

The Economist

HOLIDAY DOUBLE ISSUE

DECEMBER 18TH–31ST 2021

Featuring: A MOMENTOUS AFRICAN CIVILISATION • HOW RESTAURANTS CAME TO BE
INDIA'S TOURING CINEMAS • THE VALUE OF OLD CLOTHES • THE KINGS OF CRYPTO
RETRACING CAESAR'S FOOTSTEPS • A FAIRER WAY TO VOTE • FEASTS WITHOUT ANIMAL FLESH
SINGAPORE'S LAST KAMPONG • PARENTING IN HONG KONG • MURDER OF THE ORIENT EXPRESS
AN ESSAY ON RUSSIA AND UKRAINE • AND MUCH MORE...



LOUIS VUITTON

High Jewelry

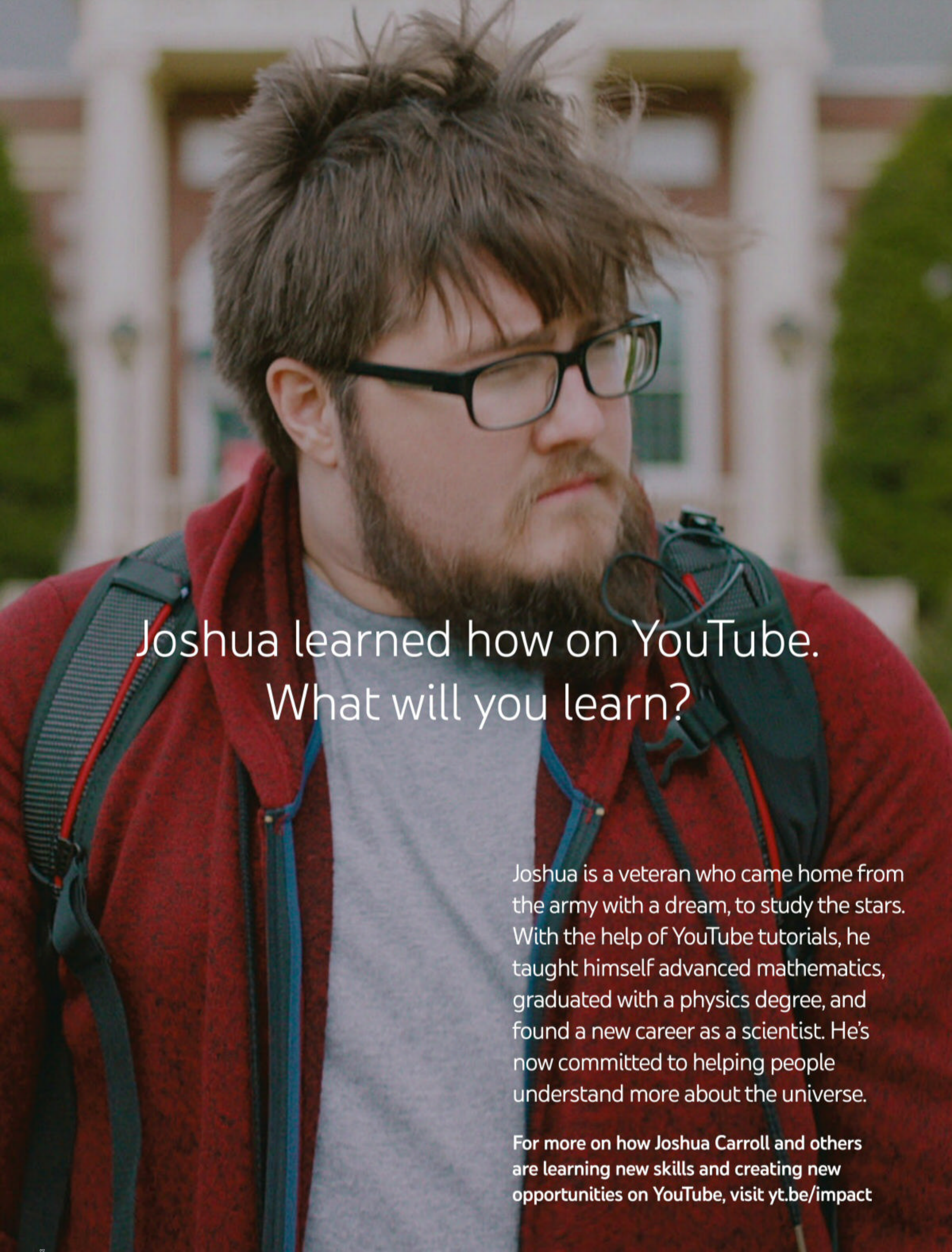
Bravery Collection, Le Mythe Necklace.
White gold, sapphires, emerald and diamonds.





A hand is holding a photograph of a soldier in camouflage gear and sunglasses, holding a large American flag. The soldier is standing in front of a large military vehicle, possibly an M1 Abrams tank, with other vehicles and a clear sky in the background. The text "From army vet to astrophysicist." is overlaid on the photograph.

From army vet
to astrophysicist.



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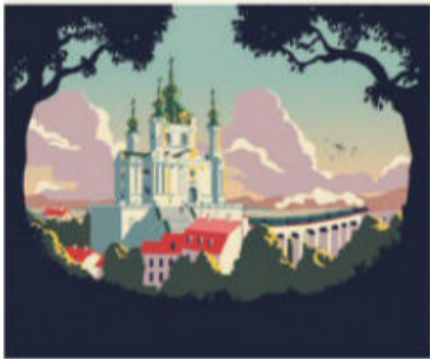
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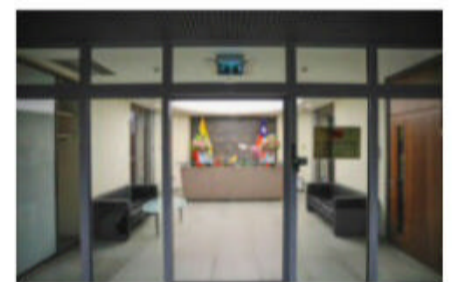
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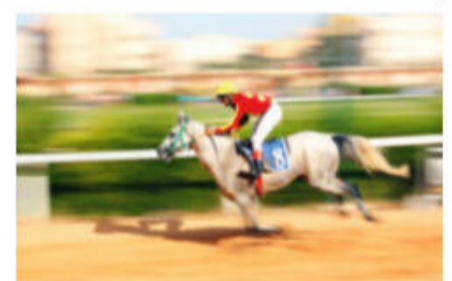
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The year was once again dominated by the **covid-19 pandemic**, as new waves of infection swept across countries. India's second wave proved far more deadly than the first one in 2020. By May the government was reporting 400,000 cases and 4,000 deaths a day, although the true numbers were much higher. After a shaky start in some places the roll-out of **vaccines** in the rich world was, by and large, a success, curbing hospitalisations (the Omicron variant may threaten that good work). Distribution of the doses remains uneven: poorer countries have received far fewer. The WHO warned recently that the donation of vaccines to Africa has been "ad hoc", making it hard to plan inoculation drives.

Quantum of solace

Lockdowns came to an end, including one lasting 262 days in Melbourne. Many **travel restrictions** on land, sea and air were also eased, delighting a beleaguered travel industry. America reopened (to the vaccinated) only in November; before that international air travel in October was still 66% below its level of October 2019.

Companies began coaxing staff back to **the office**, some more forcefully than others. Banks were the most insistent; Morgan Stanley's boss told employees that if they were happy entering a restaurant they should come into work. Surveys suggested that foot traffic in the centres of cities such as London and New York was still far below pre-pandemic levels. **Zoom's** share price fell from \$560 in October 2020 to \$180 today.

Postponed from 2020, the **Tokyo Olympics** at last went ahead. Events were subdued, thanks to covid. Spectators from abroad were banned. Applause was quiet. The Japanese government grew unpopular over its handling of the pandemic, prompting the resignation of Suga Yoshihide as prime minister. He was replaced by Kishida Fumio.

A coup in **Myanmar** brought an abrupt end to its nearly ten-year turn towards democracy. The generals seized power in February after Aung San Suu Kyi won an election in late 2020. Hundreds were killed in post-coup protests. Some activists were rounded up; others resorted to guerrilla warfare. The junta held a closed-doors trial of Ms Suu Kyi on bogus charges, and jailed her.



Supporters of **Donald Trump** invaded Congress on January 6th, hoping to overturn the result of the presidential election he lost in 2020. Democrats accused Mr Trump of inciting the violence. Shortly before he left office Mr Trump was impeached, making him the first American president twice indicted. Again the Senate acquitted him. He is expected to run for the White House again in 2024.

Joe Biden's inauguration brought a sense of calm to Washington after the chaos of the Trump years. Mr Biden soon found himself bogged down in congressional gridlock over trillions of dollars in spending on social programmes, but managed to pass a \$1.2trn infrastructure bill. America rejoined the Paris accord on climate change.

Skyfall

The COP26 summit on **climate change** didn't prove the breakthrough that many had hoped, though the final agreement did promise action to limit warming to 1.5°C. America and China issued a joint declaration to work together to reduce emissions. Evidence abounded of a warming planet. Summer **floods** in China and Germany killed hundreds of people. **Wildfires** ravaged Greece, Israel, Italy and Turkey, and killed 90 in Algeria.

After years of negotiation led by the OECD, 136 countries signed an agreement to introduce a global minimum **corporate-tax** rate of at least 15% and new measures to force companies to pay more tax in the countries where they do business.

Raúl Castro stepped down as **Cuba's** leader. For the first time since the revolution in 1959 the island is not ruled by a Castro. The communist regime was rattled by rare protests that aired many grievances.

From Russia, without love

Vladimir Putin, Russia's president, ramped up the repression. **Alexei Navalny**, the leading opposition figure, was jailed on trumped-up charges. (He had just returned to Russia after being poisoned in 2020.) The dictator in **Belarus**, Russia's client state, had protesters who objected to a stolen election tortured. He also had a Ryanair plane hijacked and forced to land in Minsk so his police could arrest a dissident who was on board.

Russian **cyber-gangs** carried out ransomware attacks that disrupted the operations of companies and governments around the world. The attackers demanded payment in bitcoin. The FBI recovered most of the ransom paid to one gang, which shut down America's Colonial Pipeline, by tracking its bitcoin address. Separately, the Biden administration accused the Chinese

government of being behind a cyber-attack on Microsoft's global email system in March.



Mr Biden pulled American troops rapidly out of **Afghanistan**, barely consulting America's allies. The Afghan government collapsed far more quickly than American officials had expected. The Taliban took over. A disorderly evacuation ensued. The new regime reintroduced strict sharia law, making it much harder for girls to get an education or women to work. The economy crashed and aid agencies warned of a winter food crisis.

After 16 years in power, **Germany's** ruling Christian Democrats lost an election, their first since 2005 without Angela Merkel, who had stepped down as party leader. The new Social Democrat-Green-Free Democrat government, headed by Olaf Scholz, is expected to be tougher on climate change and Russia.

Binyamin Netanyahu was turfed out of office in **Israel**. Following an election in March Naftali Bennett became prime minister in June at the head of a right-centre-left-Islamist coalition. This came after a conflict in May between Israel and **Hamas**, the worst since 2014. It started when Israeli forces stormed the al-Aqsa Mosque to arrest rioters. Hamas fired rockets from Gaza into Israel, which responded with air strikes. Violence erupted between Israeli Jews and Israeli Arabs.

In other elections, a leftist won the presidency in **Peru**. Daniel Ortega retained power in **Nicaragua** after cracking

down on the opposition. Justin Trudeau called a snap election in **Canada** that returned him to power as the head of a minority Liberal government. A presidential election in **Iran** was won by Ebrahim Raisi, a theocratic hardliner. Mario Draghi, a former president of the European Central Bank, became prime minister of **Italy** when the previous government collapsed; he may run for president in 2022.

Ethiopia's civil war grew bloodier. Tigrayan rebels threatened the capital, Addis Ababa, sparking panic. Foreign governments urged their citizens to leave. The government enjoined civilians to arm themselves. Militias perpetrated atrocities. Government forces recaptured some lost territory, but fighting continues. **Sudan** suffered its second coup in two years. The army reinstated the civilian prime minister, but the generals are still in charge.

The world is not enough China stepped up its **crack-down on tech firms**. The Chinese authorities investigated **Didi Global** after its IPO in New York, and proposed stiffer antitrust regulations. Succumbing to the pressure, Didi eventually said it would delist its shares in the Big Apple. CEOs were told to follow Xi Jinping's proclamation that companies must promote "common prosperity".

In October **Tesla** became the first ever carmaker to pass a stockmarket value of \$1trn (its share price has since fallen). Earlier in the year Tesla bought \$1.5bn-worth of **bitcoin**, a risky investment given the digital currency's volatility. More countries explored the possibility of launching digital currencies backed by central banks, or "govcoins"; the G7 published its policy on the subject in October. **El Salvador** became the first country to accept bitcoin as legal tender; worried about currency instability, anti-bitcoin protesters took to the streets.

Spectre **Inflation** rose sharply around the world. After pondering what to do for much of the year in December the **Federal Reserve** pivoted and projected three interest-rate rises for next year. Also before Christmas, the **Bank of England** raised its rate for the first time in three years, to 0.25%. Other central banks are considering similar measures. A big factor is the high cost of energy. The price of a barrel of Brent crude **oil** started the year at \$50 and reached \$85 in October.



Supply-chain snarl-ups added to the inflation headaches. Ships off the coast of Los Angeles, for example, queued in record numbers trying to unload their goods. In March the *Ever Given*, a container ship, got wedged in the Suez Canal, blocking 369 other ships trying to traverse the water-

way. The *Ever Given* was freed within a week, but didn't reach its destination port, Rotterdam, until July.

In **Britain** a combination of factors led to petrol shortages in September. Long queues at forecourts reminded some of the fuel crisis in the 1970s. Boris Johnson's approval ratings took a nosedive over a number of mini-scandals. Politicians were united, briefly, in condemning the murder of an MP, Sir David Amess, by a suspected jihadist.

Haiti was thrown into crisis when the president, Jovenel Moïse, was assassinated. Rumours abound that senior members of the government may have ordered the killing.

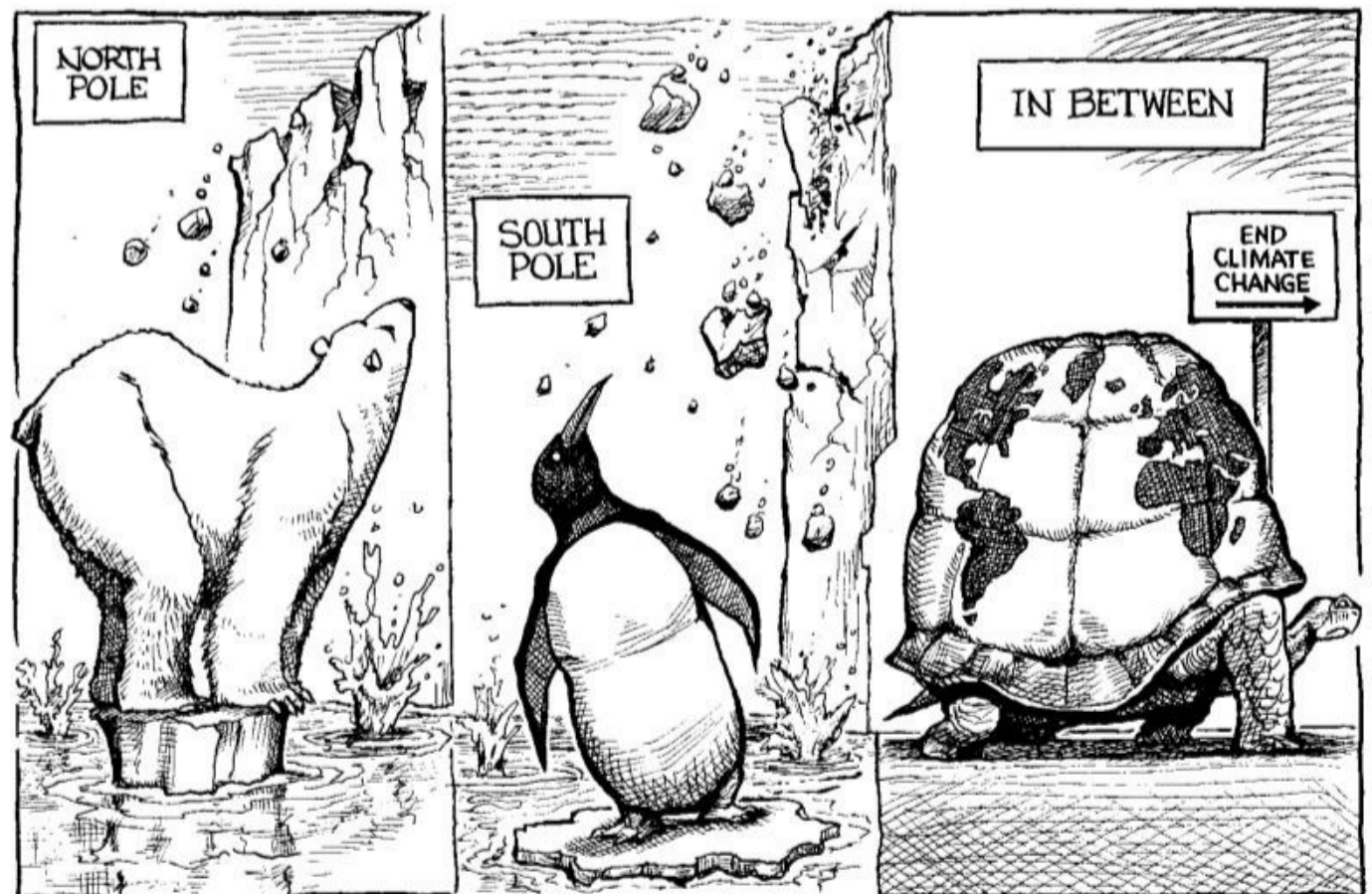
In **South Africa** the jailing of Jacob Zuma for corruption sparked the worst unrest in the country since the end of apartheid, leaving 300 people dead. Mr Zuma was eventually released on health grounds.

Moonrakers **Space tourism** took one giant leap in 2021. Richard Branson blasted into suborbital space in a Virgin Galactic rocket. Soon after stepping down as chief executive of Amazon, Jeff

Bezos joined the crew on his New Shepard rocket; a subsequent trip included William Shatner, Captain Kirk in "Star Trek". Meanwhile, China landed a spacecraft on Mars, only the third country to do so. NASA delayed its planned return of humans to the **Moon** until at least 2025, but hopes to test a capsule on a lunar orbit in the first half of 2022. A number of countries are also sending unmanned missions to explore the Moon next year.



"**No Time to Die**", the last outing for Daniel Craig as James Bond, was finally released in cinemas, having been postponed three times during the pandemic. The film has become Hollywood's biggest hit during the covid era. Its box-office takings were dwarfed, however, by the year's biggest grossers: "The Battle at Lake Changjin" and "Hi, Mom", both made in China.





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The new normal

The era of predictable unpredictability is not going away

IS IT NEARLY OVER? In 2021 people have been yearning for something like stability. Even those who accepted that they would never get their old lives back hoped for a new normal. Yet as 2022 draws near, it is time to face the world's predictable unpredictability. The pattern for the rest of the 2020s is not the familiar routine of the pre-covid years, but the turmoil and bewilderment of the pandemic era. The new normal is already here.

Remember how the terrorist attacks of September 11th 2001 began to transform air travel in waves. In the years that followed each fresh plot exposed an unforeseen weakness that required a new rule. First came locked cockpit doors, more armed air marshals and bans on sharp objects. Later, suspicion fell on bottles of liquid, shoes and laptops. Flying did not return to normal, nor did it establish a new routine. Instead, everything was permanently up for revision.

The world is similarly unpredictable today and the pandemic is part of the reason. For almost two years people have lived with shifting regimes of mask-wearing, tests, lockdowns, travel bans, vaccination certificates and other paperwork. As outbreaks of new cases and variants ebb and flow, so these regimes can also be expected to come and go. That is the price of living with a disease that has not yet settled into its endemic state.

And covid-19 may not be the only such infection. Although a century elapsed between the ravages of Spanish flu and the coronavirus, the next planet-conquering pathogen could strike much sooner. Germs thrive in an age of global travel and crowded cities. The proximity of people and animals will lead to the incubation of new human diseases. Such zoonoses, which tend to emerge every few years, used to be a minority interest. For the next decade, at least, you can expect each new outbreak to trigger paroxysms of precaution.

Covid has also helped bring about today's unpredictable world indirectly, by accelerating change that was incipient. The pandemic has shown how industries can be suddenly upended by technological shifts. Remote shopping, working from home and the Zoom boom were once the future. In the time of covid they rapidly became as much of a chore as picking up the groceries or the daily commute.

Big technological shifts are nothing new. But instead of taking centuries or decades to spread around the world, as did the printing press and telegraph, new technologies become routine in a matter of years. Just 15 years ago, modern smartphones did not exist. Today more than half of the people on the planet carry one. Any boss who thinks their industry is immune to such wild dynamism is unlikely to last long.

The pandemic may also have ended the era of low global inflation that began in the 1990s and was ingrained by economic weakness after the financial crisis of 2007-09. Having failed to achieve a quick recovery then, governments spent nearly \$11trn trying to ensure that the harm caused by the virus was transient.

They broadly succeeded, but fiscal stimulus and bunged-up supply chains have raised global inflation above 5%. The apparent potency of deficit spending will change how recessions are

fought. As they raise interest rates to deal with inflation, central banks may find themselves in conflict with indebted governments. Amid a burst of innovation around cryptocurrencies, central-bank digital currencies and fintech, many outcomes are possible. A return to the comfortable macroeconomic orthodoxies of the 1990s is one of the least likely.

The pandemic has also soured relations between the world's two great powers. America blames China's secretive Communist Party for failing to contain the virus that emerged from Wuhan at the end of 2019. Some claim that it came from a Chinese laboratory there—an idea China has allowed to fester through its self-defeating resistance to open investigations. For its part, China, which has recorded fewer than 6,000 deaths, no longer bothers to hide its disdain for America, with its huge death toll. In mid-December this officially passed 800,000 (*The Economist* estimates the full total to be almost 1m). The contempt China and America feel for each other will heighten tensions over Taiwan, the South China Sea, human rights in Xinjiang and the control of strategic technologies.

In the case of climate change, the pandemic has served as an emblem of interdependence. Despite the best efforts to contain them, virus particles cross frontiers almost as easily as molecules of methane and carbon dioxide. Scientists from around the world showed how vaccines and medicines can save hundreds of millions of lives. However, hesitancy and the failure to share doses frustrated their plans. Likewise, in a world that is grappling with global warming, countries that have everything to gain from working together continually fall short. Even under the most optimistic scenarios, the accumulation of long-lasting greenhouse gases in the atmosphere means that extreme and unprecedented weather of the kind seen during 2021 is here to stay.

The desire to return to a more stable, predictable world may help explain a 1990s revival. You can understand the appeal of going back to a decade in which superpower competition had abruptly ended, liberal democracy was triumphant, suits were oversized, work ended when people left the office, and the internet was not yet disrupting cosy, established industries or stoking the outrage machine that has supplanted public discourse.

Events, dear boy, events

That desire is too nostalgic. It is worth notching up some of the benefits that come with today's predictable unpredictability. Many people like to work from home. Remote services can be cheaper and more accessible. The rapid dissemination of technology could bring unimagined advances in medicine and the mitigation of global warming.

Even so, beneath it lies the unsettling idea that once a system has crossed some threshold, every nudge tends to shift it further from the old equilibrium. Many of the institutions and attitudes that brought stability in the old world look ill-suited to the new. The pandemic is like a doorway. Once you pass through, there is no going back. ■



Britain's government

Broken promises

A rebellion in Parliament is just the start of the prime minister's difficulties

TWO YEARS into their terms, governments often languish. But any supporters of Boris Johnson who may be tempted to fall back on that excuse for the increasingly feeble grip of his premiership would be guilty of self-delusion. Britain's prime minister is facing a double crisis. One half of this is the growing sense that he is temperamentally unfit to hold the highest office in the land. The other is the fear that his government will be incapable of bringing about the reforms it has promised—some of which Britain badly needs.

The depths of Mr Johnson's difficulties became clear on December 14th, when 99 Conservative MPs voted against his "Plan B" to deal with the Omicron variant. It was one of the largest-ever rebellions against a Conservative prime minister and it put Mr Johnson in the unsustainable position of depending upon the opposition Labour Party for one of his government's central policies. Two days later, as *The Economist* went to press, voters were about to have their say in a by-election in North Shropshire, the truest of blue seats. A collapse of the Conservative majority looked assured. There was even the possibility of defeat.

Whatever the verdict in North Shropshire, Mr Johnson is looking personally wounded. He has always been accident-prone, but he has usually matched this with an extraordinary knack for wriggling out of trouble. When lesser politicians bluster and contradict themselves, voters sneer at their sleaze, lying and hypocrisy. By contrast, Mr Johnson has had an uncanny ability to make them feel as if they are in on the joke.

But his greatest political gift is failing him. First, sleaze cut through to ordinary voters. In November Mr Johnson tried to save Owen Paterson, then MP for that North Shropshire seat, from being censured for breaking the rules over paid lobbying. (The prime minister said that to punish him would offend natural justice.) The next to cut through was lying. This month it emerged that, whereas Mr Johnson had claimed to know nothing

about who paid for a renovation of his Downing Street flat, which cost £112,549 (\$150,000), he had in fact been asking for money from the man who turned out to be the donor. (Number 10 says that appearances are deceptive.) And most recently it was hypocrisy. A video showed senior aides joking about one of several parties held in Downing Street last Christmas, when the rest of the country was locked down with only the television for company. (Mr Johnson said he knew nothing of it.)

What matters more to Britain than the fact that the prime minister's spell over voters has broken is his government's diminished capacity for reform. Mr Johnson's pitch in the election of 2019 was that post-Brexit Britain would no longer be a divided, unequal country. Power and prosperity would flow from the metropolitan elite to left-behind places that would be "levelled up". His was a radical new type of Conservatism, popular but not populist.

The revolution never happened, and not just because the pandemic got in the way. Brexit stumbles on, zombie-like, in an endless struggle over the future of Northern Ireland. Policy-making has seized up or, as with reforms to planning law, been abandoned altogether. A

campaign to warn against the dangers of Scottish independence has died. Levelling up has come to encompass everything, so it means nothing. True, a drive to weaken judicial oversight, limit free speech and protest, and make the police less accountable trundles forward. But such illiberalism is hardly a glorious tribute to Britain's post-Brexit sovereignty.

The viciousness of Omicron could yet vindicate the urgency behind Plan B (see International section). The lack of a Tory challenger—and of a strong opposition—could win Mr Johnson reelection in 2024. Even so recent weeks mark a new phase in his premiership. Once lost, voters' trust is hard to recover. When a government and its party are ragged, they are hard to reunite. If reform loses focus and purpose, it is hard to jump-start. ■



Russia and Ukraine

How to deter Vladimir Putin

The West must raise the costs to the Kremlin of invading Ukraine

IN CHRISTMAS 1991 the Soviet Union ceased to exist. Mikhail Gorbachev, its last leader, said that, even if the future was uncertain, at least "we have...abandoned the practice of interfering in others' internal affairs and using troops outside the country."

Thirty years later Russia, the heir to the old Soviet Union, is once again in the business of interfering abroad. In Vladimir Putin, it is run by a man who sullenly regrets the dissolution of the USSR. Mr Putin particularly resents the way two Slavic states, Ukraine and Belarus, slipped from Moscow's control (see Essay). He has recently reasserted a large degree of influence over Belarus, after its election-rigging despot turned to him for

help. And he is massing troops on Ukraine's border—over 70,000 of them, complete with supply lines, field hospitals and the prospect of reinforcements. American intelligence fears that he could invade Ukraine soon. What can be done to deter him?

Ukraine's armed forces, though better than they were when Mr Putin first started biting chunks out of their country in 2014, are not nearly strong enough to stop a Russian invasion. Nor is there any chance that NATO countries will intervene militarily to defend Ukraine. They do not, and should not, want a war with a nuclear-armed Russia. However, there are ways to raise the costs to Mr Putin of invading. ▶▶

Some are economic. Joe Biden, America's president, spoke to Mr Putin on December 7th. Mr Biden says he threatened severe economic sanctions were Russia to attack Ukraine again. (It has already annexed Crimea and helped pro-Russian rebels carve out an enclave in Donbas, in eastern Ukraine.) There is talk of cutting Russia off from SWIFT, an international payments system. This would harm Russia, but it is a bad idea as it would disrupt other economies, and start a rush of autocratic regimes to find non-Western alternatives (see Finance & economics section). The same deterrence could be achieved, with less collateral damage, by threatening to blacklist Russian financial institutions individually. Meanwhile, America should present a united front with European allies. For starters, Germany should not approve Nord Stream 2, Russia's newly built gas pipeline that bypasses Ukraine.

A second means of deterrence is military. Although Russia could easily overrun Ukraine, occupying a country for the long term is a different matter, as America found in Iraq. Ukraine needs to make itself indigestible. The West should supply it with more financial aid and defensive weapons to help it become so. Mr Putin's actions since 2014 have ensured that the vast majority of Ukrainians, even most of those of Russian ethnicity, would resist Russian control of their country.

At the same time, Western diplomats should seek ways to de-escalate the looming conflict. This is tricky, because so many of Mr Putin's demands are neither reasonable nor sincere. He says that NATO poses a threat to Russia. It does not. He makes that claim because a functional, democratic Ukraine on his border discredits his authoritarian system, and because his talk of defending Russia from imaginary external enemies is a good way of drumming up support. In a recent poll, only 4% of Russians



said the tensions in eastern Ukraine were Russia's fault, whereas half blamed America and NATO.

Mr Biden is right to talk to Mr Putin, and should keep doing so. He should try to find face-saving ways for Mr Putin to back down. Since Mr Putin controls how his actions are portrayed on Russian television, this should not be impossible. Mr Biden could make clear again that Ukraine is not about to join NATO, for example, though he should not give Russia a formal veto.

Mr Putin wants America to get Ukraine to implement his vision of the Minsk accords, a peace deal forced on Ukraine at gunpoint after Russian forces routed Ukrainian ones seven years ago. He hopes to create a federal state in Ukraine, with Russia pulling the strings in the east, controlling part of the border and having a large say over foreign policy. Ukraine has resisted this by ring-fencing Donbas, making no effort to recover its lost territory and forging a unitary, decentralised state that, in effect, excludes it. After many casualties and the displacement of 1.5m people, reintegrating Donbas into Ukraine is now more or less impossible, and many Ukrainians no longer desire it, though they would not say so aloud.

There is no clean solution to this mess, so the best strategy is to keep talking, with two provisos. First, the Ukrainian government must be in the room. Mr Putin should not be encouraged to treat it as a puppet of the West, since it is not. Second, the aim should be to make even a minor war unattractive for Mr Putin. He may calculate he has more to gain and less to lose from threatening Ukraine, rather than invading it. But he is adept at finding pretexts for smaller acts of aggression, which he brazenly denies he is committing even as they unfold on the world's television screens. So long as Mr Putin is in charge, Russia will remain a danger to its neighbours. ■

America's investors

Situation normal: all bid up

What doesn't kill the bull market only makes it stranger

IN THE "Society of the Spectacle", published in the 1960s, Guy Debord, a leading theorist in a group of provocateurs known as the Situationists, depicts a culture in thrall to mass media where appearance is more important than fact and representation is preferred to reality. It is an unsettling book and not one that finance types would normally reach for. But after a strange year, the idea of the markets as spectacle has an appealing logic. A Debordian might say that their primary role is no longer capital allocation, or even enrichment, but entertainment. How else to make sense of stock prices driven haywire by social-media mobs or celebrities selling shares in shell companies?

A reckoning feels due. And as 2021 draws to a close, markets seem nervy. Speculative assets, such as bitcoin, are down from their peaks. Even habitual bulls agree that 2022 will be difficult. On December 15th the Federal Reserve talked tough on inflation and signalled that it would end its asset purchases by mid-March and then start raising rates.

