in the form of humanin, a short string of amino acids of the sort biologists call a peptide. It appears that as well as containing genes describing some full-size proteins, mitochondrial genomes also contain a lot of short DNA sequences that could describe peptides, and some of these peptides have now been isolated and studied.

Humanin normally becomes less prevalent as people age. But studies of centenarians show that their humanin levels stay high. Correlation, not causation; but interesting enough to justify some experiments. Those have found that nematode worms genetically engineered to have high humanin levels live longer. In April a review of humanin’s protective effects by researchers at the University of Sassari, in Italy, suggested that there could be a role for it in treating Alzheimer’s and Parkinson’s diseases, diabetes, obesity and inflammation. Another potential belle has come to the ball. ■

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Give us the tools

Fighting ageing requires properly equipped cells

Keeping the right proteins in the right amounts

Sep 25th 2023



A CELL'S MACHINERY is made almost entirely of proteins, each of them a chain of amino acids that takes on a particular shape when folded up. The shapes of some of them are designed to recognise other molecules, and sometimes to bring two different molecules together in a way that catalyses a reaction between them. Others are designed to cut DNA, RNA or other protein molecules into chunks. Long thin ones fit together to create the rods and filaments which give the cell structure its cytoskeleton; others make pores in membranes. But whatever has to be done, the protein has to be folded into the correct shape to begin with.

To a large extent most proteins fold themselves. Some, though, need help from other proteins, known as chaperones and foldases. In both cases things can go awry. Mutations in the genome or mishandling of RNA can lead to a protein chain having the wrong amino acid in one or more positions and thus folding up badly. Alternatively, the chaperones and foldases may themselves make a mistake. Not only will these misfolded proteins not work properly,

they risk, if produced in large quantities, overwhelming a cell's repair and removal mechanisms.

The process that keeps a cell supplied with the right proteins in the right proportions and in peak condition is proteostasis. Impaired control of this process is detrimental wherever it happens, sometimes terribly so. Accumulations of misfolded proteins underlie several of old age's nastiest illnesses, including Alzheimer's and Parkinson's diseases. Misfolded proteins also cause the cataracts which, though treatable, remain a leading cause of blindness throughout the world.

The possibility of dealing with such conditions explains why fixing proteostasis is the core activity of Altos's campus in Silicon Valley. This is run by Peter Walter, who was, before Altos recruited him, one of those responsible for identifying what is known as the integrated stress response (ISR) in cells.

As its name suggests, the ISR reacts to many forms of stress, including starvation, infection and too much reactive oxygen. One of its main jobs is to make sure that they don't mess with the cell's proteostasis. If things get out of whack the ISR slows the rate at which proteins are being made, which lightens the load on the chaperones and foldases. If things go really off the rails, it presses the self-destruct button which sets apoptosis in motion.

Taking out the trash

Altos's operational security makes it hard to say what if any progress Dr Walter and his colleagues are making. But the ISR is not the only approach to proteostasis. One alternative is microautophagy, a process which clears away damaged and superfluous proteins. Life Biosciences of Boston is dabbling in microautophagy alongside its work on epigenetic reprogramming.

Besides folding proteins up, chaperones also deliver their mistakes to bits of cellular machinery called lysosomes, which disassemble them so that their amino acids can be recycled. But this garbage-disposal system is yet another victim of disposable-soma theory, and thus another candidate for pepping up in later years. Researchers at Life Biosciences have found a molecule which,

they claim, can do just that, and they are now in the early stages of testing its potential to curb frontotemporal dementia, Alzheimer's disease and retinal degeneration.

Alongside microautophagy sits macroautophagy, a big enough deal to have a hallmark of its own. Like microautophagy, the macro kind delivers proteins that need to be broken down to lysosomes. The difference is that it uses a garbage truck called an autophagosome to get them there, one big enough to transport not just a bunch of proteins but even whole mitochondria. Genetic inhibition of autophagy accelerates ageing in laboratory animals. Its stimulation increases healthspan and lifespan.

One way to stimulate it is with a molecule called spermidine. This extends the lifespan of mice by up to 25%. Metformin, the type-2 diabetes drug being looked at for broader anti-ageing activity, also boosts autophagy. Rapamycin may do so, too. Biochemistry is a tangled web. It is perhaps not surprising that pathways which regulate what cells do according to the energy available might take an interest in the disposal of surplus proteins.

Other stimulants are less widely known. Retro Biosciences, the startup funded by Sam Altman of OpenAI, is looking at an autophagy booster known only as RTR-242 as a treatment for a disease of the muscles that it also declines to name.

The last of Dr López-Otín's hallmarks of ageing is chronic inflammation, now trendily and irritatingly often referred to as "inflammageing". Healthy inflammation is a response to tissue damage, pathogens or parasites. White blood cells heeding chemical cries for help from afflicted cells swoop in to clear out the damaged ones and fight back against the invaders. A side-effect of their doing this is that they cause swelling, thus increasing the pressure on their surroundings.

Cells experiencing genetic instability, senescence and poor communications with their microbiome also release such molecules, provoking inflammatory responses in places where they cause harm. Indeed, the threat posed by chronic inflammation is such that a high level of a molecule called IL-6, an indicator in inflammation, is predictive of all-cause mortality in humans.

For inflammageing, there is no magic pharmaceutical bullet. Healthy living is the answer. Weight loss (for fat cells are sources of inflammation-provoking chemicals), exercise, sleep and eschewal of smoking and alcohol are all good ideas. And that, taken to extremes, is a pathway beaten by some of those who would like to cheat death for as long as possible. ■

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Blood and guts

What the young can give to the old

Can gut microbes and blood be gifts of youth?

Sep 25th 2023



PAUL BERT, a pioneering 19th-century French physiologist, added a gruesome new procedure to laboratory experimentation: grafting mice together rather as a gardener grafts branches onto a tree. Part of the idea was to discover what qualities could be passed from one mouse to the other through the blood they now shared. In the 1950s such “parabiosis” experiments led to the suggestion that one such thing was youth. Older rats, after several weeks grafted to younger rats, showed signs of rejuvenation.

The experiments were widely ignored until new interest in the science of ageing brought them to light in the 2000s. Since then the phenomenon has attracted new interest among both scientists and a number of people who might charitably be described as chancers. Young-to-old transfusions of human blood plasma allow wealthy clients to take a punt on the blood of hard-up students.

There may be substances in young blood that help the old, such as taurine or humanin. However it seems quite likely that the effect seen in older rats

owes more to the removal of detritus than an influx of the essence of youth. In 2020 Irina Conboy of the University of California, Berkeley, and her colleagues found that replacing half of an old mouse's blood with just albumin, a blood protein, and saline solution had the same rejuvenating effect as young-mouse blood. Old blood may need filtering and dilution, not supplementing.

Intriguingly, blood is not the only thing which, if transfused between old and young animals, has an effect on how they age. Gut microbes do so, too. A body's microbial inhabitants are not mere hangers-on; evolution has built them a role in their host's well-being. Gut bacteria liberate inaccessible nutrients from food and synthesise molecules their host cannot.

Some of the parabiosis experiments in the 1950s were aimed at discovering whether the microbiome of the old mouse would be rejuvenated by young blood. (It was not.) But taking poo (and the microbes it contains) out of the digestive tract of a young mouse and putting it into the gut of an older one seems to enhance both lifespan and healthspan in "progeric" mice engineered for early ageing.

A study of 9,000 individuals aged between 18 and 101 by a team of investigators at the Institute for Systems Biology, in Seattle, revealed three things about the ageing microbiomes in their guts.

First, in middle age people's microbiomes become increasingly dissimilar from individual to individual. Second, this process of increasing distinctiveness continues in healthy people as they get older but stops in those who are unhealthy. Third, in those aged 85 or more, lack of such distinctiveness is a harbinger of earlier death.

There are broad hints as to which microbes are the ones that matter. *Lactobacillus plantarum* both extends lifespan and alleviates cognitive decline in progeric mice. Its presence is also, intriguingly, boosted by calorie-restricted diets. Conversely, retention into old age of lots of bacteria of the genus *Bacteroides* is a known predictor of mortality. But the key message of the institute's studies is that an old-age-friendly microbiome is one well adjusted to its unique circumstances. More fundamental insights

into how the microbiome adapts to its host, and vice versa, may be necessary before a road to an enduring old age through the gut can be established. ■

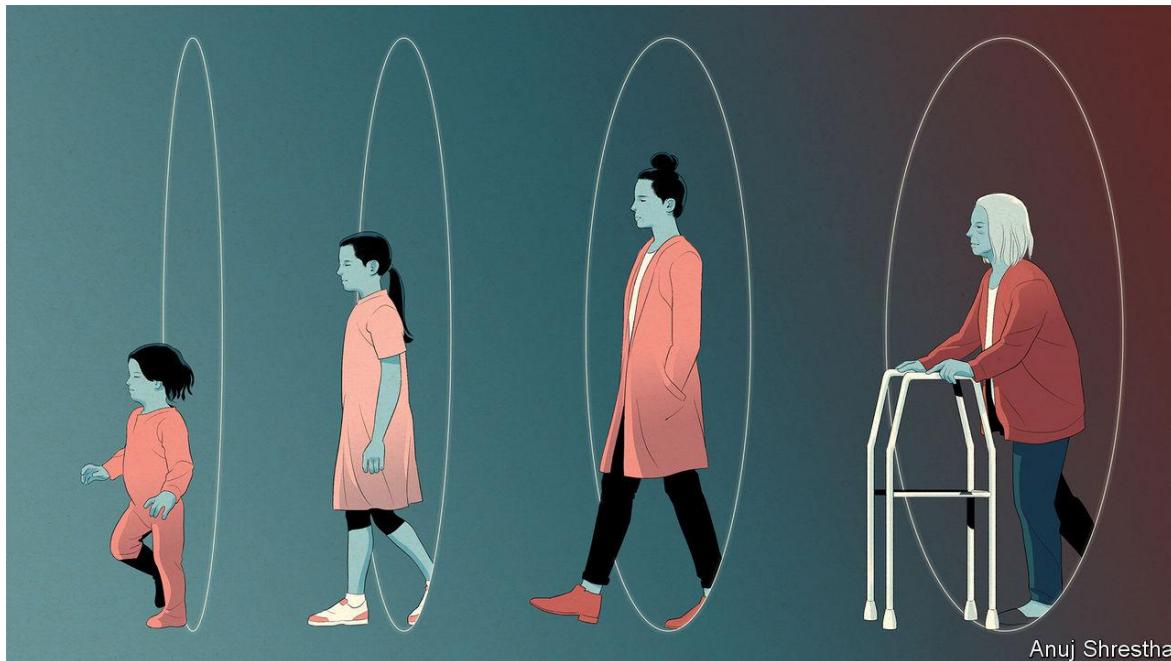
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A design for living

Some claim human lifespans can be lengthened indefinitely

Why not try a “country club for precision diagnostics” while you wait?

Sep 25th 2023



Anuj Shrestha

THERE IS A story about a blues musician who, when questioned on his 100th birthday about his decades of smoking and drinking, responded that if he'd known he was going to live so long, he'd have taken better care of himself. Bryan Johnson is that apocryphal bluesman's polar opposite. He has been taking care of himself for years to a degree as remarkable, in its way, as the deepest devotion to bourbon and bad choices. By sacrificing the now for the future, rather than the other way around, he turns disposable-soma theory on its head.

The daily regime which he and his many doctors have devised makes life in Biosphere 2 look sybaritic. A kilogram of vegetables, all before 11am, rigorous workouts lasting 45-60 minutes, and 100 pills, including metformin and rapamycin. His vital functions are subjected to the sort of continuous scrutiny more usually associated with laboratory animals. He says he is ageing at 69% of the normal rate.

Mr Johnson, who has been described as the most measured man in the world, can afford the team of medics, trainers and dieticians who minister to him because selling Braintree, an electronic-payments company which he founded, left him with a net worth of more than \$100m. For mere mortals, however, a range of less intensive options are available.

One is a distillation of Mr Johnson's accumulated experience, available on his website as "Project Blueprint". Though he makes it available for free, he says implementing it could cost \$1,000-1,500 a month, including groceries, supplements, drugs and trainers.

For those on a budget, or who would prefer to have their hands held, an entry-level product at around a tenth of that price is offered by Tally Health, based in New York. Tally is the latest brainchild of David Sinclair, who led early research on sirtuins. Members get a quarterly cheek-swab test to check levels of epigenetic methylation, thus providing a Horvath-clock-like age to compare with a client's chronological age, and a daily supplement containing fisetin, quercetin, resveratrol, spermidine and alpha-ketoglutarate, a molecule involved in several biochemical pathways which seems to give lab mice longer, healthier lives.

Waiting in luxury

For a more substantial fee, Human Longevity, in San Diego, offers customers full sequencing of their genomes and MRI scans of their bodies as well as a suite of other tests likely to leave them feeling like wired-up lab rats; for this they get a personal "longevity action plan" which the company will help them implement.

For now, people should concentrate on not dying as a means to the greater end of eventual age reversal

Human Longevity was founded in 2013 by Craig Venter, who, in the 1990s, ran a private rival to the Human Genome Project, and Peter Diamandis, a marketer, entrepreneur and all-round future-booster. Dr Venter later left, and though Mr Diamandis still has a stake in the business, his gaze seems to have shifted to a glitzier proposition. Fountain Life, his new venture, offers a similar package of goodies to that of Human Longevity, but with swimming

pools and fluffy towels thrown in: “a country club for precision diagnostics”, as it says in its marketing literature.

Mr Diamandis’s stated vision of the future goes like this. For now, people should concentrate on not dying. Not dying is an obvious end in itself, but in this context it is also a means to a further end. Not dying gets the customer through to the moment when senolytic drugs are proved and approved and ageing curtailed. That in turn sees them through to the ultimate goal: age reversal via epigenetic reprogramming.

This approach can be traced to the ideas of Aubrey de Grey, a computer scientist with a remarkable beard who has been active in the field since the 1980s. Through entities like the Methuselah Foundation and concepts like SENS (Strategies for Engineered Negligible Senescence) he did much to shape modern ideas about life extension while also providing some succour to those who saw it as a weird fringe pursuit. (Mr de Grey was relieved of his position at the SENS Research Foundation in 2021 after allegations of sexual misconduct, all of which he denies). One of his pet ideas is “longevity escape velocity”, a future state where science is extending people’s lifespans by more than a year every year.

There is certainly room for scepticism about Mr Diamandis’s attempts to sell people an inside track to that longed-for day. Even if the science were to come good quickly, the time it takes for new medical treatments to be approved tends to be measured in periods that will challenge the physiology of Fountain Life’s more elderly customers. Excited talk of bringing AI to bear on the matter (Fountain Life makes a hoo-ha about its use) has yet to produce much of a pudding, let alone one that provides any proof.

Scepticism is increased by the number of defunct ideas and firms that litter the verges of the road to immortality. Human growth hormone, which is part of another nutrient-sensing pathway, was once promoted as having anti-ageing effects. Subsequent work on animals suggests using it might actually be counterproductive. The same may be true of some of the anti-oxidant approaches built on theories about mitochondrial-DNA damage.

The excitement over resveratrol guttered. Companies founded with much fanfare have lapsed into obscurity. Calico Life Sciences, a subsidiary of

Alphabet, which was the Altos of its day in 2013, has fallen completely out of the conversation. Grand science projects born of entanglements between the very wealthy and the not entirely mainstream do not always end well. Remember Biosphere 2.

A reasonable tendency to short-term scepticism, though, should not preclude medium-term open-mindedness. There is now a serious interest in understanding the biological underpinnings of ageing. There are treatments available which can almost certainly be used to extend healthspans, and possibly even lifespans, even though a lack of formal trial evidence makes it hard to see which of the touted options actually work. And there are promising lines of inquiry which may lead to bigger breakthroughs.

Evolution has no interest in seeing people live for ever, or even indefinitely. But that will not stop people trying. Whether it is feasible in practice is another thing altogether, for bodies contain trillions of cells that will need either rejuvenation or renewal. But less heroic measures towards smaller gains may yet yield fruit. And that alone is surely worth the effort. ■

Correction (September 26th 2023): This article has been changed. Tally Health uses a proprietary epigenetic clock, not the Horvath clock, for its epigenetic test.

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Insight

Video: In search of forever

Inside our correspondent's investigation into the science of longevity

Sep 26th 2023

SINCE THE 1990s Geoffrey Carr, now senior science and technology editor, has been writing in *The Economist* about whether scientists will one day figure out how to slow down ageing. Now their research is making significant progress. Here Geoff discusses the most promising developments in the field of longevity.■

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Cranes, drains and automobiles

Will the auto workers' strike jeopardise Joe Biden's manufacturing boom?

A report from the front line of America's industrial revival

Sep 24th 2023 | DE SOTO AND STANTON



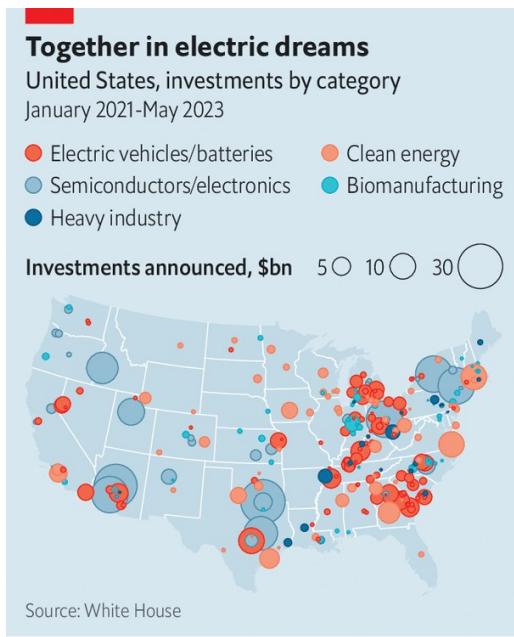
Getty Images

STANTON, TENNESSEE, looks like a place from a bygone age. The town hall quaintly resembles a 1960s grocery store. Next door is a cannery, where townsfolk use communal stoves to make soups and peach preserve for winter. For much of its history, Stanton's main source of income has been cotton farming, which was so depressed that many smallholders left.

Yet amid the cotton fields something remarkable is taking shape. Ford, one of America's three big carmakers, is setting up the biggest industrial complex in its history, including an electric-vehicle (EV) plant, a battery factory and a base for its suppliers, with an investment of \$5.6bn. A year after it broke ground thousands of acres have been covered with concrete and steel. Construction workers in high-vis jackets stomp into Suga's Diner, the only food joint in the 400-person town, for lunches of fried chicken and catfish. When Ford announced the project in 2021, the diner had a sign lamenting a shortage of chicken. Now a help-wanted sign points to a

shortage of staff. “We are rushed off our feet,” says Lesa “Suga” Tard, the owner.

It is a similar story in De Soto, Kansas. Its industrial activity was abruptly cut short decades ago when a munitions factory was mothballed. In April construction began on a \$4bn Panasonic battery plant, the largest investment in the state’s history. Driving to the 9,000-acre (3,600-hectare) site in his pickup truck, Rick Walker, the mayor, points to diggers turning a country road into a four-lane highway, counts the cranes (nine of them) erecting the plant’s second floor, and gushes about a giant solar farm due to be built nearby.



The Economist

A drive over several days down parts of America’s “auto alley”, which stretches from the Great Lakes to the Gulf of Mexico, provides a glimpse of industrial history in the making. The country is in the grip of an investment boom in everything from semiconductor “fabs” to solar farms (see map). By late 2022 firms had announced a cumulative \$210bn of investments in EV and battery factories in America, up from \$51bn at the end of 2020, according to Atlas Public Policy, a data gatherer. This is already fuelling a boom in construction spending, which has doubled since the end of 2021.

Several factors explain what some are calling America's [manufacturing renaissance](#). President Joe Biden claims much of the bonanza is the result of financial incentives in the CHIPS and Science Act, and the [Inflation Reduction Act](#) (IRA), two of his signature policies. State and local giveaways also help. So does the desire to outcompete China, as well as reshoring after the supply-chain chaos of the pandemic. In the case of car firms like Ford, which decided to build in Stanton before the IRA was passed, the fear is that unless they seize the initiative on electrification, they will lose their dominance of American carmaking to Tesla, the EV front-runner.