Yet there is an even more troubling possibility: that investors conquer their nerves and bid prices of stocks still higher. America's stockmarket has proved surprisingly resilient. The econ-

omy has had a banner year, fuelled by a \$1.9trn fiscal-stimulus package and an indulgent Fed. The S&P index of leading companies rose by 25% in the year to December 15th. It is around 40% higher than it was before the pandemic took hold in February 2020—and few thought then that stock prices were unduly low.

The bull market has kept going in spite of some big challenges. China's tech backlash and property-market troubles seem only to have reinforced the desire to own American shares. And although inflation in America is at its highest for decades, that has not hurt the profits of big listed firms. Indeed, bumper earnings have helped lift share prices in 2021.

Take a longer view, though, and shares look terrifyingly expensive. A valuation measure popularised by Robert Shiller of Yale University puts the United States stockmarket on almost 40 times its earnings adjusted for the business cycle. Crypto-currencies have moved from the investment fringes to the mainstream. America has seen a rush of initial public offerings, often a signal that a bull market is coming to an end. So is the growing presence of retail investors. New smartphone apps and low-cost exchange-traded funds and brokerages that cater to small inves- ▶▶

tors have opened up access to financial markets—including to derivatives, which small investors use in huge numbers to gamble on rising stocks.

Perhaps investors are sobering up. Already the blank-cheque-company craze has ebbed, with less-frothy prices and a slower pace of launches. Speculative shares have taken a beating, too: witness the 40% fall in the value of ARK's flagship exchange-traded fund, which invests in fledgling technology companies.

And yet, despite all this, it is easy to imagine the bull market powering through 2022 with renewed vigour. One reason is that risk-free interest rates remain near all-time lows. The yield on a ten-year inflation-protected Treasury bond is around -1%, roughly where it started 2021. The negative real returns on bonds and cash help push investors into riskier assets, such as shares and private-market vehicles, including buy-out funds, direct lending and venture capital (see Finance & economics section). Perhaps the Fed will raise interest rates dramatically in the coming years. But nothing like that is priced into bond markets.

A second prop for bulls is the buy-the-dip reflex that has become wired into markets. Experience has taught investors to see a fall in prices as a chance to buy more assets at a better price. In February-March 2020 the S&P 500 fell by a third in a matter of weeks; it then suddenly revived and kept going up. Swift action by the Fed helped keep finance flowing to companies at the pandemic's onset. But in acting this way, it gave extra credence to the idea that it would always put a floor under asset prices.

Spectacular

Big tests lie ahead. It is easy to forget the sell-offs in 1998-99 as the dotcom bubble inflated. Likewise the coming months may witness market declines that seem to signal disaster, only for a revival to boost prices to even more worrying levels. The market's performance has its own logic. "Real life is materially invaded by the contemplation of the spectacle and ends up absorbing it and aligning itself with it," wrote Debord. Well, quite. However strange things look now, they could get stranger. ■

Country of the year

Triumphal honours

Which country improved the most in 2021?

EACH YEAR *The Economist* picks a "country of the year". The award goes not to the biggest, the richest or the happiest, but to the one that in our view improved the most in 2021. Past winners have included Uzbekistan (for abolishing slavery), Colombia (for making peace) and Tunisia (for embracing democracy).

This year was a difficult one. Covid-19 continued to spread misery, as brilliantly designed vaccines were unevenly distributed and new variants such as Omicron emerged. In many countries civil liberties and democratic norms were eroded. Russia's main opposition leader was jailed. Donald Trump's supporters stormed the US Capitol. Civil wars gripped Ethiopia and Myanmar. Yet amid the gloom, a few countries shone.

In tiny **Samoa** courts defused a constitutional crisis, tossed out the ruling party of 33 years and a prime minister who claimed to have been chosen by God, and installed a reformist, the first woman to hold the job. **Moldova**, one of the poorest countries in Europe, has long been a sink of Russian money-laundering. But in late 2020 it elected the graft-busting Maia Sandu as president and in 2021 it gave her party control of parliament.

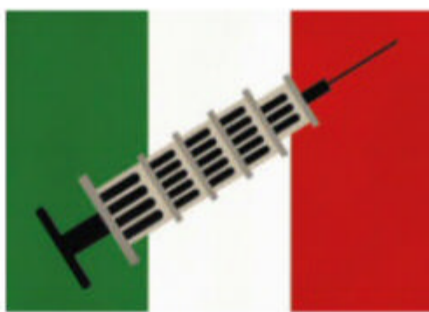
Zambia reclaimed its democracy. A year ago the country was corrupt and broke. In August its rulers tried to rig an election, but Zambians voted for Hakainde Hichilema, a liberal businessman, by such a wide margin that the rigging failed. Mr Hichilema has since struck a deal with the IMF, promised to cut wasteful subsidies on fuel and electricity, and started to investigate corruption.

Lithuania stood up for democratic values, too. If this Baltic state were a city, it would barely make the top 40 in China by population. Yet it defied the government in Beijing by letting Taiwan open a representative office in Vilnius, the Lithuanian capital. It also advised its citizens to throw away Chinese-made smartphones, after its spooks found what they called censorship software that could be activated without warning.

Lithuania stood up to other authoritarian regimes as well. It gave sanctuary to dissidents from next-door Belarus and Russia, including the woman who probably won Belarus's most recent election, Svetlana Tikhanovskaya. The despot who stole that poll, Alexander Lukashenko, tried to take revenge by forcing crowds of refugees across the Lithuanian border. Lithuania responded firmly, yet more humanely than Poland, which Belarus also provoked in the same way. China is determined to bully Lithuania into submission (see China section). A Chinese newspaper mocked its size, likening it with great originality to "a mouse, or even a flea". Democrats everywhere admire its pluck. Even so, it is not our winner.

That honour goes to **Italy**. Not for the prowess of its footballers, who won Europe's big trophy, nor its pop stars, who won the Eurovision song contest, but for its politics. *The Economist* has often criticised Italy for picking leaders, such as Silvio Berlusconi, who could usefully have followed the Eurovision-winning song's admonition to "shut up and behave". Because of weak governance, Italians were poorer in 2019 than they had been in 2000. Yet this year, Italy changed.

In Mario Draghi, it acquired a competent, internationally respected prime minister. For once, a broad majority of its politicians buried their differences to back a programme of thoroughgoing reform that should mean Italy gets the funds to which it is entitled under the EU's post-pandemic recovery plan. Italy's covid vaccination rate is among the highest in Europe. And after a difficult 2020, its economy is recovering more speedily than those of France or Germany. There is a danger that this unaccustomed burst of sensible governance could be reversed. Mr Draghi wants to be president, a more ceremonial job, and may be succeeded by a less competent prime minister. But it is hard to deny that the Italy of today is a better place than it was in December 2020. For that, it is our country of the year. *Auguroni!* ■





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 **Closing date: December 31, 2021**

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Britain's role in Europe

Your article on Lord Frost, Britain's chief negotiator on Brexit, rather underplayed the extent to which the policies he is pursuing represent a break with Britain's role in Europe, not just in the past few decades but in the past few centuries ("Portrait of a Brexiteer", December 4th). After all, a succession of leaders from Marlborough through Pitt to Lloyd George and Churchill strove successfully and at considerable cost to ensure that Britain exercised a part in shaping the politics and economy of the continent to which we belong. Now that objective seems to have been abandoned without a thought as to the unintended consequences.

Moreover, the glorification of national sovereignty was tried in Europe after the first world war and it did not end terribly well. Nearly all of the American presidents since 1945, and certainly the present incumbent, have taken a contrary view on Britain's role in Europe and the dangers of unfettered national sovereignty in that continent.

So, quite a fundamental rupture. Whether or not those you described, somewhat dismissively, as "the old guard of the diplomatic service" in fact hate Lord Frost's guts is, frankly, irrelevant. What matters is whether he is on the right side of history.

DAVID HANNAY
House of Lords
London

Nary starry night

We read your article on how bright satellite constellations are blocking the view of the cosmos for astronomers ("Goodbye darkness, my old friend", November 27th). In America the Federal Communications Commission has already approved licences for thousands of satellites and associated Earth stations. In doing so, it has failed to meet its legal responsibilities under the National Environmental Policy Act, which requires agencies to analyse environ-

mental effects with public input before taking such actions. In virtually all instances, the FCC authorises satellites without any substantive environmental review.

Real and potential environmental harm from proposed satellite mega-constellations go beyond interfering with astronomy. Light pollution can affect migrating birds, sea turtles and pollinating insects. It also degrades celestial views sacred to many throughout history. The satellites will add significant amounts of debris and chemicals to the atmosphere, including one that depletes ozone. But the FCC continues to authorise these satellites, fundamentally changing the night sky for everyone.

RUSKIN HARTLEY
Executive director
International Dark-Sky
Association
Tucson, Arizona

ERICA ROSENBERG
Former attorney at the Federal
Communications Commission
Washington, DC

A pinch of SALT

A point missed in your leader about the deduction on state and local taxes (SALT) in America is that states with high state taxes generally contribute more in federal taxes than they receive in federal funds ("SALT in the wounds", December 4th). States with low state taxes generally receive more from the federal government than they contribute and are more dependent on the federal purse.

I live in California and pay significant state taxes as well as the regular federal taxes. California chooses to finance its own social programmes whereas other states choose to rely on federal handouts. California residents thus subsidise the low-tax states. Without SALT we get to pay twice: once for ourselves and once for the deadbeat states.

Kentucky is a fine example. Low state taxes, federal subsidies and poverty. The senators from Kentucky despise socialism but their state sub-

stantially relies on federal support from other states. I will not drink their whiskey.

CLIVE MCCARTHY
San Francisco

Cheese for the season

I took exception to your disparaging comments about American cheese (Obituary, October 30th). American cheese had plenty of varieties and quality before Anne Saxelby, whom you said had "no domestic-cheese culture to build on". Poppycock! Most of the early cheese practitioners were of European origin and their descendants carry on those rich traditions with their own innovations.

I took particular umbrage at your comments about our cheddar, "pale attempt" indeed. I urge you to try some top quality Aged New York-style cheddar from Cabot Creamery, some Wisconsin-style cheddar, or great Tillamook Creamery West Coast cheddar. All three are distinctly different and dare I say better than the original.

If you really want to get the flavour of American cheese you should attend the World Cheese Expo in Milwaukee next April. It holds a cheese championship with 3,000 entries from all over the world.

JEROME LIPPERT
Former president
Nelson-Jameson
Marshfield, Wisconsin

That last-minute gift?

I read with interest your article on Apple making a Damascene conversion by allowing customers to repair its devices ("iMac, iPhone, iRepair", November 27th). One trailblazer in the world of mobile-phone repairs is Fairphone. The same iFixit website you referred to gives Fairphone top marks for repairability.

There are arguably downsides to the ease of repair, however the series of Fairphones have come along in leaps and bounds in terms of performance and reliability over the past decade. It seems only fair to give Fairphone due

credit for having led the way over these past years, waiting for the rest of the industry to wake up and take notice.

ULRIC SCHWELA
Director
Salus Mineralis
Thornton, Lancashire

Heading for the exit

"Safeguarding art" (November 27th) looked at how museums decide which pieces of work to save in the event of a fire. The director of a big gallery in London was once asked which one work he would save. After a moment's reflection he said, "the one nearest the door".

KEITH COLLARD
Ilkley, West Yorkshire

You say tomato...

The obituary on Stephen Sondheim (December 4th) quoted a line from "Could I leave you", a song he penned for "Follies", as: "Could I bury my rage/with a boy half your age/in the grass?/Bet your arse!" The last word of this line is actually "ass." The two words do mean the same thing on opposite sides of the Atlantic, but "ass" rhymes with "grass" (not to mention "pass" in the previous line).

As an advocate of true rhyme, Sondheim would never have used "arse" here.

BRAD BEAVER
Long Beach, California

So this is Christmas

"A long and winding ode" (December 4th) reviewed Paul McCartney's recent 960-page memoir. Sir Paul's essays on his lyrics apparently aim "to affirm his status as a writer", and "he makes a strong case for treating his work as poetry." That is why we all like John Lennon more.

MATTHEW DRAPER
Charlottesville, Virginia

Letters are welcome and should be addressed to the Editor at The Economist, The Adelphi Building, 1-11 John Adam Street, London WC2N 6HT
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Internal migration

Movers and shakers

DALLAS

The covid reshuffle of the past two years will change America for longer

AFTER THE second world war, Americans took their new cars on their new highways and decamped for the suburbs, changing American life forever. Today, the internet and remote work presage a similar transformation. A two-hour commute a couple of days a week may be worthwhile, if it allows a bigger house and smaller mortgage payment. So might a move across the country, if one rarely has to travel to company headquarters. Adam Ozimek of UpWork, a freelancing platform, has estimated that some 14m-23m Americans may up sticks because of the rise of remote working, which amounts to between 9% and 13% of today's workforce.

"People are asking deep questions about how and where they want to live," says Richard Florida of the University of Toronto, who observes a "great unmooring" in Americans' thinking about where they live. Chris Proctor, who works for John Burns Real Estate Consulting, which advises homebuilders, says this is "unlike anything we've seen in decades. The closest comparison is the suburbanisation we saw in the 1950s".

Migration is following two trends, both of which existed before the pandemic. First, people have been leaving large, dense, expensive urban cores for smaller, less-dense cities and suburbs. Second, people and companies have been moving to warm, low-tax states in the South and south-west (see chart 1 on next page).

Take the flight from cities first. Stephan Whitaker at the Federal Reserve Bank of Cleveland uses credit data to show how hard urban neighbourhoods were hit during the pandemic. More people left and fewer people chose to move into large cities, such as New York, Los Angeles and Chicago. Late 2020 saw a peak of net out-migration from urban neighbourhoods of around 75,000; in the second quarter of 2021 it averaged 54,000 per month, more than double pre-pandemic levels.

Mr Whitaker estimates that from March

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2020 to March 2021 around 600,000 people moved from large, high-cost metro areas to mid-size cities (meaning those with between 500,000 and 2m people), and more than 740,000 moved to rural areas, small towns and cities with populations below 500,000—an increase in both instances of 13.5% from pre-pandemic levels. New York and San Francisco saw the largest jump in the share of people leaving. In recent months, young renters have started returning to some cities while middle-aged people are continuing to flock to the suburbs to buy homes.

Cost and covid-19 are not the only considerations. Many cities have seen an uptick in crime, homelessness and business closures just as they are experimenting with criminal-justice reform and proposing tax increases. Edward Glaeser, a professor at Harvard and co-author of "Survival of the City", says he worries about "the understandable urge for progressive action in cities running into the buzz-saw of heightened geographic mobility". But he warns that if cities target the rich and businesses with taxes "and fail to offer basic services like public safety, then something that was a modest economic disruption could turn into something much more severe".

Towns and suburbs near large cities have been the biggest magnets. According to *The Economist's* crunching of data from the United States Postal Service, the three zip codes with the most changes of address for new arrivals were in suburbs and exurbs outside Houston and Austin in Texas ▶▶

▶ and Jacksonville, Florida.

The places attracting people share common features: relative affordability, a strong sense of community, amenities (natural or constructed) and friendliness towards business, says Cullum Clark, director of the Bush Institute-Southern Methodist University Economic Growth Initiative. Nearness to nature is attractive, but so is the ability to bring up a family and nurture a nest-egg. According to Joel Kotkin of Chapman University, “People go to places where they can achieve the American dream. It’s increasingly difficult to do that in cities that created the American dream, like New York,” because of the cost of living there.

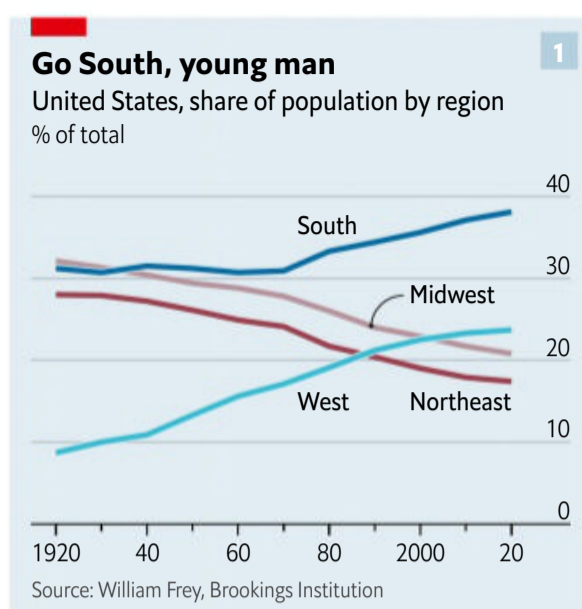
Housing costs are one indicator of where people are going. Kalispell, Montana, has seen the largest increase in property values in the country—with the average home up nearly 50% year-on-year. Second is Austin, Texas, followed by Boise, Idaho. Traditional holiday spots—including Bend, Oregon and California’s Lake Tahoe—have seen a surge of interest.

But not every under-the-radar town has prospered. “It’s very hard to find examples of places that were losing people or jobs but have drawn them in during the pandemic,” says Jed Kolko, chief economist at Indeed, a job-listings firm. Some had expected left-behind cities and rural areas to benefit from remote work and migration. “But the migration data so far suggests that the relatively affordable places people move to are the affordable places they were already going,” says Mr Kolko.

The pull of suburbs has been observed for more than half a century, but covid-19 has given it new force. “Urbanising suburbs”, as Mr Clark calls them, are gaining amenities but keeping their characteristic sprawl. Contrary to the stereotype of identical white homes with white occupants, today’s suburbs are diverse. Wendell Cox of Demographia, a consultancy, estimates that 86% of the population of big metro areas live in suburbs or exurbs. That includes 90% of whites, 83% of Hispanics, 81% of Asians and 76% of African-Americans.

Four in five of the zip codes that saw the largest percentage increases in population since the start of the pandemic were in just three states: Texas, Florida and Arizona. This underscores the second trend, which is a shift of people to low-tax states in the South and West.

Sunshine and low taxes are the most obvious reasons. Both Florida and Texas levy no state income tax, while California’s top rate is 13.3% and New Jersey’s is 10.75%. Two owners of buildings and housing developments in the Dallas area estimate that 20% of occupants are recent Californian transplants. But part of the impulse may be a reaction to covid-19 restrictions. Unlike Texas and Florida, which reopened quick-

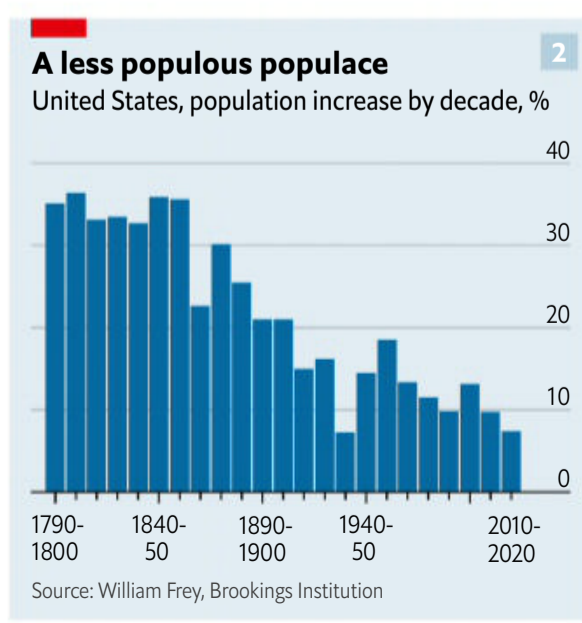


ly, California insisted on factories and businesses staying shut, to the frustration of bosses. According to Mr Florida, “the reason people have left cities and moved to rural hinterlands or cities in the South is not just taxes. It’s the fact that they can live their daily life and send kids to school with minimal restrictions.”

South by south-west

Out-of-state buyers, flush with cash from selling their expensive homes, have pushed up prices in once-affordable markets. Prices rose so much in Frisco, Texas, that Scott Warstler, executive director of operations for the Frisco Independent School District, decided to sell his house. He sold it in three days, above the asking price, to a Californian buyer. He put in offers on four rentals but was gazumped by people willing to pay a full year of rent in advance, and eventually found somewhere in Prosper, the next town over. The same outward shift is under way in Denver, where house prices have also spiked, pushing people 60 miles south to smaller, less congested Colorado Springs.

As with everything else, the rich have more choices. The 70-odd mile stretch running from Miami to Palm Beach has become a popular destination for people fleeing Wall Street and Silicon Valley. In Palm



Beach, at least ten homes have sold for \$85m or more this year. One financier who moved from Connecticut to Florida reckons that home prices on Palm Beach Island have tripled since the start of covid-19. He predicts that the next wave of millionaire migration will not be from the north-east and west coast to the South, but from all 50 states to Puerto Rico, which is the only place one can live in America and pay no tax on capital gains.

Even if not to Puerto Rico, though, the flow of people and firms out of California will probably continue, as state politicians consider ratcheting up taxes on high-earners and imposing new regulations. Since January 114 companies have moved their headquarters from California, double the number in 2018, according to Joseph Vranich of Spectrum Location Services, a relocation consultant. Businesses of all shapes and sizes are assessing their options. The poster-child for Silicon Valley disruption, Tesla, recently moved from California to Texas. Mr Vranich says he was even contacted by a winery in northern California that wants to shift its headquarters: it will leave the vines there but take its rootless departments, such as distribution and finance, elsewhere.

If the dispersal means more places will thrive, that is a good thing. “If I had to choose between an America where there were two or three wealthy cities or two or three hundred, I’d choose two or three hundred,” says Glenn Kelman, the boss of Redfin, a property brokerage. In 2005-17 a whopping 90% of employment growth in the “innovation” sector was concentrated in just five coastal metro areas: Boston, San Diego, San Francisco, San Jose and Seattle. Innovation in the coming decades will probably be more widely distributed.

As with any disruption, there will be losers from the covid reshuffle. The long-term prospects of America’s biggest cities depend on how well they are managed. With fewer people commuting into centres because of remote work, shops may not return, putting a greater burden on remaining city dwellers to fund costly services such as public transport. Meanwhile, people in some suburbs and small towns may find themselves priced out.

If the country’s population were expanding rapidly, where Americans choose to live might matter less. But in the past decade the population has grown at the second-slowest rate since 1790, just slightly faster than during the Great Depression, according to Bill Frey of the Brookings Institution (see chart 2). Immigration has slowed markedly, because of the pandemic and also because of tighter border controls. This means that states are competing for a limited resource: the people that comprise their tax base. And many states are losing the fight. Over the past decade, Illinois, ▶▶

ECONOMIST
IMPACT

Employee health and well-being linked to **business success**

New Economist Impact study finds companies need better metrics if they really want to move the needle

COMMISSIONED BY



The covid-19 pandemic made horribly clear that the health and productivity of a business is entirely dependent on the health of its people. It has also given us a more holistic understanding of employee health and well-being, from workplace ergonomics to the importance of work as a site of community, support, and purpose. It has also highlighted the impact on mental health of juggling work and family commitments when the lines between personal and professional time blur to invisibility.

The employer imperative: Driving US economic vitality through a healthy, productive workforce, a new report from Economist Impact, commissioned by Cigna, outlines the links between employee well-being, productivity, and business success. Utilising a novel conceptual framework developed from expert interviews, focus groups, an online survey of 1,800 employers and employees across six industries, the research looks at how employers can ensure their workforce, and their bottom line, are in the best possible shape.

According to the report, over 90% of executives now agree that investing in a healthy workforce

directly impacts business success and ultimately economic recovery in the United States. Shareholders also increasingly understand the value of that investment. A business culture that prizes health and wellness is seen as vital in recruiting and keeping the best talent, being part of the Great Retention rather than Great Resignation.

Introduction of workforce health and well-being programmes is, though, still uneven, the report finds, particularly amongst smaller companies. Performance metrics are ill-defined and, despite significant advances and more openness around the subject, not enough attention is paid to employee mental health.

The report argues for more tailored support and a pro-active and sophisticated approach to addressing the health and well-being needs of socio-economically disadvantaged employees. Clear objectives, a better understanding of best practice and a rigorous and data-backed assessment of performance, it argues, are vital if businesses want to make a genuine impact on workforce well-being.

Read the full report at healthyworkforce.economist.com

▶ Mississippi and West Virginia have seen their populations decline. The implications for funding pensions and public education could make living in shrinking states even less attractive for younger people, who will finance those debts. Growing states such as Texas and Florida will have an economic advantage.

This will also influence the country's politics. Texas, Florida, Colorado, Montana, Oregon and North Carolina have all gained population, and therefore congressional seats, while seven states, including New York and California, have lost seats. According to the 2020 Census, the South now has ten of the country's 15 fastest-growing cities with a population of 50,000 or more. About 62% of Americans now live in the West and the South, compared with 48% in 1970. The share residing in the Midwest and north-east has fallen from 52% to 38% over the past 50 years. This will affect congressional seats, federal funding and electoral-college votes, all of which are apportioned to states by population size.

The movement of people will not only give certain places more national political clout: it will also reconfigure local politics. In the 2020 election, Democrats gained ground in Arizona and Georgia in large part because of the young, college-educated, non-white people moving there. The shifting politics of Arizona and Georgia received attention, but less noted is that "growing suburban places moved quite dramatically toward the Democratic Party", says Jonathan Rodden, a political-science professor at Stanford. Traditionally Democrats have been at a disadvantage because so many of their voters are clustered in cities. Their spread outward into suburbs could determine the result of more races.

"The big question that everyone would like to answer is whether this is a short-term reaction to some of the excesses of the Republican Party by relatively young, educated voters, or if it is a longer-term realignment of the suburbs," Mr Rodden says. A countervailing political force is that some of the people who are moving into Texan, Floridian and Arizonan suburbs from California and the north-east consider themselves political refugees, fleeing badly run state and local governments. They may vote against Democratic candidates to prevent their new areas from turning into the places they left.

America is never stagnant. Towns, cities and suburbs will be transformed by their new inhabitants. The richness, diversity and creativity of cities will come to smaller places, and the country's urban-rural divide should narrow. "The dispersing of millennials, minorities and immigrants means the country will have more in common than it did before," predicts Mr Kotkin of Chapman University. That would be something to celebrate. ■

Kentucky's tornado

The long road back

MAYFIELD, KENTUCKY

Recovering from natural disasters is easier if you're already strong

AT THE FIRST Baptist Ministries Centre in downtown Mayfield, Kentucky, a huge cross used to be visible through a large window overlooking the crossroads. Now it stands, perilously, in the open air. The entire rest of the front of the building, as well as much of the roof, was torn off by a tornado on the night of December 10th, which flattened a large part of the rest of the town. On December 14th, the congregation were serving coffee and breakfast buns to passers-by out of the shell. "It has been an experience", said Debbie Fowler, a 68-year-old parishioner whose son is the pastor. "We were so sick at heart to see it, it's devastating." But, she says, the town will come back. "It won't look the same, but the people will be the same. This is a close-knit community", she says.

The tornado that hit Mayfield was the worst to have hit America since one destroyed much of Joplin, Missouri, in 2011. As well as tearing up Mayfield, it wrecked buildings in five other states across the Midwest and South. By December 15th, 88 people were known to have been killed, 74 of whom were in Kentucky. Dozens more were still missing, while hundreds have been made homeless. Andy Beshear, Kentucky's governor, described it as the "worst, most devastating, most deadly tornado event" in his state's history. On December 15th Joe Biden visited Mayfield to survey the damage himself, and announced federal aid to cover the costs of re-



Cover and recover

building. And yet recovery from natural disasters is rarely easy. The population of New Orleans is still 20% lower today than it was before Hurricane Katrina in 2005. Many smaller towns like Mayfield have struggled to retain population even without tornadoes. Will it really bounce back?

When your correspondent arrived, volunteers from all over Kentucky, and even further afield, had set up stalls to hand out food, water and other essentials. Fire departments were busy clearing the roads. Generators had been hauled in to provide power. "The town is not going to quit because of this," says John Darnell, who drove in from his home in a neighbouring county to drop off supplies. "They're too resourceful." And yet volunteers rushing in is not the main determinant of how easily somewhere recovers. Sam Anselm, who was assistant city manager in Joplin when it was hit, says the town got a lot of donations of clothes and toys, and then had to find space to store them. "Really what we needed was a gift card or cheque", he says.

What matters more is having a good plan, says Elaina Sutley, who studies disaster recovery at the University of Kansas. A well-organised local government can marshal an enormous amount of federal and state resources. But smaller towns often do not have the ready expertise to work out which grants to apply for, or what to do with them. Political conflict can stifle the ability to use money well. "There is a window of opportunity that does not last very long after each disaster," she says.

Sadly, as in so many things, a town's existing wealth is an important factor. Where most residents affected are homeowners and decently insured, they can often recover quickly, by enlisting private sector resources to rebuild their homes. Poorer places, with lots of renters, are more likely to suffer permanently, as people whose homes are damaged leave. What you sometimes see, says Ms Sutley, is that "some pieces of the town look really great, and other parts get left behind." Joplin has largely recovered, partly thanks to decent leadership, but also because its housing stock was well-insured.

Whether Mayfield will thrive is yet to be seen. The median household income in the town is just \$32,200, much lower than the national figure of \$67,500. Poverty will prove a challenge. At a community centre shelter in Wingo, a town around 10 miles away, one evacuee, Evonda Murdock, says this is the second time she has been forced to move recently. A few months before, her landlord had evicted her and her son, forcing them to live in a hotel. "I don't know what we are going to do now", she says. America has an enormous amount of compassion when catastrophe arrives. But more day-to-day support for the vulnerable would help too. ■

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Lexington | Rowing about Christmas

Knock yourself out, Fox: Americans have vied over Christmas for 400 years



HAVING SPENT almost two decades ballyhooing a non-existent “War on Christmas”, Fox News received the best present imaginable in the first week of Advent. A homeless man called Craig Tamanaha, while stumbling around Manhattan late one night, came across the 50-foot-high “All American Christmas Tree” in Fox Square. Mr Tamanaha climbed it, allegedly flicked his lighter, and the tree-like installation went up with a whoosh.

It seems the suspected arsonist was not in his perfect mind. Mr Tamanaha had earlier exposed himself to journalists outside the courthouse where Ghislaine Maxwell is on trial. Yet for Fox, his vandalism represented the war its anchors had spent so long trying to talk into existence. “Torching Christmas trees is an attack on Christianity!” wailed Tucker Carlson. For two days, the catastrophe and Fox’s Churchillian resolve to rebuild the tree sculpture dominated its coverage. “We will not let this deliberate and brazen act of cowardice deter us,” thundered Fox’s CEO, Suzanne Scott.

Fox’s imagined War on Christmas is nonsense and conservative pay-dirt. Though Christian practice is collapsing (the share of Americans who attend church regularly has fallen by almost half since Bill O’Reilly first detected the war in 2005), Christmas is invulnerable. Nine in ten Americans celebrate it, including a growing multitude of non-Christians. The problem, for Fox’s anxious white audience, is precisely that diversity, however. The war is a figment designed to exacerbate its fears of a changing country.

As ritualised cultural statements, festivals, as well as the debates around them, often reveal a lot about their participants, including how they see themselves and what they fear. Christmas has done so to an astonishing degree in America, and in ways its defenders on the right might find surprising.

For much of the country’s early history Christmas actually was under attack. The Puritans of the Plymouth Colony considered it wasteful, illicit and heathen; as indeed it was. A late addition to the Christian calendar, in the 4th century, Christmas was timed to match the winter solstice and Roman Saturnalia. And it retained the attributes, including gorging, licentiousness and role reversal, of those pagan revels. Between 1659 and 1681 it was illegal to celebrate Christmas in Massachusetts, as it was in England around the same time. But whereas the Restoration soon swept English Puri-

tanism aside, its influence was far more enduring in America.

Christmas returned in the early 18th century in traditional form. Historians have identified a surge of premarital pregnancies in New England around this time, and a “bulge” in births in September and October—nine months after the revels. Church and state authorities meanwhile continued to condemn and resist them. Christmas was a regular working day everywhere until Alabama, in 1836, made it a public holiday. Even now, New England’s Unitarian, Baptist and Methodist churches, inheritors of the Puritan tradition, are often closed on December 25th.

The wealthy bourgeoisie that emerged in New York during the early 19th century feared Christmas for more selfish reasons. Its members disliked the drunken revellers who, each wild Christmaside, claimed a subversive right to their provisions and hearth. So they set about domesticating the festival, out of which effort came America’s biggest contribution to it: Santa Claus. Mitteleuropean versions of the magical present-giver had long been around; but the modern standard was set in 1822 by a rich slave owner called Clement Clarke Moore, author of “The Night before Christmas”. Where the historical St Nicholas was a lofty Greek bishop, his version was a jovial proletarian figure. Instead of demanding gifts, as the wassailers at Moore’s gate did, however, he delivered them. Stephen Nissenbaum, a historian of the American Christmas, sees this as an inversion of propertied New Yorkers’ fears of the festive mob. It was an exercise in taming Christmas.

A festival long associated with excess, now rededicated to spoiling close relatives in America’s richest city, Christmas rapidly became commercialised. Coca-Cola is often said to have established the fur-clad image of Santa Claus in a famous series of adverts in the 1930s. Yet similar images appeared, advertising toys and household goods, in New York a century earlier. The adoption of the Germanic Christmas tree in the 1830s was, for its promoters in New England, an effort to return the festival to a more innocent folk tradition. The attempt was later encouraged by Queen Victoria’s Anglo-German festivities. Indeed, the classic American Christmas, which has changed relatively little since the 1850s, is an Anglo-American production. America contributed its most famous poem and Santa Claus; Britain its most famous novel—Charles Dickens’s “A Christmas Carol”—and helped with the tree.

Visions of sugar plums

Of course, Christmas trees soon provided new opportunities for sales and marketing. After Thomas Edison’s business partner strung electric bulbs around a tree in New York in 1882, tree lights were soon being mass-produced. And the marketers—another essential ingredient of the American Christmas—were only getting started. The popular ritual of hiding a pickle decoration on the Christmas tree began as a late 19th-century Woolworths’ sales gimmick. The Hall Brothers (now Hallmark) produced the first folded Christmas card in 1915. Towns up and down the country rebranded themselves as seasonal theme parks (“It’s Christmas all year round here in Bethlehem,” goes the slogan for that Pennsylvania town). Since the publication in 2005 of “Elf on the Shelf: A Christmas Tradition”, over 13m households have been persuaded to “adopt” a toy elf (with the book, it can be yours for \$32.95).

Fox’s grandstanding is just another effort to turn a buck from the festival. Its War on Christmas is no more real than the elf. Whether he knew it or not, by contrast, Mr Tamanaha’s Saturnalian rampage was a deeply traditional festive act. It was the sort of thing the Pilgrim Fathers banned Christmas to prevent. ■



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Education after covid-19

Studying Ceará

FORTALEZA AND SOBRAL

What one state's sprightly schools can teach Brazil, and the world

WHEN AMAURY GOMES began teaching history in Sobral in the mid-1990s, its schools were a mess. The city of 200,000 people lies in Ceará, a baking-hot north-eastern state that has one of Brazil's highest rates of poverty. When local officials ordered tests in 2001 they found that 40% of Sobral's eight-year-olds could not read at all. One-third of primary pupils had been held back for at least a year. Staff were not always much better, recalls Mr Gomes. He remembers a head teacher who signed documents with a thumbprint, because she lacked the confidence even to scribble her own name.

These days Mr Gomes is the boss of a local teacher-training college, and his city gets visitors from across Brazil. In 2015 Sobral's primary-school children made headlines by scoring highest in the country in tests of maths and literacy, a milestone in a journey begun almost 20 years before. The pandemic has thrust the city back into the spotlight as a model for educators seeking to reboot schooling after lengthy closures. In November ambitious officials from other parts of Brazil trooped into Mr Gomes's

college, the first group since the start of the pandemic to attend one of the tours Sobral offers to curious outsiders.

Success stories are important to Brazil's beleaguered educators, now more than ever. Before the pandemic only about half of children could read by the time they finished primary school, compared with nearly three-quarters in other upper-middle-income countries. In 2017 the World Bank warned that it could take 260 years before Brazil's 15-year-olds are reading and writing as well as peers in the rich world. Since then many Brazilian pupils have missed around 18 months of face-to-face lessons as a result of school closures (most schools have now reopened). Few countries kept classrooms shut for as long. Data from São Paulo suggest that during this period children learned less than a third of what they normally would have, and that the risk of pupils dropping out tripled.

Jair Bolsonaro, Brazil's president, seems to have no meaningful plan to get teaching back on track. Even before covid-19 his educational policies were meagre. He said he wanted more schools to be

run by the army and for Congress to legalise home-schooling. Yet his chaotic administration has not made much progress towards even these eccentric goals. It has churned through four education ministers in three years. There is one consolation, says Priscila Cruz of All for Education, a charity based in São Paulo. She thinks the vacuum in the federal government is making municipal and state officials keener to seek lessons from each other.

The success in Sobral has roots in reforms begun in the late 1990s. In much of Brazil, city governments appoint their friends or political allies to serve as school principals. Officials in Sobral insisted that these jobs go only to candidates who could win them on merit after competing in interviews and tests.

The city shut small schools in outlying areas, where staff commonly taught children in several grades at once. Merging them with bigger ones allowed more pupils to learn from Sobral's best teachers, and cut costs. This reorganisation has helped keep spending per pupil below the national average, according to the World Bank (see chart on next page).

In the classroom, Sobral has focused obsessively on making sure small children can read. The city determined that every pupil would master basic literacy before entering the third grade (when they are aged eight or nine). Examiners began listening to all children in their first years of school read aloud. These days local professionals run city-wide tests in maths and ▶▶

Portuguese for all grades. Teachers earn bonuses if their pupils hit minimum targets. Lesson plans pumped out by the city ensure that no teacher need start a class unprepared. Every teacher spends a day a month in training.

Not much of what Sobral has done would surprise reformers in richer countries, says Claudia Costin, an academic who used to run Rio de Janeiro's school system. But that is not the point. "The beauty of Sobral", says Ms Cruz of All for Education, "is that they do the obvious things very well." The city has a dogged willingness to implement "what the evidence says works".

What makes Sobral's story most compelling is that it has touched off improvements all across Ceará. In 2006 bigwigs from the city were elected to run the state government. They, in turn, gave cities more power to run their own schools. They also introduced a statewide literacy test for eight-year-olds, and increased the amount of training and flow of materials to teachers. Most notably, they made a bit of the money each city gets from the state dependent on improving school results. That gives mayors ample reason to put smart types in charge of schools, and gives other officials cause to help local education chiefs succeed.

No state has seen school results rise as fast as Ceará since rigorous comparisons began in 2005. The latest data, from 2019, saw several local cities surge up a national ranking, even as scores in Sobral itself fell slightly. Twelve Cearan school systems ranked among Brazil's 20 best (judged by the performance of primary schools). Sobral slipped from the top spot, after four years of triumph. That accolade went instead to Mucambo, less than an hour down the road. Curiously, towns and cities that lie just across Ceará's borders with other states have also been creeping up the rankings, notes Daniel Santos at the University of São Paulo.

New frontiers beckon. In 2018 Veveu Arruda, who served as Sobral's mayor from 2011 to 2016, set up an organisation—supported by the Lemann Foundation, a big charity, among others—that aims to help governments elsewhere in Brazil mimic some of the region's reforms. One of its programmes involves offering advice to governors in ten of Brazil's 27 states. Another, which provides more hands-on help to municipal governments, will soon expand to around 50 cities.

Not everyone thinks formulae from Brazil's north-east are sure to help schools in other regions. Sobral has probably benefited from its unusually stable politics. The same political clique has run city hall for 25 years. They have kept education a priority. The cities working with Mr Arruda are advised to select strategies they think best fit local conditions. One important thing, he says, is to cast off a mindset that "poor children cannot learn". In Sobral and the rest of

Ceará that meant disregarding well-meaning observers who said that disadvantaged children were bound to lag at school unless officials first resolved stubborn inequalities in income.

For all that education is prized in Sobral, its performance during the pandemic has not been glorious. Local leaders chose to keep school buildings closed for just as long as did officials in much worse-run bits of Brazil. "We were scared," admits Ivo Gomes, the mayor since 2017. Pupils made less progress than usual while learning online and from worksheets, says Herbert Lima, the city's education secretary. But he insists the deficits are not as deep as those emerging in many other cities, and that very few pupils have dropped out. Sobral's schools are far better prepared than most in Brazil to rescue pupils who lag behind their grade. "I know they can catch up," says the mayor, "because I have seen them do it before." ■

Chile's presidential contest

Curb your extremism

As a run-off nears, candidates are moderating their radical platforms

FORMER CENTRE-LEFT president, Michelle Bachelet, once belittled his party. Yet Gabriel Boric, a 35-year-old former student-protest leader, has a good shot at being Chile's next president. He made a name for himself railing against Chile's highly successful economic system and criticising the centrist parties that have governed the country for most of the time since Augusto Pinochet's dictatorship ended in 1990.

Now Mr Boric, whose radical coalition includes communists, is leading opinion polls ahead of the second round of a presidential ballot set for December 19th. After narrowly losing the first round last month to a hard-right candidate, José Antonio Kast, Mr Boric has turned towards the centre to broaden his appeal. He wrote to the Christian Democrats asking forgiveness for his party's "generational arrogance". They endorsed him. Ms Bachelet followed on December 14th.

Mr Boric has also invited centre-left economists to evaluate his economic programme. He now says he will raise taxes by a whopping 5% of GDP in four years, an initial step in his plan to raise them by a crushing 8% in six to eight years. His overhaul of pensions will be implemented gradually (details remain vague). He promises to stick to fiscal consolidation and to stabilise public debt. Earlier, he scrapped a requirement for workers to occupy half the seats on corporate boards.

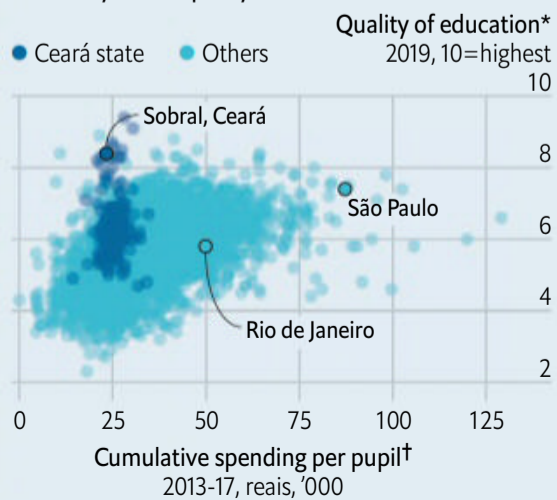
Critics dismiss these changes as cosmetic. Mr Boric still proposes to abolish private pension funds, forgive student debt, shorten the working week, raise the minimum wage by half, increase the state's role in areas such as telecoms and energy, and reserve at least 1% of government jobs for trans people. Economists fear that introducing all these measures together will harm growth. Ignacio Walker, a former leader of the Christian Democrats, also worries that Mr Boric may not be able to restrain his more radical left-wing allies.

Still, Mr Boric appears to be convincing more voters of his moderation than Mr Kast, a conservative Catholic who defends Pinochet and opposes abortion and same-sex marriage (which was legalised in Chile on December 9th). Mr Kast once proposed to eliminate the women's ministry and close the National Institute for Human Rights; now he promises to "strengthen" the former and "profoundly reform" the latter. His critics decry the fact that Mr Kast's late father, a German soldier, joined the Nazi party in 1942.

The election remains wide open. A quarter of voters are undecided. Whoever wins will struggle to pass sweeping reforms: Chile's Congress is divided and the country is in the process of rewriting its constitution, which could limit the powers of the executive. Mr Boric may soon learn that it is easier to protest than to govern.

Top of the class

Brazil, by municipality



Source: World Bank



North Korea

A decade of despair

SEOUL

Ten years into Kim Jong Un's reign, his country is more isolated than ever

LOOKING ACROSS the Han river estuary from the Aegibong peace park observatory in Gimpo near Seoul, South Korea's capital, North Korea is just a short paddle away. Less than a mile from the observatory, its citizens can be seen tending fields and riding bicycles past a cluster of low-rise blocks of flats not far from the river bank. If any of them were to peer back, they would see gaggles of South Korean schoolchildren trying to get a closer look at their settlement through the row of binoculars erected at the viewpoint.

The sense of closeness that comes from looking out over the river in Gimpo has rarely been more deceptive than today, ten years into the rule of Kim Jong Un, the North's dictator. The latest hope for opening and reform was dashed in Vietnam in 2019, when Mr Kim and Donald Trump, then America's president, failed to come to an agreement to exchange sanctions relief for arms control at what was to be their final meeting. Over the past two years, ever more of the few remaining links between

North Korea and the outside world have been severed as Mr Kim has instituted one of the world's strictest border closures in response to the covid-19 pandemic. What little information trickles out is hardly encouraging: there are reports of severe food shortages and political purges, even as state media rebuff diplomatic overtures from America and the South.

When Mr Kim took over upon the death of Kim Jong Il, his father, on December 17th 2011, such a grim state of affairs did not seem inevitable. Some observers at the time thought the regime would soon collapse, and economic opening under Chinese supervision would follow. Others, including this newspaper, doubted that Mr Kim would develop an appetite for serious reform but still assumed that he would be

unable entirely to resist pressure for change. Both elites and ordinary North Koreans were increasingly cynical about the might of the state after witnessing its failures during the famine in the 1990s.

For the first few years of Mr Kim's tenure, predictions of improvement did not seem unrealistic. In a speech on the centenary of his grandfather's birth, in 2012, the rookie dictator laid out his plan to build an "economically powerful state" and "improve the people's livelihood". He reformed laws governing agriculture and state-owned firms to allow a degree of private enterprise in the economy, invited outside experts to advise him on setting up new special economic zones and awarded official status to hundreds of the country's informal markets.

Mr Kim also embarked on a binge of "socialist construction", filling Pyongyang, the capital, with futuristic skyscrapers, water parks and a dolphinarium. And he set to work on new tourist infrastructure elsewhere in the country, notably at his summer retreat in Wonsan on the east coast. Trade with China picked up, driven largely by a new class of quasi-entrepreneurs operating from within state-owned firms.

As a result, things visibly improved—albeit from a low level and mostly in the capital, where those with spare cash could enjoy well-stocked supermarkets and new coffee shops. Refugees from North Korea arriving in the South began to report differ-

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ent reasons for leaving the country, suggesting both economic improvements in places beyond Pyongyang and a growing awareness of life in the outside world. “In earlier years people would say they were fleeing to survive; now most say they fled for freedom,” says Sokeel Park of Liberty in North Korea, an NGO in Seoul that helps North Koreans reach the South.

Mr Kim’s “father and grandfather built their identity around conflict, suffering and sacrifice,” says Jenny Town of the Stimson Centre in Washington. “He didn’t have that, so promising people a better life was an alternative way to build legitimacy.” Yet the boundaries of that “better life” have been gradually constricted in recent years. The point of it was to make Mr Kim’s rule more stable. It did not extend to allowing anything resembling a real market economy or granting more political freedoms to ordinary people.

And it has been accompanied by heightened repression inside the country, tighter control of the borders and acceleration of the nuclear programme started by Mr Kim’s predecessors, notably through tests of intercontinental ballistic missiles which, North Korea claims, are capable of reaching America. The international economic sanctions imposed on the North to slow down the nuclear programme, which were strengthened in 2017 after those tests, left Mr Kim with little money to advance goals other than building up his arsenal.

Mr Kim’s attempts to resolve that contradiction by courting Mr Trump and Moon Jae-in, South Korea’s president, ended in failure. During his meeting with Mr Trump in Hanoi, he miscalculated by demanding comprehensive sanctions relief from America in return for dismantling Yongbyon, an important but ageing nuclear plant. Mr Trump, who prides himself on his ability to drive a hard bargain (and has little patience for working-level talks), rebuffed Mr Kim, causing talks to collapse.

That might have been manageable, since Mr Kim’s other diplomatic overtures in this period, notably to China, had slight-

ly more success and ensured a steady flow of trade, both legal and illicit. But when the pandemic struck, Mr Kim’s response put paid to that, too (see chart). The border with China has been closed for the best part of two years. Despite recent rumours of a limited opening, it is likely to remain so for the foreseeable future. Tourism is moribund. Most foreign diplomats have left. Aid organisations are locked out, making it difficult for anyone to discern what is going on inside the country.

There are hints of growing distress, with even the privileged in Pyongyang suffering food shortages. Mr Kim himself has admitted that the food situation is “tense” and urged his people to prepare for hardship. But he has also increased penalties for smuggling, and for watching foreign entertainment such as South Korean dramas. He continues to rebuff offers of aid and even covid vaccines. Calls by South Korea and America to revive a spirit of détente, such as by negotiating a formal end to the Korean war, have gone unanswered.

That suggests that Mr Kim has lost hope, at least for now, that building bridges with America and its allies can improve things, reckons Ms Town. He will probably shift his focus back towards relations with Syria, Iran and Venezuela, fellow pariahs to which North Korea has sometimes sold weapons to raise hard cash.

If it ain’t broke...

Trade with China, too, is likely to resume, if slowly, as pandemic restrictions in both countries are loosened over the coming years. Western countries and South Korea may find themselves at the receiving end not of diplomatic outreach, but of ransomware attacks, cryptocurrency theft and espionage perpetrated by North Korea’s increasingly sophisticated state-sponsored cyber-criminals. Combined with current levels of political repression, such measures are likely to be enough to keep North Korea’s economy afloat.

Given that even the grim status quo looks, for now, survivable, it will be hard to muster up enticements to coax Mr Kim back to the table to discuss arms control. Of 82 North Korea analysts polled recently by NK Pro, a research outfit based in Seoul and Washington, a plurality of 31 recommended that America should accept that persuading the paunchy dictator to give up his nuclear weapons was a lost cause, and engage in sustained diplomacy that is not contingent on his agreeing to renounce them. But there is little appetite for that among American politicians.

Ten years on, the “economically powerful state” Mr Kim set out to build remains a mirage. He can at least console himself with his yachts and the continuing growth of his nuclear arsenal. His people, alas, have no such luxury. ■

Politics in the Pacific

Rule of three

WELLINGTON

New Caledonia says no to independence, again

“FRANCE IS MORE beautiful,” Emmanuel Macron, its president, said on December 12th, “because New Caledonia has decided to stay part of it.” The French territory, some 17,000km away from Paris in the Pacific Ocean, emphatically rejected independence earlier that day by 96.5% to 3.5%. It was the last of three referendums laid out in the Nouméa Accord of 1998, a compact designed to end bitter conflict between the islands’ loyalist politicians and the largely indigenous and pro-independence Front de Libération Nationale Kanak et Socialiste (FLNKS). The result is a turnaround from the previous two polls, when it seemed as though pro-independence sentiment was gaining strength. In the first, in 2018, 43.3% voted “oui” to independence; in the second, two years later, 46.7% did.

The reason was not a sudden surge in affection for *l’Hexagone* but a collapse in turnout—the 44% of eligible voters who showed up amounting to barely more than half the 86% at the previous ballot in October 2020. The FLNKS had argued for a delay to the poll after a recent Delta wave that killed one in 1,000 residents, mostly Pacific Islanders. A perception that delaying the vote would boost the odds of independence no doubt played a role in the FLNKS’s call for postponement, too. The government in Paris insisted on sticking to the appointed date, to avoid criticism from nationalists in the run-up to the French presidential election in April. Pro-independence campaigners boycotted the vote.

The French government dismissed the ▶▶



The nons have it

Banishing act

North Korea-China trade, exports, \$m



Source: General Customs Administration of China

turnout as legally irrelevant. In the past, it had presented itself as a neutral arbiter in the dispute between the territory's loyalist and pro-independence politicians. This time was different. A 100-page government document released before the poll warned of dire economic consequences if New Caledonia seceded. Abandoning the reticence of his predecessors, the French Minister for Overseas Territories, Sébastien Lecornu, unexpectedly pitched up in New Caledonia the day before the referendum, sending a clear message of French reluctance to cede control.

Geopolitics played a role in the anti-independence campaign, too. New Caledonia has around a tenth of the world's nickel reserves. The metal accounts for 90% of exports, mostly to Asia. Loyalist parties argued that an independent New Caledonia would become a Chinese vassal state.

Mr Macron hopes that the result will render the Nouméa Accord void, ending what he calls the "binary choice" between independence and staying part of France. "We must now build a common project, while recognising and respecting the dignity of everyone," he said. Yet key elements

of the devolved structure agreed on in the accord, including a power-sharing agreement between the loyalist and pro-independence parties, will remain in place.

Pro-independence parties, for their part, refuse to acknowledge the legitimacy of the latest ballot. They have shunned Mr Lecornu's post-referendum overtures for negotiations for a new political settlement, though these, too, are required under the Nouméa Accord. In the background lurks the impending contest for the French presidency. Until then, Mr Macron is likely to be in no mood for concessions. ■

Banyan Down and to the right



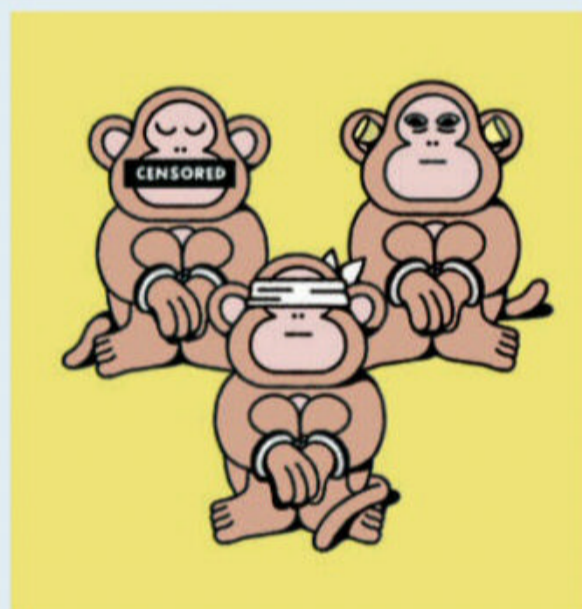
Democracy declined across Asia in 2021, but there are ways that it can revive

IT WAS, IN much of Asia, not a good year for fair, free and open societies. "Democratic recession", the phrase used by some analysts, does not really do service, especially in so motley a region. It is too clinical, eliding the profound human impact of lurches towards authoritarianism. It is also too optimistic: "recession" has embedded in it the notion of a bottom in the cycle, with inevitable recovery. In much of Asia, that is a heroic assumption.

Brutally so in Myanmar. Its army chief seized power in a coup in February and has since ruled through terror. Not only has General Min Aung Hlaing wiped out years of fragile democratic gains. With dogged ignorance he attempts to stuff his country back into some prelapsarian mould of discipline, order and benevolent military rule. In reality his troops slaughter unarmed citizens as foreign investors flee and the economy implodes. Far from pulling Myanmar together, he is hastening its dissolution.

Myanmar becomes the second coup-led military dictatorship in South-East Asia, joining next-door Thailand. It, too, is under a (now-retired) general of limited intelligence, Prayuth Chan-ocha, the prime minister. One of the bleaker jokes of the past year is that General Min Aung Hlaing turned to Mr Prayuth for advice on building a flourishing democracy.

The ten countries of the Association of South-East Asian Nations also include two Leninist dictatorships, Laos and Vietnam (three, if, tongue in cheek, you include Singapore); an absolute monarchy, Brunei, with whippings and amputations as potential punishments; and a dirt-poor autocracy, Cambodia, where Hun Sen, in power for nearly 37 years, dispenses favour with the munificence of an emperor of yore in Angkor.



As for the region's nominal democracies, in the Philippines, President Rodrigo Duterte has assaulted the judiciary and the press. In Indonesia President Joko Widodo, known as Jokowi, uses internet laws to silence critics and has defanged the anti-corruption commission. Malaysia's reform movement has succumbed to the same grubby dealmaking as the corrupt former ruling party, which it dislodged from power in 2018. In 2021 some of the reformists joined that party to form a new government.

In South Asia, even less joy. A drug-running theocracy seized power in Afghanistan. In Sri Lanka President Gotabaya Rajapaksa and his brothers continue transforming the state into a family fief. And in India the prime minister, Narendra Modi, hounds critics, stokes sectarian tensions and hollows out Parliament's supervisory functions. The irony of his imperial-scale plans to reshape New Delhi is in plain view: the old parliament building is to become a museum of democracy.

The pandemic has only emboldened authoritarian tendencies. But, to revert to

financial metaphors, even if a cyclical recovery is not inevitable, there is still scope for secular improvement. Parliamentary systems are embedded in enough Asian countries to allow democratic consolidation to reassert itself after strongman rule. India, after all, recovered from the Emergency, Indira Gandhi's dictatorship between 1975 and 1977. Elsewhere, work by Don Lee of Sungkyunkwan University in Seoul and Fernando Casal Bértoa of the University of Nottingham suggests that the accretive habits of democratic elections help keep the worst instincts of past authoritarianism at bay. For all Jokowi's backsliding, future elections in Indonesia are likely to remain fair.

Above all young Asians offer hope. They are sick of rigged political systems, graft-based economies and poor job prospects. In 2022 Malaysia is a country to watch. New automatic voter registration and a lowering of the voting age will swell the electorate by over a third.

As for the influence of outside powers, perhaps it is exaggerated. Authoritarian China has not been the democracy-undermining force some in the region feared. Indeed Taiwan, the main object of China's bullying, is a rare democratic beacon. By the same token America's rhetorical promotion of democracy, to say nothing of its summitry, does not resonate widely: Asian liberals know the priority for American democracy is not to lead but simply to hang on.

For all that, more stable democracies elsewhere can help in practical ways, such as by supporting independent media. When Maria Ressa won the Nobel peace prize, even Mr Duterte, who has hounded her and her brave news website, Rappler, was forced to congratulate her. Count that, in 2021, as a success.



Bullying small countries

A frigid farewell

BEIJING

As relations sour, Lithuania evacuates its embassy in Beijing

ONE OF THE Chinese government's favourite pieties is to warn Western democracies against starting a new cold war. A peaceful world needs more "win-win" co-operation, intone Communist Party officials, not more ideological cliques. This winter those words ring hollow in Beijing's embassy districts. On the diplomatic front-line, it is China that appears to have launched an undeclared cold war. It seems confident of winning.

An early skirmish took place on December 15th, when the small Baltic republic of Lithuania withdrew all its diplomats and their dependants from Beijing "for consultations", leaving its embassy locked and empty. Their evacuation followed an escalation of a months-long Chinese pressure campaign, aimed at punishing Lithuania for allowing the democratic island of Taiwan to open a representative office in its capital, Vilnius. China calls the Taiwanese office an affront to its sovereignty, since it claims Taiwan as its own territory.

The evacuation was not undertaken lightly. The shuttering of the embassy,

which Lithuania insists is not closed for good, is the worst crisis in relations between China and a European state since 1981. That year the Chinese ambassador to the Netherlands was recalled in response to the sale of Dutch submarines to Taiwan. Sino-Dutch ties remained downgraded for three years. Lithuania has been without an ambassador in Beijing since September, after China asked its envoy to leave. In November China unilaterally declared that each country's respective embassy would be demoted to an office headed by a *chargé d'affaires*, or caretaker.

Lithuania's diplomats were given until December 14th to hand in their Chinese identity cards to have them changed to reflect their mission's diminished status. Not knowing whether the staff would retain diplomatic immunity, and not accepting its embassy's demotion, Lithuania told

all diplomats and dependants to keep their cards and leave the next day on an Air China flight to Paris. In scenes worthy of a cold-war thriller, the Lithuanians duly gathered beside a busy ring road near their embassy on a grey mid-week morning. The evacuees—tense-looking adults, teenagers in headphones and a pet cat in a crate—boarded a coach, watched by plain-clothes police. Colleagues from friendly embassies gathered to offer an escort to the airport.

To hear Chinese officials tell it, any looming cold war is the fault of America, an enfeebled yet vicious bully which is scheming to thwart China's rise. State media say Lithuania, a country of 2.8m people, is surely too small to decide to defy China alone, and charge that it was either trying to curry favour with America or heeding American orders. In truth, similar suspicions once circulated among European Union governments, especially during Donald Trump's presidency, when American officials roamed the world urging allies to defy China.

But the Baltic republic points to its long history of standing up to bullying foreigners, including Nazi Germany and the Soviet Union. In 2019 Lithuania denounced China's embassy there for rallying people to disrupt a protest in support of Hong Kong's democrats (Chinese diplomats were photographed handing out banners). In 2021 Lithuania announced its withdrawal from the "17 plus one", a Chinese-led grouping of former communist countries in central ▶▶

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▶ and eastern Europe, calling it divisive.

There was some grumbling among EU politicians and officials when Lithuania first announced the opening of a “Taiwanese Representative Office” in Vilnius. Did Lithuania really have to approve that particular name, fellow Europeans muttered? After all, China tolerates overseas trade offices that are named after Taiwan’s capital, Taipei. The mood now is different. China’s eagerness to use undeclared forms of economic and diplomatic coercion is breaking new ground. In contrast with the cold war against the Soviet Union, the concern is not that China is bent on exporting revolution or overthrowing global capitalism. Instead, China is seen as a disrupter of the rules-based order: willing to use instruments of commerce and diplomatic intercourse as weapons, even as Chinese leaders talk up multilateralism and free trade. China’s treatment of Lithuania follows a pattern seen in other recent rows with American allies. Among them are Australia and Canada, which have suffered unacknowledged trade boycotts and seen citizens imprisoned as hostages in bilateral disputes. Before that, it was the turn of Japan and South Korea to face undeclared economic sanctions for displeasing China.

For some weeks, importers have been unable to list Lithuania as a country of origin in Chinese customs databases, making it impossible to clear shipments (Lithuania does not export much to China, however). German and French firms have been warned that they may not ship goods with Lithuanian components to China, potentially blocking hundreds of containers already in transit. There are rumours that the People’s Bank of China, the central bank, has forbidden banks from issuing letters of credit covering trade in or out of any port in the Baltic states. When EU officials raised these concerns, Chinese authorities retorted that Lithuania is lying and that the EU should beware of being taken hostage by a tiny troublemaker.

In its desire to punish Lithuania, China is betting that bigger EU powers will think of China’s market and abandon the Baltic minnow. In doing so, China overlooks the extent to which small or mid-ranking European countries have a horror of a world in which great powers set their own rules. Europeans loathed Mr Trump for his America-first trade policies. They detest China-first bullying just as much, especially when it threatens the integrity of the European single market.

First they came for Lithuania

In EU councils even Hungary, which is normally friendly to China, is speaking up for Lithuania. On November 30th France’s president, Emmanuel Macron, told Lithuania’s, Gitanas Nausėda, that France sees engagement with major powers as a vital

interest—but puts a higher priority still on EU solidarity. On December 8th two senior EU officials warned that the apparent trade ban, if confirmed, may put China in breach of its World Trade Organisation obligations. Soon afterwards the EU unveiled new instruments to retaliate against economic coercion by third countries. Free-traders within the bloc doubt whether such tools can work. But the same governments are also troubled by China’s behaviour.

When the new German chancellor, Olaf Scholz, has his first bilateral call with Xi

Jinping, China’s president, Lithuania will surely be on the agenda. All in all, 2021 ends with Europe-China relations in dire shape. Pessimistic envoys in Beijing worry that Chinese leaders do not care. They fear that the regime is intoxicated by nationalism. They also detect a conviction that it is the destiny of a rising China to struggle with a fading America. Solidarity with Lithuania may prove fleeting; Europeans may start accommodating China on other issues. But the chasing of an embassy from Beijing will not be quickly forgotten. ■

Elderly suicide Old and sad

Suicides by rural women have declined. Now the elderly are the biggest concern

AS CHINA AGES, worries are mounting about the mental health of its elderly population. Globally, suicide rates among old people tend to be higher than average. In China this is especially true. People there aged 70 and above kill themselves at more than four times the rate of the general population, compared with around a quarter more in America. Loneliness and inadequate health care are among the main reasons.