Given how attached Americans outside a few coastal cities remain to their gas guzzlers, the surge in EV and battery factories may seem like white elephants in the making. Whatever their commercial logic, the factories are already playing a role in national debates. The EV and battery plants are important points of contention in a strike against Detroit's big three carmakers, Chrysler (part of Stellantis, whose biggest shareholder part-owns *The Economist*'s parent company), Ford and General Motors (GM). Ford has paused construction of a battery plant in Marshall, Michigan, until the labour dispute is resolved. Both Mr Biden and his predecessor and likely presidential rival, Donald Trump, visited Michigan this week to support the strikes.

The United Auto Workers (UAW), the trade union behind the strike, worries that the new plants will be hard to unionise. In fact there is little evidence of a full-blown migration of carmaking from the unionised north to the less union-friendly south. James Rubenstein of Miami University, in Oxford, Ohio, who studies the industry's geography, notes that non-American carmakers have been building factories in the south for decades. And now the old carmaking states are seeing as much activity as the new ones. GM's first contiguous EV-and-battery plant is in Detroit, close to the dilapidated and graffitied factories left over from the city's heyday. Ford's project in Marshall is a two-hour drive away. "Everyone's getting a pretty fair share of the largesse, both north of the Ohio River and south," says Mr Rubenstein.

The megaprojects may not, then, be reconfiguring America's large-scale industrial geography. But at the local level, their impact is extraordinary. They are sprouting up in left-behind places that for years waited in

frustration for a manufacturing revival to arrive. These places have several things in common.

First, they long ago earmarked huge spaces of unproductive land for industrial development. Allan Sterbinsky, mayor of Stanton, says the town set aside 4,000 acres for this purpose decades ago; the state government even set up an office in Japan to promote it. Toyota, a Japanese car giant, made a few exploratory approaches. But it took Ford to ensure that the town's ambitions could at last be realised, he says. In Kansas, De Soto started drawing up plans to rezone 9,000 acres for development a decade ago.

Anyone up for a car pool?

The second common feature is the availability of labour. Though many of the new factories are in rural backwaters, they have access to big pools of workers within commuting distance. Once up and running, Ford's operations are expected to employ 6,000 workers, about 15 times more than Stanton's meagre population. A technical college on site will in time train future workers. For now, it will be fairly easy to find them in Memphis, which is about a 40-minute drive away, and which the car industry has hitherto overlooked. De Soto has 1.5m potential workers within a 30-minute radius, including Kansas City, so Panasonic should have no problem hiring 4,000 people, says Mr Walker.

The new factories will nevertheless contribute to further clustering in the American car industry—a third shared trait. This is helpful in order to minimise the cost of transporting heavy batteries. Ford will have SK On, its South Korean battery partner, on site in Stanton. It will also have car-parts suppliers, such as Magna, directly on its doorstep. Unlike the gigafactory in Nevada, where Panasonic has teamed up with Tesla, the Japanese firm's De Soto plant will supply more than one customer, and make different types of lithium-ion batteries.

The projects' dependence on copious sources of clean energy, meanwhile, makes them symbiotic with the proliferation of wind and solar developments nearby. The skyline along the Kansas prairies is thick with wind turbines, which generate almost half of the state's electricity. The Tennessee Valley

Authority, a multi-state utility, is investing heavily in new solar and other forms of generation capacity to meet sharply rising electricity demand in the south because of projects like Ford's.

A few big bones of contention remain. One is the cost and efficacy of government incentives to promote the investment boom. Ford and SK, which are also building two battery factories in Kentucky, have conditionally been granted a \$9.2bn loan from the Department of Energy. They also hope to qualify for a battery-production tax credit under the IRA. Panasonic will reportedly receive \$830m in state-funded tax credits, as well as potential IRA support.

A new report by Ahmed Medhi and Tom Moerenhout, of the Centre on Global Energy Policy at Columbia University, calculates that the IRA tax credits provide savings of more than 30% for battery manufacturers, helping bridge the gap between the cost of producing batteries in America and China. However, their success in stimulating investments may make their fiscal costs higher than projected. They are also triggering "subsidy wars" with the European Union. Although they might boost factory towns, the subsidies come at a cost to the taxpayer, and in the long term could blunt the industry's incentives to innovate. De Soto had to offer tax breaks and the like to lure Panasonic, which for many months kept its identity secret even from town officials so as not to tip off competitors.

Another concern is the environmental and social impact of investments. Companies want to develop greenfield sites in places where demand for labour is not too fierce. But that can stir hostility from locals who resist turning fields into factories and worry about pollution and overuse of local resources, even in the service of a "green revolution". Some also fear that industrial development will destroy the traditional character of their towns, or increase living costs. At a café in De Soto, Kira Horn, a waitress, describes how at night the lights on the cranes, which work around the clock, make the site look "like a city". Although people like her boss, who is also an estate agent, are already relishing the business and property boom, some of her young friends worry that it will price them out of buying homes.

Then there is the union challenge. Neither Kansas nor Tennessee is a union-friendly state. In contrast to GM, which has a unionised factory near

Nashville, Tennessee, Ford's workers at Stanton will not automatically be required to join the UAW. This has caused friction. In June the UAW's president, Shawn Fain, blasted the Biden administration for lending money to the Stanton project without agreeing wage requirements up front.

Ford caught a breather on September 22nd when the UAW decided to expand its strike only at factories run by GM and Stellantis, saying it had made progress in negotiations with Ford. But the carmaker will be loth to give much ground on Stanton. Erik Gordon of the University of Michigan's Ross School of Business says that the revitalisation of American manufacturing will hinge on automation and labour. The Detroit carmakers' EVs will be uncompetitive if labour costs are too high, he says.

If America's entrepreneurial muscle is to be rebuilt and left-behind places revived, as the champions of local projects hope, these hurdles will need to be overcome. And Mr Biden's turn towards subsidies may bring with it economic costs for the country at large. But, though it is early days, the prospects for Stanton look encouraging. The presence of Ford's supply chain close to the factory floor is likely to lure more small businesses. The mayor's projections show that, as a result of Ford's investment, the town's population is likely to grow about 20-fold in just over a decade. Mr Sterbinsky is already securing investments in water, sewerage and other infrastructure to support the growth. He has toured southern states to learn how to turn sleepy places into creative hotspots that attract enterprising types. Stanton's genuine southern treasures, such as the cannery and Suga's Diner, are a good start. ■

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That's a wrap

Hollywood's strike enters its final act, as writers reach a deal

Next: the actors

Sep 25th 2023 | Los Angeles



DUST-SHEETS cover the sets inside one soundproofed Hollywood studio, as placard-wielding writers and actors make as much noise as they can outside. The covers have been on since May, when America's writers downed pens; in July the country's actors joined them on strike. But on September 24th the writers said they had reached a tentative deal with the studios. The stage is now set for the actors to do the same, after which the dust-sheets can be whisked back off.

The writers have won meaningful concessions: bonuses for shows that do well on streaming, a format whose success metrics have until now been opaque; higher foreign royalties; and minimum staffing levels for writers' rooms. The three-year agreement also lays out loose terms governing the use of artificial intelligence, which writers fear could soon churn out blockbuster scripts. The Writers Guild of America (WGA) says the “exceptional” deal is worth \$233m a year. The studios are more circumspect. Until the agreement

is ratified by a vote among the WGA's 11,500 members, which closes on October 9th, both sides have reason to say the deal is a good one for writers.

After nearly five months without work, the writers are likely to vote “yes”. “If I lose my rent-controlled apartment, I’ll have to leave Los Angeles,” said one Hollywood worker marching in the heat outside Disney last week. The WGA has authorised its members to start working again while the ratification process is going on. Production of some formats, like talk shows, has already resumed.

Elsewhere, the cameras are not quite ready to roll. With actors still on strike, there will be no filming of scripted content (and even the talk shows will feel thin, as striking stars are banned from appearing as guests). Their union, the Screen Actors Guild, is demanding a revenue-sharing deal with the streamers, plus an 11% rise in basic wages, which the studios have rejected. A few more weeks of negotiation look likely. Factoring in a similar ratification process, things are unlikely to get back to normal much before Thanksgiving, in late November.

That will mean a production crunch at a time when Hollywood is normally winding down. With the industry on hold for nearly half the year, film and television schedules in 2024 are looking rather bare, so studios will rush to cram in as much production as they can. Time is running out to save next year’s summer blockbusters.■

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Grid unlock

Can Europe's power grid cope with the green transition?

The boss of Germany's biggest grid operator sure hopes so

Sep 28th 2023 | BERLIN



Getty Images

“MORE *Energiewende*, more business for us,” says Leonhard Birnbaum, chief executive of E.ON, a German power-grid operator that enjoys a near monopoly in Europe’s biggest economy. The set of policies and timetables to which he is referring (and which translates to “energy turning-point”) was first unveiled in 2000 with the aim of making Germany a net-zero emitter of carbon by 2045. It is meant to increase the demand for and the supply of green power exponentially. And it can only work so long as that power can reliably flow from wind and solar farms to users in Germany and the rest of Europe.

This presents an enormous opportunity for E.ON—and an equally formidable challenge. The energy transition requires huge investments in German and European grids, and it requires them right now. That will only happen if the government and regulators fundamentally change the way they deal with power-grid projects, notably by cutting red tape and speeding up

permitting for grid expansion and reinforcement. “The limits of infrastructure are the biggest obstacle of Europe’s green transition,” says Mr Birnbaum. At the moment, he explains, the grid expansion can barely cope with the huge surge of producers of renewable energy trying to connect to it.

To illustrate the scale of the task, Mr Birnbaum points out that one charging station for electric cars with 15 outlets needs as much power as a town of 5,000 inhabitants. A new data centre needs as much power as 80,000 households. As a result, electricity consumption in Europe is forecast to increase by around 60% by the end of the decade. And whereas before the *Energiewende* Europe had 200-300 power plants, in October E.ON expects the millionth electricity generator to hook up to its German grid.

“The challenges of the energy transition make Mr Birnbaum one of Germany’s most political chief executives, along with Markus Krebber,” says Ingo Speich of Deka, an investment fund that owns 1% of E.ON. Mr Krebber runs RWE, a big German power producer (and E.ON’s largest shareholder, with a 15% stake). Mr Birnbaum admits he still “too often” finds himself in Berlin, a six-hour drive away from E.ON’s headquarters in Essen, talking to policymakers. But at least the coalition government is listening to his concerns, he reports.

Policymakers in Brussels are on the case, too—at least on paper. Earlier this month Kadri Simson, the EU’s energy commissioner, lamented in the *Financial Times* that securing permits for grid reinforcements can take up to ten years in Europe. Without certainty about connection to the grid, she warned, renewables projects were being abandoned. Existing clean-power capacity is underutilised. Solar panels, for instance, are frequently switched off when grids are overloaded, because they are flexible and easy to manage. “This is wasteful and costly,” Ms Simson wrote.

While Mr Birnbaum waits for German and EU regulators to untangle the bureaucracy—a process that, he complains, remains far too selective—his company is starting to ramp up investments. These will add up to €33bn (\$35bn) over the next five years, up from an earlier plan to spend €20bn. Most of that will go to its grids, which account for 72% of E.ON’s turnover.

Among other things, each year Mr Birnbaum is planning to replace between 6,000 and 7,000 of the company's 100,000 or so analogue transformers, which convert high-voltage power from the grid to voltages needed in homes, with advanced models that monitor performance and detect faults before they occur. Mr Birnbaum is keen on software that can strengthen networks without extra physical infrastructure by optimising the management of solar and wind power's variable output. "A bigger system with much more renewable energy can only be run digitally," says Mr Birnbaum. He calls such "smart grids" the basis of 21st-century society.

After a difficult 2022, when investors fretted about the impact of the energy crisis caused by Russia's invasion of Ukraine, E.ON's share price has rallied by nearly 20% this year. That has given Mr Birnbaum some room for manoeuvre. But if €584bn-worth of grid investments is to materialise by 2030, which Ms Simson estimates is necessary to meet the EU's climate goals, he will need a lot more of it. This means more visits to Berlin and Brussels. ■

For more coverage of climate change, sign up for the [Climate Issue](#), our fortnightly subscriber-only newsletter, or visit our [climate-change hub](#).

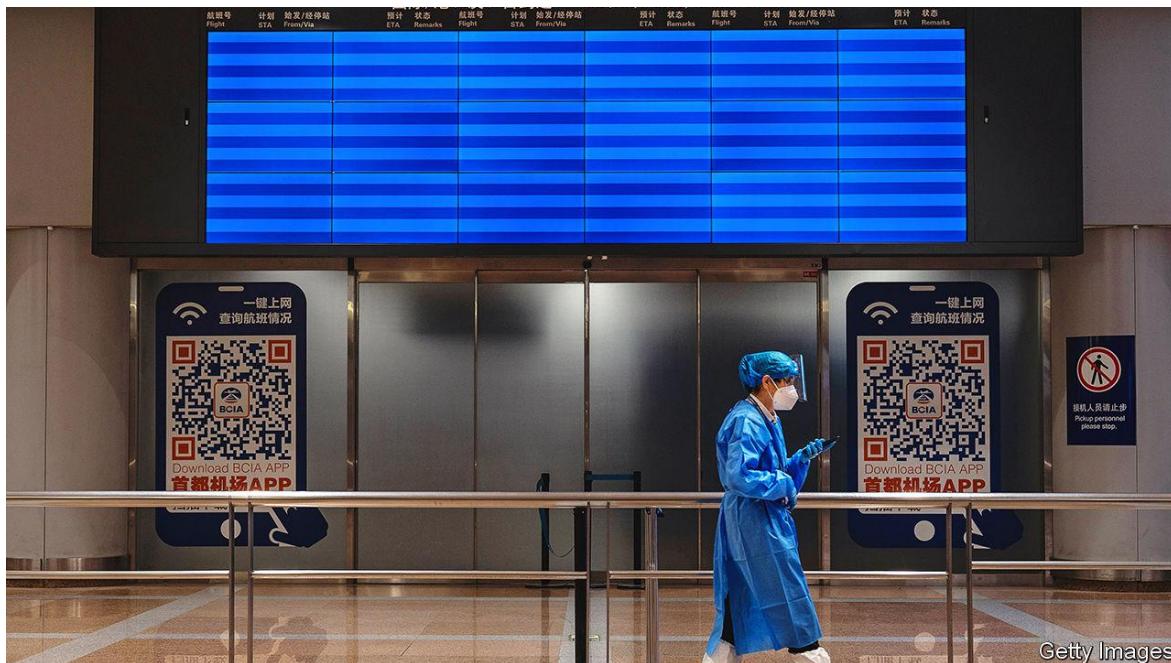
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Exit the dragon

Ties between foreign businesses and China go from bad to worse

Travel and investment are shockingly depressed

Sep 26th 2023 | Shanghai



Getty Images

THE RANKS of foreign businesspeople in Shanghai are much depleted these days. Those who remain closely monitor the comings and goings of multinational executives. So all eyes were on the Bund Summit, a globally minded economic and financial forum held in the city from September 22nd to 24th. In previous years the forum brought in A-list chief executives from around the world. The latest gathering, the first since China lifted its draconian covid-19 restrictions and declared itself open for business, was expected to draw high-powered crowds once again.

Not so. Nearly ten months in, President Xi Jinping's grand reopening from his zero-covid fiasco has been a big disappointment. Foreign investors believed that 2022, when quarantines threw China into a deep freeze, would mark the bottom for gloomy sentiment. Instead the Chinese economy is creaking and cross-border investment flows have weakened. Several foreign businesses have been raided by the authorities. On September 25th the

Financial Times reported that Charles Wang Zhonghe, the chairman of Chinese investment banking at Nomura International, a Japanese bank, had been banned from leaving China. Many foreign investors are skipping trips and, more damagingly, putting off investment plans.

Those who are showing up in Beijing and Shanghai this year say the damage wrought by zero-covid is palpable. Some of this, like the deteriorating English-language skills of hotel workers, is superficial. Other problems cut to the bone. Local staff have been deprived of foreign travel for years, and so from mingling with colleagues, engineers and scientists. China's legions of well-trained white-collared workers appear less prepared to engage with the rest of the world than they did a few years ago, the visitors lament.



Communication between the government and foreign investors is even more stilted. Chinese officials are less willing to have open discussions with visitors from abroad. Most queries from foreigners are met with boilerplate responses. A lack of specifics is particularly unhelpful at a time when dizzyingly complex new compliance rules for things like data transfers pose big legal risks for companies.

Perhaps as a consequence, few foreigners bother coming. Travel remains shockingly depressed. The number of passengers entering and leaving the

country on international flights dropped by more than three-quarters in the first half of the year, compared with the same period in 2019. As late as July the figure was still languishing at just over 50% (see chart). Western tourists have been almost entirely missing from China in recent months, depriving the country of useful interpersonal connections. Group travel from America was down by about 99% in the second quarter of the year, compared with 2019.

Business travel, which ground to an almost complete halt in 2022 as China issued few visas and required up to three weeks of quarantine, is far below Chinese expectations and increasing only at a snail's pace. Harrington Zhang and colleagues at Nomura warn in a recent report (published before their colleague's predicament came to light) that the "lack of business contacts and civilian exchanges between China and the outside world may have more profound implications for China's economic growth potential in the years ahead". The flow of inbound foreign direct investment has already collapsed. In the second quarter it was just \$4.9bn, down by 94% from the same period in 2021, according to Nomura. Just \$4.4bn in foreign venture capital flowed into China in the first half of the year, down from about \$55bn for all of 2021, reckons PitchBook, a data provider.

Those who stuck it out during the punitive zero-covid years are re-evaluating their commitment to China. According to a survey of American companies in the country by the American Chamber of Commerce in Shanghai, released on September 19th, just 68% were profitable last year. Only 52% think this year will be better. Roughly as many were optimistic about the next five years, a record low. Some 40% of companies say they are moving investments elsewhere or planning to do so.

The chamber noted that "2023 was supposed to be the year investor confidence and optimism bounced back." But, it added grimly, that rebound has simply "not materialised". Instead, business sentiment has "continued to deteriorate". Merely flinging the door to the world open has not worked. Meanwhile, the window to meaningfully re-engage with the West is closing.



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Bartleby

Films and the white-collar workplace

Putting the office into box office

Sep 28th 2023



THE OFFICE is not the most promising setting for films. Desk warriors can occasionally be caught up in dramatic stories, whether journalists ("Spotlight"), lawyers ("Dark Waters") or whistleblowers ("The Informant"). The greed and fear of high finance ("Dumb Money") have an enduring appeal. But office-based blockbusters are still pretty thin on the ground: typing, malfunctioning toilets and meetings are just not that exciting.

There is a simple fix. Take film titles that have already done well with cinema-goers and tweak their plots for the white-collar workplace. Here are pitches for a few such remakes:

"A Quiet Place". A newly refitted office contains several small rooms that are expressly designed for focused work. But it rapidly becomes clear that demand for these rooms exceeds supply. In the rush among employees to book them or grab them when they become free, things turn very nasty indeed. Genre: horror/office administration.

“The Terminal”. An office worker logs into the Bloomberg terminal for the first time in the hope of quickly finding some information. She finds that it does not respond to normal commands. Several years later, she has neither been able to locate any data nor managed to log off.

“TED”. John is a 40-year-old man who once gave a talk at a TED event. He seems unable to move on from this career highlight, even though the rest of the world has. He talks only in 18-minute monologues that always start with a personal anecdote. When he speaks, he invariably stands up, paces from side to side and ends each sentence staring purposefully into the middle distance. His family and friends find him completely insufferable and all desert him.

“Avatar”. A group of early adopters are given digital alter egos as they prepare to visit another world. They are promised all manner of wonderful experiences in this realm, but feel only disappointment when they find that they have no legs and the one person there is Mark Zuckerberg.

“14 Peaks”. They said it couldn’t be done. But one man believes that it is possible to go to Davos 14 times in a row without completely losing his sanity. Can he survive repeated exposure to Will.i.am, Klaus Schwab and John Kerry? Viewer discretion advised: features distressing scenes of breakfast panels about AI.