It is not all bad news. In the 1990s China’s suicide rate was among the highest in the world. Fatal self-harm was strikingly common among young women in the countryside, who had easy access to lethal pesticides. But in the past 20 years, China’s rate has declined more than other country’s, mainly as a result of stricter controls on those chemicals and migration to cities, where such poisons are even harder to obtain. In 2019 it was nine per 100,000, compared with 14 in America and 19 in Japan.

Among people aged 70 or over, the suicide rate has also dropped since 1990, from 78 per 100,000 to 35. But as a pro-

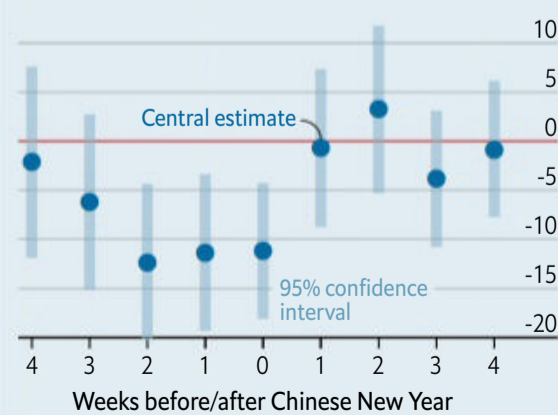
portion of all suicides, those by elderly people have risen from 14% to 31%. In part, that is because the elderly’s share of the population has risen, too, from 3.4% in 1990 to 6.8% today. But between 1990 and 2017 suicide rates among the old fell the least of any age group.

Poverty and a lack of social services exacerbate the problem, as does internal migration: younger people often leave older family members behind in the countryside. Because of falling birth rates, elderly people have fewer youngsters to look after them. Research published in March by a group of academics in America and China, including Hanming Fang of the University of Pennsylvania, uses an unusually granular set of data from the Chinese Centre for Disease Control and Prevention to demonstrate the impact of loneliness. It shows that the weekly suicide rate among the elderly—those over 65, in this case—decreases by more than one-tenth during the Chinese New Year holiday, when families reunite (see chart). The holiday does not appear to affect suicides among younger people.

The situation may get worse. At least half of the elderly are empty-nesters, state media say. Their numbers are surging. In 2013 China passed a law requiring those who live apart from elderly parents to “frequently visit or send greetings”. It has, of course, proved difficult to enforce. On November 24th the government published guidelines on care for the elderly, including advice that young adults should live with, or close to, their parents. Many online comments were derisory. How about scrapping household-registration rules that restrict migrants’ access to welfare in the cities, some asked? Only then might ageing parents leave the villages and join their urban offspring.

The solace of company

China, change in suicide rate among over-65s
2013-17, %



Source: “Family companionship and elderly suicide: evidence from the Chinese Lunar New Year”, by H. Fang, Z. Lei, L. Lin and P. Zhang, NBER working paper, March 2021



Libya

On your marks, get set, now what?

BENGAZI AND TRIPOLI

Libya's first presidential election was meant to unite the country. It is not going as planned

FOR WEEKEND relief in war-torn Libya, there is little better entertainment than cheering the Arabian steeds at the race-track in Tripoli, the capital. The competitors can be a stubborn bunch. It often takes six men to bundle a horse into its starting box. They place a sack over its head and yank it forwards with a leather belt strapped around its rump. The horses frequently rear up and dislodge the jockeys.

Staging Libya's first race for president is proving far messier. There is no commonly accepted legal framework for the election, scheduled for December 24th. Candidates have been disqualified, then readmitted. The UN official who was supposed to help oversee the process, Jan Kubis, resigned in November. With the vote likely to be postponed, warlords are flexing their muscles. On December 15th militias briefly surrounded government offices in Tripoli.

The election was meant to pull Libya out of a decade of chaos that began when rebels, with the help of NATO, overthrew and killed the country's ageing dictator, Muammar Qaddafi, in 2011. A disputed election in 2014 triggered a civil war be-

tween east and west, each with its own government. Foreign powers piled in: Turkey in the west and France, Russia and the United Arab Emirates in the east. The UN tried to establish a "unity" government in 2015, but it did not have widespread support. In 2019 Khalifa Haftar, the strongman in the east, launched a siege of Tripoli that lasted 14 months.

General Haftar's foray failed, thanks in large part to Turkey's intervention. The UN then initiated a new political process that led to a ceasefire in late 2020 and an interim government, agreed on by both sides, in February. The presidential election was meant to crown this progress. A large portion of the public registered to vote. But an election law pushed through by the speaker of the parliament based in the east, Aguilah Saleh, who is also a presidential candidate, has been rejected by other factions.

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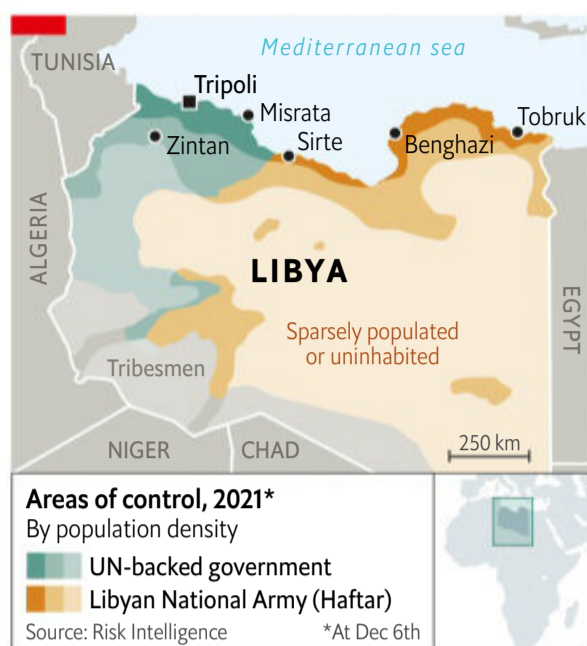
35 Iranian saffron-sellers stew

36 Shifting sands in Ethiopia's civil war

There has been little conventional campaigning, but armed groups are reportedly trying to strong-arm voters.

Even if the election goes ahead, few Libyans imagine it will mark a break with the past. One of the most popular candidates is Seif al-Islam Qaddafi, a son of the late dictator. When he emerged from his hideout in Zintan, south-west of Tripoli, to announce his candidacy, he wore a brown tunic like his father used to. Many Libyans are too young to remember the late Qaddafi's brutality. Others appreciate the relative stability of that era, during the latter part of which Seif acted as a sort of prime minister. His followers believe Libya's economy and infrastructure would be stronger had the rebellion never happened. They are not moved by the International Criminal Court's indictment of Seif for torturing and killing civilians and rebels in 2011.

If Seif represents the Qaddafi era, General Haftar, also a candidate, represents the period that followed. He tried to seize control of the rebellion and proclaimed himself commander of Libya's army after it. His men fired the first shots in the subsequent civil war, after a largely Islamist administration refused to hold new elections when its mandate expired in 2014. Like Seif, he is accused of war crimes. From his base near Benghazi, Libya's second city (which he smashed during the war), he lords it over the east—and much of the south and west. He has spurned repeated offers to join Libya's interim governments, spoiled past efforts to unite the country and has no eco-▶▶



► nomic vision. Still, he might fare well in the east, where few dare criticise him.

The west, by contrast, has a profusion of candidates. The most popular among them is Abdul Hamid Dbeibeh, the interim prime minister based in Tripoli. He was the head of the country's largest construction company in Qaddafi's day. Voters doubt that he would do much to curb corruption. When he became prime minister he promised not to run for any office, but changed his mind. Still, Libyans give him credit for keeping the streets clean and clearing some of the rubble. He has reopened the road between east and west and got planes flying across Libya again. He occasionally sounds a bit liberal: he has allowed women to pass their Libyan nationality on to their children. He has also instituted a grant for all couples who get married.

A race with many false starts

If none of the candidates gets a majority of votes, the election will go to a second round. That, of course, assumes that the first round takes place and that the result is respected. Neither is assured. General Haftar's men tried to prevent Seif from appealing against his initial disqualification as a candidate (he was later reinstated). Critics of Mr Dbeibeh want him to be tossed out for breaking his pledge not to stand. The manoeuvring by militias is unlikely to stop once the votes are cast. Each of the meddling foreign powers has a favourite, too, and has thus far shown little concern for the well-being of ordinary Libyans.

Yet it is not all gloom. Libya has abundant oil and gas and a relatively small population (7m). It sits across the Mediterranean from the consumers of the EU. Away from the political scrapping, military commanders are making progress on reunification. And many think the UN's mission is in better hands now. Stephanie Williams, the American diplomat who drew up the electoral road map, is in charge again. She is trying to corral the candidates. But they are a stubborn bunch. ■

Iranian saffron

The bitter taste of sanctions

The world's most valuable spice has been stigmatised

ALEXANDER THE GREAT stewed in it in the bath, believing that it helped heal wounds. Roman newly-weds sprinkled it on their beds, hoping for a bit of arousal. Today saffron is mainly used to season and colour dishes such as paella. But the spice, made of the dried stigmas of the saffron crocus (pictured), is still highly valued. In November a kilo of saffron from Iran, which produces over 90% of the world's supply, cost \$1,400, says an importer in Britain.

Yet Iranians in the saffron business are struggling. A recent jump in the price has been driven by increasing demand following the shock of the pandemic—but also by drought and rising shipping and labour costs (it takes many hours of picking and stripping to produce a single kilo). Then there are America's sanctions, which aim to cut Iran off from the world economy. To get around them, Iranian saffron traders often use non-Iranian middlemen, opaque supply chains and complicated payment procedures.

A kilo of saffron might thus move by courier from Khorasan, the region that produces most of Iran's crop, to Dubai or Spain, where all references to Iran are scrubbed before it is shipped onwards. Plenty of funny business can occur along the way. Sometimes Iranian saffron is mixed with flower debris or other spices to increase its weight. In February the Spanish police seized 400kg of saffron threads from a smuggling ring that allegedly imported Iranian stuff, added cheaper ingredients and then sold it as a much-beloved variety from La Mancha

(which has "protected designation of origin" status).

This may only be the tip of the stigma, says Burkhard Mühl of Europol, the EU's police agency. A recent study commissioned by the EU found that 11% of saffron for sale within the bloc may be counterfeit. Studies by the French government suggest a higher figure.

All of this causes problems for honest Iranian traders. "I am having to try harder to gain my customers' trust," says Vahid Jafari, an exporter who has just come off a video call with a Vietnamese client. "They told me they were worried about receiving fake saffron." Other customers are afraid that if they buy Iranian saffron, even through middlemen, they will be blacklisted by America. Banks are nervous about handling such transactions. The importer in Britain says he has had accounts in Dubai and Britain closed. "Every six months Barclays [a British bank] gets in touch with me to ask if I am doing business with Iran," he says. "I have to lie to them."

It hasn't always been so hard. Trading was made easier in 2015, when Iran agreed to limit its nuclear activities in exchange for the lifting of many international sanctions. But just three years later Donald Trump, then president, pulled America out of the deal and reimposed sanctions. Talks to restore it are taking place in Vienna, giving traders a thread of hope—although progress has been scant. Says a dealer based in Tehran, "If you can export saffron from Iran nowadays, you're a superman."



Purple sanctions beaters



Ethiopia's civil war

Back to the mountains

GASHENA

The shifting sands of battle can be seen in the fight for a few important towns

BURNT-OUT TANKS and fresh trenches. Makeshift fortifications cobbled out of fieldstone. And litter, everywhere, strewn by two armies: bullets, bottles, biscuit wrappers and the muddy pages of a notebook with poetry scrawled in smudged ink.

The fields around Yekaba Terefe's house in Gashena, a town at a strategic junction in Ethiopia's Amhara region, bear witness to the twists and turns of the country's civil war. For the best part of four months dozens of rebels from the neighbouring Tigray region sprawled themselves on mats in her cramped living room, exhausted, angry and hungry. Some, she says, were gentle. Others were brutal. Soon after they arrived in August they murdered her husband, accusing him of passing information to the federal army. Later they stole her crops. Then, in early December, they retreated—killing some of her neighbours as they left.

When your correspondent visited Gashena, the town was back in the hands of federal troops, who marched in its streets or sipped tea in its cafés. Heavy artillery pounded rebel positions as ambulances raced back and forth. Days later it fell to the rebels again.

The pendulum in Ethiopia's civil war has swung wildly in the year since Abiy Ahmed, the prime minister, sent troops to crush the Tigrayan People's Liberation Front (TPLF), the party ruling the northern region of Tigray. Just weeks after war broke out Abiy's troops had taken Mekelle, the capital of Tigray, and the prime minister declared victory. But it was illusory. The Tigrayan forces had merely melted into the

mountains. In June they returned and routed the Ethiopian army. By November they had advanced to within 160km of the Ethiopian capital, Addis Ababa, and seemed set to storm it. Embassies evacuated staff and urged citizens to leave.

This was as far as the TPLF got before the pendulum swung back in favour of Abiy's forces, who recaptured Dessie and Kombolcha on the road to Tigray, as well as Gashena and Lalibela. Abiy's forces also pushed the Tigrayans out of most of Afar, an eastern region that contains critical road and rail links between Addis Ababa and the port in neighbouring Djibouti. In an echo of his earlier declaration, the prime minister has told several African leaders that the war is all but over.

That seems premature. The TPLF tried to stand and fight—and suffered losses—in only a few places such as Gashena. Elsewhere its troops reverted to the guerrilla tactics that the TPLF had honed in the 1980s when it toppled the Derg, a communist dictatorship. Having conserved its forces, the TPLF may be able to inflict bloody damage on Ethiopian troops if they advance through the narrow valleys and mountain passes on the road to Mekelle. And it still seems capable of rapid ripostes such as the recapture of Gashena and Lalibela.

Even so, the rebels are on the back foot. Their advance into Amhara and Afar allowed them to build their strength with captured fuel, food and weapons. Yet the TPLF failed to break a government blockade of Tigray, which since July has received only 10% of the food needed to prevent

famine. With millions at risk of starving, rebel forces cannot afford to bide their time. "The TPLF cannot sustain a war if it doesn't very quickly find a corridor to neighbouring Sudan or Djibouti," reckons René Lefort, a researcher who has known some of its leaders for decades.

The federal forces, meanwhile, are extending their numerical advantage over the Tigrayans, who make up about 7% of Ethiopia's 115m people. Before its recapture on December 13th, the streets of Gashena overflowed with a mixture of federal soldiers, Amhara militias and thousands of volunteer fighters known as "Fano" (pictured in Lalibela), whose ranks have been swelled by Abiy's calls to arms. Their morale was buoyed when Abiy said he would lead the fight himself. Some militiamen are not armed and wear plastic sandals and football shirts, which may be why the TPLF seems to have underestimated them. "After one year of fighting it was inevitable that a hardened core of fighters would emerge on a par with the Tigrayans," notes another veteran foreign researcher.

The Ethiopian army is also growing stronger as it rearms. Since July Abiy is said to have bought drones and other high-tech kit from the United Arab Emirates (UAE), Turkey, Iran, Israel and China. Air strikes seem to have devastated the Tigrayans' heavy weaponry, particularly as the TPLF descended from the mountains towards the more exposed terrain near the capital. "Drones changed the fight in our favour," says a senior ruling-party official.

Several dangers loom. One is what Alex Rondos, a former EU special envoy to the Horn of Africa, calls the "Syrianisation" of Ethiopia's war, as foreign powers meddle in it. Iran and the UAE are backing the government, though they detest each other; the Tigrayans may seek help from Sudan and Egypt, which are angry about a dam that Ethiopia is building on the Nile. If the TPLF were to strike westwards to open a route to Sudan, this could draw in Sudanese troops and inflame a simmering border war between Sudan and Ethiopia.

A more immediate risk is that Abiy, convinced victory is imminent, will decide to push again into Tigray rather than start talks. Officially, at least, such folly is not likely. "We don't think it is wise to go into Tigray even if we can," says a ruling-party official. "There is a general realisation that we need a peace plan." But many in Amhara, in particular, think otherwise. "If the central government negotiates with the TPLF, it will be immediately fighting against the rest of Ethiopia," warns a Fano leader in Gashena. As for the TPLF, its goal of removing Abiy remains unchanged. As long as both sides believe they have more to gain from fighting than from talking, the misery of Ethiopia, and of towns like Gashena, will continue. ■



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ARCHAEOLOGY

UNEARTHING THE TRUTH

GREAT ZIMBABWE

A Zimbabwean archaeologist reimagines the story of a momentous African civilisation



THE OUTER wall of the Great Enclosure, the apogee of the state known as Great Zimbabwe, is a triumph of engineering. The elliptical structure, 250 metres round, rises 11 metres towards the sky. More than a million granite stones are stacked without a drop of mortar, but with a geometric precision that ensures the stoutness of the edifice centuries later. Near the top of the wall a row of chevrons adds a dash of flair.

Inside is further evidence of a sophisticated civilisation. Drainage channels snake along the ground. Interior walls with gaps for lintels mark out separate quarters. Most striking is the drystone Conical Tower, 5.5 metres across at the bottom, almost reaching the height of the outer wall. Its purpose is a mystery. Foreign explorers speculated that it was stuffed with gold. But inside they found only a solid core of granite.

In its prime, from around 1200 to 1550, Great Zimbabwe was home to about 10,000 people. The state covered 1,779 acres, more than twice the area of New York's Central Park. UNESCO, the UN's cultural body, declared it a world heritage site in 1986. At independence in 1980 Robert Mugabe renamed Rhodesia Zimbabwe (roughly "house of stone") after the site. Yet it is far less visited, or understood, than Machu Picchu, say, or Egypt's pyramids. One scholar has made it his life's work to show how Great Zimbabwe was the foremost example of a precolonial sub-Saharan African state.

Shadreck Chirikure was born in 1978, some 60km from Great Zimbabwe in Gutu, a town in eastern Zimbabwe. At school he learned little about the site. His first visit was as a student, aged 22. He has since made up for lost time. A renowned archaeologist, Mr Chirikure is a professor at the University of Cape Town and the University of Oxford. He has worked across Africa. But he is always drawn back home.

That is because, says Mr Chirikure, Great Zimbabwe should be a "symbol", not just of Africa's power and potential, but of how outsiders have too often told Africans' stories—and got them wrong. His work at Great Zimbabwe is revealing new truths about one of the most important places in Africa's past. In doing so he hopes to overhaul ideas about the continent's future.

ALL RHODES LEAD TO ROAM

Like many historical sites, Great Zimbabwe is cloaked in myth. Yet few have been shrouded in so many outright lies. After a visit in 1871 Karl Mauch, a German explorer, concluded that the site was too impressive to have been built by Africans. Mauch wondered whether he had found Ophir, the biblical land of riches.

His suspicions were apparently confirmed after he sniffed a lintel. It smelt of Lebanese cedar—rather than, say, the local sandalwood—and so he concluded that materials must have been brought by Phoenicians or Israelites. "A civilised nation must once have lived there," he wrote. In other words, not a black one.

Mauch's writing was catnip to colonialists. In 1889 Willi Posselt, another German explorer, bribed a local bigwig and stole one of Great Zimbabwe's bird carvings which had spiritual importance for the local Shona people. Posselt sold the bird to Cecil Rhodes, who established the British South Africa Company that year to exploit the area north of the Limpopo river.

Rhodes funded trips to Great Zimbabwe for other colonial explorers. In 1891 James T. Bent carried out the first archaeological dig, carelessly. He agreed that the site could not have been the work of local Africans. ▶▶

▶ Other British archaeologists soon challenged these views. In 1905 David Randall-McIver saw that artefacts at Great Zimbabwe were akin to those still used by Shona. He noted that the Arab and Persian glass beads at the site were from the 14th or 15th centuries, not biblical times. Later research trips, including one of the first female-led excavations anywhere, by Gertrude Caton-Thompson and Kathleen Kenyon, also surmised that Africans built Great Zimbabwe.

Not that the evidence mattered under white rule. Schoolchildren were told that foreigners were behind Great Zimbabwe. Rhodesian soldiers who fought in the colonial wars of conquest were buried at the site. Golf courses were built within its environs. In 1973 Peter Garlake, an iconoclastic white archaeologist, was forced into exile by the Rhodesian government for promoting the African origins of the site.

Today its true origins are universally accepted. But Mr Chirikure argues that the colonial legacy still affects how the state is viewed. Its greatness is seen as a product of its relations with non-African states, he says, rather than its indigenous ways. “How different is that from saying it was colonisers who built it?” he asks. “We have replaced foreigners’ direct influence with their indirect role.” Combining archaeological science and technology with Shona ethnography, Mr Chirikure and colleagues have pieced together a new story about Great Zimbabwe, one that he says no longer “marginalises” those responsible for its majesty.

Items found at Great Zimbabwe have long astonished archaeologists. A Ming dynasty teapot, a Persian pot inscribed with Arabic script, glass from Syria, cowrie shells from the Indian Ocean—all attest to its connection to an international trading network. “It shows how wrong it is to think there was nothing happening in Africa before colonisation,” says Mr Chirikure.

But not many foreign goods have actually been found, points out Mr Chirikure. And pieces like glass beads are scattered across the site, suggesting rulers did not revere them. By contrast, the eight soapstone

birds, on average 40cm high atop a metre-high column, were found mostly in the Hill Complex, the site’s highest point. The birds resemble bateleur or fish eagles, Shona totems, but have human features, so may represent the ancestors of Great Zimbabwe’s leaders.

And exotics from China and elsewhere have meant that “internal African trade is hardly emphasised”. He points to the presence of cross-shaped copper ingots similar to those found in Congo and Zambia today, and metal gongs akin to those found across west and central Africa. Cattle bones from cows 120km away have been found, suggesting marriages and trade across the region. All these imply that Great Zimbabwe was central to an African network of trade and knowledge.

The remains visible today were the heart of a vibrant city-state. Constellations of polygamous families lived in multigenerational homesteads built from *dhaka* (a gravel and clay mix). Residents ate grains such as millet and sorghum, as well as beef from cattle.

Some Western scholars believed that major parts of the site reflected separate domains. The Hill Complex was for political and religious leaders; the enclosures in the valley for rulers’ wives; and the Great Enclosures for rituals such as circumcision. One breathless observer felt the tower in the Great Enclosure must have had phallic connotations. Yet evidence gathered by Mr Chirikure challenges the idea of sexes living separate lives. Pots found with metal residues suggest women made clay crucibles which men used for metalwork. He notes that the supposedly all-female valleys were the last to be vacated. In an archaeological zinger, he wrote in a paper in 2008 that this timing “raises serious questions regarding why royal men would leave royal wives behind when abandoning the site.”

The idea that certain parts of Great Zimbabwe were always home to rulers reflects what Mr Chirikure says is a common mistake: the tendency to apply Western ideas in African contexts. For scholars of medieval Europe, it might make sense to think of the Hill Complex as a sort of Edinburgh Castle, occupied by successive ▶▶

Outsiders have too often told Africans’ stories—and got them wrong





↑ Beads found scattered across Great Zimbabwe

► generations high on a rocky outcrop. But in Shona culture, where burial sites are spiritual places, which ought not to be disturbed, it makes more sense that a royal homestead would move after a ruler's death.

Mr Chirikure was the first African to win the Antiquity prize, a prestigious gong. In 2019 he became the first archaeologist to win it twice, with a paper on the dynamic between elites and commoners at Great Zimbabwe. He noted that there was little difference in the types of objects found in marquee parts of the site and those discovered elsewhere. That matched his understanding of Shona culture. In *maguta*, or large settlements, people of shared lineage “had equal access to resources, symbols and power”, he notes. Those at the top of the hierarchy interacted with those at the bottom more than in medieval Europe. In Great Zimbabwe, Mr Chirikure concludes, class was “very fluid”.

WHAT LIES BENEATH

Nor are the high-profile sites everything. Much of Great Zimbabwe remains unexcavated. When Mr Chirikure dug up the car park used by visiting vehicles—and the monkeys who defecate on them—he found, among other things, thumb pianos, prompting the realisation that the area outside the main walls was populated too. Scientific dating confirmed that people lived beyond the perimeter well into the 17th century.

This finding has challenged the accepted chronology of Great Zimbabwe. It was seen as the successor state to Mapungubwe, in contemporary South Africa, which dates to 1200-1300. When this state collapsed its inhabitants allegedly left for Great Zimbabwe. After living there they moved on again (no one knows precisely why), ending up in Khami, from 1400-1650, near what is today the city of Bulawayo in southern Zimbabwe. In Mr Chirikure's telling, while Great Zimbabwe's peak may have passed during the 1500s, it was occupied for much longer than commonly assumed.

Archaeology, like many academic disciplines, is under pressure to “decolonise”. To its critics the idea is wokeism run amok, the diluting of intellectual standards for the sake of political correctness.

For Mr Chirikure, decolonising archaeology is not about rejecting academic rigour or centuries of pro-

gress in materials science. It is, he argues, about incorporating “local sources of knowledge”. In trying to understand life in Great Zimbabwe, he says that it is better to understand Shona culture, rather than copy and paste ideas based on medieval European kingdoms.

African history remains peripheral and dogged by outdated assumptions partly because of a lack of African perspectives. Just 3% of the papers published in four prestigious history journals from 1997 to 2020 were about Africa. Of these only about 10% were written by authors based in Africa (compared with 86% for America, 76% for Europe and 40% for Asia and Oceania). The more that is written about African history, the more nuanced it is likely to become. The more African scholars do the writing, the more likely it is that the field benefits from new methods and insights.

For Mr Chirikure Great Zimbabwe should be a fillip for those considering Africa's current development, too. He points to the importance of manufacturing at the site. About half of sub-Saharan African exports are raw materials, which are processed elsewhere. Mr Chirikure notes that in Great Zimbabwe metalworkers added value to gold, bronze and iron before exporting them. The site's connections with other African states, he adds, underline the need for more intra-African trade. Just 17% of Africa's exports go to other countries on the continent, compared with 68% in Europe and 59% in Asia. Those planning the African Continental Free Trade Area, the early stages of implementation, could do well to remember the Congolese ingots.

“We don't learn from the past as much as we should,” concludes Mr Chirikure. “Here is a place that was occupied by people who were heavily invested in production, who developed regional links, who were also interacting with other parts of the world—and they built a place with such strength and resilience.”

Great Zimbabwe holds one more lesson for Africa today: the importance of functioning states. Since it took power in 1980, Zanu-PF, the party of Mugabe, has ruled in thuggish and kleptocratic style, immiserating a country with vast potential. Little has changed since Mugabe was toppled in a coup in 2017. The local currency is in the middle of another devaluation, a result of command-and-control economic policies and rampant corruption. A Zimbabwean “bond note” was ostensibly worth one American dollar in 2016; today it is worth less than half a cent. Emmerson Mnangagwa, who replaced Mugabe, wants outsiders to think Zimbabwe is “open for business”, but few are fooled.

Power cuts are common. Great Zimbabwe's museum houses seven of the eight bird statues found on the site (the other is at Rhodes's house in Cape Town). But in the dark one-room exhibition only the light from a phone, reflecting off the soapstone, was visible.

Perhaps conscious that references to Great Zimbabwe may seem irrelevant to today's troubles, Mr Chirikure is fond of quoting a Shona saying. *Matakadya kare haanyaradzi mwana* literally means, “If a child is crying because they are hungry, you cannot tell them to stop because they once ate in the past.” Yet, when he gazes up at the vast beauty of the wall of the Great Enclosure, or digs in the car park, he cannot help but hope that past glories can still inspire future ones. “It is a reminder of what can be,” he says. ■



For an interactive tour of Great Zimbabwe, visit [Economist.com/GreatZimbabwe](https://www.economist.com/GreatZimbabwe)



PARENTING IN HONG KONG

TEACH YOUR CHILDREN WELL

HONG KONG

Does that mean submitting to the Communist Party?

MARY CHOI had bundled her two sons off to her mother's so that she could pack in peace. Her apartment was stacked full of cardboard boxes, and three hard-shell suitcases were wedged between the dining table and wall, price tags still dangling from their handles. She was not excited about leaving Hong Kong for Britain. Two years earlier, she and her husband had taken their sons on a reconnaissance trip, staying for a few days with old friends in London to see if they liked it. She had not.

It was her son cheering for China during the Tokyo Olympics in the summer of 2021 that tipped her over the edge. That, and being forced to sign an oath pledging fealty to the Hong Kong government and, effectively, the Chinese Communist Party. Never mind that she had worked in the civil service for almost 20 years without ever having to take an oath.

To make matters worse, a culture of informing on colleagues had enveloped her workplace, and a record number of people had resigned. Mrs Choi was not a democracy activist. But the speed with which Hong Kong had slid from being a fairly liberal and free society towards an authoritarian one shocked her. She and her husband had stopped talking about politics at home, fearful that their sons, who were seven and ten, might overhear them and unknowingly say the wrong thing in school.

Mrs Choi thought about how nervous, worried and excited her sons were about moving, emotions that whirled inside her too. Would they fit in? What would she do if her sons were bullied at school? What if her sons never learned to read Chinese fluently? What if they refused to answer her in Cantonese? ▶

▶ She helped run a picture-book club for her sons and other children in the neighbourhood, and hundreds of such books filled several of her boxes. Some were by Hong Kong or Taiwanese authors, but most were Chinese translations of books from around the world. Her sons loved the Butt Detective and Sherlock Holmes series, but she also read them books about democracy. One favourite, popular among other parents in Hong Kong, was “The President of the Jungle”. In it, the animals are fed up with King Lion, who cares only about himself. So they hold an election and Snake, Sloth and Monkey decide to run against Lion. To keep the family’s memories of Hong Kong alive, Mrs Choi planned to start a Cantonese picture-book group in Britain.

Mrs Choi did not hate China, nor did she want her boys to do so. But, she said, “I don’t want them to grow up being forced at school to love the Communist Party.” And the indoctrination had started. New multiple-choice exam questions in primary school asked students “How do you feel about China?” The only options were positive. In a government video for primary-school pupils, an animated owl wearing glasses and a graduation cap warned them about threats such as terrorism and hostile foreign powers.

A struggle is under way for the hearts and minds of Hong Kong’s children. The city’s chief secretary said in 2020, when he was its security secretary, that the government’s foremost target was education: “The main task is to cleanse it of ‘bad apples’ to save the students from being poisoned.” Teachers are leaving at around twice the normal rate. According to a survey by the largest teachers’ union in Hong Kong, over 40% of teachers said they wanted to quit the profession. Of those, 70% cited “increased political pressure” as the main reason. Many teachers know all too well how successfully China ramped up “patriotic education” in mainland schools after the Tiananmen Square protests in 1989.

Mrs Choi felt lucky. Her husband’s company had offered to transfer him to London, and they both had siblings who could look after their elderly parents in Hong Kong. The future is darker for many of their friends and other parents who have chosen to stay, whether because of family ties, the cost of moving, or their attachment to Hong Kong. Some hope the Chinese crackdown will not be that bad; others, more pessimistic, are still determined to raise their children with ideas the regime considers so dangerous they are punishable with life in prison. It is a risky choice. About 4,000 of the more than 10,000 people arrested since pro-democracy protests roiled the city in 2019 are high-school and university students. Authors of pro-democracy picture books have also been jailed, charged with printing seditious material.

ILLIBERAL ARTS

Since the protests, Hong Kong’s largest teachers’ union has been forced to close, and the education bureau has overhauled the curriculum. Liberal studies, a compulsory high-school subject that encouraged students to think critically, including about China, has been abolished, replaced by a course emphasising China’s achievements. “In traditional Chinese culture, teachers are supposed to be role models,” says one liberal-studies teacher, Jason Wong. “How do I encourage my students to think critically while teaching them to obey authority and be loyal to the motherland?”

In the end, Mr Wong instructed his students to praise the government in their exams. “I think teachers and parents in Hong Kong are now struggling with the same question: how do we teach our children?” he says. “If I teach my students to be sincere, kind and honest—important qualities for being a good human being—then it is difficult to survive in this society. Now you are rewarded for perpetuating the lies of the Communist Party.” Mr Wong is applying for a licence to work as a taxi driver.

Hong Kong’s world-class universities are under scrutiny, too. Ip Iam-Chong, a professor of cultural studies, was denied tenure despite backing from his department, he believes because of his outspoken support of democracy. But he, his wife and their eight-year-old daughter are staying put. They love Hong Kong and are attached to friends who share similar values. “My daughter can leave to study or live overseas when she is older,” he says.