“Goodwill Hunting”. A cleaner at the offices of a hedge fund has a preternatural talent for accounting. One evening he comes across the accounts of a target company and sees immediately that it has overvalued the intangible assets on its balance-sheet. Finance-based suspense from the same team that brought you “Negative Jaws” and “Tombstone”.

“IT”. The screen goes blank just as a board meeting is about to begin. The directors panic and press various buttons but all they manage to do is turn off the lights. Only one department can help sort out the chaos. Likely to be the longest-running film franchise in history.

“The Matrix”. On the surface it looks like a normal company. But a change to reporting lines causes utter confusion. Nobody knows what is happening; several people lose their grip on reality. Not science fiction.

“World War Z”. A new generation of workers is entering the office. They spend most of their time staring at their phones and laughing to themselves, but occasionally whip themselves into a state of outrage about something or other. Older workers panic about the impact these creatures will have on the company until they realise they were not that different when they were young.

“Taken”. Of all the hot desks in the office one is especially sought after. It offers privacy, splendid views of the city and good air-conditioning. Nancy, a mild-mannered customer-service agent, is incensed by the tactics her colleagues use to take the desk. Things again turn very nasty. From the same team that brought you “A Quiet Place”.

“Fish Tank”. The office’s reception area is due for a refit. In an extraordinary piece of documentary film-making, the audience follows the facilities team as it decides to install Europe’s largest aquarium. Features profanity, substance abuse and graphic violence.

“The Remains of the Day”. It’s four in the afternoon and Nigel, a mild-mannered actuary, has done his work for the day. He could start out on a new project, but decides to while away the time instead. Unbearably slow-moving drama.

You can’t just slap a big title on something and hope for the best, surely? If it’s good enough for promoting people, it might work for films, too. ■

Read more from Bartleby, our columnist on management and work:
[Why it is a bad idea for managers to attempt to engineer office friendships](#) (Sep 21st)
[Who is the most important person in your company?](#) (Sep 14th)
[Networking for introverts: a how-to guide](#) (Sep 7th)

Also: [How the Bartleby column got its name](#)

A medical gold rush

Pharma's big push for a new generation of obesity drugs

Rivals to Novo Nordisk and Eli Lilly are piling in

Sep 28th 2023

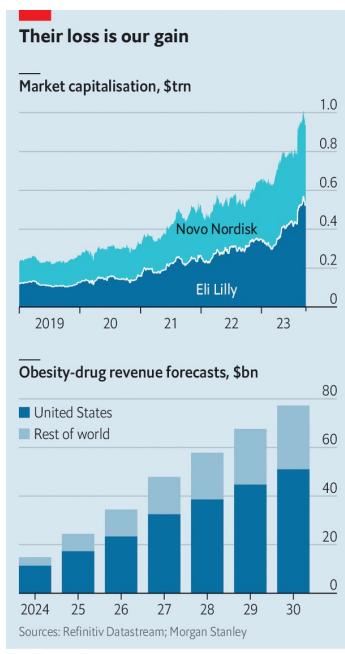


Getty Images

FIVE YEARS ago Novo Nordisk was a boring Danish drugmaker whose diabetes medications were reliably profitable. The only time the company made headlines was when it was caught up in complaints about the high cost of insulin. Then in 2021 a trial of its diabetes drug, Ozempic (semaglutide), showed that people taking it lost weight. A great deal of weight—up to 15% of their body mass. Excitement about the drug has kept Novo Nordisk in the headlines. Its market value has nearly quadrupled in the past five years. Earlier this month it reached \$444bn, handbagging LVMH, a purveyor of luxury goods, off its perch as Europe's most valuable company. Novo Nordisk's main rival, Eli Lilly, which has a similar drug called Mounjaro (tirzepatide), is worth \$522bn, more than four times what it was at the start of 2019.

It isn't just investors who are jubilant. Not long ago Morgan Stanley, a bank, estimated that global sales of such weight-management drugs could reach

\$54bn annually by 2030. Now it puts the figure at \$77bn. By comparison, last year they raked in just \$2.4bn. The potential bonanza is attracting imitators. These include big pharma (for instance, Amgen, Boehringer Ingelheim and Pfizer), not-so-big pharma (Jiangsu Hengrui, Structure Therapeutics) and biotech startups (Carmot Therapeutics in California, Gmax Biopharm and Sciwind Biosciences in Hangzhou).



The Economist

It is not the first time in pharmaceutical history that a class of drugs has been ignored, only to spur a gold rush when a successful medicine emerges. The arrival of Prozac (fluoxetine) in 1987 spawned many competitors, leading to the broad range of similar antidepressants available today. The weight-management newcomers will be hoping their drugs can, like some of Prozac's rivals, improve on the first-movers.

One important improvement would be a drug that can be gulped down rather than injected, as Mounjaro and Ozempic's weight-loss version, Wegovy, need to be. Pfizer's needle-free option, danuglipron, is in the second phase of clinical trials (out of the necessary three). The company is expected to announce plans for further trials later this year.

A lot of effort is also going into limiting the drugs' side effects. The ones currently available make many people feel nauseous. That may lead some

patients to stop taking them—a problem, given that their fat-suppressing effect wears off as soon as they are no longer administered. Novo Nordisk is experimenting with adding a hormone called amylin, which it hopes might make Wegovy more tolerable.

Efforts are under way, too, to make the drugs more effective and longer-acting. Work is going into testing whether they can help patients counteract compulsive behaviour other than overeating, such as alcoholism. And trials are being conducted to see whether they bring broader health benefits. One recent trial showed that Wegovy was able to reduce the risk of death from heart attacks, strokes and other cardiovascular causes by 20%.

Just how useful the drugs will prove beyond helping people lose weight remains unclear. Despite Wegovy's promising trial, Airfinity, a firm of analysts, recently calculated that 63 people would need to be treated with it over three years at a combined cost of \$1.1m to prevent one cardiovascular death. However, more data on the medical benefits of these drugs could also add to their perceived value.

This in turn would make them more palatable to those who foot the bill, such as public health-care systems or private health insurers. Those payers are nervous about the high cost, particularly as the drugs must, in their current iteration, be taken indefinitely. In Europe prices range from €170 to €357 (\$180 to \$375) a month. In America the list price of Wegovy is about \$1,350 a month. Health insurers are cautious: so far only 40m of the 110m Americans with obesity have access to the drugs through their health insurance.

Raymond Stevens, boss of Structure Therapeutics, says that the long-run future of pricing remains hazy. Competition from firms like his could force prices down. On the other hand, innovations in delivery or tolerability could lift them back up. The short term is more predictable. Despite Eli Lilly's and Novo Nordisk's efforts to ramp up production, demand from an overweight world will continue to outstrip supply. That is a formula for healthy profits.

■

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Schumpeter

Customer service is getting worse—and so are customers

What could fix it?

Sep 28th 2023



Brett Ryder

RARE IS THE company today that does not claim to be “customer-centric”. Anyone unfortunate enough to have sought assistance or redress from big business may quibble. Many interactions with customer service make you feel central only in the sense of being the prime target of corporate abuse. Such experiences grew especially maddening amid the staff shortages and supply-chain snarl-ups of the pandemic. But trouble has been brewing for some time. After rising steadily for two decades, the American Customer Satisfaction Index (ACSI), a barometer of contentment, began declining in 2018. Although it has edged up from its pandemic nadir, it has shed all of its gains since 2006.

Businesses have long known that it pays to keep customers happy. In 1976 the White House commissioned TARP, a consultancy, to study the state of complaints-handling in America. Among other things, TARP’s report concluded that businesses could profit from investing more in customer

service, quantifying for different industries the value that loyal customers create through repeat purchases and referrals. In the years that followed, companies from American Express to General Motors set up contact centres with toll-free phone lines to make themselves more accessible to customers. A new genre of business books extolled the value of customer loyalty. A nascent industry of consultants peddled ways to improve customer-service operations.

“In a well-functioning market, it should be profitable to satisfy your customers,” argues Claes Fornell, architect of the ACSI. What, then, has gone wrong? Increased concentration in industries from airlines and banking to telecoms could be a factor, in so far as market power weakens the will of companies to invest in pleasing their clients. Much of the consolidation in these and other industries, however, occurred before or during the period in which customer satisfaction was improving.

Technology may be a bigger part of the problem. Besides dropped calls, the most common irritation in customer-service interactions is being stuck with a chatbot, according to research from Genesys, a maker of contact-centre software. In recent years many companies have been busily deploying automation software in their contact centres in an attempt to do away with human interactions. The results have sometimes been disappointing both for customers and for companies, says Darci Darnell of Bain, a consultancy. Tony Bates, the boss of Genesys, also notes that many customer-service operations have become hamstrung by clunky old systems and messy data. That may help explain why younger upstarts, unencumbered by legacy technology, are often able to provide much slicker service, raising expectations for everybody else.

Customers, for their part, are not helping. In this year’s National Customer Rage Survey, another gauge of sentiment, 17% of customers admitted to being “uncivil” in their interactions with businesses. Scott Broetzmann, who led the survey, thinks the problem is getting worse, and that standards of acceptable behaviour are slipping. Mr Bates laments the lack of empathy customers often show towards contact-centre agents. Many such workers endure foul language and verbal abuse, one reason why attrition rates are high and rising. Staff turnover in contact centres in America hit a record 38% last year, according to SQM Group, another software provider. Higher

attrition means less experienced contact-centre agents, further worsening service standards.

Could ChatGPT-like “generative” artificial intelligence (AI) make things less awful? These tools offer more humanlike interactions than earlier generations of customer-service bots. Once trained on past call transcripts and other company data, they also make fewer mistakes than the off-the-shelf version of ChatGPT, says Ms Darnell. They do a good job, too, at speedily sifting through information such as a customer’s prior interactions with a company. Whether they are an adequate substitute for humans, however, is less clear. As Jo Causon of the Institute of Customer Service, a professional body, notes, many customers are happy using self-service solutions for simple transactions but want assistance from a real person when they encounter problems.

An alternative would be to use generative AI as a complement to human agents, rather than a substitute. A working paper from earlier this year, by Erik Brynjolfsson of Stanford University and co-authors, studied the effect of equipping contact-centre agents with an AI-based conversation assistant that offered real-time suggestions for responses. The agents remained in control of the conversation, and were able to accept or ignore the AI’s suggestions as they saw fit. The authors found that the tool increased worker productivity by 14%, measured by the number of chats agents were able to successfully resolve per hour. It also disproportionately improved the productivity of less experienced agents, meaning a more consistent service for customers.

A boost to productivity was not the only benefit wrought by AI. Mr Brynjolfsson and colleagues also measured the sentiment of customer interactions, and found that use of the technology led to a significant improvement in how agents were treated by customers, thanks perhaps to speedier resolution of their problems. They studied, too, the tool’s impact on the attrition rate of agents, which also improved.

For ever by your side

Since ChatGPT dazzled the world last November, many have fretted over whether AI will obliterate entire categories of jobs, not least among them

contact-centre agents. The evidence so far hints instead at another, more hopeful possibility: by augmenting workers, rather than replacing them altogether, generative AI could lead both to better jobs and better experiences for customers. After years of frustration and rage, that would come as a relief to people on both sides of the customer-service line. ■

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Also: If you want to write directly to Schumpeter, email him at schumpeter@economist.com. And here is [an explanation](#) of how the Schumpeter column got its name.

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Finance & economics

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Conflict economics

The costs of Russia's war are about to hit home

Vladimir Putin will be unable to protect citizens from the pain

Sep 28th 2023



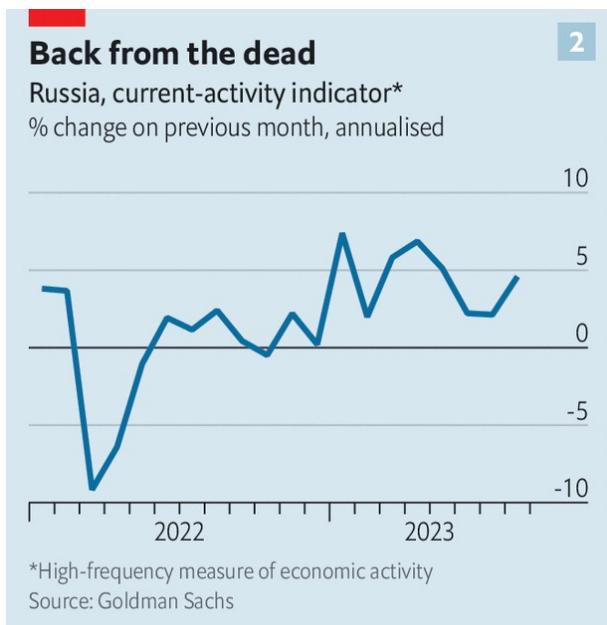
Nanna Heitmann/Magnum

OVER THE past year few currencies have done worse than Russia's rouble. Last September an American dollar bought just over 60 of them. These days it will buy almost 100 (see chart 1). The drop is both a symbolic blow to ordinary Russians, who equate a strong currency with a strong country, and the cause of tensions in the Russian state. It has blown apart the consensus that existed among Russian policymakers last year, when the central bank and finance ministry worked hand in glove. Now, as inflation rises and growth slows, the two institutions are turning against one another. At stake is the country's ability to wage war effectively.



The Economist

During the conflict's early stages, Russian officials had a straightforward task: it was their job to stop the economy collapsing. Immediately after the invasion began, this involved preventing people from pulling money out of the financial system, by implementing capital controls and doubling the policy interest rate. The rouble hit 135 to the dollar, before recovering. The economy nosedived and then improved (see chart 2). Funded by juicy revenues from sales of oil and gas, the finance ministry then kept the show on the road by lavishing spending on defence and welfare.



The Economist

Strong oil-and-gas exports also caused the rouble to appreciate, lowering import prices and in turn inflation. This allowed the central bank to accommodate fiscal expansion, cutting interest rates to below where they had been on the eve of the invasion. Over the course of 2022 consumer prices rose by 14% and real GDP declined by 2%—a weak performance, but miles better than forecasters had predicted. Last week Vladimir Putin noted that “the recovery stage for the Russian economy is finished”.

The new stage of the economic war presents officials with tough choices. Mindful of a presidential election in March, the finance ministry wants to support the economy. Bloomberg, a news service, has reported that Russia is planning to increase defence spending from 3.9% to 6% of GDP. The finance ministry also wants to raise social-security spending. Mr Putin is keen to run the economy hot. He recently boasted about Russia’s record-low unemployment rate, calling it “one of the most important indicators of the effectiveness of our entire economic policy” (conscription and emigration no doubt helped).

Yet the central bank is no longer keen to assist. The problem starts with the rouble. It is sliding in part because businessfolk are pulling money from the country. Low oil prices for much of this year have also cut the value of exports. Meanwhile, Russia has found new sources of everything from

microchips to fizzy drinks. Resulting higher imports have raised demand for foreign currency, cutting the rouble's value.

A falling currency is boosting Russian inflation, as the cost of these imports rises. So is the fiscal stimulus itself, warned Elvira Nabiullina, the central bank's governor, in a recent statement. Consumer prices rose by 5.5% in the year to September, up from 4.3% in July. There are signs of "second-round" effects, in which inflation today leads to more tomorrow. Growth in nominal wages is more than 50% its pre-pandemic rate, even as productivity growth remains weak. Higher wages are adding to companies' costs, and they are likely to pass them on in the form of higher prices. Inflation expectations are rising.

This has forced Ms Nabiullina to act. In August the central bank shocked markets, raising rates by 3.5 percentage points and then by another percentage point a month later. The hope is that higher rates entice foreign investors to buy roubles. Raising the cost of borrowing should also dampen domestic demand for imports.

But higher rates create problems for the finance ministry. Slower economic growth means more joblessness and smaller wage rises. Higher rates also raise borrowing costs, hitting mortgage-holders as well as the government itself. Last December the finance ministry decided it was a good idea to rely more heavily on variable-rate debt—just as borrowing costs began to rise. In August, conscious of higher rates, it then cancelled a planned auction of more debt.

Mr Putin would like to square the circle, defending the rouble without additional rate rises. He has therefore asked his policymakers to find creative solutions. Two main ideas are being explored: managing the currency and boosting energy exports. Neither looks likely to work.

Take the currency first. The government is keen to mandate exporters to give up more hard cash and make it harder for money to leave the country. In August officials started preparing "guidelines" that would "recommend" firms return not just sale proceeds but also dividend payments and overseas loans. On September 20th Alexei Moiseev, the deputy finance minister,

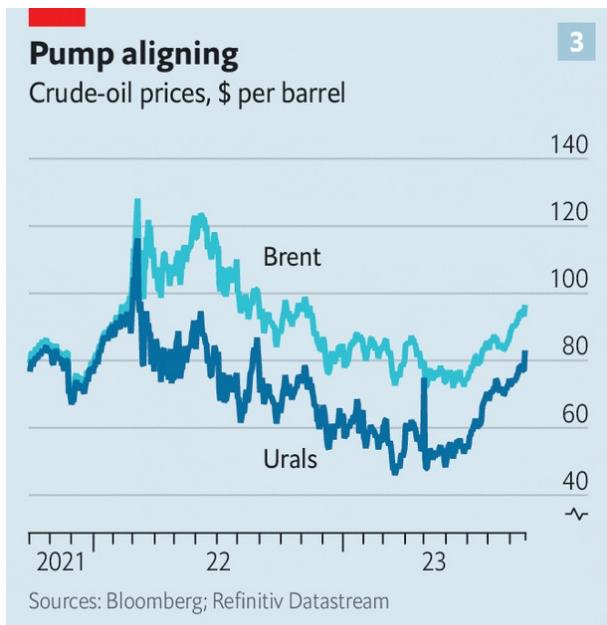
hinted that capital controls were being considered to stem outflows to every country, even those deemed “friendly”.

Such measures are, at best, imperfect. Russia’s export industries form powerful lobbies. The experience of the past 18 months is that the firms which dominate energy, farming and mining are skilled at poking loopholes in currency controls, says Vladimir Milov, a deputy energy minister in the early days of Mr Putin’s reign. Waivers and exemptions abound. In late July Mr Putin issued a decree allowing exporters operating under intergovernmental agreements, which cover a big chunk of trade with China, Turkey and others, to keep proceeds offshore.

Civil war

The Kremlin also wants to create artificial demand for the rouble by forcing others to pay for Russia’s exports in the currency. Central bankers seem to think this plan is pretty stupid. “Contrary to popular belief,” as Ms Nabiullina noted in a speech on September 15th, the currency composition of export payments has no “notable impact” on exchange rates. The only thing that changes is the timing of the conversion. Either an exporter paid in dollars uses them to buy roubles, or the customer buys the roubles themselves. What might help Russia more would be to pay for more of its imports in domestic currency so as to save foreign exchange—and then for foreign sellers to keep hold of those roubles. But there is little sign of that happening.

Russia might consider using its foreign reserves to intervene in currency markets. Yet more than half of its \$576bn-worth of reserves, held in the West, are frozen. Using the rest is hard because most of Russia’s institutions are under sanctions that limit their ability to conduct transactions, says Sofya Donets, a former Russian central-bank official. And the country’s available reserves, which have shrunk by 20% since before the war, could only defend the rouble for a little while anyway.



The Economist

Short of raising rates, the only workable way to support the rouble is to boost energy exports. In theory, two factors are working in Russia's favour. One is a rising oil price. Since July production cuts by Saudi Arabia and receding fears of a global recession have helped raise the price of Brent crude by nearly a third, to \$97 a barrel. The other factor is a narrowing gap between the price of Urals, Russia's flagship grade, and Brent, from \$30 in January to \$15 today (see chart 3). This gap is likely to continue to shrink. Since December members of the G7 have barred their shippers and insurers from helping to ferry the fuel to countries that still buy it unless it is sold under \$60 a barrel. Russia's response has been to build a "shadow" fleet of tankers, owned by middlemen in Asia and the Gulf, and to use state funds to insure shipments.

However, Russia's oil-export proceeds will probably not rise more. Higher prices may depress consumption in America; China's recovery from zero-covid seems over. Reid l'Anson of Kpler, a data firm, estimates that America, Brazil and Guyana could together increase output by 670,000 barrels a day next year, making up for two-thirds of Saudi Arabia's current cuts. Futures markets suggest that prices will fall during much of 2024. Although Russia could export more oil to make up for this, doing so would accelerate the slide.

The other bad news for Russia is that it must now earn more from oil merely to keep its total export revenue flat, owing to declining gas sales after the closure of its main pipeline to Europe. In the fortnight to September 19th these were a paltry €73m (\$77m), compared with €290m last year. There is talk in the EU of curbing imports of Russian liquefied natural gas. Europe's nuclear-power generators are also cutting their dependence on Russian uranium.

All this means that, as Russia's inflation troubles persist, the tussle between the government and the central bank will only intensify. The temptation to splurge ahead of the presidential vote next year will fan tensions, forcing the central bank either to crank up rates to debilitating levels or to give up the fight, leading to spiralling inflation. Alternatively, Mr Putin could cut military spending—but his plans for 2024 show he has little interest in doing that. The longer his war goes on, the more battles he will have to fight at home. ■

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Laboratory visit

The city that encapsulates China's economic stagnation

Zhengzhou's experience suggests that local problems will be hard to fix

Sep 25th 2023 | Zhengzhou



Getty Images

ON A TYPICAL evening Zhengzhou's manufacturing district should be teeming with workers heading back to their dormitories. For more than a decade the city of 13m in central China has been home to Foxconn employees who assemble iPhones in a local megafactory—meaning activity at hole-in-the-wall eateries and dank internet cafés provides an informal gauge of the health of the local economy. But now one of the main dormitory areas is vacant. Labourers are stripping out what remains of internet cafés and hauling off sofas that once furnished dorms. Many workers fled, never to return, in October last year, escaping a [lockdown](#) that had confined them to their dorms, sometimes ten to a room, for weeks on end.

Zhengzhou has become one of China's most problematic cities. GDP per person in Henan province, of which it is the capital, is more than a quarter below the national average. The city's difficulties—including a lack of work,

falling property prices and banking instability—are acute examples of those facing China at large. They also emerged earlier than those in much of the rest of the country. As such, Zhengzhou has become a laboratory for potential remedies, some of which have since been rolled out on a national level.

China's recent economic data, released on September 15th, indicate that the economy is at least starting to stabilise. The annual rate of growth in industrial production rose to 4.5% in August. Retail sales were up by 4.6%. Both beat analysts' expectations. But the total floor area of new homes under construction fell by 7.1% in the first eight months of the year, continuing [its decline](#). And even if the situation has begun to stabilise, Zhengzhou's experience shows how hard it will be for China to truly escape from its economic malaise—and how long any recovery will take.

The region's troubles began to accelerate in 2020, with the default of Yongcheng Coal, a local energy firm. The next year floods swept Zhengzhou, killing almost 400 people and submerging a metro line. Local officials, including the party secretary, were sacked for hiding the true number of casualties. In 2022 bank depositors around the country discovered they could not withdraw their funds from several banks in the province, leading to weeks of protests outside the Zhengzhou branch of China's central bank. The city also experienced tough treatment during covid-19. Locals shudder at the memory of a four-month lockdown they endured before the abandonment of "[zero-covid](#)" policies.



The Economist

As one woe after another has been visited upon the city, its property market has worsened. China has been in the throes of a real-estate crisis since 2021. Developers have come up short on the cash needed to finish flats. And because most buyers pay upfront, they have found themselves taking out mortgages without receiving homes. In July last year dissidents began tracking mortgage boycotts—and found Zhengzhou to be at the centre. By some counts, 600,000 local homebuyers have bought flats in troubled developments. CRIC, a research firm, estimates that one in every 13 households has been affected.

The situation has forced local policymakers to act. Henan's plans to ease joblessness have included a 100-day, military-style campaign, which began in May and recently came to an end. It aimed for “zero-dynamic clearing” of youth unemployment, borrowing language from the zero-covid policy. Staff at universities were told to identify youngsters who were struggling to find jobs and to connect them with public institutions, state-owned enterprises and even employers in the countryside. Since the campaign has only just concluded, the results are not yet clear—but it seems unlikely to have discovered thousands of new employment opportunities. With a poor job market and 870,000 new university graduates this year alone, Henan's public servants would have had to have been working overtime to have put even the slightest dent in the problem.

Other reforms are a little more thought-through. In March Zhengzhou became the first big city to drop restrictions on buying second homes, in an attempt to prop up demand. Last month it led the way again as the first city to launch reforms that instructed banks to lower mortgage rates, exempted new graduates from deed taxes and handed out subsidies of up to 30,000 yuan (\$4,100) for home purchases for families with three children. It also lifted a rule that banned people from reselling their homes within three years of purchase.

By early September work appeared to have restarted on some of the city's largest stalled property developments. One, named Qifucheng, had been paused since 2019. The development, with more than 6,000 residential units, has been called Zhengzhou's largest *lanweilou*, or abandoned building site. Last year the developer behind it was accused of putting a few workers on site in order to give the impression that work was taking place, perhaps to avoid being sued. Now trucks are moving in and out, and many workers are on the job. If similar projects resume, people looking for new flats might even shake off their distrust of the sector. This will take time, however. Property prices in Zhengzhou are still heading in the wrong direction—they fell by 0.5% month-on-month in August—which bodes ill for a rapid recovery in other second-tier cities.

Perhaps Zhengzhou's most daring reform has been to relax the constraints of the *hukou*, a household-registration system. A year ago city officials announced that migrants with local jobs and residences would qualify for a registration necessary to buy homes or access education, abandoning a system that has created a two-tier society across China. In theory, ditching the *hukou* could relieve many of the city's problems. Talented young people looking to live in a big, central city might move to Zhengzhou. Some might even launch startups, attracting workers from around the country. All of this should help boost property prices. Yet since policymakers introduced the reform, other provinces have made similar moves, increasing competition for potential arrivals. In August, for instance, Jiangsu, a prosperous coastal region, said that it would relax *hukou* requirements for many of its cities.

After a long delay, the central government has shown that it is taking the country's stagnation seriously. Meanwhile, the central bank has loosened policy. But questions remain over whether China's leaders will be able to

solve local crises, which is necessary if the country is to raise its long-run growth. So far, the message has been that local leaders will need to solve many of their own problems. It is unfortunate, then, that Zhengzhou's experience suggests doing so will be a struggle. ■

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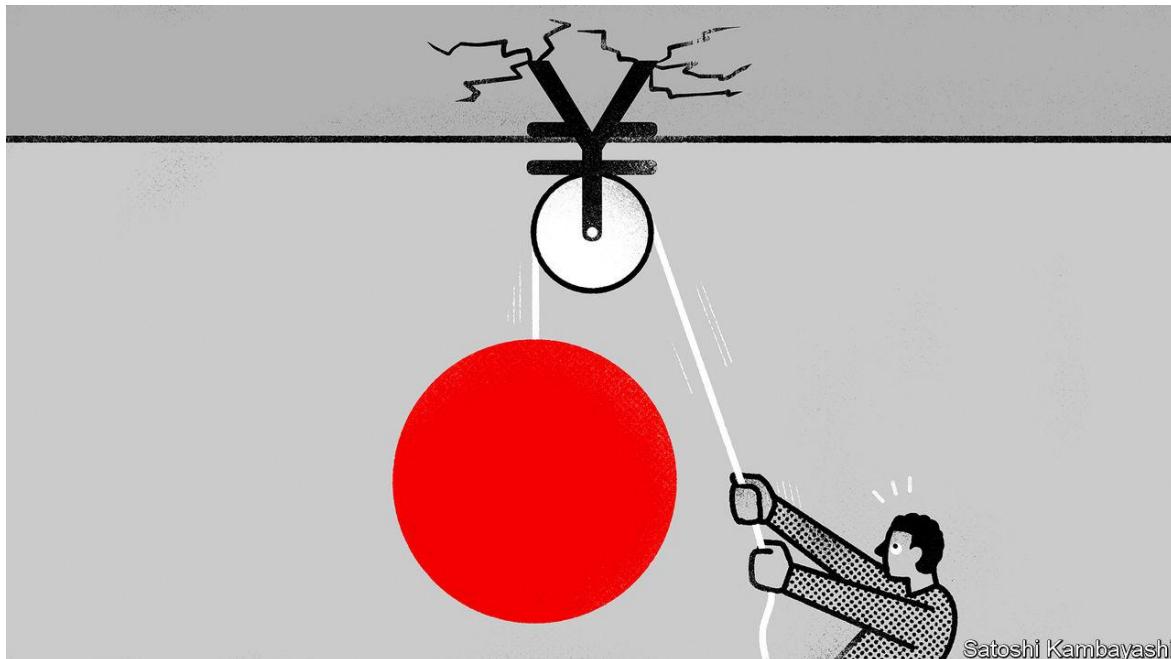
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Buttonwood

Investors' enthusiasm for Japanese stocks has gone overboard

Speculators have flocked to the country's markets this year. They may soon regret it

Sep 28th 2023



FOREIGN VISITORS have come flooding back to Japan since it reopened to travel in late 2022, making up for three years' absence during the covid-19 pandemic. The weakness of the yen has produced some bargains for these recent arrivals. For the first time in a much longer period, investors are similarly excited about the bargains to be found in Japanese stockmarkets. Unfortunately, much like the travellers who zip through Tokyo in go-karts dressed as Mario and Luigi, many now risk going overboard in their newfound enthusiasm.

From January to August foreigners bought ¥6.1trn-worth (\$40bn-worth) of Japanese stocks, which represents the largest nominal inflow during the same timeframe since 2013. According to a survey by Bank of America, more fund managers are now overweight the country's shares (ie, investing more than they usually would) than at any time in almost five years. The

return of investors to Japan's markets has been driven by optimism about reforms to corporate governance, with companies increasingly subject to investor activism and therefore returning cash. High-profile winning bets on Japan's trading companies by Warren Buffett, a famous investor, have provided a boost. So has the fact that Japanese stocks have returned 13% this year, in dollar terms, compared with a 10% rise globally.

All this optimism will soon be put to the test. After all, it is not just prospects for corporate-governance reform that have fuelled the rise in Japanese stocks; it is also the astoundingly cheap yen, and that may not last. The currency trades at ¥149 to the dollar, its weakest in three decades—down by 23% since the end of 2021. Japanese exporters, which face domestic costs but make much of their revenue overseas, have benefited enormously from this state of affairs.

The yen's weakness has been caused by huge differences in interest rates, with capital flows moving to higher-yielding assets. Unlike almost every other central bank, the Bank of Japan (BoJ) has refused to raise rates: its short-term interest rate remains at -0.1%. Yet observers increasingly expect the BoJ to shift, abandoning its cap on ten-year government-bond yields and raising rates for the first time since 2007. Japan's "core core" inflation, which strips out fresh food and energy prices, sits at 4.3%, far above the central bank's target. Even a small rate rise would squeeze the government, which last year had net debts equivalent to 163% of Japan's GDP, twice the rich-world average.

Some had thought that a virtuous cycle of mild inflation and stronger wage growth might finally be returning to Japan after decades of torpor, which would have made higher rates and a stronger yen less bothersome. But after months of waiting there is little evidence that pay really is rising. Employee earnings have dropped 2% in real terms in the past year and by 8% in the past decade. The ratio of job vacancies to applicants, which reached around 1.6 in 2018 and 2019, is now at 1.3, and falling rather than rising. Thus if the BoJ is dragged into tighter policy, it will not be by a budding recovery. Rather, it will be because of external pressure. With oil prices hovering above \$90 per barrel, inflation in energy imports will filter through to other prices over time.

Even if the BoJ does manage to stick to its guns, the gulf between American and Japanese interest rates looks unlikely to widen much, since the Federal Reserve has paused its rate rises. The transitory effects of the weaker yen will therefore begin to ebb for Japanese companies. A fall in the yen will boost earnings once, as foreign revenues are magnified in yen terms relative to the previous year. However, unless the yen continues falling, the support is a one-off. If the American economy weakens and investors come to expect interest-rate cuts, the yen will almost certainly surge against the dollar, weakening overseas earnings in the opposite way.

Reforms to Japanese corporate governance are not to be sniffed at, and some beaten-down companies still present opportunities. Yet these bright spots will not be enough to overwhelm the macroeconomic gloom that is now enveloping Japan. Global investors sometimes seem capable of holding only one narrative in mind when it comes to the country: Japan is either a stagnant mess, with little hope of rescue, or is on the verge of an epoch-defining revival. This dichotomy does not apply today. The overwhelmingly positive trend in Japan's corporate governance must be set against the trickier situation it is facing in the currency markets. ■

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Republican doves

America's Federal Reserve could soon be flying blind

A government shutdown would have far-reaching consequences

Sep 28th 2023 | Washington, DC



ONE OF THE most anodyne phrases a central banker can utter is that they are “data-dependent”. It is a sophisticated way of saying that they do not know the future, and so will wait and see what the numbers look like. These days, though, declarations of data dependence by the Federal Reserve are more interesting: they sound like plaintive pleas rather than statements of the obvious. Many of the data points that allow the Fed, analysts and investors to understand the American economy are on the verge of disappearing, a casualty of the looming government shutdown.

Congress faces a deadline of midnight on September 30th to pass a bill to keep the federal government funded. Given the stubbornness of hardline Republicans, who wield near-veto power in the House of Representatives, the chances that America’s legislature will miss the deadline are high and rising. The most recent government shutdown, which started towards the end

of 2018, lasted for 35 days, meaning it could easily be November before federal employees get back to work this year.

The straightforward economic impact of a shutdown is milder than often imagined. Unlike in the disastrous scenario of a debt-ceiling induced default, the government would continue to meet its mandatory obligations such as providing income support to the elderly. It is the so-called discretionary parts of federal spending—from crop insurance for farmers to money for highways—that would be halted. These account for about 27% of the government’s budget. A rule of thumb, based on past experience, is that each week of a government shutdown shaves about a tenth of a percentage point from the annualised rate of GDP growth in the quarter when it occurs. But when federal offices reopen, workers receive back-pay, and the hit to growth is mostly papered over.

The less widely appreciated concern is that the government will be unable to collect and publish a wide array of the economic data that are the lifeblood of financial markets. Retail sales, housing starts, personal income, GDP and, most crucially, inflation—all these reports will be suspended while the government is shut. The blackout will be more of a problem than during the 2018-19 saga, because on that occasion the Bureau of Labour Statistics (BLS), responsible for inflation figures, among others, had already received funding and so could continue to operate. If a shutdown starts next week, the BLS would go offline, joining the Census Bureau and the Bureau of Economic Analysis, two other stalwarts of official statistics.

The Fed’s policymakers would not be entirely bereft of information about the economy. For starters there are plenty of regular private-sector indicators of which they already make use: multiple reports on the job market, alternative indicators of inflation and surveys of both consumer and business sentiment. Financial information from banks and state-level figures, especially tax receipts, are useful. Plus the central bank has regional offices that will continue to collect data about their local economies. The problem, however, is that none of these fallbacks has the same combination of nationwide scope, methodological rigour and track record as, say, the BLS’s consumer price index. “It would be very awkward for the Fed if it made a decision based on its own regional data, and then when the national data

comes out, it's actually quite different," warns Joseph Wang, a former Fed trader.

This risk could well tip the Fed towards being more doveish in its next interest-rate decision at the start of November. Why raise rates again if there is little visibility about how the economy is performing? If the government reopens and it turns out that inflation was too hot, the Fed could always catch up with a rate increase at its December meeting. By contrast, if the Fed raises rates in November and it then emerges that the economy has in fact slowed sharply, the central bank would have to consider reversing its move —far more awkward to explain than a slightly belated rate hike. The Republican hardliners who are driving the government to a shutdown do not want to be thought of as inflation doves, but that is the strange consequence of their intransigence. ■

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Cruel world

Why fear is spreading in financial markets

Investors have begun to confront the long-haul reality of high interest rates

Sep 27th 2023



AP

ACCORDING TO T. S. ELIOT, April is the cruellest month. Shareholders would disagree. For them, it is September. The rest of the year stocks tend to rise more often than not. Since 1928, the ratio of monthly gains to losses in America's S&P 500 index, excluding September, has been about 60/40. But the autumn chill seems to do something to the market's psyche. In September the index has dropped 55% of the time. True to form, after a jittery August it has spent recent weeks falling.

Such a calendar effect flies in the face of the idea that financial markets are efficient. After all, asset prices ought only to move in response to new information (future cash flows, for instance). Predictable fluctuations should be identified, exploited and arbitraged away by traders. Yet this September there is no mystery about what is going on: investors have learned, or rather accepted, something new. High interest rates are here for the long haul.

The downturn was prompted by a marathon session of monetary-policy announcements, which began with America's Federal Reserve on September 20th and concluded two days and 11 central banks later. Almost all the big hitters repeated the "higher for longer" message. Beforehand Huw Pill of the Bank of England had likened rates to Table Mountain, Cape Town's flat-topped peak, as opposed to the triangular Matterhorn. Christine Lagarde of the European Central Bank raised rates and spoke of a "long race". The Fed's governors, on average, guessed that their benchmark rate (currently 5.25-5.50%) would still be above 5% by the end of 2024.



The Economist

For the bond market, this merely confirmed expectations that had been building all summer. The yield on two-year Treasuries, which is sensitive to near-term expectations of monetary policy, has risen from 3.8% in May to 5.1%. Longer-term rates have been climbing as well, and not just in America, where the ten-year Treasury yield has hit a 16-year high of 4.6%. Ten-year German bunds now yield 2.8%, more than at any point since 2011. British gilt yields are near the level they hit last autumn, which were then only reached amid fire sales and a market meltdown.

At the same time, fuelled by America's robust economy and the expectation that its rates will reach a higher plateau than those of other countries, the

dollar has strengthened. The DXY, a measure of its value compared to six other major currencies, has risen by 7% since a trough in July.

By comparison with the bond and foreign-exchange markets, the stockmarket has been slow to absorb the prospect of sustained high interest rates. True, borrowing costs are not its only driver. Investors have been euphoric over the potential of artificial intelligence (AI) and a resilient American economy. The prospect of rapidly growing earnings, in other words, might justify a buoyant stockmarket even in the face of tight monetary policy.

Yet it appears investors had also taken a pollyanna-ish view of interest rates, and not just because the most recent fall in prices was triggered by pronouncements from central bankers. Since shares are riskier than bonds, they must offer a higher expected return by way of compensation. Measuring this extra expected return is difficult, but a proxy is given by comparing the stockmarket's earnings yield (expected earnings per share, divided by share price) with the yield on safer government bonds.

Do this with the S&P 500 index and ten-year Treasuries, and the “yield gap” between the two has fallen to just one percentage point, its lowest since the dotcom bubble. One possibility is that investors are so confident in their shares’ underlying earnings that they barely demand any extra return to account for the risk that these earnings disappoint. But this would be an odd conclusion to draw from economic growth that, while robust, has presumably not escaped the business cycle entirely, as recent disappointing consumer-confidence and housing data demonstrate. It would be an even odder conclusion to draw in relation to profits from AI, a still-developing technology whose effect on firms’ bottom lines remains mostly untested.