He tells her stories, including about his friends and students who are in jail. His best friend is Eddie Chu, a former pro-democracy politician who has been charged with subversion for taking part in a primary election. He faces life in prison. “I tell her about what happened to Eddie, why the police have put him in jail, whether there is a reason and why people are migrating. I think it is enough to just tell her these stories. How she understands the situation isn’t something that we as parents can dictate.”

Other parents are more supportive of the government. During the protests in 2019, Catherine Lau bought her son a set of Hong Kong police-force toys from Taobao, a Chinese e-commerce site: police dogs, officers firing tear-gas and police officers holding up signs warning against illegal assembly. But Ms Lau cancelled all play dates, concerned about what conversations the toys might provoke: “I wouldn’t have known what to say to the other mum. We don’t talk about politics; it is too sensitive.”

Ada Mak, who runs a nursery in southern Hong Kong, is on a mission to instil a love of the motherland in her pupils. On the eve of important holidays in China, the nursery transforms into the stage of a flag-raising ceremony. A few chosen students don white gloves tailored to their tiny hands. They march behind a boy who holds a small flag in his outstretched arms. The students stand to attention. The flag is unfurled and raised on a little pole. Loudspeakers blast the national anthem: “China has arrived at its most dangerous moment. Everyone must let out one last roar.”

Some parents do not approve of these ceremonies, Mrs Mak says. And most do not believe her when she tells them their children’s futures lie in mainland China. When Britain handed Hong Kong over to China, in 1997, the city’s economy was almost a fifth the size of the mainland’s. Now it is less than 2.5%.

Once covid-19 restrictions lift and the border reopens between Hong Kong and neighbouring Shenzhen, Mrs Mak plans to take her parents to see how quickly China has developed. Shenzhen’s GDP overtook that of Hong Kong for the first time in 2018. “Around 20% of parents know this is true, 40% are in utter denial and the remaining 40% haven’t made up their minds. For the parents who disagree, I just ignore them. There is no point me wasting my time and energy trying to convince them. I’m focused on changing the minds of the parents in the middle. They need to ▶▶

“Now you are rewarded for perpetuating the lies of the Communist Party”

▶ get to grips with reality and start thinking about how to best prepare their kids for this future.”

Within Hong Kong, the influence of the mainland is felt everywhere. Step out at lunchtime during the week and you are likely to hear conversations in Mandarin nearly as frequently as Cantonese, the dialect traditionally spoken in Hong Kong. Hong Kongers used to act as a bridge between China and the West. A few decades ago, many rushed to the mainland to set up factories or to run the Chinese branches of multinationals. Increasingly, these jobs are going to mainland Chinese who speak fluent English and have graduated from Ivy League universities or Oxbridge. Many companies want staff who not only speak the language of the clients they are pursuing but also watch the same films and gossip about the same celebrities.

Ms Lau, who bought her son the police toys, works in financial technology. “I manage a lot of mainlanders who have moved to Hong Kong for work. They work harder, stay later and are more ambitious and thick-skinned. There is no way a local Hong Konger on my team can compete with them. The Hong Kong competitive advantage is gone.” She may not embrace the democracy movement, but she is not happy about the changes in the curriculum. “When I was growing up, we were taught to think at school. Now, it’s a joke.” She adds of her son, “Not only is he not going to learn about what really happened in Tiananmen Square, but he is also not going to be competitive against mainland Chinese his age when he enters the workforce.”

Hong Kong is one of 11 cities being merged into the Greater Bay Area, a signature plan of China’s president, Xi Jinping, which covers an area of nearly 90m people with an economy larger than Australia’s. Shenzhen is at the centre. Hong Kong’s primary role will be to provide Chinese companies with a way to raise money from abroad. Faced with this future, some wealthy Hong Kongers are sending their children to private schools which teach in Mandarin and English. “My children can pick up Cantonese on the street. I don’t care if they aren’t fluent,” says one Hong Kong father whose private-equity firm mostly invests in mainland China. He and his wife speak Mandarin at home.

More and more high-school graduates from Hong Kong are choosing to attend university across the bor-

Many in Hong Kong fear the next generation will be like the post-Tiananmen generation in mainland China

der. Tony Lam chose to study on the mainland because he has family there and tuition is about a quarter what it is in Hong Kong. He hopes to find a job in advertising or public relations when he graduates. “There are a lot more jobs in the mainland.” Mr Lam says the past two years of pandemic and protests have “proved the superiority of the mainland system”. Several of his friends who are also pursuing university in mainland China were encouraged by their parents to do so.

Some parents reject the idea that the regime’s control is inevitable or, at least, permanent. Rachel Leung is home schooling her daughter on a small farm because she wants her to have a connection to the land and to have time to play—and because she wants to insulate her from China’s influence. “The party will eventually fall,” she says. “When? I don’t know. Maybe 20 or 50 years from now. And when it does, what skills will our children, our grandchildren, need to thrive?” She pauses as children covered in mud from planting rice run by, then lists the qualities that she thinks they will need. “A willingness to communicate, the ability to persuade and compromise, empathy and love, knowing how to listen deeply. There will be an end to this darkness. For now, we can’t do anything big. But we can do small things like raise our children with this future in mind.”

LESSONS LEARNED

Ms Leung may be right. But the Chinese government has plenty of practice in moulding young minds. In 1989, at the height of pro-democracy protests in China, hundreds of thousands of people piled into Tiananmen Square. Li Ming’s father was one of them. After the massacre, he made his way back to his home town to join the civil service. When the party rolled out its patriotic education campaign, Mr Li was one of tens of millions of students who were subjected to it.

“My father taught me to never say anything in public that could get me into trouble,” he says. “He taught me, above everything else, to protect myself. It is a very pragmatic approach to life in China: it is the way to survive.” But his father also bought him whatever books he could find. He pushed Mr Li to think for himself by observing society and the people around them. When Mr Li moved to Hong Kong for university, his father warned him: “Be very careful what you say. But always remember: think for yourself.”

Many in Hong Kong fear the next generation will be like the post-Tiananmen generation in mainland China. They expect the curriculum to change so much that the government’s campaign of indoctrination may succeed. Still, there are reasons Hong Kong may hold out. Because it is already advanced, the party’s deal with the mainland—of economic growth in exchange for political submission—does not apply. And so far, unlike in mainland China, the government has not restricted internet access.

But the past two years in Hong Kong have shown how well the party understands power and how ruthlessly it will wield it. Mr Li may continue to think for himself, but he has absorbed the lesson his father drew from Tiananmen. He has returned home and is preparing for his civil-service examinations, with an eye to becoming a local propaganda official. ■

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Some names were changed to protect individuals featured in this story.



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UNCERTAINTY

STRATEGY

VOLATILITY

POSITION

Sarah Kemp
LPGA Player

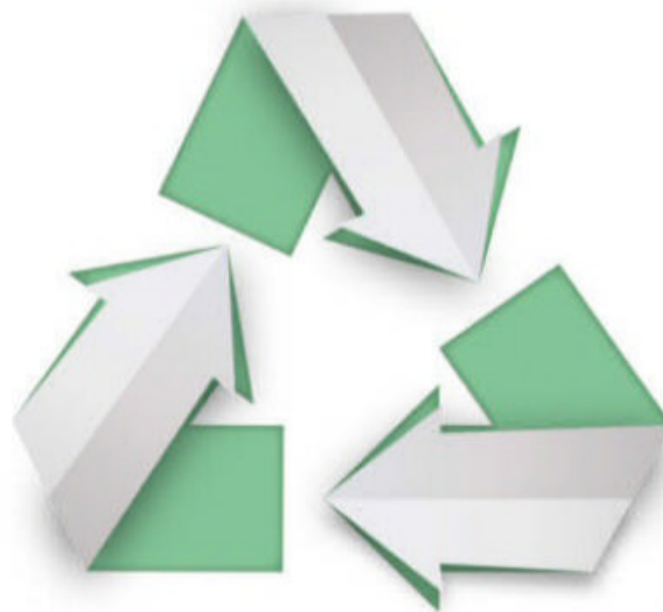
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AN ECONOMIC HISTORY OF THE RESTAURANT

THE PLEASURES OF THE TABLE

NEW YORK, PARIS AND YOUNTVILLE

How restaurants came to be and how the pandemic may change them

APRIL 9th 2020 was the restaurant industry's darkest day. The imposition of lockdowns to slow the spread of covid-19, combined with people voluntarily avoiding others, meant that on that Thursday bookings in America, Australia, Britain, Canada, Germany, Ireland and Mexico via OpenTable, a restaurant-reservation website, normally in their millions, fell to zero. Now, as economies unlock, many restaurants, even the fanciest, are facing labour shortages. Le Gavroche, one of London's swankiest French offerings, has had to stop its lunch service and has lost its general manager.

Covid brought to a halt an astonishing expansion. In 2010-19 the number of licensed restaurants in Britain grew by 26%. Americans were, for the first time, spending more than half their total food budget on eating out. Well-paid folk from Hong Kong to Los Angeles were happily renting kitchenless apartments: why bother cooking when good food was so lavishly available beyond your front door?

Being deprived of restaurants has made people realise how much they value them. Eating out fulfils needs which seem fundamental to human nature. People need to date, to seal deals and to peer at their fellow humans. At a good restaurant you can travel without travelling, or simply feel coddled.

Yet restaurants in their current form are a few hundred years old at most. They do not satisfy some primeval urge, but rather those of particular sorts of societies. Economic and social forces, from political reform to urbanisation to changing labour markets, have created both the supply of and demand for restaurants. Their history also hints at what their future could look like in a post-pandemic world.

People have long feasted outside the home. Archaeologists have counted 158 snack bars in Pompeii, a city destroyed by a volcano in 79AD—one for every 60-100 people, a higher ratio than many global cities today. Ready-cooked meat, game and fish were available for Londoners to eat from at least the 1170s. Samuel Cole, an early settler, opened what is considered to be the first American tavern in 1634, in Boston.

These were more like takeaways, though, or stands where food might be thrown in with a drink, than restaurants. The *table d'hôte*, which appeared in France around Cole's time, most closely resembled a modern restaurant. Clients sat at a single table and ate what they were given (trends now making a comeback). Many of these proto-restaurants resembled community kitchens, or quasi-charities, which existed for the benefit of locals. Strangers were not always welcome.

Nor were they destinations predominantly for the well-heeled. Before the use of coal became widespread in England in the 17th century, preparing food at home involved spending a lot on wood or peat. Professional kitchens, by contrast, benefited from economies of scale in energy consumption and so could provide meals at a lower cost than people could themselves. Today dining out is seen as an indulgence, but it was the cheapest way to eat for most of human history.

It was, thus, a low-status activity. Cicero and Horace reckoned that a visitor to a bar might as well have visited a brothel. According to "Piers Plowman", a late-14th-century poem, cooks would "poison the people privily and oft". Some rich types rented private dining rooms; Samuel Pepys, a 17th-century diarist, enjoyed eating "in the French style" (that is, with communal dishes) at one in London. But most wealthy ▶▶

▶ people preferred to eat at home, enjoying the luxury of having staff to cook and clean up.

Over time, however, the notion that a respectable person might eat a meal in public gradually took hold. Wilton's, a fish restaurant in London, got going in 1742. Dublin's oldest, established in 1775, traded under the name of the "Three Blackbirds" and was "noted for a good bottle of Madeira, as well as for a Chop from the Charcoal Grill". Fraunces Tavern, New York City's oldest restaurant, probably opened in 1762 (it is still open today and serves determinedly American fare from clam chowder to New York prime strip steaks).

Some historians look to the supply side to explain this shift, arguing that the restaurant emerged as a result of improvements in competition policy. Powerful guilds often made it hard for a business to sell two different products simultaneously. Butchers monopolised the sale of meat; vintners that of wine. The growth of the restaurant, which serves many different things, required breaking down these barriers to trade.

A Monsieur Boulanger, a soup-maker in Paris, may have been the first to do so. He dared sell a dish of "sheep's feet in white-wine sauce". The city's *traiteurs* (caterers) claimed the dish contained a *ragout*, a meat dish only they were allowed to prepare, and was therefore illegal. They took their case to court, but Boulanger triumphed. The tale, supposedly marking the beginning of a movement in mid-18th-century France towards more open markets, is probably apocryphal. But other regulatory changes did help. In Britain reformers worried about public drunkenness passed a law in 1860 allowing places serving food to serve wine as well (thus encouraging people to eat something to sop up the booze). Around the same time American states started passing food-safety laws, giving customers more confidence in the quality of the food.

Yet for restaurants to flourish, richer people had to demand what Pepys did not: eating in full view of others. Until the 18th century elites largely viewed public spaces as dirty and dangerous, or as an arena of spectacle. But as capitalism took off, public spaces became sites of rational dialogue which were (putatively) open to all. And, as Charles Baudelaire, a French poet, observed, 19th-century cities also became places where people indulged in conspicuous consumption.

The restaurant was the natural habitat of the *flâneur*, Baudelaire's wandering observer of city life. Where better than a restaurant to see and be seen? Out went the set menu of the *table d'hôte*; in came the *à la carte* kind. Shared tables gave way to private ones. Eating out became less of a communal activity focused on calorie intake and more of a cultural experience—and a place, as Baudelaire wrote, where people could show off their wealth by ordering more food than they could eat and drinking more than they needed.

Restaurants' growth accelerated in the 20th century. American employment in food service quadrupled as a share of the workforce over this period. The Michelin Guide was first published in 1900; the stars came 26 years later. And yet the continued rise of the restaurant up until the pandemic nonetheless presents an economic puzzle. Cooking at home was becoming ever easier. Average house sizes grew. Appliances such as the food processor and the dishwasher reduced preparation and clean-up times. Dining out became relatively more expensive: in America in 1930 a restaurant meal was 25% costlier than an equivalent

Today dining out is seen as an indulgence, but it was the cheapest way to eat for most of human history

meal at home, but by 2014 the gap had risen to 280%. From 2007-20 "French Laundry inflation", describing the cost of a meal at a three-Michelin-star restaurant in California, was twice the core inflation rate.

And yet three economic changes ensured that demand for restaurants grew despite rising prices. The first is immigration. In the 50 years after the second world war the net flow of migrants into rich countries, relative to population, more than quadrupled. Starting a restaurant is a good career move for new arrivals; it neither requires formal qualifications nor, at least for chefs, fluency in the local language. Migrants tend to improve the quality of an area's restaurants. London's became far better in the era of free movement with the European Union. The melting pot that is Singapore has some of the best food in the world. Restaurants became more tempting, even as prices went up.

GASTRONOMICS

The second factor was the changing microeconomics of the family. As a new paper by Rachel Griffith of the Institute for Fiscal Studies, a think-tank, and colleagues, shows, households' choices about whether to make their own food or to buy it premade are shaped not only by the upfront cost of those things. They also depend on what economists call "shadow costs".

The true cost of an at-home meal involves not just the outlay for the ingredients, but the time spent on shopping and preparation. In an era of low female labour-force participation, shadow costs were low. A stay-at-home mother who cooked instead of eating out would have less leisure time. But as more women entered the workforce during the 20th century this equation changed, raising the shadow cost of cooking. Now a working woman who cooked dinner would be sacrificing time which might otherwise be used to earn money. And so eating out made increasing economic sense, even as it became more expensive.

The third factor was changing working patterns. Historically poor people have tended to work longer hours than rich ones. But in the latter half of the 20th century the opposite became true. The rise of knowledge-intensive jobs, and globalisation, made rich people's work more financially rewarding—and enjoyable. Toiling into the night became a sign of status. The upshot was that the people with the most money to spend on dining out increasingly needed it most, since they had the least free time. In Britain the richest tenth of households devote a much bigger chunk of their overall spending to dining and drinking out than the poorest tenth, and the gap has grown in recent years.

What does the history of the restaurant say about its future? People have relished their reopening. In recent weeks global restaurant reservations have been near their pre-pandemic levels. The best ones are booked up for months: Silicon Valley nerds have created automated bots which instantly reserve tables.

The long-term future of the restaurant is less clear. The pandemic has led to many people buying more takeout than before (Uber's revenue from delivery now exceeds what it earns from helping people get around), while others have a newfound love of cooking. Restaurants have little choice but to continue to adapt. That means moving still further from the utilitarian model of the 18th century and before, and instead doubling down on what they do best: offering those who need to eat a taste of romance, glamour and love. ■

26%

The growth in the number of licensed restaurants in Britain between 2009 and 2019

0

The number of restaurant bookings via OpenTable on April 9th 2020



CORRUGATED IRON

GIMME SHELTER

DOWN THE deep lanes that lead to Dartmoor's granite uplands, in England's West Country, a weather-beaten gap has grown in the hedge marking a Saxon field boundary. One day this winter a battered sheet of corrugated iron appeared, lodged in the gap as if it had blown in. In reality, the middle-aged brothers who farm nearby are probably responsible: their sheep have a habit of busting into others' fields. In the chilling wind the sheet quivers, like a living thing.

Rusted corrugated iron melds with autumn's russet colours, just as the corrugated roofs of nearby barns sit comfortably in Dartmoor's weather-worn landscape. For decades, corrugated iron has been used by farmers for lambing sheds, shepherds' huts, shelter for farm machinery and much more.

Too often, corrugated iron (in fact, more usually, steel) goes ignored. Tastemakers have looked down on it, though that is changing. Invented in the early 19th century, its spread represents a revolution that is playing out still, on a global scale. Sheets of corrugated iron marked the first wide-scale building material that did not spring from what lay, in terms of stone, clay and timber, around. It represented the first widespread use of steel in buildings. Corrugated iron is light, and easy to transport and assemble. That enabled the first mass production of prefabricated buildings—introducing the flat-packable concept a century before IKEA.

From the mid-19th century, some of the biggest waves of human migration and settlement were indivisible from the corrugated iron that people often brought with them. The metal enabled life in places that were otherwise inhospitable because of climate, terrain or paucity of local materials for shelter. It is, ▶▶

The rise and rise of an unfairly ignored building material

Corrugated iron is a child of the Industrial Revolution

▶ write Adam Mornement and Simon Holloway in their terrific book on the stuff, “a material of the frontier”.

Consider its ubiquity. Water butts, bird hides, outside latrines, aircraft hangars, aircraft themselves, water towers, lighthouses, the abandoned whaling station of Grytviken on South Georgia and, most hauntingly, places of human internment, be they for refugees, prisoners-of-war or the persecuted: corrugated iron has loomed large. In Mawsynram in north-east India, which receives the highest rainfall on Earth, buildings cannot be of wood, for they quickly rot; the sound of the Mawsynram climate, then, is the rat-a-tat-tat of huge raindrops falling on “tin”, as the material is widely referred to. Tennessee Williams knew what metaphor he wanted for the enervated sexuality and jittery frustrations of Maggie, one of his best-known protagonists, in a doomed marriage—“Cat on a Hot Tin Roof”.

Corrugated iron is a child of the Industrial Revolution. The best-known origin story starts at the Phoenix ironworks near Birmingham, when a sheet of metal serving as a guard protecting workers making rails worked loose and got pulled into the gears of the machine. While the workers fabricated a new guard, John Spencer, master of the ironworks, picked up the crumpled sheet. It did not flop around or bend under pressure as sheet metal usually did.

Spencer had stumbled upon how a linear pattern of ridges and furrows renders a sheet stiffer perpendicular to the axis of the corrugation. The scientific explanation for this lies in the, to laymen, nearly inscrutable *Theorema Egregium* (Remarkable Theorem) of Carl Friedrich Gauss, published in 1827 and concerning the curvature of surfaces. More intuitively, consider a common pizza-eating strategy: gently bending your slice before bringing it to your mouth obviates the risk of buckling and consequent mess.

Spencer envisaged a machine in which sheets were fed through a pair of grooved rollers. Thus was the barrel corrugator born, a thundering machine that served as the chief way to make corrugated iron until the second world war. But the earliest patent was registered in 1829 by Henry Palmer, an architect and engineer with the London Dock Company. Palmer’s insight was that while possessing transverse strength, corrugated sheets can still be curved lengthways and then lapped and riveted to form a self-supporting arch. Such a roof would be light. But in the same way that the shell of an egg represents impressive structural strength, it would be capable of bearing compressive forces present in all roofs as their weight bears down with gravity on whatever is holding them up. Up to a certain span a corrugated roof of self-supporting sheets can arch across a given space with little or no recourse to the usual supports used to hold up roofs clad in slate or other heavy materials. Suddenly, sheds far larger than had previously existed became imaginable.

THE WORLD’S ENTREPOT

Towards the end of the 18th century, London was the victim of its own success. The River Thames was choked with vessels from around the world waiting for a limited number of wharves. Work on a new London Dock began in 1800. But by the time the 32-year-old Palmer was hired in 1827, the London Dock was bursting. A new basin, locks and warehousing were needed. Palmer would oversee the work.

In 1829 he proposed a large and new type of struc-

ture, the 2,200 square-foot (204 square-metre) Turpentine Shed. It was the world’s first corrugated-iron building. Its half-barrel roof soon became emblematic of building with the material. Admirers had no doubt of its radical nature. One, in the “Register of the Arts and Sciences”, deemed the Turpentine Shed’s roof to be “the lightest and strongest roof (for its weight), that has been constructed by man, since the days of Adam”.

Palmer’s large-span roofs found ready use on naval slipways, where ships had hitherto been constructed in the open. Corrugated iron also enabled the grand new termini of the burgeoning railways. None was more impressive than Paddington station, built in 1854 by Isambard Kingdom Brunel. It remains unchanged, in essence, even today.

Rust was corrugated iron’s first problem. Galvanisation—coating it with corrosion-resistant zinc—was the solution. By the mid-19th century Britain’s galvanising industry was using 10,000 tonnes of zinc a year. When, in 1856, Henry Bessemer created a revolutionary furnace that blew air through molten iron to drive out impurities and create steel, the demand for galvanising grew further. Steel is more formable and ductile than iron, and stronger. It is also more prone to rust.

Around the middle of the 19th century, a more democratic impulse came to embody corrugated iron. It emerged, oddly, with a royal nudge at the Great Exhibition of the Works of Industry of All Nations. One of the defining events of the time, it was held in 1851 in Crystal Palace in London’s Hyde Park. A third of Britain’s population flocked to it. The exhibition was intended to showcase the wonders of the industrial age.

Queen Victoria’s consort, Prince Albert, was the exhibition’s chief patron. Among all the exhibits, homely Albert was struck most by an emigrant’s corrugated-iron cottage. He ordered something similar for Balmoral, the royal residence in Scotland. Just weeks later it had been fabricated, shipped and erected. Today, it serves the estate as a carpenter’s shop.

Albert’s blessing spurred the trade in portable, timber-framed, corrugated-clad buildings. Also helping were the early gold rushes of California (1848) and Australia (1851)—where this “universal material” really came into its own. Within a year of gold being found in New South Wales and neighbouring Victoria, 500,000 immigrants were scouring the land for new finds. British manufacturers rushed to provide shelter. Shipping firms exporting wool from Australia to Europe gladly took cargoes of corrugated iron on the return trip. Immigrants to Australia often shipped their own pre-fab homes with them. South Melbourne’s “Canvas Town”, a shanty encampment of prospectors and traders, acquired a more permanent air thanks to corrugated-iron kits for cottages and shops arriving on the quay.

Land dealings on the new frontiers of Australia and New Zealand were notoriously dodgy. In case of eviction, having a portable house was a distinct advantage—you did not lose everything. Thanks also to cheapness, portability and a relatively rust-free climate, “wrinkly tin” blazed across the frontier landscape of the Antipodes. From kennels to post offices and even the outdoor dunny, there seemed nothing tin could not do. In urban settings, tin cottages gave way to bungalows with verandahs, and then structures of two or more storeys. In New Zealand tin was given a new lease on life in 1936, with the fixing of a 40-hour week and two days out of every seven for leisure. The ▶▶

After God, in the story of corrugated iron, comes war

▶ national craze for the weekend “bach”, a Kiwi dacha, was born. Baches are among New Zealand’s most iconic buildings—largely because of tin.

Back in Britain, corrugated-iron churches for the new settlements in Australia, Burma, Canada and beyond were designed to seat hundreds of congregants. Before shipping, they would be erected to check nothing was missing. The occasion was public and festive. Services and even dances were held inside.

Churches for export also primed a new domestic market for corrugated churches, chapels and mission halls. These are Britain’s “tin tabernacles”. The radical structures were the antithesis of the medieval stone parish churches that till then had embodied religion, the English landscape and a paternalistic social order.

THE RIPPLE EFFECT

Two broad forces were at work. The first was a population on the move, a consequence of an intense period of population growth and industrialisation. Poor, rural classes flocked to new centres of industry and mining. In the other direction, prospering middle classes sought distance from satanic mills and miasmic air by looking to the new suburbs. The demand for new places of worship followed. There was also a moral and social upheaval, typified by improving education, a growing awareness of class and a wave of religious “revivals”. Paternalism was there, in places, but with the new religiosity came a questioning of the established church. Iron churches, writes Nick Thomson in “Corrugated Iron Buildings”, were the “perfect synthesis of industrial ability and social or spiritual need”.

The catalogues of the iron-makers were swift to cater to the new trend. Church kits offered gothic windows and belfries. They started at under £100 (about £12,000 (\$15,800) today), including shipping to the nearest railway goods station and erection on ready-made foundations. Landowners and industrialists were persuaded to part with a scrap of ground, and within weeks, the structure would be up. The cost per soul must have seemed a bargain.

In today’s post-industrial age, populations have moved on again, mainly to exurbia. Many of the surviving tin tabernacles float in empty quarters, at a rural crossroads or under the overgrown boughs of abandoned orchards. One landmark in Shrubland Road in

east London has passed through the hands of several denominations. Now the building stands for sale, presumably destined to become homes for hipsters.

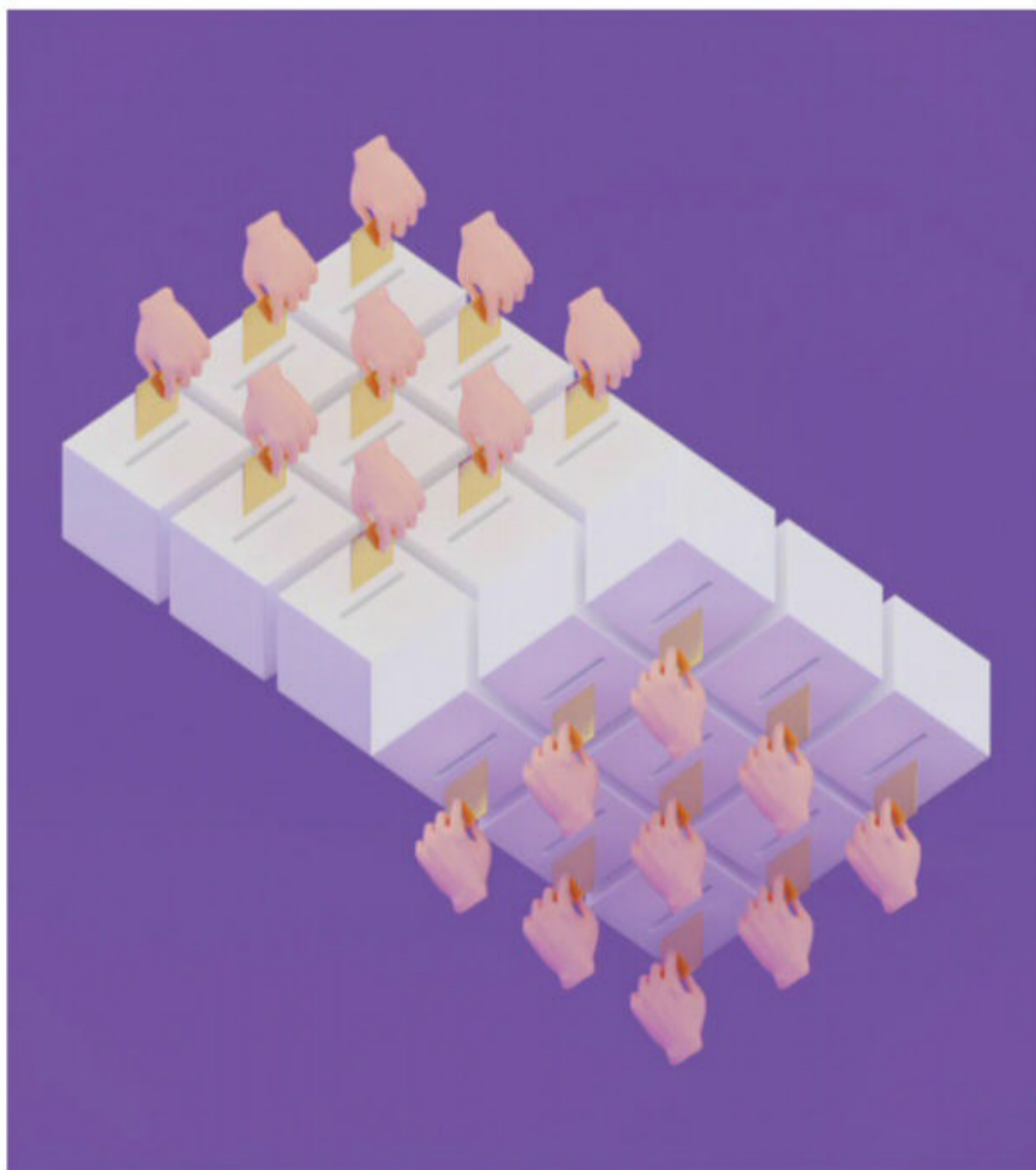
After God, in the story of corrugated iron, comes war. In 1916, halfway through the first world war, a Canadian engineer in the British Army, Peter Nissen, came up with a half-cylindrical building for billeting troops or storing equipment. A handful of men could put up a Nissen hut in four hours, transforming soldiers’ comfort. In the second world war, a larger version, the Quonset hut, evolved in America. Hundreds of thousands were made. Two Nissen huts, joined end to end, underwent an apotheosis on Scotland’s Orkney Isles at the hands of Italian prisoners-of-war. The Italian Chapel features a rood screen fashioned from steel reinforcing rods, and lanterns made of corned-beef tins. A painted Madonna and Child rise behind the altar. The walls and ceiling are covered with *trompe l’oeil* depictions of saints and Italian landscapes. The ornate whole is a masterpiece of suffering willed into hope.

Across the poor world, tin still lies at the heart of informal settlements: urbanisation rolls out sheet by corrugated sheet. As well as representing shelter and adaptability, corrugated iron serves both as currency and community glue. Tin has less obvious adaptations: leave plastic bottles of water on top of a tin roof, and the reflected light and radiation will help kill bacteria in the water. Stick the same bottle through a hole in a tin roof, and you have an instant solar lamp.

In the rich world, tin has acquired a hipness that acknowledges its back-story and its “authenticity”, to employ a much-abused word, in pursuit of a simpler, more essential way of living. In particular, a handful of Australian architects, notably Glenn Murcutt, Richard Leplastrier and Ken Maher, celebrate the tradition of corrugated iron in a modern context. Mr Murcutt’s buildings “touch the earth lightly”, a phrase he borrows from ancient aboriginal precepts. Mr Maher’s Olympic Park Station in Sydney, built to bring spectators to the 2000 games, has a spectacular vaulted roof that pays homage to Australia’s corrugated tradition, Mr Maher says, while leaving the traveller with a powerful sense of emerging into the light. A long way from that quivering sheet in the Dartmoor hedge, but all the more reason to allow your eye, next time you are out and about, to settle on the humble, unsung tin. ■

↓ Buenos Aires, Argentina (left) and Zeila, Somaliland





A FAIRER WAY TO VOTE?

THE PUBLIC SQUARED

The intellectual roots of a new democratic vision

ALICE WAS soaked. So was the Mouse, the Eaglet, the Dodo and all the other bedraggled creatures that emerged from the pool of tears Alice had shed at the bottom of the rabbit-hole. After the Mouse tried talking them out of their soggiess with the “driest” speech he knew, the Dodo proposed “more energetic remedies”. Alice and the animals began racing around a circle, with no start or finish line, and no obvious winner. It was, the Dodo said, a “caucus-race”.