The alternative is that, until now, investors have simply not believed that interest rates will stay high for as long as the bond market expects—and central bankers insist—they will. If that is the case, and they are now starting to waver, the next few months could be crueler still. ■

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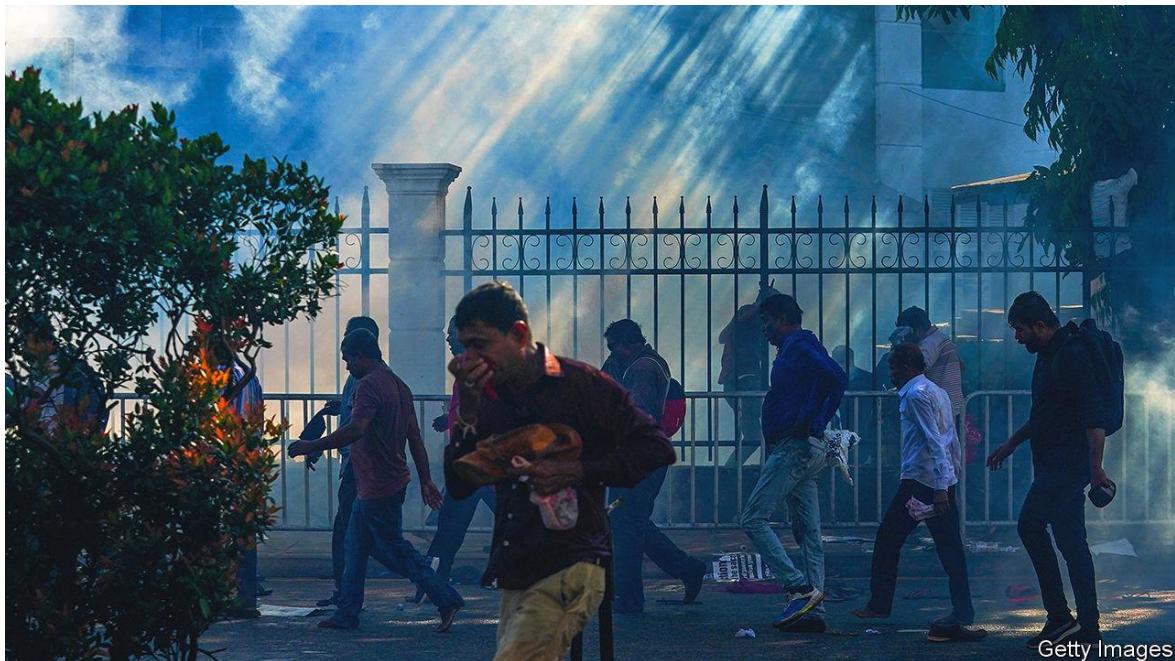
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Better off without you

Sri Lanka shows how broken debt negotiations have become

The country's creditors decide they have no choice but to freeze out China

Sep 28th 2023



Getty Images

FOR SRI LANKA'S politicians September 27th was meant to be the light at the end of the tunnel. After more than a year of economic free fall—in which the former president fled protests, GDP shrank by 9% and billions of dollars of arrears piled up—the IMF was in town, ready to release \$330m from a bail-out agreed in March. There was even talk that the country's creditors would reach a deal to cut back its debts.

Yet the fund's officials flew back from Colombo without releasing a dollar. The problem was two-fold: Sri Lanka's tiny tax take and China, which is the country's biggest creditor. The IMF cannot lend more unless Sri Lanka restructures its debts, since the country owes so much elsewhere that officials cannot otherwise be sure they will get their money back. Therefore by refusing to take a haircut on its debts, China is holding up Sri Lanka's restructuring—as it is in other indebted countries, too.



The Economist

On the same day that the IMF officials departed, Bloomberg, a news service, reported that other national creditors, led by India, were working on a deal, and that it would not include China. They may end up insisting that Sri Lanka suspends repayments to China or forces it onto a comparable deal. Either would be almost impossible to enforce. Creditors usually only agree to something because everyone agrees to the same terms. Even creditors at war with one another usually manage to hash out a deal. The decision to proceed without China reveals the extent of the breakdown in sovereign-debt negotiations.

It was hoped that a recent deal in Zambia, to which China signed up, would provide a template. But the solution was unique to the structure of Zambian debt, which allowed creditors to relabel some Chinese lending as private rather than public. And China only agreed to much of the compromise, which includes low interest rates and slower repayment, on the condition that it could back out if Zambia's economy picked up. At a recent G20 summit, where the agenda ranged from cryptocurrencies to global tax, officials observed that debt restructuring was the issue on which the least progress had been made.

Worse, middle-income countries like Sri Lanka cannot even get into the process through which Zambia secured its deal. The Common Framework, a

G20 mechanism for creditors, only applies to poor countries. Middle-income ones must negotiate with China alone. Chinese officials refuse even to sit on a committee with the rest of Sri Lanka's national creditors. Many economies near default today, from Egypt to Pakistan, are also too rich to qualify.

Sri Lanka's situation also exposes a worrying new fault line. Some think that China was put off joining Sri Lanka's creditor committee because India was a co-chair. After all, it was willing to participate in Zambia's committee, which it jointly led with France. Such tensions will only become more of a problem, since India's lending is growing. Bradley Parks of William & Mary, an American university, suspects that India's officials have decided to lend to countries already indebted to China to counter their rival's influence. Future standoffs are therefore likely to be in places where both countries are big creditors.

This week's check-up was the first by the IMF in a defaulting country in the Asia-Pacific region since the financial crisis there more than 20 years ago, when it doled out \$35bn to Indonesia, South Korea and Thailand, and was so busy that South Koreans called events "The IMF Crisis". Then the fund was in the thick of things—now it can do little but sit and watch. ■

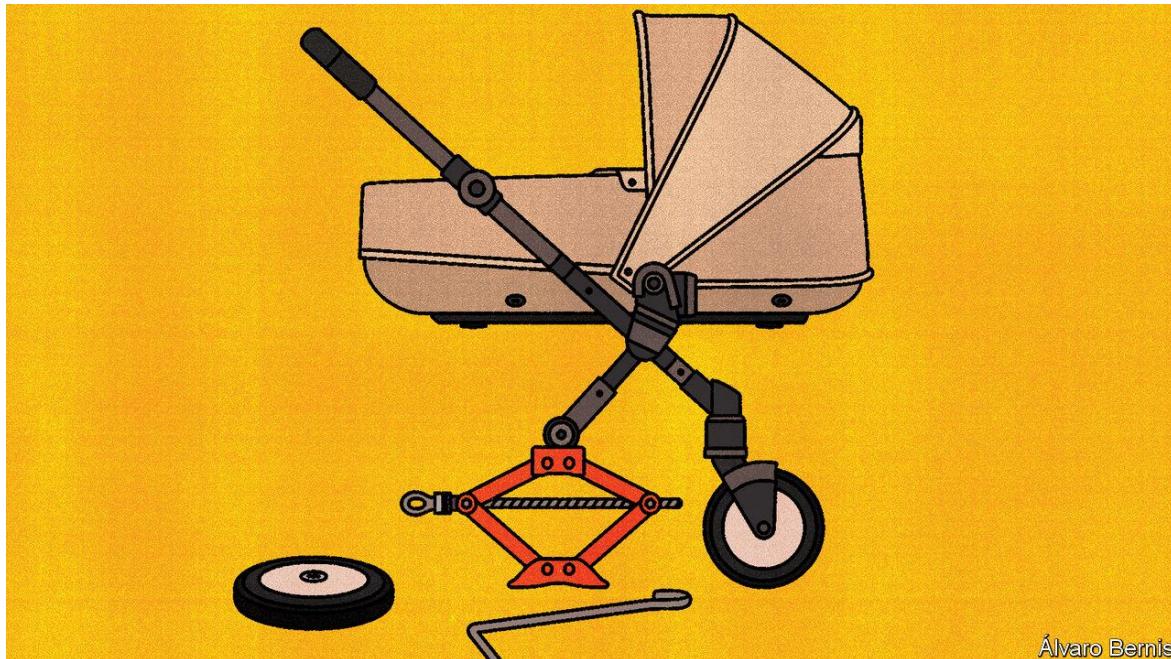
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Why the state should not promote marriage

Even though children from two-parent households do better in life

Sep 28th 2023



HERE ARE some stark facts about family structure and children in America. Whereas the poverty rate among youngsters living with two married parents is 7.5%, among those raised by a single mother it is 35%. Children of married parents tend to behave better in school, stay in education longer and earn more as adults. Those raised by married parents appear to be at an advantage even after controlling for the age, education and race of their mothers.

Yet marriage has been in long-term decline (and without a compensating rise in unmarried cohabitation). Today more than two-fifths of births are to unmarried mothers, up from less than a fifth in 1980. The fall is unequal across demographic groups: only 11% of births to college-educated mothers are outside wedlock. Marriage has gone from being a pretty universal institution to an exclusive one that propels life advantage through generations.

In recent years economists have documented these trends and their relationship to inequality and social mobility. Melissa Kearney of the University of Maryland summarises the literature in a new book, “The Two-Parent Privilege”. Ms Kearney is aware that many liberals—and very few conservatives—will wince at her findings, and writes in an almost apologetic tone as a result. “Not talking about these facts is counterproductive,” she pleads.

Why does being raised by two parents matter so much? One reason is the extra earnings an additional adult may bring to a household, which contribute to the enormous costs of child-rearing. Yet it is not all about money. Children raised by mothers who divorce and remarry tend to do worse than those raised by both their biological parents. The beneficial effects of two-parent child-raising appear to be particularly strong for boys, and even spill out beyond the boundary of the home. Researchers have found that the number of black fathers living in the local neighbourhood strongly influences the life chances of black boys.

The question is what to do about all this. Ms Kearney does not argue for a return to conservative social practices, such as shotgun marriages after unplanned pregnancies or encouraging parents to remain in unhappy unions. She cites research showing that legal changes making divorce easier (the introduction of “no fault” or “unilateral” divorce) result in worse outcomes for affected children. But, she says, such laws have a big advantage: they help adults escape bad situations and are probably desirable as a result. On top of this, some households benefit from the absence of a negative influence. Children whose parents are charged with a crime tend to do better if that parent is sent to prison. If single mothers are single because the men who fathered their children would have been bad second parents, then their offspring would have had little chance of better life outcomes in the first place.

Ms Kearney is more interested in whether the underlying causes of single parenthood can be fixed, so that more happy marriages are formed. She laments the long-term decline in the availability of good jobs for men without college education, which is thought to reduce the pool of “marriageable men” and—consequently—present fathers. She also highlights that social norms now exert less pressure, even on parents in a

healthy relationship, to live together. To demonstrate the importance of these norms, she compares the effects of two economic booms that took place a generation apart. The Appalachian coal rush of the 1970s and 1980s boosted men's wages; the result was more marriages and, for married couples, more births—but not more births out of wedlock. Decades later, amid different norms, the shale oil and gas booms had different effects. They boosted births among married and unmarried women alike, and had no effect on the propensity of couples to marry. Therefore Ms Kearney concludes that both money and mores are needed for additional two-parent homes to form.

For all the striking statistics in the book, the author does not offer an especially rousing call to arms. Ms Kearney's four prescriptions are to promote a norm of two-parent homes, to improve the economic position of men without a college education, to scale up the pro-family programmes that work and to strengthen the social safety-net for all family types.

Yet policymakers are already obsessed with male-dominated middle-class manufacturing jobs. Recently this has meant more protectionism and other policies that do more harm than good. And it is doubtful that governments can do all that much to alter social norms, just as they hold little responsibility for the fact that they changed in earlier decades. Past research (of which Janet Yellen, America's treasury secretary, was a co-author) has theorised that technological development—namely, the wider availability of contraception and abortion—was the fundamental cause of the rise of single parenthood in the late 20th century, because it altered the premarital behaviour of both men and women. Although some conservatives argue that the welfare system is instead to blame, since it made single motherhood a less daunting financial prospect, this is at odds with the evidence. As Ms Kearney notes, restricting welfare does not reduce births and single-motherhood is more common in America than in countries with generous handouts. Moreover, the record of trying to promote marriage with tax incentives and the like is one of failure. Without more concrete proposals, Ms Kearney is at risk of having identified a trend that correlates with poverty, but is no easier to solve.

Happy families

Perhaps knowledge of what produces successful adults is most useful to individuals planning their own lives. The safest bet for anyone who wants to have children who thrive is probably to settle down. The vast majority of college graduates already seem to believe this, at least based on how they behave, if not how all of them talk. Anyone who doubts that the two-parent privilege exists should read Ms Kearney's book. Unfortunately, that does not mean there is much in its pages for policymakers to exploit. ■

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Science & technology

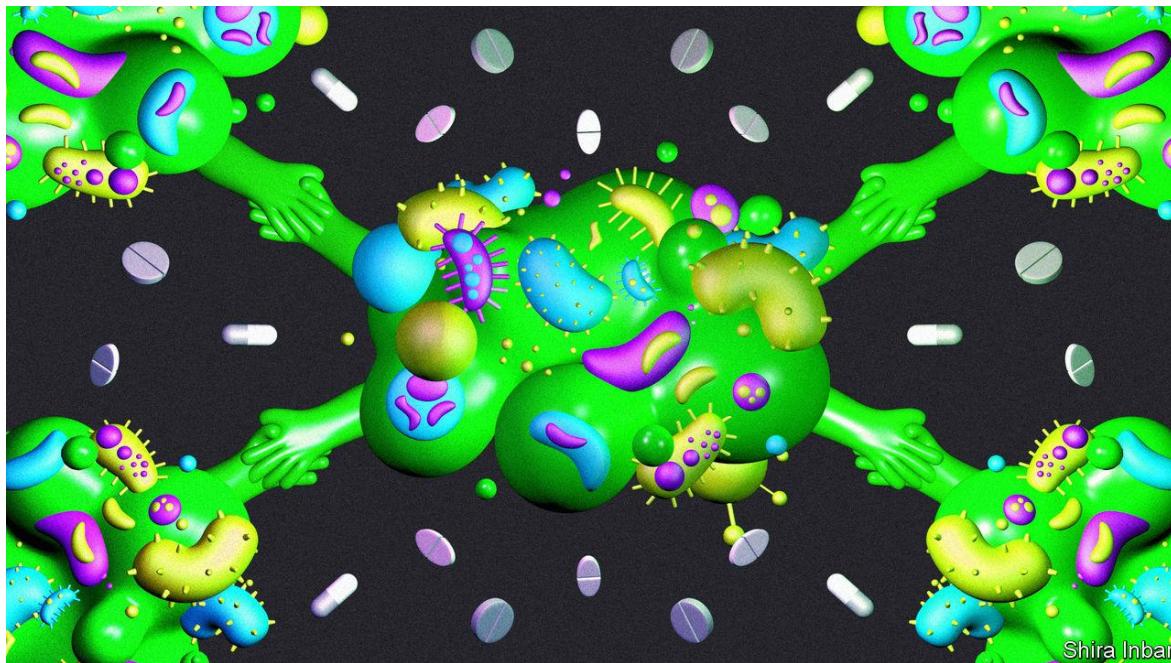
- Sticking together makes bacteria nearly invincible
- Colonies of bacteria could save the Pentagon billions
- Glaciers on volcanoes could serve as early-warning systems
- Antarctic sea ice is at a record low

Storming the fortress

Sticking together makes bacteria nearly invincible

New treatments are trying to drive them apart

Sep 27th 2023



BACTERIAL LIFE is astonishingly varied. These single-celled organisms come as spheres, rods, spirals and corkscrews. A few are a centimetre long; most are tens of thousands of times smaller. They have been found on Mount Everest, in Antarctica, and deep within Earth's crust. And yet virtually every bacterial species ever found shares one trait: its members do not like living alone.

Matthew Fields, a microbiologist at Montana State University, reckons that most of the bacteria living on the planet exist in colonies. Known as biofilms, these slimy aggregates are held together by strands of DNA, proteins and other molecules recycled from the cells of dead neighbours. Such sociability is ancient. Some of the oldest known evidence of life on Earth are fossilised biofilms known as stromatolites. A group of stromatolites in Western Australia are thought to be 3.5bn years old.

Cohabitation brings big benefits. When biofilms grow large enough, they become hard for hostile parties to penetrate. Some estimates suggest these

fortresses can make bacteria up to 1,000 times harder for antibiotics to dislodge. But what is a boon for the bacteria is the bane of many of the humans who must live alongside them. Figures from 2022 suggest that biofilms play a role in 60% of all human bacterial infections. They congregate on joint implants and clog up catheters. They colonise bed rails, light switches and incubators in hospitals. They infect open wounds, and produce the plaque between your teeth.

In 2017 Britain's National Biofilm Innovation Centre put the global economic burden of biofilms at over \$3.9trn. That represents more than just health costs. Biofilms can [corrode metals](#) and gunk up infrastructure.

Despite the scale of the problem, it has drawn little attention. One reason is that biofilms are comparatively poorly understood. Several different species of bacteria can unite in a single biofilm, which makes it harder to create accurate models in a lab. All the same, progress is being made. A better understanding of biofilms is indicating ways to get rid of them.

No two biofilms are exactly alike. But they begin when a bacterium finds its way to a surface, often attracted by food. It secretes sticky compounds to attach itself and begins to divide. Within a couple of days—or a few hours, for the fastest-reproducing strains—a small colony of descendants has formed.

Inside the bacteriopolis

The new bacteria, and any interested passers-by, can attach themselves to the colony in several ways. These include polymers secreted by the bacteria. Molecules of DNA usually carry the organism's genetic information, but bacteria can repurpose them as biochemical glue. In a paper published in *Nature Communications* in April, Tiago Costa, a bacteriologist at Imperial College London, reported that conjugative pili, hair-like filaments that bacteria use to exchange genetic information, can likewise be repurposed to bind them together.

The bacteria can also build barricades from other chemicals they find in their environment. Biofilms in living bodies, for instance, can sometimes exploit their host's immune system. When white blood cells spot a bacterial

infection, they sometimes release strings of extracellular DNA to cordon it off. But that often backfires, helping bind the biofilm together.

Biofilm-building is governed by quorum sensing, a process by which bacteria exchange chemical messages to work out how many of their fellows are nearby, and adjust their behaviour in response. The end result is something like an ad-hoc multicellular organism, made up of billions of individual bacteria and sporting channels to carry nutrients and remove waste. In a paper published on September 1st in *Communications Biology*, researchers at the University of Copenhagen found that, sometimes, a biofilm does not even require a solid surface to form. Its members can instead glom onto other bacteria floating about in a liquid medium—the equivalent, says Dr Costa, of a nomadic tribe, rather than a fixed settlement.

This cohesion makes the biofilm much harder to dislodge than individual bacteria would be. A biofilm protects most of its members from antibiotics and immune cells, which struggle to penetrate beyond its outer layers. The bacteria in a biofilm's innermost depths can enter a hibernation-like state in which their metabolism slows down greatly. That allows these so-called “persisters” to live longer, and to resist more strongly any antibiotic that relies on disrupting bacterial cell chemistry to work. Bits of biofilms can even break off when attacked, seeding new infections elsewhere in the body.

All this makes for a challenge. “It’s like trench warfare,” says Dr Costa. “We are not fighting against one bacterium, we are fighting against an army.” Much of the weaponry is rudimentary: cleaning open wounds, prescribing antibiotics, or, in the case of infected implants, removing them, sterilising them and putting them back.

But the arsenal is growing. One promising weapon is [bacteriophages](#). These are viruses which infect bacteria in the same way that many bacteria infect other organisms. Like antibiotics, phages leave the host’s cells alone. Unlike antibiotics, they make more of themselves in the process of killing their prey. That means that even a small initial dose can grow into an opposing army big enough to storm the bacterial barricades. And it is thought to be harder for bacteria to evolve resistance to phages in the way they have to many drugs, since the phages can themselves evolve to counter the new defences.

Phages have been shown to be effective in a handful of laboratory studies, but a lack of data has prevented the arrival of commercial medicines. That is changing. Glasgow-based Fixed Phage is one company of many trying to develop phages to target biofilms. It is working on a product for use in dogs' teeth, to prevent decay and remove bad breath. It hopes soon to move beyond canine canines, and test phages against diabetic foot infections in humans.

Brendan Gilmore, a microbiologist at Queen's University Belfast, is investigating cold plasma, a substance in which electrons have been stripped from their parent atoms by a powerful electric field rather than scorching temperatures. Although a biofilm can survive exposure to the plasma, Dr Gilmore and his team think the stress could boost the metabolisms of "persisters" enough to restore their vulnerability to antibiotics.

A biotech company in Pittsburgh called Peptilogics, meanwhile, is exploring ways of zapping bacteria even while they are hibernating. It is experimenting with a small protein known as PLG0206 that is attracted to the negatively charged environment inside a biofilm. Once there, it can disrupt the membranes of bacterial cells, regardless of their level of activity. A phase 1 clinical trial on 14 patients with prosthetic joint infections began in October 2022. Interim data look promising.

Rather than finding ways into the fortress, some are hoping to tear it down. In 2008 Steven Goodman, then at the University of Southern California, and his collaborator Lauren Bakalcz at Ohio State University, found what seemed to be two universal components of biofilms—standard-issue screws that could be loosened with the right tool. The screws in question are two proteins in a family known as DNABII (pronounced DNA-B-2). They bind to places where strands of DNA scaffolding cross. Remove them, and biofilm should collapse.