The puzzling race described in “Alice’s Adventures in Wonderland” is a piece of political satire smuggled into a children’s tale. The book’s author, Lewis Carroll, took a keen interest in the quirks of electoral contests. He would later write a treatise on “the dust and din” of Britain’s 19th-century voting reforms, under his real name, Charles Dodgson. (The animals’ huffing and puffing may also mock the circuitous deliberations of Christ Church College, Oxford, where Carroll spent his life, often locking horns with the dean, father of a real-life Alice.) Most election pundits lavish vast attention on the political creatures in the competition and the prizes they might win. But Carroll was different. A mathematician and logician, he turned his eccentric intelligence to the rules of the race.

To most, this is the driest subject in politics. But the rules of the race can change the course of nations.

The rules of the race helped dictate the outcome of two of the most consequential votes in recent history: the election of Donald Trump as the Republicans’ presidential nominee in 2016 and Britain’s vote to leave the European Union in the same year. In each case, the rules of the race seemed straightforward, commonsensical and unobjectionable. Both produced a clear winner. But what if the rules had been switched? What if the Brexit referendum had looked more like the primary, and the primary more like the referendum?

In the primaries, each voter picked one candidate and the contender with the most votes won. It is a method so familiar as to almost defy examination. And yet its disadvantages have long been recognised. Back in 1873, Carroll lamented its “extraordinary injustice”. Imagine, he wrote, if one of four candidates is the first choice of 36% of voters but hated by everybody else. Another is the first choice of a slightly smaller percentage but the second choice of everyone else. The second candidate should win. But the rules of the race would conspire in favour of the first.

In the Republican primary, opposition to Mr Trump was fragmented among numerous rival candidates—as many as 11 in the early contests. A different set of rules might have winnowed the field earlier to leave Mr Trump facing a single opponent, such as John Kasich, hated by none, liked by many, but the first choice of few. That would have made the primary more akin to a straight-up yes-no referendum on Mr Trump’s candidacy. In that case, some polls suggest, he might have lost the race.

The result of the Brexit referendum would also have been different if the myriad versions of Brexit (modelled on Australia, Norway, Switzerland and so on) had been pitted against Remain and each other. Opposition to the EU would have been fragmented among many alternatives. And Remain would have triumphed like Mr Trump.

Some people think Brexit was an example of a voting paradox almost as surreal as the Dodo’s caucus-race. Of the three broad options—Remain, hard Brexit ▶▶

▶ and soft Brexit—each could beat one of the others but not both. If asked, Britain would have preferred a soft Brexit to remaining a member of the EU, because even hardened Eurosceptics thought some kind of exit was better than none. Voters would have preferred Remain to a hard Brexit, because of the economic chaos entailed by such a disruptive departure. But they would have preferred a hard Brexit to a soft one, because if the country was going to go to all the trouble of leaving the EU it might as well regain control of immigration.

Carroll proposed a number of alternative voting methods to bring races to a more satisfactory conclusion. One was a version of the “method of marks”. Each voter is given a number of points or “marks” to spread across candidates as they see fit. They would give the most marks to their favourite candidate. But they might also give a few to acceptable alternatives. This would allow voters to express both the fact of their support and its intensity.

Polarising figures like Mr Trump would attract lots of marks from some voters, but none from others. They might therefore lose to choices that earned a few marks from everyone. “This Method would, I think, be absolutely perfect,” Carroll wrote in 1873, if only voters were “sufficiently unselfish and public-spirited” to reserve some marks for their second or third choices. But in practice, he thought, voters would “lump” all of their marks on their favourite candidate—if only because they worried that others would do the same.

ACROSS THE QUAD

Carroll never really overcame this problem. The intellectual baton instead passed to another eccentric enigmatologist, who provided the ingredients for a solution shortly after the second world war. Like Carroll, Lionel Penrose was educated as a mathematician (at Cambridge not Oxford) before becoming a medical doctor and geneticist at University College London. Like Carroll he was fond of riddles, paradoxes and inconclusiveness. He and his son documented some of the “impossible objects” (such as the never-ending staircase that leads up to its own foot) made famous by M.C. Escher. In his 16th-century country home, he was amused by a tree with roots that grew upwards.

According to one obituarist, he also knew how to be “difficult” in committee if things went the wrong way. Indeed, his ingenious contribution to the theory of voting was to write down the mathematics of getting one’s way. Being difficult, he proved, is often easier than you might think. The power of a single committee member was surprisingly hard to dilute.

To see why, imagine a committee of three people—call them Tom, Dick and Harry. Their votes can in principle fall eight different ways. (A proposal can gain support from all three or none. It could win backing from Tom and Dick alone; Dick and Harry alone or Tom and Harry alone. Alternatively, these same three pairings could oppose it.) In four of these combinations, Tom can change the outcome, turning a knife-edge victory or defeat into its opposite. A voter’s chances of finding themselves this pivotal position serves as a good index of their “power”. So in a small three-person committee, their power is four out of eight or 50%.

What if the committee were three times bigger? You might think that would divide a voter’s power by three. You would be wrong. In a committee of nine, there are 512 different combinations of votes. An individual vot-

The rules of the race can change the course of nations

er can decide the result in as many as 140 of these, because the other votes are evenly split. By the same index, the voter’s power is 140 out of 512 or 27.3%—down by less than half.

Why is that? The voter is now only one of nine, diluting their influence. But this dilution is partly offset by another consideration, as Richard Baldwin of the Centre for Economic Policy Research has pointed out: with nine members, many more potential knife-edge combinations of votes exist. A voter’s power diminishes as a committee grows in size, but it does not shrink proportionately. It shrinks at a more gentle pace, proportionate not to the size of the committee but to the square root of its size. The voter’s power, Penrose pointed out, diminishes as the roots grow upwards.

Writing just after the second world war, Penrose had bigger concerns in mind than university politics. He was intrigued by the best way to allocate votes to countries in a “world assembly” like the United Nations, established only months earlier. Giving every country a single vote, regardless of its size, was undemocratic. The obvious solution was to award votes in proportion to population. But that would give big countries too much clout, Penrose argued.

He instead proposed a middle way between the two. Each country should be allocated a number of votes corresponding not to the size of its population, but to the square root of its population. The population required for one thousand votes might be one million. For two thousand, four million. For three thousand, nine million. To put it another way, the population required for a given number of votes should be that number multiplied by itself (or squared).

Penrose’s idea reappeared when the EU mulled reforms to its voting rules in 2007. Poland worried that big countries like Germany would have too much sway. So it adopted an odd slogan for the summit: “the square root or death”. The phrase “neatly combines obscurity, absurdity and vehemence,” as Gideon Rachman of the *Financial Times* (and formerly of *The Economist*) put it, “capturing the spirit of the modern EU”.

Despite this vehemence, the proposal got nowhere. But something similar in form has been proposed by Glen Weyl, a political economist now at Microsoft Research. He calls it quadratic voting or qv. In its simplest version, each voter would be given a budget of “marks” as Carroll might call them or “voice credits” as Mr Weyl calls them. Voters could use these credits to “buy” votes for a candidate or proposal. The first vote for a candidate costs one credit. But casting two votes for a single candidate costs four credits (ie, two squared); casting three costs nine (three squared), and so on. Under this scheme, people buy votes with their credits just as countries “earn” votes with their populations in Penrose’s imagined assembly. In both cases, the aim is to give voters as much sway as their population or passion warrants. But no more so.

Compared with the method of marks, qv makes it harder to “lump” votes. That is because each additional vote for a single candidate costs more than the last one did. (A second vote costs an additional three credits; a third vote costs an additional five.) Thus instead of buying increasingly expensive votes for their number-one choice, voters are nudged to cast some relatively cheap votes for second- or third-choice options. In this way, the method encourages compromise.

In the book “Radical Markets”, Mr Weyl and his co-▶▶

▶ author Eric Posner argue that the method could potentially work well in organisations large and small, from the United Nations to presidential elections, from shareholder meetings to homeowner associations. By their reckoning, it would also have left Mr Trump trailing Mr Kasich in 2016. Vitalik Buterin, co-founder of a blockchain platform called Ethereum, has used similar principles to govern his crypto-community's decision-making. He describes it as "an initial foray into a fundamentally new class of social technology".

In principle, this social technology gives people a reason to express, but not overstate, the intensity of their feelings. To see how that works, imagine that one voter would happily part with \$1,000 if it would magically guarantee their candidate a victory. A second more passionate supporter would pay twice as much. They both calculate that casting an extra vote will increase the odds of victory by the same small percentage (say 1%). And they privately value each voice credit at the equivalent of about \$1 (even if they cannot literally sell them for money).

The first voter enters the poll. Since a vote increases the chance of their candidate winning by about 1%, it is worth roughly \$10 in their mind (1% of \$1000). The first vote, which costs only one credit or the equivalent of \$1, is a bargain. So is the second, third and fourth. By the time they have cast five votes (for a combined cost of 25 credits), a sixth would cost 11 credits (six squared is 36, which is 11 more than 25). That is the equivalent of \$11. So it is not worth buying.

The more passionate supporter values each vote at \$20. Once they have cast ten votes (for 100 credits), an eleventh would cost them an additional 21 credits. So they limit themselves to ten. That is twice as many as the first supporter, accurately reflecting the fact that they care twice as much about the issue.

The result could be quite different under a simpler system of one-credit-one-vote. If each vote cost a flat one credit, the passionate voter would snap them up, until they had exhausted their budget, or until victory was so assured an additional vote was not worth buying. The other, milder supporter might do the same, in which case the result would fail to differentiate between them. Or, knowing that stronger supporters were blowing their budgets for the cause, the milder

Even minorities could occasionally prevail over quadratically constrained majorities

supporter might not bother to buy any votes at all. That would again misrepresent their true feelings.

Distinguishing strong from mild support is equally valuable in opinion polling. In 2016 David Quarfoot of the University of California, San Diego and his co-authors put ten controversial policy proposals to 4,850 American voters. They included proposals to raise the minimum wage, deport illegal immigrants, repeal Obamacare and tax the rich. Some of the voters were asked to respond on a conventional scale (from strongly approve to strongly disapprove). Others were given a budget of 100 voice credits to spend quadratically.

In the conventional survey, people tended to gravitate to one end of the scale or the other. They expressed strong approval or disapproval, just as online reviewers tend to give five stars or none. In both cases, a strong statement costs nothing. In the quadratic poll, people faced a constraint. Expressing vehemence on one issue required them to weaken their stand on another. This constraint forced them to be more discerning about their passions.

QV, SEE

Mr Weyl suggested the method to Chris Hansen, who is now a state senator in Colorado. The Democratic legislators used qv to help pick which of many possible spending bills they should push in the year ahead. It is also used in Taiwan to help decide among the innovations cooked up in the annual Presidential "Hackathon", which challenges civic entrepreneurs to use data to improve public services. In Brazil the city council of Gramado has also used quadratic voting to set its priorities for the year and to find consensus on tax amendments. It is a way to go beyond "the simplicity of yes or no," says Professor Daniel, the council's president. "At first we faced some scepticism, we found it strange," he says. But after the councillors were trained, "everyone understood the idea, which is the search for consensus, for a democracy of the future."

Quadratic voting does sound strange. Like the caucus-race in Wonderland, the "best way to explain it is to do it". And so *The Economist* is inviting readers to take part in an online quadratic poll (see the link at the end of this article) modelled on the experiment by Mr Quarfoot and his co-authors. The proposals include: should countries impose a carbon tax? Should they legalise assisted dying? Should Britain reverse Brexit? You can express how you feel about these proposals, and how strongly, by taking part.

Mr Posner and Mr Weyl have big dreams for their moderation machine. They imagine a world in which citizens would spend from a lifetime budget of voice credits on regular referendums. An individual who felt strongly about a single issue could hoard their credits until its moment arrives, then blow all of their saved credits on it. That would allow passionate minorities occasionally to outvote indifferent majorities.

In this vision, voters could enter and exit electoral contests when the spirit moves them. In that way it would resemble Carroll's caucus-race. And since even minorities could occasionally prevail over quadratically constrained majorities, everyone could win at some point. As the Dodo said, "All must have prizes." ■



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SPACE TRAVEL

FIGHTING FIT

THE EARLY days of the American space programme—days of white-knuckle test flights and solo orbital missions—called for pilots with qualities such as supreme self-confidence, unflinching bravado and ice in their veins. Or, to put it less kindly, “narcissism, arrogance and interpersonal insensitivity”. That was the assessment of one of NASA’s first staff psychiatrists, Patricia Santy, in her book “Choosing the Right Stuff”.

Yet as the space programme has grown up, so have the astronauts. And they are continuing to evolve with their missions. The next giant leap—travelling to Mars—will require people made of very different stuff from their predecessors. They must survive not only deep space but one another’s company. It took Apollo 11 about three days to get to the Moon and two days to make it back. A voyage to Mars will probably be an 18-month round trip in a spacecraft no larger than a small house, as well as perhaps a year spent on the planet.

Rotations on the International Space Station last about six months, so many astronauts have become used to long stretches in space. But a mission to Mars will add new complications. Crews on the space station have real-time contact with experts on Earth to help them manage whatever comes up. As the Mars crew ventures deeper into space, gaps in their communications with mission control will grow to 20 minutes or more; crews will need to be able to co-operate without support to solve unforeseen problems.

“There’s going to be some conflict, there’s no doubt about it,” says Noshir Contractor, a behavioural scientist at Northwestern University, in Illinois, who works with NASA to help crews in space co-operate. The trick, he says, is not to avoid conflict but to manage it. ▶

Missions to the red planet will need a new breed of astronaut

▶ When engineers design a spacecraft, they do so first on a computer so they can consider every variable and understand how the machine might behave in different scenarios. NASA is trying something similar in building crews. Its researchers are creating computer models of how different people interact when confined together, and using those models to predict conflict and optimise performance over a long mission.

Humans are more complicated than spacecraft. But Dr Contractor likens his work to weather-forecasting. Weather is a complex, non-linear interaction of factors including air temperature, pressure and wind speed. Yet models can reliably predict next week's temperatures and chances of rain. Meteorologists turned to computers in the 1950s; social scientists began computerising "human factors" a decade ago.

Effective computer models demand a lot of data, so NASA has created a supply. Inside Building 220 at the Johnson Space Centre in Houston, Texas, is a structure three storeys high and 14 metres long, composed of two standing cylinders connected by a third lying on its side. Called the Human Exploration Research Analogue (HERA), it is a laboratory in which crews perform mock space missions of a few days to a few months. They are confined to the laboratory, eat only space food and follow a minute-by-minute itinerary of tasks and exercise. Monitored by cameras and microphones night and day, they are routinely prodded, physiologically and psychologically. Vibrations, sound effects and communication delays with a mock mission control add to the realism, and the stress. Dr Contractor calls HERA the "ultimate human Petri dish".

With no one to complain to about their colleagues, teams in HERA work, live, eat and solve problems together. In one experiment, four-member crews participated in mock 30-day missions to an asteroid called Geographos, where they collected rock samples and simulated spacewalks. They faced communications delays with Earth of up to five minutes each way, and at one point underwent 24 hours of sleep deprivation.

So what have these models and experiments revealed? Conflict within a team is not always a bad thing. Happy teams are not necessarily the most productive. "If we're going to draw an arrow of causality, it's stronger to reword the statement as 'a productive team is a happy team,'" says Leslie DeChurch, a psychologist at Northwestern University. "Nothing builds cohesion in a team like excellence."

Avoiding conflict can discourage the creative friction that can generate new or better ideas. Conflict associated with tasks is different from that associated with personalities. Conflict over ideas can be helpful. But when conflicts get personal, things can get ugly.

In both the leader and the crew, psychologists look for people who are able to read what others are thinking of them—or "self-monitor". Those who are good at self-monitoring can often tell, for example, whether they are intimidating others into silence, and then find ways to put them at ease. It turns out that they are also people others enjoy working with.

Psychologists also measure conscientiousness. That may sound like a crucial quality for a trip to Mars. But, on average, crew members selected these days for missions in HERA score moderately in this respect.

Research in HERA has shown that people who score very highly on conscientiousness are more likely to be seen by others as a hindrance. To others, the conscien-

tious person can feel like a nag. A good combination of personality traits mixes a degree of conscientiousness with high self-monitoring capability. That person can critique others' work without crossing lines—lines which each crew member may define differently.

Successful teams for space missions will require constant tweaking. You cannot dispatch perfect crew members and expect them to remain that way for years. In repeatedly testing participants in HERA, researchers found that certain skills within a team, such as creative thinking and problem-solving, tend to decline about halfway through a mission. The reason? Probably living in a low-stimulation environment, eating the same foods and looking at the same people and the same dark sky every day. Knowing that a team's performance can be dynamic—however good it might be at the start—crews on Mars missions will have to find ways to keep firing up each other's imaginations.

Based on its HERA experiments, NASA believes it can now feed prospective crew members' physical, intellectual and personality traits into its model and, with 75% accuracy, predict who will clash with whom during a mission.

Equipped with such information, Dr Contractor's team is trying to come up with ways to mitigate problems, including by tweaking the "playbook" given to crew members. This is the hour-by-hour schedule that lays out details of tasks, including who will work when with whom. If the model shows, say, that team members A and B will come to blows by day ten, researchers can tweak the playbook for that day to pair A with C instead. Or the task itself could be switched to one in which both A and B are highly skilled; success breeds camaraderie. A third option is to put A and B together with D, a crew member they both like who can broker and mend their relationship. Re-pairing crew members can repair teams, as Dr Contractor puts it.

EVERYONE CAN HEAR YOU SCREAM

The idea of being stuck in small spaces with the same people for a long time has a chilling ring of familiarity. And there are lessons from the space programme that might apply to terrestrial life during a pandemic.

First is the need for routines, not just for work but for cooking or downtime, too. Planned routines provide structure and are central to space missions. HERA's playbook tells crews exactly what they will be doing hour by hour, including work, meals and fun.

At the same time, good communication and an ability to adjust are critical. On December 28th 1973, the three crew members of Skylab, the first American space station, declared a "work slowdown" and cut off contact with ground control, refusing to do their assigned tasks. They had become frustrated by their workload and complained bitterly to each other but kept those complaints from their colleagues on Earth.

Perhaps the most important insight NASA has gleaned from studying team dynamics—in space and on Earth—is the preciousness of one trait in particular: a sense of humour. Studies of crews overwintering at the South Pole show that a confined group needs people to fulfil various roles, including leader, storyteller and social secretary. But the most important task by far is that of the clown, a person who is funny and also wise enough to understand each member of the group and defuse tensions. Laughter, as much as courage, will sustain astronauts on their long quest to Mars. ■

The idea of being stuck in small spaces with the same people for a long time has a chilling ring of familiarity



SINGAPORE

THE LAST HOLDOUT

SINGAPORE

*Before the skyscrapers there were rural villages.
The government razed almost all of them*

WAH! SIX slices of bread for breakfast: Sng Mui Hong was unusually hungry. She knew what that meant. The spirit of her father, dead these past 25 years, was with her, and he was starving. Not that Ms Sng could see her father—she never had been able to see ghosts—but she could sense his presence: a heavy weight on her shoulders or a yawning pit in her stomach, hungry for white bread.

She was grateful he had shown up today. Torrential rain had fallen that morning, the drops hitting the zinc roof of her house like a hail of bullets. The open drains slicing through the village had clogged with twigs and leaves, as usual, and Ms Sng had to clear them. She did not thrill at the prospect. At 69 she was not as strong as she used to be, and her knee was giving her trouble. It was not as if the tenants would complain if she left the drains blocked. But clearing them was just what she did, what she had always done. The bread, and her father, would give her strength.

So she limped out into the drizzle. Along with her three siblings, Ms Sng owns Kampong Lorong Buangkok, the last village in mainland Singapore. The kampong, which means “village” in Malay, is in the middle of the city-state, and is about the size of three football pitches. Unlike her siblings, Ms Sng lives there and manages the property and the 25 tenant-households. Her skin is rumpled and weathered.

The burden of managing the place weighs heavily on her. It is not just that the land frequently floods or that tourists, eager to catch a glimpse of a way of life that is vanishing in Singapore (how could anyone live without air-conditioning?), snap pictures of tenants ▶▶

▶ through their windows as if they were zoo animals. The tenants may be forgiving when it comes to the drains but otherwise they “are exhausting”, Ms Sng sighs. Rent is dirt-cheap—anywhere between S\$6.50 and S\$35 (\$25.85) per month in one of the most expensive cities on Earth—but Ms Sng is forever chasing late payments. “People take advantage,” she says.

Ms Sng (pronounced “serng”) has every reason to sell the land, as the gadfly property agents buzzing around the kampong remind her. It is worth millions. The government intends to requisition it for redevelopment at some point anyway, so she might as well cash in. But whenever such agents come knocking, Ms Sng hides or sets her dogs on them. She has never considered moving out. “If I were to leave, what would become of the kampong?”

THE PAST IS A FOREIGN COUNTRY

Suburban Singapore is a hymn to monotony: there are beige high-rises and municipal leisure centres and multistorey car parks and pink high-rises and municipal leisure centres and multistorey car parks. But in a quiet neighbourhood in the east of the city, just beyond tower block 998A, there is a winding dirt path shaded by tamarind and banana trees leading past ramshackle wooden houses. Kampong Lorong Buangkok does not seem very Singaporean. The powerful state, governed by the same party for 70 years, owns about 90% of the land, and it has measured, levelled and engineered almost every inch of it. Jungle has long since made way for a spotless metropolis, where everything has been optimised for efficiency and everything is in a place allotted by bureaucrats.

Kampong Lorong Buangkok offers a respite from the relentless modernity. Villagers and nature do their thing. Silkie chickens promenade past one-storey clapboard houses, while vines grow wild round a bicycle rusted in place. The farther you penetrate the village, the more you begin to notice the chatter of mynas and burps of frogs. In a few places the jungle grows thick, perhaps as thick as when Singapore was a mere fishing village. Elsewhere, the ground is turfed with neatly mown grass, making the village feel like a small park. Life in the kampong, away from the hurly-burly of the city, affords a certain freedom. As Suleiman, a 64-year-old resident, puts it, in the village, with its parklike spaces, “Your mind is open.” People here are used to doing things their own way.

Seventy years ago, most Singaporeans lived in villages like this (though without the running water and electricity). In 1960, a year after the ruling party was first elected, 1.3m out of 1.89m Singaporeans lived in kampongs. But the government, sniffing at what it described as the squalor of kampong life and concerned about the lack of space in the tiny city-state, spent the next few decades razing the villages and stuffing their residents into hulking tower blocks. Better to build up than out. By 1990, 87% of Singaporeans lived in government housing. Today the average monthly rent for a five-bedroom government flat, the second-biggest on offer, is S\$656. (That is cheap by Singaporean standards but extortionate by kampong ones, especially given that the average kampong home is several times larger than the typical government flat.)

Ms Sng’s father was one of the holdouts. In 1956 he was turfed out of his village in the west by the colonial-era housing agency. He had no interest in living in a

Suburban Singapore is a hymn to monotony

government flat, says his daughter. He reared pigs and picked and sold herbs used in traditional Chinese medicine—work that would be impossible to do in a high-rise (when the resettlement programme began in earnest in the 1960s, many farmers, refusing to break with their livelihood and identity, herded their ducks and pigs up the stairs to their new flats). So Ms Sng’s mother prayed to a local Chinese deity, asking which village the family should pick as their new home. The answer came in a dream: Kampong Lorong Buangkok. Mr Sng bought the land for a song, inheriting a handful of tenants. Ms Sng was four years old.

She grew up in a community where everybody knew everybody else and residents left their doors unlocked. At weekends villagers gossiped on their sprawling verandas, or helped each other repair roofs or hack away at weeds—as they do today. Children ran wild and splashed about in the drains when it rained.

Ms Sng was lucky to live in such a close community. When her mother died “a month and two days” after they moved in, Ms Sng often went hungry—not because the family was poor but because neither her father nor her siblings could cook. Two women from neighbouring households regularly fed her, bringing round rice or fried fish.

Ms Sng left school at 11, to help her father manage the village. She tagged along as he collected rent and chatted with the tenants in Hokkien or Malay, and helped him muck out the drains, chase the snakes away or collect herbs for his medicinal potions. As a young adult, Ms Sng picked up odd jobs as a baby-sitter or an attendant at a nearby psychiatric hospital. Some of her friends married outsiders and moved away. The siren call of an air-conditioned flat was difficult to resist—it was, after all, what growing numbers of Singaporeans called home—and most outsiders could not hack life in the village. Gradually the number of households declined from a peak of 47 to 25. But Ms Sng never married, and never dreamed of leaving.

It was the family’s bad luck to live in a tiny country. In 1966 the Land Acquisition Act empowered the state to requisition land if it deemed it in the public interest, and to pay compensation below the market rate. Singapore had no hinterland or natural resources, and was stuck between two hostile neighbours. The government argued it had to move aggressively to secure Singapore’s future as a booming entrepot. It began seizing land to build roads, bridges and flats, and denied citizens the right of appeal.

Kampong Lorong Buangkok was not immune. When her father bought the village, the tract had the shape of a bird, says Ms Sng. In 1977 the government took a chunk. In 1988 it carved off more land to conduct roadworks. Ms Sng’s siblings lived in a part of the village that was seized and had to leave the kampong, which was full at the time. In total, the government took about half the land, decapitating the bird, says Ms Sng. And it is coming for the body. In 2014 the Urban Redevelopment Authority released its master plan: the village will eventually make way for a big road and two schools—though the government will not say when.

Given the high probability, now inevitability, that the family would lose the land, one might have thought the Sngs would pre-empt the government by selling. In 2007 the land was valued at S\$33m (\$21.8m at the time). That year parliament amended the Land Acquisition Act, requiring the government to compen-



← Kampong Lorong Buangkok

▶ state landowners at market value. Prospective buyers may wager they can buy low from the Sng family, then turn a profit when the government comes knocking. The family has at times considered taking the money, but Ms Sng always puts her foot down.

One reason is her devotion to her father. In 1996, when he was dying in hospital, he asked his children to take him home. He wanted to remain in the village for ever, he said, to look after them and their children after them. So that is where they took him, and that is where Ms Sng believes he has stayed. Sometimes his spirit trails her, giving her strength or warning her when something bad is about to happen. Sometimes he just wants to be fed. But most of the time he wanders the kampong, as he did when he was alive. “How can I leave this place?” she says. The kampong is the only place she can feel her father’s presence.

Another reason for spurning the money is that Ms Sng likes her life. She eats simply and does not “go for pretty clothes”, preferring mildewed checked shirts and black sweatpants. She picks her medicines from the foliage around her: Indian snake grass for fevers and borage for colds. Sometimes she wishes for more money. “\$6.50 [the lowest monthly rate she charges] is not enough to go out for a meal these days,” she gripes. But some tenants kick up a stink when she attempts to raise the rent, so she backs down; they have to be “willing partners”. “If I wanted to be wealthy by now, I would be,” she says. “As long as we have enough to eat and enough to get by, we are OK.”

IT TAKES A VILLAGE

There are also her friendships forged over a lifetime. There are the two women who practically adopted her, and the twins, now in their 20s, who used to follow her around the village. Residents have nicknames for each other like Jangot (Malay for “beard” in honour of a straggly salt-and-pepper tuft) and Botak or “cook”. Such friendships are harder to sustain when living vertically. The government tried to resettle villagers from the same kampongs in the same high-rises. But the “kampong spirit”—the trust and neighbourliness of village life—was hard to transplant and often fizzled. “We only meet neighbours along lifts or corridors and then sometimes it’s barely a hi or bye,” says Dr Intan Azura Mokhtar, Ms Sng’s former MP, of life in public housing. “But in kampong, it’s really about opening up their doors and the neighbours just walk in and out.”

It is unclear why the government has not yet taken the land. Ms Sng thinks it is because she is not a “trouble-maker”. That underplays her stubbornness and savvy. In recent years she has welcomed tourists, and she tolerates questions from journalist after journalist. One resident suspects Ms Sng hopes the publicity will deter the government. She certainly has a champion in Dr Intan, who gave a speech in parliament in 2017, when she was still an MP, asking the government to preserve the kampong so that young Singaporeans could get a taste of village life. The government responded that it was not likely to seize the village for “several decades”. That may be because state planners do not regard the neighbourhood as a priority for development. Whatever the reason, the government seems content to bide its time. “Until the day the notice letter arrives,” Ms Sng says, “I won’t worry about it. Otherwise I will get heart disease.” With that she smiles and limps home. There are chores to do. ■

JULIUS CAESAR

HE CAME,
HE SAW,
HE LIED

ALESIA, GERGOVIA AND LUTETIA

Retracing the steps of the most influential writer ever to visit France

HEMINGWAY, ORWELL, Joyce, Turgenev: many great foreign writers have found inspiration in France. But for lasting influence, one scribe stands above them all. He travelled around France for nine years, observing the local customs and recounting what he saw in lean and muscular prose. He also killed, by his own estimate, a million of the natives, conquered their territory and imposed on it a civilisation that has lasted, in one form or another, more than 2,000 years.

He was, of course, Julius Caesar. His “Commentaries on the Gallic Wars” is a fine work of literature. Cicero likened his prose to “nude figures, upright and beautiful, stripped of all ornament of style”. The “Gallic Wars” is also the only first-hand account of an ancient campaign written by a general of such stature. It is a priceless source for historians, yet also a slippery piece of propaganda. A quip apocryphally attributed to Winston Churchill could as easily have been Caesar’s: “History will be kind to me, for I intend to write it.”

A copy of the “Gallic Wars” in hand (on a non-stone tablet), *The Economist* retraced some of Caesar’s steps, using fast French trains rather than oxcarts on Gaulish roads that had not yet had the benefit of Roman engineering. The aim was not merely to retell Caesar’s bloody, dramatic tale, but to look at how modern historians have questioned it. And also to ask what we can learn from the most consequential writer-soldier-statesman in European history. We, too, live in a world where men with armies misbehave, where politicians twist the truth, and where it is not clear which culture will be dominant in the decades to come. Studying Caesar may help us understand our own age better.

An observant reader swiftly spots that Caesar peddled fake news worthy of any modern demagogue. In one battle he claims to have routed an army of 430,000 Germans without losing a single legionary. Since he had no atom bombs, this seems doubtful.

Caesar was not trying to write objective history. His aim was to increase his power. In 58BC, when the action began, he was not yet the master of Rome. He was one of a triumvirate of strongmen, along with Pompey (a general) and Crassus (a plutocrat). Having lavished sums on the Romans to buy popularity, Caesar was deeply in debt. He also faced possible prosecution for



offences committed as consul the previous year, such as using troops to intimidate his political opponents.

A military campaign was a chance to pay off those debts, from plunder. And his dispatches from Gaul burnished his reputation as a brilliant military leader. Like Charles Dickens, he probably published his work in instalments. Each year he sent another chapter to the Senate and had it circulated in Rome.