Over the past 15 years, they have tested their theory on over two dozen bacterial species, including the ones responsible for tuberculosis and leprosy. No biofilms survived the disappearance of DNABII. The two researchers now chair the scientific board of Clarametyx, a biotech company based in Ohio, which aims to spin their discovery into clinical products.

Clarametyx is developing CMTX-101, a drug programmed to remove one of the two DNABII proteins from a biofilm. The drug is an antibody, adapted for human use from similar antibodies produced by mice when they were exposed to the target proteins. Clarametyx hopes intravenous injections of CMTX-101 might one day be used along with antibiotics. The first human trials, on pneumonia patients, began in November 2022. Results are expected in early 2024. The firm hopes to begin trials on patients with cystic fibrosis soon.

Another biotech company pursuing the same target is California-based Trellis Biosciences. Instead of developing a DNABII-targeting antibody in the lab, they went looking for one that already existed in humans. After three years of tests they identified an antibody they call TRL1068, which, like Clarametyx's molecule, can extract DNABII proteins from biofilms. When tested on mice infected with a biofilm of MRSA, a bacterium resistant to many antibiotics, they enabled a 1,000-fold increase in antibiotic efficacy. "We are making traditional antibiotics work again," says Stefan Ryser, the company's president.

Demolition job

In May the firm announced the results of phase 1 trials in eight patients with chronic prosthetic-joint infections. None of the patients had a repeat infection after six months, and two showed no signs of biofilms on their implants at all. Trellis now plans bigger trials.

It is too early to say which, if any, of these approaches might lead to useful drugs. But as bacteria continue to evolve resistance to antibiotics, the problems posed by biofilms will only grow. "I think there's room for multiple players in this space," says Dave Richards, the boss of Clarametyx. The more companies that pile in, the higher the chance one of them could turn up something revolutionary. ■

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Bacterial warfare

Colonies of bacteria could save the Pentagon billions

America's armies hope to make use of beneficial biofilms

Sep 27th 2023



Shira Inbar

PLAQUE ON TEETH, slime on stones, gunge around taps and showers. Biofilms—slimy, durable colonies of bacteria—are everywhere. Much of the research into them focuses on the [hard-to-treat infections](#) they can cause in people. But they can damage inanimate objects, too.

Some biofilms contain sulphate-reducing bacteria, for instance, which respire using sulphate rather than oxygen. The end product is hydrogen sulphide, which can cause pitting in steel. Other sorts can corrode the inside of a fighter jet's fuel tanks. On a ship's hull, bacterial colonies can become a base for seaweed and other growth that increases drag. In 2016, America's armed forces reckoned unwanted biofilms cost "billions" each year.

DARPA, a storied American military research outfit, hopes to turn that problem into its own solution. A bit like trendy edible "probiotic" foods, its "Arcadia" programme hopes to replace harmful bacteria with helpful ones.

Tiffany Prest, Arcadia's manager, notes that a few naturally occurring helpful biofilms are already known. Those containing bacteria from the genus *Vibrio*, for instance, seem to be able to protect steel. One paper, published in 2020, found that such a biofilm reduced steel corrosion in seawater by 68%.

One particular goal for Arcadia is boosting the performance of underwater "gliders". These are small [seagoing drones](#) that carry out surveying and anti-submarine missions that can last for many months. That gives plenty of time for biofilms to accumulate on the hull, which can cut a glider's speed by up to 90%. Researchers at Clemson University in South Carolina are hunting for a different sort of biofilm that may be able to keep unwanted passengers off.

Another goal is to tackle corrosive bacteria in aircraft fuel tanks. (These are a particular headache because they are difficult to clean.) DARPA is funding a project called Microbes Achieve Resistance to MicroOrganism-influenced Rust (μ ARMOR) at Texas A&M University to find a biofilm that could prevent this type of corrosion.

Rather than engineering new organisms in the laboratory, says Dr Prest, the goal is for researchers to find naturally occurring species which are useful. New technologies, in particular microfluidics and rapid genetic sequencing, allow hundreds of candidates to be screened at a time. Once candidates are found, part of the trick will be figuring out how to produce the desired film: is it better to start with a sterile surface and add the bugs, or to gradually replace an existing ecosystem of harmful bacteria? The hope, eventually, is for a spray-on mix that can be applied wherever it is needed. And thanks to their ability to grow, biofilms should be much easier to maintain than manufactured coatings.■

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Ice and fire

Glaciers on volcanoes could serve as early-warning systems

They could also skew measurements of climate change

Sep 27th 2023



Alamy

MAPPING GLACIERS was once a difficult and arduous job. So was monitoring volcanoes for the grumblings and rumblings that might herald an eruption. In recent decades, the old methods of hiking boots and mountaineering gear have been joined by satellites and remote sensing, making things both easier and safer.

But looking from afar has its drawbacks too. If a volcano is high enough to sport glaciers on its flanks (and many are), then the thick layer of ice can make it harder, or impossible, to get accurate temperature readings from the rock beneath.

And that is a particular problem, for glacier-topped volcanoes are some of the most dangerous of all. If they do erupt, the heat can melt the glaciers, forming torrents of fast-moving mud called lahars that can flatten anything in their path. In 1985 the Nevado del Ruiz volcano in western Colombia

erupted. The glaciers on its summit and flanks formed several gigantic lahars, one of which buried the nearby town of Armero, killing more than 20,000 of its inhabitants. It remains the worst natural disaster in the country's history.

In a paper published last month in *Geology*, Matteo Spagnolo and Brice Rea, a pair of volcanologists at the University of Aberdeen, suggest a possible solution to the problem. The internal heat of volcanoes, they conclude, has a notable impact on the glaciers that sit on top of them. Monitoring those glaciers, rather than the volcano itself, may serve as an early-warning system for anyone living nearby.

The researchers and their colleagues studied 600 glaciers in the Andes (including those on Nevado del Ruiz) of which 74, being less than a kilometre from the mouth of an active volcano, were classed as “volcanic”. One of the main features the scientists were looking for was the “equilibrium line”. This is the point on a glacier that separates the “accumulation zone”, where snow adds to the glacier’s mass, from the “ablation zone”, where melting subtracts from it. One of the things that affects the equilibrium line is the weather. Plenty of snowfall, or a cool summer, and the line will move downhill. A dry winter or a scorching summer will move it higher.

In theory, though, any source of heat—including volcanic heat from beneath the ground—ought to affect the height of the equilibrium line. When the researchers examined the data, that is exactly what they found. Glaciers on volcanoes had equilibrium lines notably higher than those on ordinary mountains. In some cases, as on Copahue, a volcano on the border between Chile and Argentina, which last had a major eruption in 2016, the difference could be several hundred metres. Glaciers on quiescent volcanoes, such as Parinacota, a 6,400-metre mountain that sits between Bolivia and Chile, had equilibrium lines similar to glaciers on mountains that had never been volcanic at all.

With so many glaciers in their sample, the researchers were able to rule out other explanations, such as differences in the local microclimate. And on the 13 volcanoes for which the best data were available, they were able to map the correlation in detail. Those data showed a strong link between changes in

the amount of volcanic heat seeping to the surface and the movements of the equilibrium line.

This means, say the researchers, that, although volcanic glaciers obscure what is going on underneath, they could themselves serve as telltales. Sudden changes in the equilibrium line, particularly if they are out of kilter with those of other glaciers nearby, could be evidence that something is brewing beneath the surface, and that further attention is warranted. Although they are getting better, volcanologists still cannot predict exactly when eruptions will occur. But a rise in heat suggests more magma is accumulating below, and makes a valuable early-warning sign.

The findings have implications beyond volcanology and warning nearby inhabitants of a looming disaster. Measurements of glaciers around the world provide one way for climate researchers to track the long-term effects of climate change. A warmer planet should mean that glaciers are receding everywhere, and by and large they are. But Dr Spagnolo and Dr Rea's results suggest that not all glaciers make equally reliable thermometers. Those on the sides of volcanoes can advance and recede for reasons entirely unrelated to global warming. Climate scientists, they argue, should consider excluding such glaciers from their databases. ■

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It's grim down south

Antarctic sea ice is at a record low

The continent seems to be following in the Arctic's footsteps

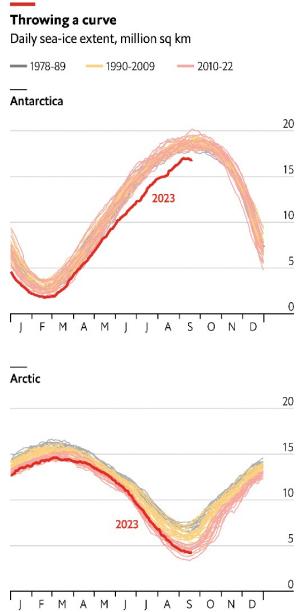
Sep 26th 2023



Getty Images

WINTER IS COMING to an end in Antarctica, while summer is wrapping up at the other end of the globe. During this time, sea ice in the south reaches its highest yearly extent, whereas in the north it drops to its annual minimum.

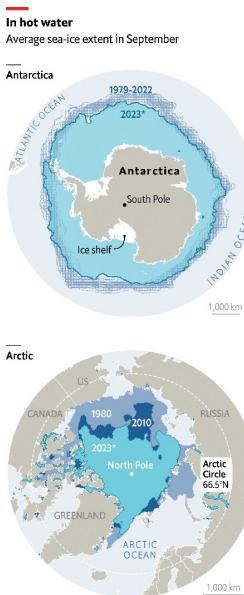
Antarctica's sea ice [grew far more slowly](#) than expected in the early parts of the southern winter. As a result, despite a spurt in early September, when the sea ice grew more than twice as rapidly as is usual, the ice now falls far short of the average maximum observed at this time of year. On September 7th it covered just short of 17m sq km, according to data tracking its daily extent from America's National Snow and Ice Data Centre (NSIDC). That is 1m sq km below its previous smallest annual maximum in 1986—an area equivalent to two Spains. Meanwhile, in the Arctic, where ice has been melting during the northern hemisphere's summer, sea ice is at its sixth-lowest level since records began in October 1978.



The Arctic sea ice is clearly in long-term decline; since 1978 the area covered has shrunk by about 78,000 sq km—the size of the Czech Republic—per year. Admittedly, the last time a record low was set was in 2012, and in a rapidly warming part of a rapidly warming world a whole decade in which things got no more extreme feels almost like a reprieve. But the trend continues, and there is some evidence that the ice's future decline has, if anything, been underestimated. A recent study published in *Nature Communications* suggested that the first ice-free summer month in the Arctic could come in the 2040s, even if the world reduces greenhouse-gas emissions quite steeply. Previous modelling studies which put ice-free summers further away, the authors say, do not capture the trends as revealed by the actual data.

The same long-term trend has not been in evidence around Antarctica. Its apron of sea ice had been stable until 2014; at times it even increased. This difference between the two poles puzzled scientists. “Climate models have all shown that Antarctic ice should be shrinking just like in the Arctic in response to anthropogenic warming,” says Professor Julienne Stroeve of the NSIDC. “Perhaps now the last few years show us that the Antarctic is starting to respond to greenhouse-gas-emissions-induced warming,” she suggests.

This year's maximum extent is so remarkably low that scientists have been scrambling for more specific explanations. Strong seasonal winds and waves lead to a greater variation in sea ice extent during this time of year, as natural forces can push ice towards the shore or out to sea. An unusual pattern of waves and gusts could be to blame for slow growth in ice during this Antarctic winter. A shift in the El Niño Southern Oscillation, a regular atmospheric fluctuation, may have broken some of the sea ice up. Sea-surface temperatures have been abnormally high.



*At September 19th
Source: National Snow and Ice Data Centre

The Economist

But it is hard to imagine that this year's low maximum in Antarctic sea ice, coming as it does after three record low minimums, can be explained entirely by natural variability. One recent paper suggests that, having previously been controlled in large part by the winds, the sea ice is now coming under the thrall of steadily warming waters below the surface. One piece of evidence for this is that the Southern Annular Mode, an oscillation in the winds which circle the continent that has long affected the formation of sea ice, seems to have lost its influence.

Such a step change could have far-reaching consequences. The effects of warming are already felt by emperor penguins, the continent's permanent inhabitants. Low sea ice last summer caused several colonies to lose their

offspring. Some studies show that the birds could be on the brink of extinction by 2100 if current rates of warming persist.

Keeping the sea ice intact also ensures the survival of species elsewhere. It protects the continent's coastal ice shelves, which in turn keep glaciers and ice sheets in place. Scientists estimate the threshold at which melting ice sheets in both Greenland and Antarctica would accelerate the rise in sea levels is between 1.5°C and 2°C of warming compared with pre-industrial levels. The planet is already 1.0-1.3°C warmer; there is no longer any realistic chance that it will stay below the 1.5°C target set in the Paris agreement. Humanity is skating on thin ice. ■

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Culture

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The emperor strikes back

A new book by Mary Beard looks at the glitz and gore of Rome

“Emperor of Rome” is a colourful tour of 30 emperors spanning over 250 years

Sep 28th 2023



Emperor of Rome. By Mary Beard. *Liveright; 512 pages; \$39.99. Profile Books; £30*

THE LIVES of the rulers of ancient Rome are still vivid in modern heads. According to a conversation that has gone viral on TikTok, some men say they think about the [Roman Empire](#) “every day”. The strongly masculine vibe appeals, of course. From “Ben-Hur” to “Carry on Cleo” to [“Gladiator”](#), the gaudy and rough images roll past: the tables groaning with grapes and roast flamingos; the marble halls; colossal self-portraits, plundered treasure and fawning senators; while, behind a curtain, wives and mothers scheme, and servants marinate the poisoned mushrooms.

People do not know the half of it, according to Mary Beard. Elagabalus, a teenage cross-dresser, not only gave banquets but allegedly showered his guests so liberally with petals that they were smothered to death. [Nero](#) not

only fiddled (or, rather, played his lyre) as Rome burned, but also had the Olympic games rigged so that he won every event he entered. He acted, too, including in a play called “Orestes the Mother-Killer”—appropriately, since he had tried to kill his own. Caligula, perhaps the nastiest of the crew (though Tiberius came close), did not only propose that his racehorse should be a consul but gave him a marble stall, an ivory manger and imperial-purple blankets.

The stories are both shocking and entertaining. [Professor Beard](#), who writes and teaches at Cambridge when not starring in TV documentaries, has become a British national treasure partly for her defiant donnishness, including grey locks and an ancient bicycle, but mostly for her unabashed delight in unearthing the “real” Rome from the pieces left behind: tombstones, scraps of papyrus and the odd arresting sentence buried deep in administrative reports.

Her ear and eye are alert to the unexpected, the funny and the salacious; her sympathies are tuned to the lives of the overlooked, who included, in those times, almost all women. In [“SPQR”, a bestseller](#) published in 2015, she explained the surprising success of the Roman republic. In “Emperor of Rome” she applies the same method to a chariot-load of extraordinary characters, examining around 30 emperors over 250 years, ending in 235AD. She burrows busily and most enjoyably to show what the lives of these blood-splashed, technicolour rulers were like.

Professor Beard’s first source is a familiar and obvious one: Roman writers, and especially Gaius Suetonius Tranquillus, who worked in the secretariats of both Hadrian and Trajan. She cautions rightly that the chronicler of one emperor was likely to trash the reputation of the one who had gone before, and the titillating or horrifying tales should be taken with a large pinch of salt. But they are much too good to overlook. Suetonius was an overflowing fountain of political and sexual gossip, revealing the tiniest details.

Emperors, too, should be pictured with a stylus in their hand. Few were writers in the usual sense, save Marcus Aurelius with his “Meditations”. Instead, they had to read and reply to mountains of paperwork from every corner of the empire: daily reports from governors and generals, petitions from towns, controversies over estates. More than 12 letters a day probably

landed on the gold-and-marble imperial desk. No local problem was too small to send to the top man.

His senior staff on the ground were stretched perilously thin. There was roughly one administrator for every 330,000 people, in an empire which, at its farthest extent from Scotland to the Sahara, and from Portugal to Iraq, contained more than 50m people. One man, competent or incompetent, lazy or dedicated, held all this together.

Equally, no part of Roman life was too trifling to escape an imperial decree. (Tiberius banned pastries from fast-food stalls.) If emperors appeared at a morning *salutatio* or at the races, dozens of parchment requests would be stuffed into their hands. Small wonder that [Julius Caesar](#) (who was not an emperor) took his paperwork to gladiator shows, though this was thought bad form. They had secretaries, of course, but most of them worked fairly hard themselves. And, being Roman emperors, they could not resist weaponising their pens. Hadrian stabbed a slave with his. Domitian used his to skewer flies.

The emperor's gracious replies and concessions were often engraved in stone and erected all over the known world. Augustus's "Res Gestae" ("What I Did") was a fulsome autobiography written for just such public display, but the smallest town might put up a plaque, too. These, combined with mass-produced statues of the emperor and coins embossed with his idealised face, carried his authority far and wide. Caesar flooded the world with images of himself, and there may have been as many as 50,000 statues of Augustus, some colossal. These imperial images were also stamped on mirrors and vases: as Professor Beard remarks, the ancient equivalent of fridge magnets, populism personified.

The awe inspired by the emperor went with the job. He was the richest man in the world, with 30 palaces in Rome and country estates outside it. In the provinces he owned marble quarries, mines, papyrus marshes, claypits and vast tracts of crop-bearing land. All this directly served to feed, administer and decorate the empire. It also provided the cash that emperors fairly often showered on people.

Dazzle came from sheer display: visitors to Nero's Golden House found so many sumptuous rooms stuffed with treasure that they were disoriented even before dinner. Dread came from imperial caprice in matters of life and death: Caligula's dinner-table quip, for example, that he could cut the consuls' necks any time he chose. Emperors were seldom physically handsome (Caligula was spindly-legged, Galba had a hooked nose and a large hernia, several worried about baldness), but they carried the allure of being "Caesar", the exhaustion of solo triumph-parades and the potential glory of being gods.

This did not sit well with all of them. The main aim of most emperors, Professor Beard writes, was almost to be "one of the lads". Augustus, visiting the Senate, would greet every senator by name and shake their hands. With some he was on kissing terms. (He also liked to haunt the palace kitchens, kept a pet goat, and spent quiet afternoons fishing.) Commodus sometimes went down from the imperial box to fight among the gladiators, though only if they were already safely netted.

Emperors did not fight in wars, but several visited the troops, chewed their hard rations and slept rough; Trajan even tore up his robes to make bandages. When bold comedians satirised them, they sometimes even let the joke pass.

At the beginning of her book, Professor Beard promises also to illuminate the lives of the people who served the emperor: the enormous staff of slaves, cooks, hairdressers, tutors, grooms and accountants. Very few emerge from the crowd. Instead she does something much more fascinating, uncovering the emperors themselves.

It was not only Nero who put on a mask and strutted on the stage. In their different and sometimes hapless ways, they were all doing it, well aware of the elaborate fakery that sustained their power. Augustus, by a long way the most impressive emperor here, summed it all up on his deathbed: "Since the play has gone down well, give us a clap, and send us away with applause." ■

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Writing the wrongs of history

Some people in China are bravely trying to document the past

“Sparks”, a new book by Ian Johnson, looks at China’s censored history

Sep 27th 2023



Koichi Imaeda /Magnum

Sparks. By Ian Johnson. *Oxford University Press; 400 pages; \$27.95. Allen Lane; £25*

AMID THE global calamity of covid-19 in 2021, the Chinese Communist Party’s elite had much to discuss at their secretive, annual conclave. But in the communique issued at the end, there were eight times as many mentions of the word “history” as of the word “pandemic”. To China’s leader, Xi Jinping, getting the party to agree to his version of the party’s century-long past was a no less pressing matter.

Mr Xi’s interpretation of history was contained in a 36,000-character document. It presented what officials called a “magnificent epic”, with Mr Xi’s “new era” as its glorious culmination. Only one paragraph dealt with the horrors (“mistakes”, it called them) of the period under Mao Zedong, when millions died in a man-made famine and political violence. It made no

mention of the deaths he caused and blamed others in the leadership for the [Cultural Revolution](#)'s "many crimes".

Deng Xiaoping's crushing of the Tiananmen Square protests in 1989, at the cost of hundreds if not thousands of lives, was dealt with in just two sentences. Tiananmen was described as "a severe political disturbance" against which the party "took a clear stand". The new history did not even hint at the army's intervention, let alone its machine-gunning of protesters.

To Mr Xi, getting the party to agree on this narrative was not a mere ivory-tower exercise. It was aimed at demonstrating his power and silencing anyone who might attempt to undermine his or the party's authority by dwelling on past failings and brutality. In his new book, "Sparks", [Ian Johnson](#), a former Pulitzer-prizewinning journalist who is now a fellow at the Council on Foreign Relations, says Mr Xi regards "counter-history"—the attempt by some people in China to correct the sanitised official record and provide truthful accounts—as an "existential threat".

The "underground historians", as Mr Johnson calls them, are a motley group of academics, artists, film-makers and journalists, often motivated by personal experiences. Most have families and take enormous risks to visit scenes of past horror and to interview survivors. They share their discoveries in *samizdat* form and publish or air them abroad, sometimes online using software to tunnel through [China's "great firewall"](#). One underground journal, called *Remembrance*, is circulated as a PDF every two weeks. It carefully avoids the most sensitive topics, such as Tiananmen, but pulls no punches on the Mao era.

Mr Johnson's description of the historians' efforts exposes an important facet of Chinese life that is often ignored because it is so hard to access. Police keep close watch on meetings and communications with the party's critics. Mr Johnson's ability to evade controls and gain the trust of his subjects is evident in his compellingly written work. The result is a rare insight into the extraordinary risks that some Chinese take to illuminate the darkest corners of communism. These historians are united, he says, by "common ideas and beliefs that remain widespread across China, so much so that it is not an exaggeration to call this a movement".

The chroniclers of suppressed memories, interviewed by Mr Johnson over the course of many years working in China, are commendable for their courage. The history they tell is bleak. One is Tan Hecheng, a “garrulous, stubborn and emotional editor”. Mr Tan has spent more than four decades researching a massacre in 1967 of around 9,000 people in Hunan province by officials who falsely accused the victims of engaging in a counter-revolutionary plot. “Many were tied together in bundles around a charge of quarry explosives,” writes Mr Johnson. “These victims were called ‘homemade aeroplanes’ because their body parts flew over the fields.” Without Mr Tan the truth of what happened may not have been uncovered.

The book also describes those who record contemporary events. When the [pandemic began to emerge](#) in the city of Wuhan, several Chinese filmed and described online the ensuing chaos of those early days, before the grim order of Mr Xi’s “zero-covid” policy was imposed. This was dangerous work in the face of official efforts to play down the suffering of ordinary people and highlight the deftness of the party’s response. The government harnessed nationalists to attack those who dared to criticise its efforts. Online diaries were gradually erased by censors. Some Chinese wrongly came to view the authors as “harmless cranks or Western stooges”, Mr Johnson writes.

But the historians have not given up. What is striking, Mr Johnson writes, is their persistence. The outbreak in Wuhan can be seen as an example of the party’s ability to project and wield enormous power. But Mr Johnson argues that it is better viewed as “a classic example” of repeated eruptions in China against “unchecked government authority”.

Such a claim may sound like wishful thinking. Many observers believe that China’s citizens are supportive of the party and its nationalist cause and that truth-seeking contrarians are a marginal force. But as Mr Johnson writes, “Saying that ‘most people’ don’t know or care is a truism applicable to almost every society in every era: what matters is that many Chinese do know and continue to battle, today, to change their society.” Mr Xi appears acutely aware of this—and fearful the efforts of unofficial historians will spread. ■

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Johnson

In favour of simple writing

There is mounting evidence on why short and sharp is best

Sep 28th 2023



Nick Lowndes

DO YOU EDIT text messages carefully before sending them? If so, you may be the kind of person who takes pride in crafting even the simplest message. If you do not, you may see yourself as a go-getter for whom verve and speed outrank care: get it done decently now rather than perfectly later.

A new book makes the argument for being the [careful kind of writer](#), even in informal, throwaway messages. Todd Rogers and Jessica Lasky-Fink are behavioural scientists, both at Harvard. Their “Writing For Busy Readers” is cleverly titled: all readers are busy nowadays. People are bombarded constantly with messages, from the mailbox to the inbox to the text-message alert. (They can also be distracted by TikTok or “Candy Crush” at any moment.) What to read, what to skim and what to ignore are decisions that nearly everyone has to make dozens, or even hundreds, of times a day.

The authors present well-established principles that have long been prized in [guides to writing](#) including *The Economist’s* style book (which Johnson helped update): cut unnecessary words, choose those that remain from the

bedrock vocabulary everyone knows and keep syntax simple. But “Writing for Busy People” brings evidence.

Take “less is more”. Most books on writing well preach the advice to omit needless words. The authors, however, have tested the notion. For example, in an email to thousands of school-board members asking them to take a survey, cutting the length from 127 to 49 words almost doubled the response rate (from a paltry 2.7% to 4.8%). The researchers found that a longer message makes recipients think the task (such as filling out a survey) will take longer, too.

The same applies to text messages. In another experiment, a pandemic-era message to parents first included a few sentences acknowledging the difficulties of home-schooling, then asked them to take a survey. A shorter message inviting them to take the survey got more responses. Writers must sometimes opt for being brusque but effective instead of sympathetic but ignored.

Often it is not just what you say but how briskly you say it. The [value of brevity](#) applies even when asking people to donate money, such as to political candidates. It is plausible that potential donors would be more likely to open their wallets if they could understand as many reasons as possible to do so. But in an experiment for an American candidate, simply deleting every other paragraph in a fundraising email increased donations by 16% (though it resulted in a disjointed message). Even political obsessives do not want to read endless self-justification.

Word-count is not the only thing to cut. Keeping messages to a single idea—or as few as absolutely needed—helps ensure that they will be read, remembered and acted on. Reducing the number of possible actions has the same effect, too: a link in an email (from, appropriately enough, *Behavioral Scientist* magazine) attracted 50% more clicks when it was solo than when it was sent alongside a second, “bonus” link.

Syntax and [word-choice matter](#), too. Short and active sentences, with common words that everyone uses, are best. From Facebook posts to online-travel reviews, even brief, informal pieces of writing that follow these rules get more likes, shares and so on. Serious writers should also take note. A

study of the ethics codes of 188 public companies found that those using long sentences and complicated words were seen as less moral and trustworthy.

The authors' other points are less about writing than about design and informational packaging. Organisation matters: a redesigned summons issued by New York City police (for small offences on the street) reduced court no-shows by 13%. Bullet points, headings and formatting for emphasis are good—when used judiciously. But mixing up different forms of emphasis like highlighting, bolding and italics are the “equivalent of a peanut butter, ham and Gorgonzola sandwich on banana bread: a combination of ingredients that add up to an unpleasant, off-putting whole”.

If everyone is a busy reader, everyone is a busy writer, too. That may make it tempting to fire off as many messages as quickly as possible and hope for the best. But from essays to text messages organising dinner plans, devoting time to the needs of readers has provable benefits. If you are so busy that you write an undisciplined message that readers scan, ignore and delete, then you might as well have not written it at all. ■

Read more from Johnson, our columnist on language:

[The importance of handwriting is becoming better understood](#) (Sep 14th)

[AI could make it less necessary to learn foreign languages](#) (Aug 17th)

[In northern Europe, a backlash against English is under way](#) (Aug 4th)

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World in a dish

Dave Portnoy, an internet personality, has become pizza's kingmaker

His controversial ratings have brought attention to what makes a good slice

Sep 28th 2023 | Coney Island



Getty Images

HE HAS A mansion in Florida and millions of Twitter followers. He rails against [Dr Fauci](#), the White House's former chief medical adviser, on Fox News and has been accused of misogyny and sexual misconduct, which he denies. Dave Portnoy (pictured) has crafted his persona in the image of the former president. He even calls himself "*el presidente*".

Barstool Sports, the media company Mr Portnoy founded 20 years ago, made him rich, but his "One Bite" pizza reviews, viewed nearly 700m times on YouTube, have made him the unlikely kingmaker of American pizza. On September 23rd, in drenching rains at a minor-league baseball stadium on Coney Island, he held his One Bite Pizza Festival. Around 6,000 fans attended; tickets started at \$150.

Mr Portnoy does not pretend to be “some elite, like, food guy”, he told journalists. In more than 1,000 videos, he does not review so much as react. “One bite, everyone knows the rules,” he tells the camera before gobbling down a plain-cheese slice, which he rates from one to ten. Mr Portnoy is not afraid to be feisty, as shown by a recent spat with a pizzeria owner in Massachusetts that went viral. (The offending pizzeria was then flooded with negative reviews by “stoolies”, Mr Portnoy’s fans.)

Despite the laddishness, this is [serious business](#). A rare high score—only 21 pizzerias in the country have scored a nine or above—can guarantee a steady, if rowdy and mostly male, clientele. Even for a popular establishment like John’s of Bleeker Street in Manhattan (one of Mr Portnoy’s avowed favourites, rated 9.3), a good review from him “puts you on the next level”, says Kevin Jackson, the manager. A small pizzeria in New Jersey lucky enough to receive a 9.4 quickly sold out its entire menu.

With cartoon renderings of Mr Portnoy’s bearded face smiling from every surface and an inflatable Statue of Liberty (brandishing a slice instead of a torch) presiding, the festival was a cheesy cross between a music festival, a drunken tailgate and a Trump rally. Despite the whiff of culture war—with several rants about the media—the event offered a helpful education in New York pizza. Mr Portnoy’s highest-rated pizzas tend to be thin, crispy, slightly charred and heavy on cheese. This is in keeping with classic ideals of pizza by the slice, says Scott Wiener, a pizza “tour guide” and critic of Mr Portnoy’s showmanship. The best slices have a thin crust with a “slightly puffy rim” and tomato sauce with light seasoning, if any.

Patsy’s, a pizzeria in Harlem founded in 1933, claims to have been the first to sell pizza by the slice in New York. Mr Portnoy awarded the storied restaurant, which was present at the festival, an 8.6. But over the years New York pizza has become as diverse as the city, and your correspondent, who intrepidly sampled 15 of the 35 pizzerias, enjoyed less predictable fare. This included samples by two based in Brooklyn: Di Fara’s almost cracker-like crust and an exquisite offering by Lucali, whose crust straddled the crispier New York and chewier [Neapolitan styles](#). (Lucali mixed [mozzarella](#) and parmesan and added a piquant garnish of basil.)

“The beauty of pizza is that everybody has access to it,” says Mr Wiener. Perhaps, then, the advent of a pizza populist—a bite-sized Trump, whose coarse charisma is impossible for restaurants to ignore—should not be surprising. Even if Mr Portnoy, like American culture writ large, is short on decency, he is a good guide to a great pie. ■

Read more from World in a dish, our column on food:

[Chinese food is more diverse than Western eaters might think](#) (Aug 30th)

[How Provençal rosé became the summer tipple par excellence](#) (Aug 4th)

[Confronting the dangers of ultra-processed food](#) (Jul 27th)

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The unreal deal

Hyperreal art is Instagram-worthy and booming

But is it any good? People cannot decide

Sep 28th 2023 | Paris



Alamy

A WOMAN RAISES her hands like claws, laughs a little, bares her teeth and pretends to growl. She is having her photo taken in front of a pack of three-metre-tall black dogs made by Ron Mueck, an Australian artist whose sculptures are on display in Paris at the Fondation Cartier until November 5th. Awestruck whispers echo through another gallery as visitors snap photographs of a five-metre-long baby smeared with blood. It lies on the ground, face contorted in a newborn's grimace.

For more than 25 years Mr Mueck, who once worked as a puppet-maker for [Jim Henson on “Sesame Street”](#), has built unsettlingly detailed figures out of silicon, fibreglass and resin. They are both lifelike and lifeless. Toying with notions of the grotesque and uncanny, Mr Mueck’s works balance tenderness with horror, often distorting the size of things to unsettle viewers and hold their focus. Audiences do not shy away. When the Fondation Cartier last showed Mr Mueck’s work in 2013, it was the most popular exhibition in its history, attracting 300,000 visitors.

“Hyperreal” artworks are so technically precise they resemble photographs: no brush-strokes, lumps of paint or seams are discernible to the eye. The style is going global, jolting many galleries out of pandemic-induced attendance slumps. “Sembra Vivo!” (“It Looks Alive”), featuring 43 installations, is on view until October 8th at the Palazzo Bonaparte in Rome, after touring 13 cities from Bilbao to Taipei. In New York, Carole Feuerman’s swimsuit-clad sculptures loom over Park Avenue.

Earlier this year, high fashion even pounced on the trend, when Louis Vuitton collaborated with [Yayoi Kusama](#), the most expensive living female artist. Store windows in London, New York, Paris and Tokyo featured clones of the 94-year-old Ms Kusama and her multicoloured dots, arresting passersby as they tried to decide whether the robots were real people.

Hyperrealism has roots in the rich detail of Dutch still-life paintings of the 1600s but began to emerge in the 1960s in the work of artists such as Chuck Close, Duane Hanson and, later, Ms Feuerman. Political upheaval and technological change in America inspired hyperrealists (alongside pop artists) to turn their focus to the quotidian. “I couldn’t get a gallery,” says Ms Feuerman of her early days in New York, when abstraction and minimalism dominated art. But now the uptick in interest is so striking, she says, it sometimes makes her nervous that demand will outstrip supply: it takes her up to two years to make a single sculpture.

Popularity has its pitfalls. Whenever the San Francisco Museum of Modern Art (SFMOMA) displays its two sculptures by Mr Hanson—“Man with Ladder” and “Policeman”—curators have to worry about security, says Sarah Roberts, the museum’s head of painting and sculpture. Visitors often get too close to them. The photos that enthusiastic viewers snap are among the most popular posts on social media from the museum. On TikTok, a social video-sharing app, where artists including Marco Grassi, CJ Hendry and Emma Towers-Evans post films of themselves working on their time-consuming creations, #hyperrealism has 1bn views (compared with #abstraction’s mere 30.5m).

On one level, these works are purely fun *trompe l’oeils*. But something deeper is at stake, too. To look at a sculpture by Mr Mueck plays with notions of physicality, says Anne Cranny-Francis, a professor at the

University of Technology Sydney. Viewers have to keep a safe distance, resist the urge to touch and avoid becoming disoriented by the surprising scale. In an era of screens, the body still matters.

Much of hyperrealism's appeal also lies in an enthusiasm for the craftsmanship involved in the works, which can take painters or sculptors weeks and sometimes years to complete. Nobody looks at a hyperreal piece and announces "I can do that," says Maximilian Letze, one of the organisers of "Sembra Vivo!". Ms Hendry, for example, spends up to 80 hours working on each hand-pencilled drawing. Mr Mueck has made 48 works in his almost three-decade career. ("That is production at [Vermeer](#) pace," marvelled one adoring critic in 2013.) At a time when [generative AI technology](#), such as DALL-E, can create images in an instant based on simple, written prompts, such care and labour resonates.

Hyperreal sculpture can be a tricky sale to private buyers, unless they are quirky types looking for something shocking to put in their living rooms, says David Knowles of Artelier, a British art consultancy. Hyperreal paintings are more likely to be sought out by his clients.

Seeing is not believing

But the truth is that most art-world insiders loathe the genre, viewing it as crude, commercial and unimaginative, more spectacle than sublime. One critic dismissed Ms Feuerman's work as an "eye-catching bauble"; others say Mr Mueck's work is akin to a wax figure in Madame Tussauds' collection. The works are, in the eyes of true collectors, the equivalent of elaborate, Instagrammable cakes: fun to photograph and post online but unlikely to be timeless.

Hyperrealism, however, can also bring people into museums and galleries they might otherwise find intimidating, says Ms Roberts of SFMOMA. And in an age of AI, some feel the work has fresh relevance. Humans are terrible at discriminating between people and deep-fakes. In June, academics from University College London found that when participants were asked to identify whether images of human faces were real or computer-generated, they were confident they could. Any success, however, was mostly due to

chance. At least with art, after an initial double-take, they can leave the gallery knowing what was real. ■

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Economic & financial indicators

- [Economic data, commodities and markets](#)

Indicators

Economic data, commodities and markets

Sep 28th 2023

Economic data 1 of 2

	Gross domestic product (% change on year ago; base quarter* = 2013t)	Consumer prices (% change on year ago; base quarter* = 2023t)	Unemployment rate
United States	2.5 q2	2.1 1.8	3.7 Aug 3.9
China	6.3 q2	3.2 5.2	0.1 Aug 0.8
Japan	1.6 q2	4.8 2.0	3.1 Aug 2.9
Britain	0.4 q2	0.8 0.3	6.7 Aug 6.8
Canada	1.1 q2	-0.2 1.1	4.0 Aug 3.8
Euro area	0.5 q2	0.5 0.8	5.2 Aug 5.5
Austria	-1.1 q2	2.7 ^t 0.2	7.5 Aug 7.9
Belgium	0.9 q2	3.5 1.0	2.0 Aug 3.2
France	1.6 q2	3.1 0.8	5.0 Aug 5.7
Germany	-0.1 q2	0.1 0.3	6.4 Aug 6.0
Greece	2.9 q2	5.1 2.4	3.5 Aug 3.8
Italy	0.4 q2	-1.6 1.0	5.5 Aug 6.3
Netherlands	-0.2 q2	-0.9 0.2	3.4 Aug 4.7
Spain	2.2 q2	2.1 2.2	2.4 Aug 3.5
Czech Republic	-1.0 q2	0.6 0.3	8.5 Aug 10.5
Denmark	1.2 q2	1.3 2.0	2.8 Aug 4.0
Norway	0.7 q2	1.4 1.5	4.8 Aug 5.8
Poland	0.6 q2	-8.5 -0.1	10.0 Aug 11.9
Russia	4.9 q2	na 0.5	5.1 Aug 6.5
Sweden	-0.8 q2	-3.3 -0.6	7.5 Aug 7.0
Switzerland	0.5 q2	0.1 1.1	1.6 Aug 2.2
Turkey	3.8 q2	14.6 3.2	58.9 Aug 46.3
Australia	2.1 q2	1.4 1.6	6.0 Q2 5.6
Hong Kong	1.5 q2	-5.2 2.9	1.7 Aug 1.9
India	7.8 q2	11.0 6.5	6.8 Aug 5.7
Indonesia	5.2 q2	na 5.0	3.5 Aug 3.8
Mexico	2.9 q2	-0.9 4.0	2.0 Aug 2.5
Pakistan	10.7 2022**	na 1.7	27.0 Aug 32.2
Philippines	4.3 q2	-3.6 4.2	5.2 Aug 5.5
Singapore	0.5 q2	0.3 1.0	4.9 Aug 4.3
South Korea	0.9 q2	2.5 1.3	3.4 Aug 3.0
Taiwan	1.4 q2	5.6 0.8	2.5 Aug 2.2
Thailand	1.8 q2	0.7 2.8	0.9 Aug 1.5
Argentina	-4.9 q2	-10.9 -2.8	124.1 Aug 130
Brazil	3.4 q2	3.7 2.1	4.6 Aug 4.7
Chile	-1.1 q2	-1.2 0.2	5.3 Aug 7.5
Colombia	0.8 q2	-1.0 0.5	17.0 Aug 15.6
Mexico	3.6 q2	3.4 2.4	4.6 Aug 5.3
Peru	-0.5 q2	1.5 1.3	5.9 Aug 6.5
Egypt	3.9 Q1	na 3.8	37.4 Aug 36.2
Israel	3.4 q2	3.1 3.0	4.1 Aug 4.1
Saudi Arabia	8.7 2022	na 0.5	2.0 Aug 2.2
South Africa	1.6 q2	2.4 0.5	4.8 Aug 5.7

Source: Haver Analytics. *% change on previous quarter, annual rate. **The Economist Intelligence Unit estimate/forecast. †Not seasonally adjusted. **New series. **Year ending June. ††Lates: 3 months; ‡3-month moving average. Note: Euro area consumer prices are harmonised.