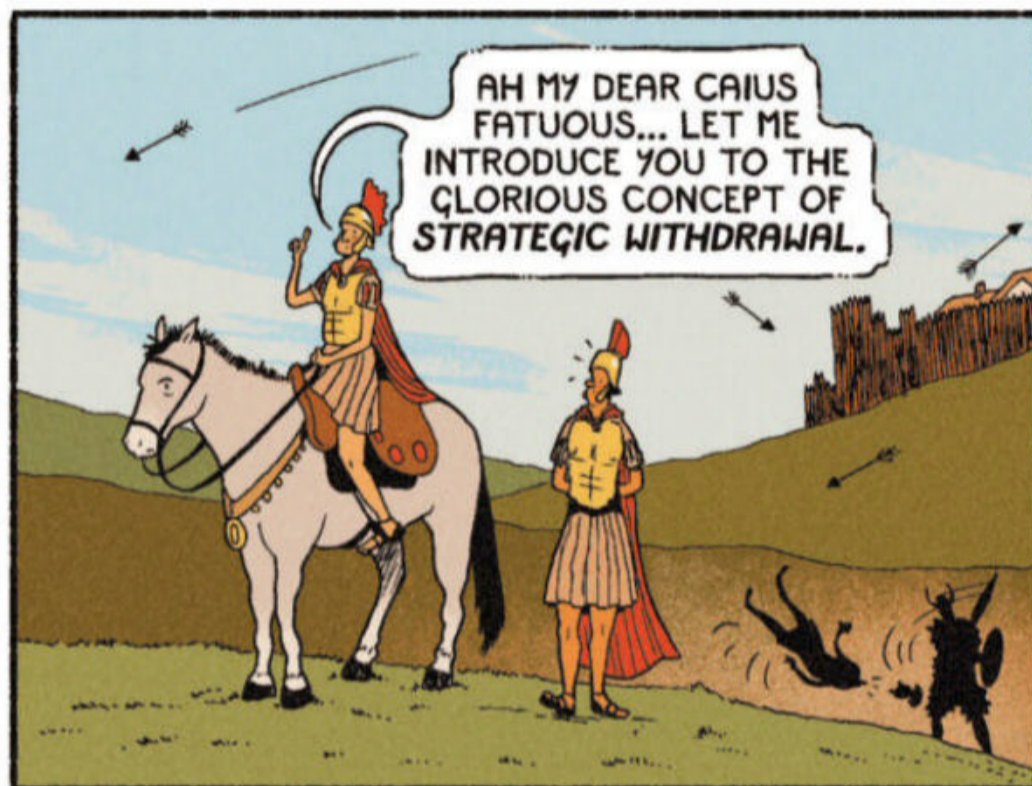
Unlike some other Roman authors, he was interested in non-Romans. He offers insights into cultures that left no written accounts of their own. “Gallic funerals are splendid and costly, for a comparatively poor country,” he observes. “Husbands have power of life and death over their wives and children.”

He notes that the Germans shunned agriculture, preferring to live on milk, cheese and meat; that German men strove to remain celibate as long as possible, believing it would make them stronger, and that German tribes “regard it as their greatest glory to lay waste as much as possible of the land around them and to keep it uninhabited” to remove “any fear of sudden invasion”. Yet they were hospitable towards guests.

Caesar makes outrageous generalisations. “Anger and impetuosity”, he writes, are “the most striking characteristic of the Gallic race.” The Gauls are quick to take up arms, but “have not the strength of character to stand up against reverses”. Some of his claims drew on earlier writers or hearsay. Did the Druids really burn wicker men full of human sacrificial victims? There is no archaeological evidence for this calumny. It is widely believed today only because Caesar wrote it. As for his belief that unicorns lived in Germany...

He did not spend long enough in Britain to observe much about its people, other than that they were nimble charioteers who, “without provocation”, attacked the army that was invading them.

He said the Belgians were the bravest of the Gaulish peoples. He thought this was because they were the “least often visited by merchants with enervating luxuries for sale”. He may have been referring to Roman wine, which was so popular with other Gauls that an amphora of it might be bartered for a slave. This was a staggering price, implying that to a rich Gaul a good drink was worth a lifetime of someone else’s labour. ▶▶



► Incidentally, Romans were sniffy about the Gaulish habit of drinking wine neat, instead of mixing it with water like civilised people. Arriving in Lutetia (“a town of the Parisii [tribe], situated on an island in the [River] Seine”), your correspondent checked to see if this barbaric custom persists. Happily, it does.

THE SWISS ROLL

The war began with a migration crisis. Nationalists today often describe an influx of migrants as an “invasion”. This one really was. The Helvetii, a tribe from what is now Switzerland, “felt that their territory was unduly small”. They burned their own villages so they could not retreat, packed three months’ supply of flour and rolled their wagons into Transalpine Gaul, a Roman province in what is now the south of France.

Caesar saw his chance. Or, as he put it, “He saw that it would be very dangerous to the Province to have a warlike people, hostile to Rome, established close to its rich cornlands.” (Caesar always referred to himself in the third person.) He crossed the Alps, thrashed the Helvetii at the battle of Bibracte and deported the survivors—110,000 of the 368,000 original migrants.

Over the next nine years, he conquered Gaul, an area that covers most of modern France and stretches as far east as the Rhine. He also fought the Germans and briefly invaded Britain. He was a superb strategist, methodical in securing supplies, and a deft forger of alliances. Yet he did not always win. *The Economist* visited the site of his most famous defeat.

It was at Gergovia in 52BC. Vercingetorix, a young chief of the Arverni, had roused several Gaulish tribes to join a revolt. His victory has been celebrated in French art and literature, on Gauloises cigarette packs and by the indomitable Gauls in the Asterix books.

Looking up at his hilltop fortress, one can see why Vercingetorix won. It is, as Caesar puts it, “situated on a high mountain and difficult of access on every side”. Gaulish warriors “occupied all the mountain heights within view and presented a terrifying appearance”.

Caesar set up two camps: a big one on flat ground, and a smaller one on a hill below the Gaulish fortress. His men dug a long, deep trench to connect the two camps, so that legionaries could “pass to and fro...

without fear of being surprised by the Gauls”. From the second camp, Caesar launched his main attack.

On a sunny October Sunday, your correspondent climbed the same mountain path, stopping first to buy bread and goat’s cheese—rations any legionary would have recognised. As in Caesar’s day the slope is steep and rutted. Loose stones trip the unwary. Round every corner is a bush in which an archer might lurk. Even without armour, the hike was arduous. Under a hail of javelins it would presumably have been worse.

After an hour, dripping sweat and feeling that he had earned his monthly bag of salt, your correspondent reached the foot of the battlements. There he was greeted not by blood-drenched Gaulish warriors, but by a French family with two small children having a picnic. They were there partly for the splendid view, they said, and partly to learn about history. The children debated which Asterix book was the best: “Asterix the Legionary” or “Asterix and Cleopatra”?

On top is the Museum of Gergovia, which opened in 2019. Visitors wander around the plateau, where helpful signs explain who camped where and who slaughtered whom. Inside are exhibits describing what modern archaeology has added to Caesar’s account.

The ditch connecting the two Roman camps is as Caesar described. Excavations in the 1990s found parts of it. In cross-section, the older soil is paler; the soil that filled it over subsequent centuries forms a dark triangle. Numerous artefacts have been unearthed: cracked helmets, short stabbing swords and huge arrows fired from a “scorpion”, a Roman siege crossbow.

In his own account of the battle, Caesar is an ingenious tactician. He has mule-herders don helmets and pretend to be cavalry, to distract the Gauls’ attention. He moves soldiers quietly through his ditch to surprise them. He loses largely because of bad luck. Some of his men fail to hear a trumpet ordering them to fall back at a crucial moment. Others mistake their allies, from another Gaulish tribe, for Vercingetorix’s men.

Caesar clearly downplays the scale of his defeat. He claims to have lost 700 soldiers, including 46 centurions. Since he fielded somewhere between 20,000 and 45,000 men and suffered a rout, this seems unlikely, notes Frédéric Nancel, the head of the museum. Caesar ►►

Roman wine... was so popular with other Gauls that an amphora of it might be bartered for a slave

► shifts blame onto his subordinates, for advancing farther than he had ordered them to. In a speech after the battle he chides his men for their “bad discipline”.

How many of his excuses are true is unknowable. What we do know is that he regrouped and beat Vercingetorix later that year at Alesia, another hilltop fortress. For centuries historians debated where Alesia was. But in 1839 a Latin inscription was found near Alise Sainte-Reine, a town in Burgundy. It read “IN ALISIA”. In the 20th century photos from the air confirmed evidence of the siege lines that Caesar built around the plateau. Modern 3D laser scanning, which can detect stone structures beneath soil and foliage, has enabled archaeologists to map where Caesar’s fortifications stood. Visitors can see a partial reconstruction, including ditches with spikes in them.

Caesar says he was joined at the siege by Titus Labienus, who had just conquered Lutetia. Recent digging confirms this: a lead sling pellet has been found with his name on it. Such inscriptions were common and often crude, “aimed at predictable parts of the anatomy”, as Mary Beard, a historian, puts it in her book “SPQR: A History of Ancient Rome”.

Strangely, the museum at Alesia is bigger and older than the one at Gergovia. Nations usually pay more attention to their victories than their defeats—Waterloo station is in London, not Paris. But Caesar’s conquest was so long ago that modern French people feel no rancour about it, notes Stéphanie Focé, who works at the museum in Alesia. Indeed, many see themselves, correctly, as descendants of both Romans and Gauls.

GALLIC SYMBOL

Napoleon III, France’s emperor from 1852 to 1870, tried to borrow the mystique of both Caesar and Vercingetorix. He paid for digs at Gergovia and Alesia, and erected a huge bronze of Vercingetorix near where the Gaulish chief made his last stand. Its face is modelled on Napoleon III’s. On the plinth is a quote Caesar attributed to Vercingetorix: “Gaul united, forming a single nation, animated by a common spirit, can defy the universe.”

Stirring stuff. But Caesar could not have heard the speech from which the alleged quote is taken. Also, Gauls in those days did not refer to themselves as Gauls; it is a Roman word. Vercingetorix would have referred to specific tribes, such as the Arveni and Mandubii. Thus, Caesar made up a quote to make his enemy sound more impressive and thereby buttress his legally dubious claim to rule the Roman world. Two millennia later another coup leader, Napoleon Bonaparte’s nephew, twisted the fake quote to make himself seem like the embodiment of ancient Gallic glory.

Groups of children and pensioners at Alesia enjoy relearning history. Gauls did not all sport huge moustaches, and they did not eat many wild boars, says Ms Focé. But they may have eaten dogs. Sorry, Obelix.

Caesar’s dispatches were not received uncritically in Rome. Cato, a senator who detested him, said the tribes whose women and children he had killed should put him on trial. Pliny the Elder, an author, later accused him of a “crime against humanity”.

But many Romans were impressed by his exploits. He had brought great swathes of land under Roman control. He had also looted a vast fortune (a fact his dispatches strangely neglect to mention). And he commanded 40,000 loyal, battle-hardened troops, which rather strengthened his hand. Had he relinquished his

What can we learn from Caesar, besides a greater scepticism of the self-serving words of the powerful?

command, his enemies would no doubt have put him on trial. Instead, in 49BC, he marched a legion across the Rubicon river and into Italy.

Four years of civil war ensued. Caesar beat Pompey and became dictator. He never called himself “king”, a dirty word in Rome, or emperor. But his triumph marked the end of the Roman republic, which is why a gang of senators stabbed him to death in 44BC. He never said “*Et tu, Brute?*” That was Shakespeare’s line. His adopted heir, Augustus, became the first emperor.

Caesar’s legacy is immense. He shaped the political geography of Europe. He ensured that French words such as *liberté*, *égalité*, *fraternité*, *vin blanc* and *croissant* all have Latin roots. He gave the world a calendar that more accurately reflects the time it takes Earth to go around the sun and that is still used. Today only two days are named after Jesus Christ, but Caesar and his heir each have a whole month. The words “kaiser” and “tsar” derive from his name. So, as the comedian Eddie Izzard has pointed out, does Cesar, a brand of food for “small yappy-type dogs”.

What can we learn from Caesar, besides a greater scepticism of the self-serving words of the powerful (especially when they talk of martial glory)? His world was distant from our own, and in many ways horrible. Babies were abandoned on rubbish heaps; children toiled in silver mines; slavery was taken for granted. Yet Rome had virtues, too.

It was open to talent from anywhere. Conquered peoples became Roman citizens. As in the modern European Union, any citizen could travel and work throughout a continent-sized polity. This is a crucial reason why so many ended up welcoming Roman rule, and why the empire lasted so long.

There was social mobility. Freed slaves could become rich and powerful. At least one emperor, Diocletian, is thought to have been born in shackles. Other emperors hailed from modern-day Libya, Serbia and Spain. Romans were rude about barbarians, but paid no heed to skin colour.

Caesar often broke the law. But we can say this only because Rome had written laws. In other ancient polities, the law was whatever the chief said, so long as it did not too blatantly violate tribal custom. For most people in the Roman world, written laws made it easier to deal with strangers, and made life more predictable. Many politicians today undermine the rule of law, from Hungary and Russia to Brazil and America. Voters should recall that when the western Roman empire collapsed five centuries after Caesar, the lawless ages that followed were not pleasant.

A final lesson from classical times is not to duck hard decisions. One reason why Caesar was able to seize power was that Roman commanders were responsible for providing their veterans with pensions. Thus the legionaries who spent nine years fighting for Caesar in Gaul had a huge financial stake in his future grip on power. They were loyal to him, not Rome.

This is a terrible system, as the citizens of countries where private militias run rampant today, from Iraq to Myanmar, can attest. Augustus ended it by making the central government responsible for military pensions. It cost a fortune: more than half the annual tax revenue of the empire, by one estimate. But it brought peace. Today’s leaders, who run and hide at the first mention of pension reform (never mind a carbon tax), should pay heed. *Carpe diem.* ■





BRITISH SOCIAL HISTORY

POCOCK'S PEN PALS

BRIGHTON

The virtues of an unrepresentative sample

THE LETTERS came every day. Sometimes a dozen, often more. The librarians of the University of Sussex were accustomed to a steady trickle of outside interest: they were the keepers of Virginia Woolf's papers and Rudyard Kipling's. But suddenly, in the early summer of 1981, the post bags bulged. They all ended up in one room of the library, where mounds of correspondence already teetered on every surface. And still more turned up. At Christmas, cards arrived, scores of them.

The postmarks fitted no pattern: one day London, then Loughton; Lowestoft and Liverpool; Weybridge and Whitby. Someone wrote from Kirkwall, the main town on Orkney—25 miles off the north coast of Scotland. The correspondents were all anxious to reach one man, no matter that he only popped into the library for an hour or two each week to paw through the choicest epistles. "Dear Professor Pocock," one neatly typed missive opened. Another struck a more informal tone: "Hi professor".

The professor in question, David Pocock, was not an obvious tribune of the masses. Sharp and sharp-tongued, a product of Cambridge and Oxford, he was by then in his fifties and lived alone with his cat. He had made his career studying Gujarati society and his reputation on campus as the host of gatherings for faculty and the brightest students. For his "black party", he covered the walls in crepe paper and served only black velvet (Guinness and champagne) and caviar.

The lives of his letter-writers were rather different. One was a nursery nurse from Rochdale in her early 30s; another a retired bus driver. There was a carpenter from Cardiff, a housewife from Great Yarmouth and a retired travel agent's clerk from Orpington. Eric Alli-▶

► son, a career burglar with a knack for relieving country houses of their silver, wrote from prison in Manchester, first on the topic of vegetarianism. Pocock was impressed. “I don’t say this to all the girls,” he wrote a little later in their correspondence, “but you can write.”

And so began one of the most eccentric, yet enduring, attempts at preserving for posterity the lives and views of everyday folk: the Mass Observation Project. Announcing the plan in a letter to *New Society*, then a British periodical, in June 1981, Pocock explained that he was seeking correspondents from any walk of life: the more humdrum, the better. “All that is required is a willingness to write to us both about personal experience and things seen and heard in daily life,” he explained. “The more ‘ordinary’ people think they are, the more interesting their experience to us.”

GETTING TO KNOW ALL ABOUT YOU

It was not the first such attempt. Pocock borrowed the idea and the name from a study that began in 1936 whose founders grandly claimed to be pioneering “the science of ourselves”. Those original “Observers”, as they referred to themselves, cast a quantitative eye over every aspect of life, sometimes in rather eccentric detail (on average, one Observer noted, it took a drinker seven minutes and three seconds to finish his pint in a pub in Brighton; pints were downed fastest on Fridays but nursed on Tuesday evenings). Of greater use to historians were the diaries Observers kept of life on the home front during the second world war.

That project petered out in peacetime, but its archives eventually wound up at Sussex with Pocock. For his new Mass Observation he decided to survey his panel quarterly, tracking in microcosm the effects of political, social and economic change. “Assume nothing is too obvious,” he wrote in a covering letter to his inaugural “directive”, as he called each appeal for contributions. “Think of yourself as describing something of which the reader has no experience. Concentrate as if bird-watching. Learn to look.”

Even Pocock’s rather dry choice of initial subject—a three-year study of the effects of inflation—did nothing to dampen public enthusiasm for the project. Every corner of the office in the library that Pocock kept with his long-suffering secretary, Dorothy Sheridan, and her two assistants was quickly covered in applications to be one of Pocock’s new Observers. It was not long until their replies to his first directive began to arrive. “Peas & beans scarce & their season short-lived!!” reported one correspondent. Another sent in pages detailing the closures of local businesses, including hand-drawn maps of her village. Now, as Ms Sheridan puts it, the professor had his “pen pals”.

Some of Pocock’s colleagues were less keen. Ms Sheridan remembers those early years as a battle to be taken seriously. The panel of Observers (at any one time, in the low hundreds to low thousands) was never a representative sample of society; in the early days, says Ms Sheridan, all who applied were accepted. Nor were their answers usefully tabulated for researchers seeking quantitative information. Quite the opposite, since Pocock encouraged his correspondents to send in free-form replies that could stretch to dozens of pages, rather than treat his directives as questionnaires. “Nobody should ever apologise for ‘rambling’ or ‘going on,’” he wrote. “For our historian of tomorrow nothing could be more valuable.”

One of the most eccentric, yet enduring, attempts at preserving for posterity the lives and views of everyday folk

The project could hardly have been described as professional. From time to time Pocock wrote to Observers warning them of another funding crisis; before a “freepost” system was belatedly established, his assistants made periodic attempts to tot up postage costs and reimburse Observers. Even the subjects of directives, when not suggested by academics eager for input to their own research, were—and still are—picked almost at random. Pocock—and then Ms Sheridan, who succeeded him in 1990—were free to ask (pretty much) whatever they fancied. The title of one directive from 2013 makes plain the project’s eclecticism: “Serial killers; the countryside; what makes you happy?”

Yet, letter by letter, Pocock’s archive took shape. Polls detailing what Britons as a whole thought about almost any issue in the past four decades are abundant. What Mass Observation offers is direct communion with a handful of them. Observers’ individual voices are preserved, as is their intensity of feeling, or apathy, on an issue. Spend any time in the archive and the most prolific Observers, identified only by an alphanumeric tag and a few words of biography (“78, male, retired hospital administrator”), come vividly to life. Even the mode of their replies can be telling: one Observer always answers on lined paper, with her tag in block caps at the top of each page, underlined in red, like an examination answer; another scrawled one reply on the back of a car-servicing receipt.

Long before it became commonplace to talk of “lived experiences”, Mass Observation was encouraging people to record them. Pocock was an anthropologist but he liked to think of his ever-expanding correspondence as the raw material of “real history”. Perusing the archive in the future, he said, would be “rather like discovering a box of your grandmother’s letters written when she was a teenager”. “It will an-►



► answer the questions that all the statistics on what we do leave begging. It will fill in the gaps.”

One gap remained, however. Pocock seemed embarrassed to ask his Observers about the most intimate aspects of their lives even though these are often the least chronicled. Their responses to his directives, from gardening to geopolitics, sometimes made for dry reading, leavened a little with humour (“I think it is undesirable for Europe to become a third major power” alongside America and Russia, wrote one correspondent in the mid-1980s. “Two idiots are sufficient”). But it took Ms Sheridan’s prompting for them to become more reflective and personal. One of her first directives after Pocock’s retirement asked about the meaning of the word “love”. “You may feel that this is a subject which is too intimate to write about,” her covering letter acknowledged.

They did not. Encouraged by Ms Sheridan, they went on to tackle ageing, menstruation, “women and men”, pleasure and bereavement. Ms Sheridan and her successors stopped apologising for the skewed nature of the sample (at the last count, about three-quarters female): they were proud to house such a collection of frank writing by women about topics not always openly discussed. Liberated by anonymity and free of the formality of an interview, the Observers wrote as if confiding in a diary or a therapist.

The results are unvarnished and very human: it is not unusual for a researcher bent over a grey archive box to stifle a giggle or wipe their eyes. Fiona Courage, the project’s current director, likes to bring the university’s students to look at responses to the directive on “having an affair”. At first, she says, the room is full of embarrassed laughter. Soon, though, it falls silent, as the students realise they are reading about real lives, usually imperfect ones.

In one response a 53-year-old doctor admitted that she “committed adultery 16 months after I was married”. “I still don’t know what went wrong but [my husband] just stopped being interested in me,” she wrote. “I remember once I bought black sexy underwear and when he saw me in it he burst out laughing.” After the affair, with a “really attractive man at work”, she felt “dreadful and wicked” and at last confessed to her husband. Their loveless marriage lasted 16 years.

Another Observer, an 83-year-old widow, wrote from her care home to confess to dating two men simultaneously 40 years previously. And, though she stayed faithful throughout her subsequent marriage, “There were times when I was tempted to have a ‘fling’ with an attractive man.”

Replies to a directive on “being overweight” were equally candid. Everybody, it seemed, was unhappy with her or his appearance. “R2247”, a 49-year-old Londoner who admitted to being overweight despite her boyfriend’s insistence she was “voluptuous”, complained that “‘fatism’ is as pernicious in Britain as racism and sexism”. “I know all about being overweight,” a 57-year-old from Aberystwyth replied. “I have struggled since I was 18 and it is a perpetual battle.” Another wrote that she was “self-conscious about being too thin, but you never see that in women’s magazines!”

Box by box, the reader becomes aware of time passing. Fountain pens give way to biros; more responses are typed, first on typewriters then computers. (Some resist: the retired hospital administrator writes neat replies in blue ink on cream Basildon Bond paper.)

The content changes too, slowly but perceptibly, as social mores and attitudes shift. In 1987 a directive asked Observers’ reactions to a government information campaign about AIDS. Some expressed sympathy for victims, but several bluntly shared their distaste for the perceived promiscuity of gay life. One suggested a campaign “explaining in no uncertain terms the dangers of going gay”. Another included a slew of jokes about AIDS. Their missives are uncomfortable to read today, but preserve the contemporary attitudes of some Britons more honestly than newspapers that would have excised such “humour” on taste grounds.

In 2000, “R1468”, a 77-year-old widow from Derby, responded to a directive about “gays and the family” by admitting “It is only over the past ten years or so that I have become aware of the number of gays and lesbians in the community.” In fact, she goes on, “One of my nephews may be gay.” Though now in his fifties, he remained in the closet, as far as she knew: “The family have not openly admitted that he is gay, different members have just hinted at it that’s all. He is loved for himself.” By 2019 things had changed to such an extent that several Observers felt no need for distancing inverted commas when replicating the directive’s own phraseology of “LGBT+ identities”.

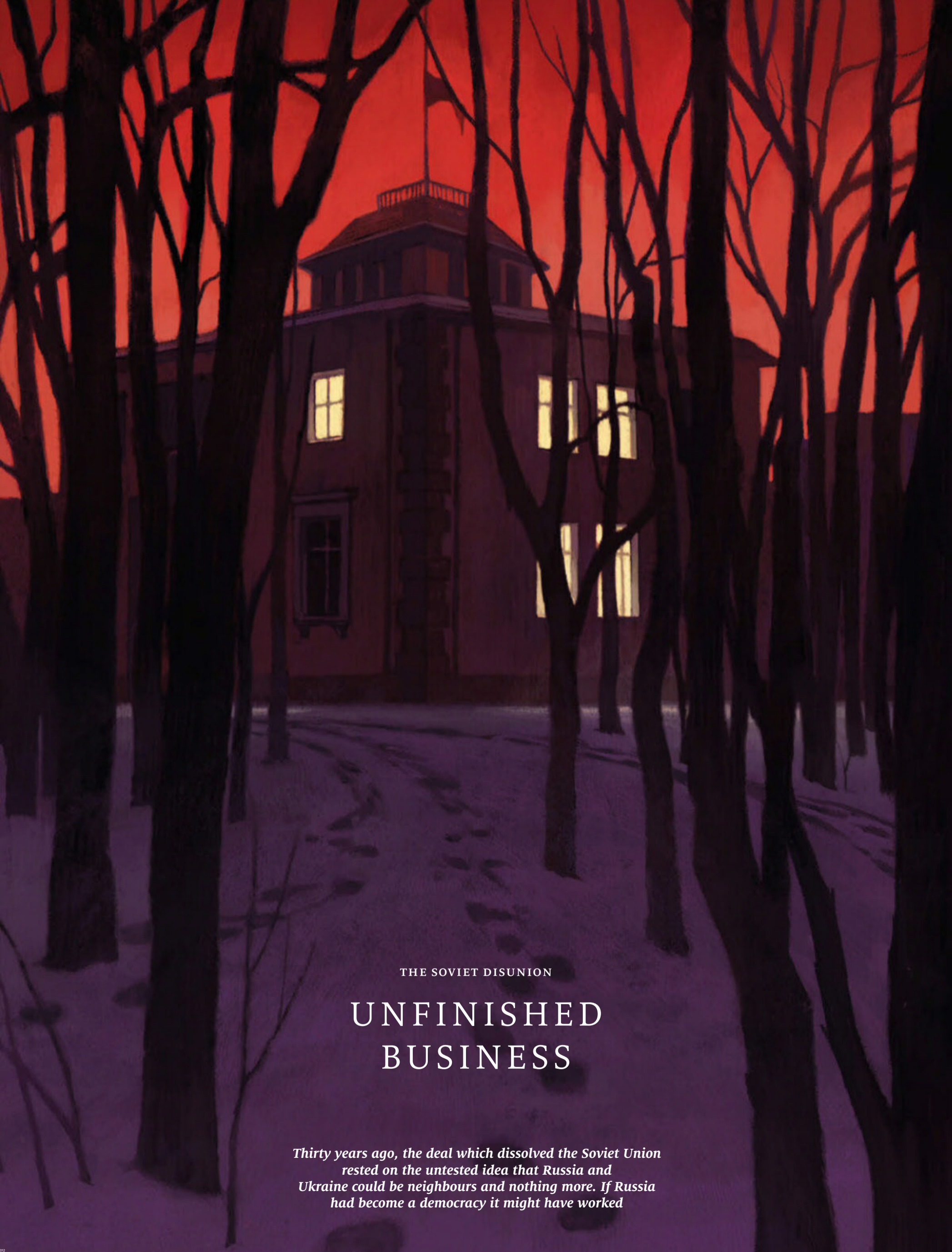
SIGNING OFF

When Pocock retired, Ms Sheridan worried that the Observers, too, might deem the correspondence closed. Many did seem to get a thrill from having their opinions taken seriously by a professor. Pocock had tried to reply to letters personally, especially if somebody had celebrated a birthday, say, or their dog had died. Mr Allison regularly received postcards from Pocock, even during a sentence for a million-pound fraud. He credits Mass Observation in part for giving him confidence as a writer. Years later, a friend pointed out that the *Guardian* was advertising for a new prisons correspondent. He got the job. Pocock sent his congratulations—in the post, of course.

Even so, Ms Sheridan need not have worried. The project survived Pocock’s retirement, and his death, in 2007. It will surely outlast her, too: she retired in 2010, but the Observers show no signs of tiring. Mr Allison has now been contributing for 38 years: the *Guardian* keeps him busy, but he still likes to respond to the latest directives when he can. Observers were prolific during covid-19, their diaries and accounts more reflective and less transient than tweets or Facebook posts (though posterity could perhaps have been spared the comprehensive account one Observer gave of “the cloth system” used during a shortage of loo rolls). Their ranks swelled from 483 to 755 during the first few months of the pandemic, perhaps because people understood the value of contemporaneous accounts of momentous times or perhaps because they had a lot of time on their hands.

Some Observers take to heart Pocock’s insistence that they are writing history, in which “each tiny piece is integral to an intricate and luminous whole, and the ordinary transformed into the extraordinary”. Others just seem glad to get something off their chests. As one wrote in 1990, after Ms Sheridan announced Pocock’s retirement, “Until the man with the scythe turns up, or you decide you’ve had enough of me, I shall send in my chatterings. Warmest good wishes to the Archivist and all the team—from E1510.” ■

Fountain pens give way to biros; more responses are typed, first on typewriters then computers



THE SOVIET DISUNION

UNFINISHED BUSINESS

Thirty years ago, the deal which dissolved the Soviet Union rested on the untested idea that Russia and Ukraine could be neighbours and nothing more. If Russia had become a democracy it might have worked

AROUND EIGHT in the evening of Sunday December 8th 1991, Mikhail Gorbachev, the president of the Soviet Union, picked up a phone call on a top-security line. The caller was Stanislav Shushkevich, a modest physics professor whom Mr Gorbachev's reforms had placed at the helm of the Soviet Republic of Belarus a few months before. Mr Shushkevich was phoning from a hunting lodge in the magnificent Belovezh forest to tell the great reformer that he was out of a job: the Soviet Union was over.

In retrospect, its last gasp had come in August, when the KGB, hardline Communists and the army had placed Mr Gorbachev under house arrest and mounted a coup. After three days of peaceful resistance led by Boris Yeltsin, president of the Russian Soviet Republic, they backed down. That ruled out any return to a Soviet past. But Mr Gorbachev still clung to hopes for some sort of post-Soviet liberal successor as a way to hold at least some of the republics together. Mr Shushkevich's call killed any such aspiration.

One of its triggers was Russia's economic collapse. As Yegor Gaidar, Yeltsin's top economic reformer, was later to write, it was an autumn of "grim food lines...pristinely empty stores...women rushing around in search of some food, any food...an average salary of seven dollars a month". To successfully enact the sweeping reforms Mr Gaidar was designing, Yeltsin needed a Russia which controlled its own currency. That meant leaving the USSR.

Mr Shushkevich, too, was motivated by the dreadful economy. He had invited Yeltsin to the retreat in the forest in the hope that by wining and dining him he would ensure that Russian gas and electricity would keep flowing to Belarus. It would have been a hard winter without them. The venue he chose was a lodge called Viskuli, where Leonid Brezhnev and Nikita Khrushchev had entertained themselves shooting bison and other game (hence its hard-wired connection to Moscow).

Yeltsin suggested that Leonid Kravchuk, the president of the Ukrainian republic, join them. The previous Sunday, Ukraine had voted overwhelmingly to ratify the declaration of independence from the Soviet Union which had been passed in its parliament, the Rada, immediately after the August coup.

Yeltsin did not just want what Mr Kravchuk had achieved in Ukraine for economic reasons. Independence would, he felt, be crucial to consolidating his power and pursuing liberal democracy. And Ukraine—never, until the 19th century, a well-defined territory, and home to various ethnic enclaves and deep cultural divides—becoming an independent unitary state within its Soviet borders set a precedent for Russia to define itself the same way, and refuse independence to restive territories such as Chechnya. That was why the Russian republic was one of the first three polities in the world to recognise it as an independent state.

But if a world in which Ukraine, Russia and indeed Belarus were completely independent from the Soviet Union was attractive, one in which they were not tied to each other in some other way was very troubling to a Russian like Yeltsin. It was not just that Ukraine was the second-most-populous and economically powerful of the remaining republics, its industries tightly integrated with Russia's. Nor was it the question of what was to happen to the nuclear forces stationed there but still notionally under the command of Soviet authorities in Moscow. It went deeper.

In "Rebuilding Russia", an essay published in the USSR's most widely circulated newspaper the year before, Alexander Solzhenitsyn had asked "What exactly is Russia? Today, now? And—more importantly—tomorrow?...Where do Russians themselves see the boundaries of their land?" The need to let the Baltic states go was clear—and when they left the Soviet Union in 1990, Solzhenitsyn,

Yeltsin and most of Russia rallied against revanchist attempts to keep them in. Much the same was true of Central Asia and the Caucasus; they were colonies. Belarus and Ukraine were part of the metropolitan core. The bonds which tied "Little Russians" (ie Ukrainians), "Great Russians" and Belarusians together, Solzhenitsyn argued, must be defended by all means short of war.

For centuries Ukraine had anchored Russia's identity. As the centre of the storied medieval confederation known as Kyivan Rus, which stretched from the White Sea in the north to the Black Sea in the south, Kyiv was seen as the cradle of Russian and Belarusian culture and the font of their Orthodox faith. Being united with Ukraine was fundamental to Russia's feeling of itself as European. In "Lost Kingdom" (2017) Serhii Plokhyy, a Ukrainian historian, describes how "the Kyivan myth of origins...became the cornerstone of Muscovy's ideology as the polity evolved from a Mongol dependency to a sovereign state and then an empire." Russian empire required Ukraine; and Russia had no history other than one of empire. The idea of Kyiv as just the capital of a neighbouring country was unimaginable to Russians.