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Economic data 2 of 2

	Current-account balance (% of GDP 2023t)	Budget balance (% of GDP 2023t)	Interest rates (10-yr govt bonds: change on latest %)	Currency units (per \$: % change Sep 27th vs year ago)
United States	-2.9	-0.9	4.6	64.0
China	1.8	-3.2	2.5 ††	6.0 7.31 -2.0
Japan	2.9	-5.2	0.8	46.0 149 -3.2
Britain	-2.8	-4.2	4.3	38.0 0.82 13.4
Colombia	-0.1	-1.2	-4.1	70.0 1.35 3.5
Euro area	3.3	-3.3	2.0	63.0 0.95 9.5
Austria	2.4	-2.4	3.5	59.6 0.95 9.5
Belgium	-1.9	-4.8	3.4	71.0 0.95 9.5
France	-1.1	-5.0	3.3	74.0 0.95 9.5
Germany	5.8	-2.2	2.9	63.0 0.95 9.5
Greece	-5.9	-1.8	4.5	-46.0 0.95 9.5
Italy	0.9	-4.8	4.8	8.0 0.95 9.5
Netherlands	7.5	-2.3	3.2	64.0 0.95 9.5
Spain	1.8	-1.1	3.9	70.0 0.95 9.5
Czech Republic	-1.5	-4.4	4.7	-50.0 32.2 1.7
Denmark	10.5	1.5	3.1	67.0 7.09 3.0
Norway	17.1	10.8	1.4	76.0 10.8 0.1
Poland	0.6	-4.8	5.8	-107 4.41 12.7
Russia	1.8	-3.8	11.8	141 96.8 39.1
Sweden	4.1	-0.3	3.0	71.0 11.0 2.8
Switzerland	6.6	-0.7	1.1	-27.0 0.92 7.6
Turkey	-5.0	-4.9	25.7	1,428 27.3 -32.3
Australia	1.7	0.3	4.4	34.0 1.57 -1.3
Hong Kong	8.4	-1.7	4.2	-50.0 7.82 7.8
India	-1.3	-5.9	7.2	12.0 83.2 -2.0
Indonesia	1.7	-2.6	6.9	-33.0 15.520 3.6
Malaysia	1.7	-5.0	4.0	-40.0 4.71 -2.1
Pakistan	-1.7	-2.7	16.2 ††	333 288 189
Philippines	-5.7	-7.0	6.6	-52.0 57.0 3.6
Singapore	18.8	-0.7	3.4	6.0 1.37 5.1
South Korea	1.6	-2.7	4.0	-18.0 1,349 5.3
Taiwan	13.0	-0.4	1.2	-44.0 32.2 -1.5
Thailand	1.1	-2.7	2.8	-34.0 36.5 4.0
Argentina	2.8	-4.2	na	na 33.0 -58.1
Brazil	-1.8	-7.6	12.1	3.8 53.0 5.6
Chile	-4.3	-3.0	6.1	72.0 90.5 8.2
Colombia	-4.0	-4.2	12.1	-70.0 4,091 11.2
Mexico	-1.8	-3.4	10.1	22.0 17.7 15.1
Peru	-1.3	-2.0	7.2	-126 3.79 4.0
Egypt	-1.5	-6.9	na	na 30.9 -36.9
Israel	4.8	-2.0	4.2	99.0 3.84 -8.8
Saudi Arabia	3.2	0.2	na	na 3.75 0.3
South Africa	-1.8	-5.7	10.9	2.0 19.1 -6.2

Source: Haver Analytics. †5-year yield. ††Dollar-denominated bonds.

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Markets

		% change on:		
		Sep 27th	one week	Dec 30th
In local currency				2022
United States S&P 500	4,274.5	-2.9	11.3	
United States Nascomp	13,953.8	-2.8	2.3	
China Shanghai Comp.	3,107.5	-1.1	0.6	
China Shenzhen Comp.	1,920.0	0.5	-3.7	
Japan Nikkei 225	23,371.9	-2.0	2.4	
Japan Toxx	2,379.5	-1.1	25.8	
Britain FTSE 100	7,593.2	-1.8	1.9	
Canada S&P TSX	19,436.0	-3.9	0.3	
Euro area STOXX 50	4,131.7	-3.4	8.9	
France CAC 40	7,071.8	-3.5	9.2	
Germany DAX	15,217.5	-3.5	9.3	
Austria ATX	20,000.3	-4.2	8.8	
Netherlands AEX	721.7	-2.2	4.8	
Spain IBEX 35	9,331.9	-3.3	13.4	
Poland WIG	64,844.4	-3.6	12.9	
Russia RTS, 5 terms	959.2	0.3	2.9	
Switzerland SMI	10,862.3	-2.4	1.4	
Turkey BIST	9,213.8	6.4	49.1	
Australia All Ord.	7,729.8	-1.8	0.1	
Hong Kong Hang Seng	17,611.9	-1.5	-11.0	
China SSE	6311.7	-1.0	8.7	
Indonesia IDX	6,937.8	-1.1	1.3	
Malaysia KLCI	1,440.1	0.8	-3.7	
Pakistan KSE	45,409.0	1.0	14.8	
Singapore STI	3,200.0	-1.3	-1.6	
South Korea Kospi	2,465.1	-3.7	10.7	
Taiwan Twi	16,310.4	-1.4	15.4	
Thailand SET	1,497.2	-0.7	-10.3	
Argentina MERV	557,033.4	-0.9	175.6	
Brazil Ibovespa	115,427.1	-2.3	4.2	
Mexico IPC	51,972.3	-2.1	6.7	
Egypt EGX 30	20,174.3	1.9	30.2	
Israel TA-125	1,870.3	-0.7	3.8	
Saudi Arabia Tadawul	11,076.9	0.1	-5.0	
South Africa JSE AS	72,174.1	-3.5	1.2	
World, dev'd MSCI	2,840.8	-3.3	9.1	
Emerging markets MSCI	948.3	-2.3	-0.8	

		US corporate bonds, spread over Treasuries		
		Sept 29th	Oct 2022	
Yield points				
Investment grade	129	154		
High-yield	436	502		

Sources: Refinitiv Datastream; Standard & Poor's Global Fixed Income Research. *Total return index.

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Commodities

The Economist commodity-price index

	2015=100	Sep 19th	Sep 26th*	month	year
Dollar Index					
All Items	148.3	145.0	-0.8	nil	
Food	132.1	130.2	-2.9	-7.2	
Industrials					
All	163.5	158.9	0.8	6.4	
Non-food agriculturals	113.4	112.9	0.8	-18.2	
Metals	178.3	172.5	0.8	13.0	
Sterling Index					
All items	182.5	181.9	2.6	-11.4	
Euro Index					
All items	153.9	152.0	1.5	-9.1	
Gold					
\$ per oz	1,933.7	1,904.2	-1.6	16.5	
Brent					
\$ per barrel	94.6	94.1	10.0	9.0	

Sources: Bloomberg; CME Group; Cotlook; Refinitiv Datastream; Fastmarkets; FT; ICCO; ICO; ISO; Live Rice Index; LME; NZ Wool Services; Thompson Lloyd & Ewart; Urner Barry; WSJ. *Provisional.

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Graphic detail

- Places claiming to be centenarian hotspots may just have bad data

Olive oil and snake oil

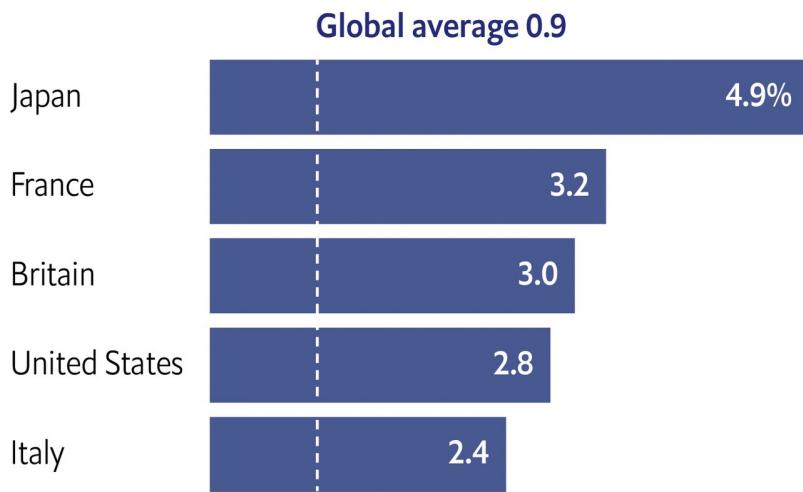
Places claiming to be centenarian hotspots may just have bad data

Adopting birth certificates appears to cut the lifespans of the very old

Sep 28th 2023

Share of people born a century ago living to 100

2021



The Economist

OKINAWA IS FAMED for the longevity of its residents. The small Japanese island, far south-west of the mainland, boasts a life expectancy for 65-year-old women that is almost a year higher than the country-wide average, and around four years more than that of Britain or America.

As a result, researchers seeking a life-extending elixir (see [Technology Quarterly](#)) have long looked to Okinawans for their secret. Eating a vegetable-rich diet, staying active and having a sense of purpose have all been suggested as candidates. But one pre-print study provides a more prosaic explanation for remarkable reported longevity in certain parts of the world: data errors.

Estimates of the ages of the exceptionally elderly are often inaccurate. Few very old people have birth certificates. Some do not know their true age. And public records can be woefully unreliable. A government audit in 2010

uncovered 230,000 supposedly living Japanese centenarians who were dead or missing. Some errors are genuine mistakes, but others may be the result of deliberate efforts by individuals or family members to commit pension fraud.

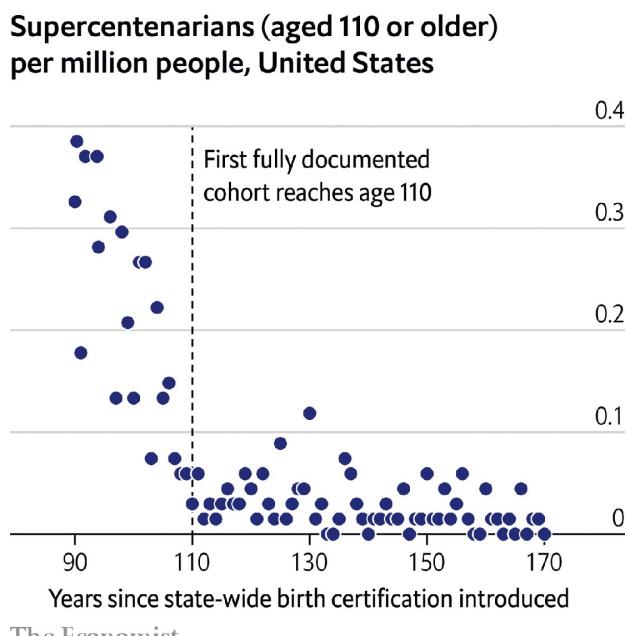
Saul Newman of Oxford University set out to test whether such errors could explain why some places appear to be longevity hotspots. He gathered numbers of centenarians, semi-supercentenarians (those over 105 years old) and supercentenarians (those over 110) ostensibly living in areas of America, Britain, Italy, France and Japan using a patchwork of death records, censuses and databases logging old people.



Dr Newman found that clusters of high reported longevity tended to occur in areas where record-keeping might conceivably be more lax, or where residents might have more incentive to claim pensions fraudulently. In Britain, Italy, France and Japan records showed old people living in poorer, crime-ridden areas as more likely to reach extraordinary ages. Okinawa, for example, has a poverty rate nearly twice the Japanese average and 1.6 times as many listed centenarians for each reported nonagenarian.

There were also curious paradoxes in the distribution of centenarians that could be easily explained by reporting errors. In Italy provinces where more

people reach the age of 105 tend to have more people die before 55. On the island of Sardinia, renowned for its abundance of very old people, residents have among the lowest chances of reaching midlife of any Italians.



The most concrete evidence that mistakes could be causing variations in the numbers of very old people came from America. Between 1841 and 1919, states introduced birth certificates, making age estimates more accurate and fraud more difficult. By aligning data on the numbers of old people in each state with the date that birth registration was introduced, Dr Newman found that it resulted in a 69% drop in the prevalence of supercentenarians.

Differences in lifestyle and health care probably cause variability in life expectancy across countries, but they cannot fully explain why some places appear to have so many centenarians. One secret to a longer life? Throw away your birth certificate. ■

Chart sources: “Supercentenarian and remarkable age records exhibit patterns indicative of clerical errors and pension fraud”, by S. Newman, working paper; UN; ESPON

Obituary

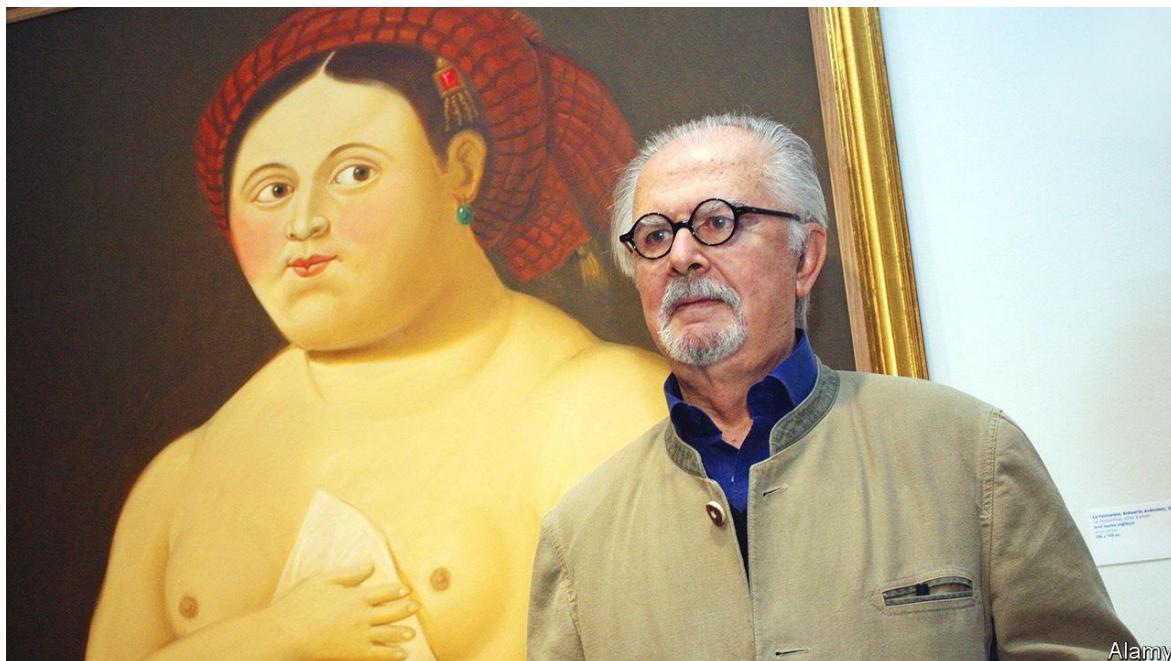
- Fernando Botero became famous for his over-size people and animals

Life in its fullness

Fernando Botero became famous for his over-size people and animals

But the Colombian painter and sculptor, who died on September 15th, had a different agenda

Sep 28th 2023



IT ALL BEGAN with a mandolin, in Mexico, in the late 1950s. A casual mandolin, lying on a table. When Fernando Botero started to draw it, suddenly, on an impulse, he made the sound-hole tiny. The effect was dramatic. The mandolin seemed to swell with its own importance. He painted it several times, sometimes with its plumpness bolstered by a fat book and a snug, solid trumpet. Had the musicians who owned these objects wandered onto one of his canvases, they too would have loomed peculiarly large in their loose-fitting suits and hats. A new style, *Boterismo*, had been born.

Most critics scorned it. At a time of confident abstract expressionism, who wanted these whimsical figurative paintings? In an era when the female figure was meant to be twig-thin, who could bear to look at fat, lumpy women in frowsy frocks? Later on Mr Botero also made huge bronze

statues, of staring cats and frisky nudes lolling like lilos. The reaction was often silence. A long gap lay between his first appearance in New York's Museum of Modern Art, in 1961, and his first major gallery show there, in 1972, while the art world tried to puzzle out what he was doing.

He never had the slightest doubt. First of all, he was not painting fat people. Nor did he feel any lust or longing for large women. Nor was he mocking his subjects, or only sometimes, as in his portraits of puffed-up Latin American dictators and generals, with huge jodhpured thighs and minute genitals, foolishly saluting. When he posed beside most of his pictures, however superficially comic they might seem, his bearded face stayed solemn.

What he was painting were "volumes": the real substance of human beings. Volumes gave his figures sensuality and dignity. Most of them were characters from his poverty-stricken youth in the then-isolated small town of Medellín: peasants, circus performers, barflies, picadors, dancers, all painted purely from memory. From memory, too, he painted bourgeois couples promenading, relaxing or sitting stiffly with their children. His canvases made them impressive. Tiny accessories enhanced the effect: a fan, a cradled puppy, a whisper-thin cigarette. His subjects became monumental then. Similarly, a simple bowl of oranges became, in his handling, a celebration of the fullness of life.

The public, at least, seemed to enjoy it all. Over the years his work became a commercial sensation. He became so rich, with his paintings selling for a million dollars and more, that he gave away parts of his own art collection to museums all over Colombia. His sculptures of nudes and huge animals turned up in parks and plazas across the world. To his joy he, a provincial artist, was producing work that touched people universally.

How he was doing so he did not know. Perhaps it came from the pleasure he felt himself. From his first teenage watercolours, which he sold outside the *plaza de toros* to support his widowed mother, he favoured volume rather than line. Once so inclined, he never wavered for the rest of his days. Confronted with a needle, he had to make it bulge. Asked to draw a horse, he inevitably gave it thick legs and hooves that were solidly square. His style declared his conviction of what art was. He could not change.

He went to matador training rather than art school; no lessons in volume there, except being tossed once by a huge bull. On his first sojourn in Europe in the 1950s he was astonished by the works of Giotto, Uccello and Piero della Francesca, and by their way of achieving the fullness of robes, cloaks and limbs on a flat surface. He spent many hours too in the Prado in Madrid, sitting there with his easel and brushes to try to learn the secrets of Goya and Velázquez. He had gone abroad (paying for the trip with prize-money earned from a painting), hoping to find Picasso and to be like him. He came back eager to paint like the Italian masters of the *quattrocento*. To these he gradually added Titian, Ingres, Rubens and, from his time in Mexico City, the muralist Diego Rivera.

One response to these overwhelming masters was to redo their works in his own style. So the Mona Lisa, while preserving her smile, put on pounds, and another version of her, at the age of 12 with a glittery slide, was his first shocking incursion into the Museum of Modern Art. Manet's "Le Déjeuner sur l'herbe" was transposed to a vivid Colombian landscape, and Marie Antoinette simpered stoutly in a feathered hat down a Medellín street. He was not imitating, but remaking beauty (since art was essentially beauty) from his own Colombian roots. Those gave truth to all he did.

Well into his 80s he dedicated ten hours a day to the task. He would "let the thing out" on an uncut roll of canvas, looking for relationships, tightening here and there. Being an artist, he thought, was like being a priest. You were born one, and the job required everything you could give. Since that was so, he had to address pain too, and tackle dark and serious themes.

He therefore painted what was happening to his country. From the 1990s he recorded guerrilla warfare and drug-gang violence: a car exploding in the street, a group of drinkers torn apart in a bar, the drug lord Pablo Escobar fighting off bullets and then dead on a rooftop, like a beached whale. His style did not alter, but now expressed the innocent impassivity of common people caught in horror. In 1995 one of his sculptures, "Bird", was blown up, together with 23 people; he made another, "The Dove of Peace", inscribed with the victims' names. He also produced his own Stations of the Cross, with Christ's white flabbiness now emphasising his helplessness among his tormentors.

His most affecting works, however, were around 100 paintings and drawings of the tortures inflicted by American soldiers on Iraqi prisoners in 2003 at Abu Ghraib. He began drawing the moment he read the news story, in pencil on paper. In the finished paintings the Iraqis were naked, bloodied, hooded and contorted. Most American museums that were offered them refused to take them. But they were not anti-American, he insisted. They were anti-brutality. Many viewers agreed. His unvarying, unchangeable style gave the prisoners only humanity and terrible vulnerability; their plumpness did not register at all. ■

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