But not to Ukrainians. At the first dinner in Viskuli, with Yeltsin and Mr Kravchuk sitting opposite each other, a number of toasts were raised to friendship. The friendship Mr Kravchuk wanted, though, was of the cordial sort that comes with a decent alimony cheque, not the sort that goes with a fresh plighting of troths.

Mr Kravchuk was born in 1934 in the western Ukrainian province of Volhynia—then part of Poland, but ceded to the USSR as part of the infamous pact it made with Germany in 1939. A childhood surrounded by ethnic cleansing, repression and war had taught him, as he put it, "to walk between the raindrops". It was a skill that made him an ideal party apparatchik and then saw him turn himself into a champion of Ukrainian independence—not for any high-minded ideological reasons, but because he wanted the chance to be in charge of his own country.

The referendum had given it to him, with independence endorsed by majorities

in every part of the country, both those in the formerly Austro-Hungarian west, with its Baroque churches and coffee shops, and in the Sovietised and industrialised east, where most of Ukraine's 11m ethnic Russians lived. There were practical things he needed from Russia, and Russian interests he recognised; he wanted a good relationship with Yeltsin and so had come to the forest meeting. But he was not interested in giving Russia an exit from the union that in any way compromised Ukrainian independence.

The agreement reached, in draft form, at 4am on Sunday morning achieved those aims with a rather neat piece of casuistry. For Russia simply to have followed Ukraine into independence would have left moot the question of the Soviet Union's residual powers. So instead they abolished the union itself.

The Soviet Union had been formed, in 1922, through a joint declaration by four Soviet republics—the Transcaucasian republic and the three represented at Viskuli. With the Transcaucasian republic long since dismembered, the presidents dissolved by fiat what their forebears had bound together. In its place they put a Commonwealth of Independent States (CIS)—Mr Kravchuk would not allow any use of the word "union"—with few clearly defined powers which any post-Soviet state would be welcome to join. There was to be no special relationship between the Slavic three.

That afternoon the three men signed the agreement, thereby proclaiming that "The USSR as a subject of international law and geopolitical reality has ceased to exist." It then fell to the most junior of the three—who was also the least enthusiastic about what

**"RUSSIA CAN BE
AN EMPIRE OR A
DEMOCRACY, BUT IT
CANNOT BE BOTH"**

▶ they had done—to inform Moscow of what had happened.

Mr Gorbachev was furious. The importance of Ukraine was not an abstract matter to him. Like Solzhenitsyn, he was the child of a Ukrainian mother and a Russian father. He grew up singing Ukrainian songs and reading Gogol, who reimagined his native country's folk magic as rich poetry after moving to St Petersburg. The Soviet Union had meant that Mr Gorbachev and others like him, whatever their parentage, could partake in both identities.

More immediately, though the failed coup had made some such break-up more or less inevitable, disassembling a multi-ethnic empire of 250m people was still a subject of huge trepidation. As Solzhenitsyn had written in "Rebuilding Russia", "The clock of communism has stopped chiming. But its concrete edifice has not yet crumbled. And we must take care not to be crushed beneath its rubble instead of gaining liberty." The fact that in that rubble, if rubble there was to be, there would be the world's largest nuclear arsenal, spread between four separate countries (the three Slavic ones and Kazakhstan), frightened statesmen around the world. When, as the economy worsened, Mr Gorbachev went to President George Bush for \$10bn-15bn, Bush's top concern was the nuclear threat. The same worry had led him to oppose Ukraine's secession in a speech given just before the August coup. "Do you realise what you've done?" Mr Gorbachev demanded of Mr Shushkevich. "Once Bush finds out about this, what then?"

The question was being answered on one of the lodge's other phone lines. Andrei Kozyrev, Russia's first foreign minister, had had trouble getting through to Bush. A State Department receptionist—Mr Kozyrev did not have the White House number with him—told the man with a Russian accent demanding that she connect someone called Mr Yeltsin to the president that she was "not in the mood for prank calls". Nor could Mr Kozyrev be called back in a way that might prove his bona fides: he had no idea of the lodge's phone number. In the end, though, he got through, and was able to act as interpreter as Yeltsin explained to Bush that the world's largest nuclear arsenal was now in the hands of something called the CIS.

If Mr Gorbachev had been unclear how Bush would react, so was Bush himself. A voice memo he recorded the next day is a string of anxious questions: "I find myself on this Monday night, worrying about military action. Where was the [Soviet] army—they've been silent. What will happen? Can this get out of hand? Will Gorbachev resign? Will he try to fight back? Will Yeltsin have thought this out properly? It is tough—a very tough situation." Similar doubt assailed the three presidents in the forest. When Yeltsin and his entourage set off back to Moscow, they joked about their plane being shot down. The laughter was not entirely free from anxiety.

Instead the shooting down of planes, along with the violation of Ukrainian sovereignty, the seizure of Crimea, the reassertion that the legacy of Kyivian Rus meant the nations must be shackled together and the reversion of Belarus to dictatorship—that all came later, a sequence of events which led, 30 Decembers later, to 70,000 or more Russian troops on the border of Ukraine and, in a ghastly sideshow, thousands of Middle Eastern refugees stuck in the Belovezh forest itself. The once seemingly settled question of post-Soviet relations between the three nations has once again become an overriding geopolitical concern.

Back then, though, as he stood among the snow-capped pine trees after leaving the meeting, Yeltsin was overcome by a sense of lightness and freedom. "In signing this agreement," he later recalled, "Russia was choosing a different path, a path of internal de-

velopment rather than an imperial one...She was throwing off the traditional image of 'potentate of half the world', of armed conflict with Western civilisation, and the role of policeman in the resolution of ethnic conflicts. The last hour of the Soviet empire was chiming." Maybe the convoluted interdependency of Russia and Ukraine did not matter as much as people thought; maybe democratic nationhood was enough. Maybe the problem had been a failure of imagination.

IN 1994, AFTER three years of horrific economic contraction, two of the three men who had met at Viskuli fell from power. In Belarus Alexander Lukashenko, who had previously run a large collective piggery, won election over Mr Shushkevich. Mr Lukashenko told people he would sort out the economic mess by taking them back to the security they had had before. Reforms stopped—as would, at a later stage of Mr Lukashenko's now 27-year reign, competitive and fair elections. The flag, which had been changed to the red and white of the very short-lived Belarusian Republic of 1918, was turned back to one like that of the Soviet era.

There was no such turnaround in Ukraine, where Mr Kravchuk lost the presidential election to Leonid Kuchma, a skilled Soviet-era industrial manager. Mr Kravchuk held the more nationalistic, Ukrainian-speaking west of the country; Mr Kuchma took the Russian-speaking and collectivist regions to the east. But unlike Mr Lukashenko, Mr Kuchma was not a reactionary, and he was to prove canny in wooing Ukrainians who had at first distrusted him.

Yeltsin was not required to stand for election that year. But a year earlier he and his reformists had faced down an insurgency by Communists and an assortment of anti-Western, anti-democratic factions led by the speaker of the parliament. One of their grievances was the loss of Crimea, a peninsula in the Black Sea reallocated from the Russian republic to the Ukrainian republic in 1954 but still seen as part of Rus-

sia by most Russians. A holidaying place for both the Soviet elite and for millions of ordinary people, it had been at the heart of the imperial project since the days of Catherine the Great.

The insurgency of 1993 was bloody; Yeltsin ordered the parliament building shelled by tanks. The public stood by him. A referendum held in the aftermath greatly increased the powers of the presidency. His foreign supporters stood by him too, and the following year a security agreement saw America, Britain and Russia guarantee respect for Ukraine's integrity within its existing borders—which is to say, including Crimea—in exchange for its giving up the nuclear weapons it had inherited from the Soviet Union. Ukraine was grateful; the West saw further evidence of a transition towards a liberal, democratic Russian state.

Some, though, thought this dangerously optimistic; one such was Zbigniew Brzezinski, a Polish-American diplomat and former national security adviser. In March 1994 Brzezinski took his own shot at Solzhenitsyn's question—the question he believed, rightly, to provoke "the greatest passion from the majority of [Russian] politicians as well as citizens, namely 'What is Russia?'" Rather than give a definitive answer, he gave an alternative one: "Russia can be either an empire or a democracy, but it cannot be both."

He was right. Yeltsin's unburdened moment among the trees had been that of a man who did not want to, and did not have to, rule an empire. He consciously rejected not just the Soviet Union's ideology and central planning, but also the tools of statecraft that had held it together—repression and lies. To him, the market ▶▶



► economy was a condition for freedom, not a substitute for it. His successor, Vladimir Putin, also embraced capitalism. But he saw no need for it to bring freedom with it, and had no problem with a state run through repression and lies. He thus reversed Yeltsin's democratic project and, though not at first territorially imperialist himself, took the country down the other side of Brzezinski's fork. It is that which puts Russia and its Slavic neighbours in such a parlous position today.

One of Brzezinski's problems with Yeltsin's Russia was "that the emerging capitalist class in Russia is strikingly parasitic". By the time Mr Putin became president in 2000 Russia was run by an oligarchic elite which saw the state as a source of personal enrichment. But when pollsters asked people what they expected of their incoming president, reducing this corruption was not their highest priority. The standing of the state was. Russians wanted a strong state and one respected abroad. As Mr Putin's successful manifesto put it, "A strong state is not an anomaly to fight against. Society desires the restoration of the guiding, organising role of the state." When, shortly after his election, Mr Putin restored the Soviet anthem, it was not as a symbol of reverting to central planning or rebuilding an empire. It was a signal that the strong state was back. State power did not mean the rule of law or a climate of fairness. It did not have, or need, an ideology. But it did have to take on some of the "geopolitical reality" that the meeting in Viskuli had stripped from the Soviet Union.

The strong state which provided an effective cover for kleptocracy in Mr Putin's Russia was not an option for Mr Kuchma's similarly oligarchic Ukraine. It had no real history as a state, let alone a strong one. Its national myth was one of Cossacks riding free. So in Ukraine the stealing was instead dressed up in terms of growing into that distinctive national identity. The essence of the argument was simple. As Mr Kuchma put it in a book published in 2003, "Ukraine is not Russia".

This was not an attack on Russia. Ukrainians liked Russia. Polls showed that they admired Mr Putin more than they did Mr Kuchma. It was just a way of defining things that put the nation first. And Mr Putin had no problem with it. Ukraine might not be Russia, but it was not significantly different from Russia, let alone threateningly so. It was just a bit more corrupt and chaotic.

The degree to which Ukraine was not Russia became clearer, though, in 2004, when a rigged presidential election saw hundreds of thousands of Ukrainians protesting in the streets. Mr Kuchma could have used force against them; Mr Putin encouraged him to do so. But various considerations, including Western opprobrium, argued against it. Perhaps most fundamental was his sense that, as a Ukrainian president, he could not thus divide the Ukrainian nation. He stayed his hand and allowed a second vote. Viktor Yushchenko, pro-Western and Ukrainian-speaking, beat Viktor Yanukovich, a corrupt thug from Donbas (the easternmost part of the country and, save Crimea, the most ethnically Russian) who had claimed victory the first time round. The "Orange revolution", as the protest came to be known, was a serious setback for Mr Putin—all the more so when a similar uprising in Georgia, the Rose revolution, put another pro-Western state on his borders.

In 2008 Mr Putin took a constitutionally enforced break from the presidency, swapping jobs with Dmitri Medvedev, his prime minister. The shift did not stop him from overseeing a war against Georgia that summer. In 2010, though, the Orange revolution became, in retrospect, a somewhat Pyrrhic victory. Mr Yushchenko proved a sufficiently poor president that in 2010 Mr Yanukovich was able to beat him in a free and fair election.

Mr Putin's return to the presidency in 2012 came at a time when the global financial crisis had choked the Russian economy. The rigging of Russia's parliamentary elections the year before, and the prospect of Mr Putin's return, had seen tens of thousands take to the streets. And the West, spooked by the increased belligerence Russia had shown in Georgia, was taking a keen interest in Ukraine. The EU offered the country an association agreement which would allow Ukrainians to enjoy the benefits of a deep and comprehensive free-trade agreement and free travel across Europe.

A year earlier a group of economists had told Mr Putin that a customs union with Ukraine would be a smart move. What was more, such a deal would preclude Ukraine's association with the EU. Pursuing it was thus a way for Mr Putin to achieve three things at once: push back against the West; give Russia a victory that would prove its importance; and help the economy.

Time for some Slavic unity. When Mr Putin flew to Kyiv for a two-day visit in July 2013, his entourage contained both his chief economic adviser and the patriarch of Russia's Orthodox Church, whose jurisdiction covered both countries. The trip coincided with the 1,025th anniversary of the conversion to Christianity of Prince Vladimir of the Kyivan Rus, and subsequently of the people as a whole, in 988: the "Baptism of Rus". With Mr Yanukovich he visited the cathedral in Chersonesus, the site in Crimea where Prince Vladimir is said to have been baptised. He and the patriarch also visited Kyiv Pechersk Lavra, a monastery founded in caves a millennium ago.

The commitment he gave there to protecting "our common Fatherland, Great Rus" was not without irony. When in 1674 monks at the Lavra published the "Synopsis", the first demotic history of Russia, the city was under threat of attack by the Ottoman empire and desperately needed support from the Russian lands to the north. The "Synopsis" sought to encourage Slavic solidarity by stressing the importance of Vladimir and his virtuous Kyivan Rus to Kyiv and Muscovy alike—something historians like Mr Plokhly now see as expedient mythmaking. Mr Putin was cynically min-

ing a mythos itself contrived for political ends.

Mr Yanukovich did not want to be Russia's vassal. Nor did he share western Europe's values—especially when applied to matters of anti-corruption. But eventually he had to choose a side. At a secret meeting in Moscow in November 2013, as European leaders were preparing to sign their agreement with Ukraine, he was promised a \$15bn credit line with \$3bn paid up front. He ditched the European deal. And at 4am on November 30th his goons bludgeoned a few dozen students protesting against his betrayal in Kyiv's Independence Square, known as Maidan.

By "turning into Lukashenko", as one journalist put it, Mr Yanukovich crystallised the choice facing Ukraine: dignity? Or subservience? Tents sprang up on Maidan. Volunteers distributed food and clothes. Oligarchs, afraid that a deal with Russia would see their ill-gotten gains stolen from them, tried to restrain Mr Yanukovich. Mr Putin pressed him to use force. Mr Yanukovich dithered until, on February 18th, Kyiv went up in flames. Nobody agrees on who fired the first shot. But by the third day of violence around 130 people were dead, mostly on the protesters' side, and Mr Yanukovich—to everyone's surprise—had fled Kyiv.

This was far worse, for Mr Putin, than the Orange revolution. Ukraine had made geopolitical reality, to coin a phrase, of the independence it had claimed two decades before. Its demands for dignity resonated with Russia's middle class and some of its elite, making it a genuinely dangerous example. So Mr Putin annexed Crimea and started a war in Donbas.



▶ According to Russian state media, Mr Putin was not undermining a revolution against a corrupt regime quite like his own; he was protecting the Russian people and language from extermination at the hands of western Ukrainian fascists. The relevance to Russia of the issues that had led to what was being called in Ukraine “the revolution of dignity” was thus obscured. At the same time the brutality in Donbas, relentlessly televised, showed Russians the disastrous consequences of rising up: civil war.

On March 18th Russia’s ruling elite watched Mr Putin enter the Kremlin’s gilded Hall of St George in triumph as he hailed the return of Crimea and, thereby, Russia; the annexation was supported by nearly 90% of the Russian population. A year later he had a stone from Chersonesus brought to Moscow to be built into the pedestal of a giant statue of Prince Vladimir outside the Kremlin gates. In “On the Historical Unity of Russians and Ukrainians”, a tract published in both Russian, Ukrainian and English in July 2021, Mr Putin described how the inheritors of “Ancient Rus” had been torn apart by hostile powers and treacherous elites, and how Ukraine had been turned from being “not Russia” into an anti-Russia, an entity fundamentally incompatible with Russia’s goals.

All baloney. Mr Putin did not attack Ukraine in order to honour or recreate an empire, whether Russian or Soviet. He attacked it to protect his own rule; the history is window-dressing. At the same time, following Brzezinski, for Russia to be something other than a democracy it has to at least be able to think of itself as an empire. And in Russia, empire requires Ukraine—now more deeply opposed to union with Russia than ever before.

IN NOVEMBER 2021 Vladislav Surkov, Mr Putin’s cynical, loyal ideologist, turned his attention to the question of empire. “The Russian state, with its severe and inflexible interior, survived exclusively because of its tireless expansion beyond its borders. It has long lost the knowledge [of]—how to survive otherwise.” The only way Russia can escape chaos, he argued, is to export it to a neighbouring country. What he did not say was that Mr Putin’s export of chaos, and violence, to that end has severed the ties between the Slavic nations and their peoples in a way which the collapse of the Soviet empire did not.

Mr Putin now talks of the collapse of the Soviet Union as “The collapse of historical Russia under the name of the Soviet Union.” But he has hardly restored its empire. Ukraine is not a province, or a colony; it is a beleaguered nation in a messy, perilous process of self-realisation. Belarus, for its part, is a grim illustration of how “severe and inflexible” things have to get in order to stop such aspirations welling up. Mr Lukashenko has met a nationalist resurgence with ever more brutal and well-orchestrated repression—a bloody irony given that he helped start it.

When Mr Putin annexed Crimea Mr Lukashenko feared his own fief might be next. So he decided to strengthen the Belarusian identity which he had previously worked to suppress. It was an opening he would regret. Social media quickly gave well-prepared liberal nationalists access to half of the country’s population. In 2018 the centenary of the Belarusian republic saw its red-and-white flag rise again.

In 2000 Svetlana Tikhanovskaya, previously apolitical, ran against Mr Lukashenko in the presidential election in place of her husband, who had been jailed, the red-and-white flag waving over her rallies. When Mr Lukashenko stole that election on August 9th it was in the same flag that protesters draped a vast statue of their motherland. Like Ukraine, Belarus had no real history of state-

hood; all that Mr Lukashenko had given it since 1994 was a rough approximation of its Soviet past, fascism with Stalinist trappings. But the idea of something better had taken hold.

Unlike the Ukrainians, though, the protesters in Belarus had no independence-friendly oligarchs to take their side. They had no equivalent to the radical fringe of western Ukrainians who had shown themselves ready to kill and ready to die on Maidan. And they were pitted against someone who would not stay his hand, as Mr Kuchma had, or cut and run, like Mr Yanukovich. Mr Lukashenko doubled down on repression, his brutality honed and guided by experts from Moscow.

For Mr Putin, the situation has become the reverse of that faced at Viskuli 30 years ago. Then a free and independent Ukraine—and, to a lesser extent, Belarus—were a necessary condition for what Russia sought to become. Now such freedom would constitute an intolerable affront to Russia staying as it is. At the same time, though, their struggles feed Mr Putin’s need for enemies. Russia’s great-power “geopolitical reality”, as sold to the people, has become that of a besieged fortress. America is the enemy-in-chief; Ukraine, and those within Belarus and Russia itself who have aspirations like those seen in the “revolution of dignity”, are its lackeys, all the more despicable for betraying their kin.

Russian propaganda outlets are baying for war. But that does

not mean Mr Putin plans to take fresh territory. He has never laid claim to the western part of the country. He is probably aware that there are now enough Ukrainian patriots to fight Russian occupation in central and even eastern parts of Ukraine, and that the army he has massed on the border would prove less good at occupation than invasion. But he still needs conflict and subordination. Left unmolested a free Ukraine reopens the existential threat of an alternative to empire.

Ukraine’s struggles since 2014 have been slow, frustrating and messy. According to Evgeny Golovakha, a sociologist, this is in part because “Ukrainians love to experiment.” True to that assessment, in 2019 they elected Volodymyr Zelensky, who as a

television comedian had played a history teacher accidentally elevated to the presidency, to tackle the role in real life. His biggest achievement, so far, has been to consolidate protest votes against the old elite across Ukraine, making the electoral map look more cohesive than it has ever looked in the past. That will not necessarily stop him getting voted out in two years’ time. “We find it easier to change [people in] power than to change ourselves,” says Yulia Mostovaya, the editor of *Zerkalo Nedeli*, an online news outlet.

But change is afoot; it can be seen in the way that demography increasingly trumps regional allegiance. Even in the east nearly 60% of those born since 1991 see their future as in the EU—countrywide, the figure is 75%. All told 90% want Ukraine to stay independent, and nearly 80% are optimistic about its future.

The same optimism is hard to find in Russia, let alone stricken Belarus. But the same yearnings are there, especially among the young. That is why Alexei Navalny was first poisoned and is now jailed. As the leader of the opposition to Mr Putin he has championed the idea of Russia not as an empire but as a civic nation: a state for the people. It is why Russia has recently become much more repressive. It is why Mr Putin cannot tolerate a true peace on his borders.

Unlike Ukrainians and Belarusians, Russians cannot separate themselves from Russia, so they have to change it from within. They cannot do that in a forest retreat, or with a few phone calls. But only through such change will they become truly independent of the Soviet Union. ■



THE IDEA OF EUROPE

In the summer of 1896 a carriage pulled into the town of Ronsperg in western Bohemia...

POBEZOVICE

Two men, a century apart, vie for Europe's future

...carrying the new mistress of the castle, a young Japanese woman trained as a geisha who by virtue of her marriage one year earlier to a progressive Austro-Hungarian diplomat had become Countess Mitsuko von Coudenhove-Kalergi. Her husband Heinrich had accompanied her on the long voyage by steamboat and train, having given up his post in Tokyo to come home and raise his sons. They had arrived in Ronsperg earlier, sent ahead with their nursemaids and Heinrich's faithful Armenian manservant, Babik. The elder boy, two-year-old Hansi, would eventually inherit the castle and be jailed for co-operating with the Nazis. The younger, 18-month-old Richard, would become a father of the European Union.

Ronsperg is recorded in 14th-century documents as a Czech village, Pobezovice, but by the 1890s it was German-speaking, with a Yiddish-speaking Jewish minority. The carriage rode uphill past the synagogue and the church to the castle, a Gothic fortress remodelled during the 17th century into a Baroque chateau. Mounting the steps Mitsuko looked out over orchards and farms to the hills on the Bavarian border, with the family hunting lodge hidden in the trees.

It would prove a difficult home for Mitsuko. She initially spoke limited German and suspected the locals were mocking her. But for Richard, childhood in Ronsperg was "paradise", he later wrote. He lost himself in the library of his father, who was studying philosophy and writing articles denouncing anti-Semitism and duelling. The castle swarmed with exotic guests: Japanese diplomats, Jesuits, a rabbi and a Muslim scholar. Coudenhove-Kalergi credited Ronsperg with forming his worldview. Alongside his studies at Vienna's Theresianum, the school of the Austro-Hungarian ruling class, it taught him that "nationalism was not a problem of blood or race but of education".

Few Europeans remember Richard Coudenhove-Kalergi. But as Martyn Bond argues in a new biography, he deserves as much credit as anyone for creating the EU. In 1923 he wrote a bestselling book, "Pan-Europa", advocating a United States of Europe. He launched a movement, the Paneuropean Union, which soon had thousands of members, including Albert Einstein and Thomas Mann. Adolf Hitler referred to him as "that cosmopolitan bastard". He was probably the model for Victor Laszlo, the activist fleeing the Nazis in "Casablanca". He counselled Winston Churchill and Charles de Gaulle on creating a European federation, and proposed Beethoven's "Ode to Joy" as its anthem.

Yet today his name is best known on the paranoid right. Over the past decade and a half, xenophobic nationalist groups all across Europe have put him at the centre of their conspiracy theories. Seizing on predictions he made of rising migration and intermarriage, they have imagined a secret "Kalergi plan" comprising the EU's real mission: to destroy European nations through miscegenation.

Ask anti-immigrant militia leaders in Bulgaria why refugees are crossing from Turkey, and you will hear it is part of the Kalergi plan. Candidates standing for the For Britain Movement, an insignificant political party, fulminate about the Kalergi plan for white genocide. In Italy the Kalergi plan is a hobby horse of neo-fascist groups. And in the Czech Republic, where Ronsperg is known again as Pobezovice, the most important far-right politician frowns at Coudenhove-Kalergi's name. He represents "exactly what we don't want," says the ▶▶

▶ head of the nationalist SPD party, Tomio Okamura.

Mr Okamura is the son of a Japanese father and a Czech mother. His parents married in communist Czechoslovakia; he was born in Tokyo in 1972. He came to Prague as a child, when his mother returned with her three sons after the marriage failed. His move from Japan was tougher than Coudenhove-Kalergi's: his depressed mother was sent to a psychiatric clinic. An aunt took in the oldest boy, but Tomio and his younger brother spent a miserable year or so in an orphanage.

Mr Okamura came to attention as a guest on television shows in the 2000s, having built a successful travel business focused on Asian tourists. He was a peppy salesman for Czech culture, making light of his background by calling himself "the only slant-eyed Moravian". In 2010 he published a bestselling autobiography, "Tomio Okamura: the Czech Dream". He launched his first party three years later.

Initially Mr Okamura ran denouncing corruption and advocating referendums, but he soon shifted to bashing Islam and the EU. He is best known abroad for claiming refugees will introduce "monkey plague" to Europe and calling for a referendum on Czeexit. In the latest election, in October, the SPD won 10% of the vote, a bit below its share in 2017.

Richard Coudenhove-Kalergi and Tomio Okamura make for curious bookends to Europe's past century. Coudenhove-Kalergi's detractors asked what business a half-Japanese interloper had telling European nations to unite. Mr Okamura's critics wonder how he manages to square his xenophobia with his background. How did they end up on opposite sides of the European question? Was it character? Or has the direction of history changed?

THE ARISTOCRAT

In "Pan-Europa", Coudenhove-Kalergi argued that unless Europe chose political and economic union, it would slide, again, into war and end up ruled by America and Russia. These were inhuman societies, one commercial, the other military. As the home of civilisation and freedom, Europe had to unite and merge its colonial empires to seize back its role in history.

The notion of a European federation had existed since the 18th century, and Coudenhove-Kalergi's version would largely appeal to today's Europhiles. But they would not approve of his ambivalence towards democracy. He believed in an aristocracy of education and talent, and associated universal suffrage with nationalism. In one essay he proposed that politics be organised by profession and class rather than simple democracy. He was intrigued by Benito Mussolini, Italy's dictator who had entertained similar ideas, and sought to enlist him in his movement.

In his 1925 book "Practical Idealism" Coudenhove-Kalergi's interest in aristocracy spilled over into the language of race, including the lines underlying the "Kalergi plan" myth. Due to migration, he wrote, "today's races and castes will gradually disappear," becoming "the Eurasian-Negroid race of the future". The Jews would furnish the "leaders of humanity".

The passages praising Jews are significant. In 1915, at 20, he had married Ida Roland, a famous Jewish actress 13 years his senior. (He first saw her playing Catherine the Great.) It was a happy marriage, though Mitsuko disapproved. Ida subsidised Richard's lifestyle: driving around Europe in a chauffeured Bentley, stay-



ing in grand hotels while recruiting for his movement.

He also got money from Max Warburg, the powerful German banker. Coudenhove-Kalergi's theory of politics was aristocratic: Europe could be unified by cultivating leaders and elites. He was quietly encouraged by Tomas Masaryk, the first president of independent Czechoslovakia, and openly supported by Aristide Briand, prime minister of France. Churchill was interested too. At the beginning of the 1930s it seemed the project might work.

By the late 1930s it was clear it would not. The Nazis crushed the German chapters of the Paneuropean Union. In 1938 Coudenhove-Kalergi was running his movement from Vienna. He and Ida were hosting a dinner party when news arrived of the Anschluss. He was on a Gestapo hit list. They hopped into the Bentley and rode to Zagreb, alerting the Italian government that they planned to cross to Switzerland. Coudenhove-Kalergi's cultivation of Mussolini paid off: he sent an honour guard to escort them.

When France fell they jumped in the Bentley again, rode to Lisbon and got seats on the fully booked seaplane to New York, apparently via sympathisers in the American government. (The claim that this was the origin of the Victor Laszlo plotline in the film "Casablanca" is circumstantial but persuasive. Among other things, Paul Henreid, who played Laszlo, was a fellow graduate of the Theresianum.) Friends landed Coudenhove-Kalergi a professorship at New York University while he sought to persuade President Franklin Roosevelt to back European unification. He failed, in part because his anti-communism was inconvenient at a time when the Soviet Union was an ally. But the war convinced him of democracy's virtues. In its aftermath a European Union seemed no more Utopian than the other new international organisations.

After the war Coudenhove-Kalergi had to get his older brother out of jail. Hansi had turned rather strange, stuffing Ronsperg with kitschy portraits of his ▶▶

"Vienna was full of people thinking about a new world order, in every café"

▶ Coudenhove ancestors. He liked to travel with a mummy that he had bought in Egypt. The Czechs charged him with consorting with Nazi officers—he was probably protecting his wife, who, like Ida, was Jewish. Meanwhile, Coudenhove-Kalergi worked his contacts with Churchill, who was pushing for a United States of Europe, and with de Gaulle.

But by now other players were on the scene. A rival British-backed group, the United European Movement, did most of the planning for the Congress of Europe in 1948, which led to the Council of Europe, an inter-parliamentary body. Two years later Jean Monnet, a French businessman and civil servant, laid the foundation of the EU by helping negotiate the European Coal and Steel Community. Monnet apparently saw Coudenhove-Kalergi as a useless idealist. In the 1950s and 1960s he found himself gradually sidelined. He left little institutional legacy when he died in 1972.

Coudenhove-Kalergi himself seems to have worried he was too much of a dreamer. In “Practical Idealism” he writes that people of mixed race can see things from many sides, but the more they do so, “the weaker usually is their will to act”. The “heroic, single-minded man” must set aside diverse perspectives to achieve great things. This makes his quest for European unity seem an effort to resolve anxieties over his identity, much like Hansi’s ancestor portraits.

Yet Barbara Coudenhove-Kalergi, Richard’s niece, thinks it is simpler: “He was a child of the multinational Habsburg empire.” Barbara is the daughter of the third brother, Gerolf, who worked for Japan’s embassy in Prague. In Barbara’s telling, the brothers’ identity crisis was not so much about being half-Japanese as being fully Austro-Hungarian. After the war her family was kicked out of Czechoslovakia along with 3m other German-speakers as collective punishment for Nazi misdeeds. But her father said the expulsion was nothing compared to seeing his homeland dissolve in 1918.

As for Richard’s dreams, “you have to remember that when he was young Vienna was full of people thinking about a new world order, in every café,” Barbara explains. Trotsky, Stalin and Hitler all lived there in 1913. “Lots of cranks with ideas about the future were mixing, and Dicky was one of them.”

THE STRIVER

On a sunny day in September 2021, Tomio Okamura stood in a town square 100km south of Prague, warning several hundred voters about his liberal opponents: “They want more migrants, they want to introduce the euro, they want to get rid of gender, they want to raise property taxes.” Next to the stage, stalls in the colours of his Freedom and Direct Democracy (SPD) party were selling Czech produce, promoting his plan to make the country self-sufficient in basic foodstuffs.

The SPD resembles other populist parties in Europe, combining right-wing stances on immigrants, gender and the EU with left-wing ones on social welfare and pensions. Mr Okamura banters endlessly with constituents, and like many populists he has good comic timing. (“I’m sorry but we’re born either with or without a wee-wee,” gets a big laugh.) Many Czechs who remember his earlier, jovial TV personality wonder whether his xenophobia is an act.

But in an interview after the rally, Mr Okamura evinced genuine antipathy towards the EU. “For us it’s not important what the EU says, some foreigners a

“Lots of cranks with ideas about the future were mixing”

thousand kilometres away who never lived together with us in the Czech Republic...speaking in some languages we don’t understand. I’m sorry but I don’t understand English and French,” he said, speaking in English. “Czech citizens [are] the most Eurosceptic nation in the European Union.”

This is an exaggeration, but most surveys show Czechs to be among the less enthusiastic EU members. For Mr Okamura, mentioning the economic benefits provokes only resentment. Czechs are not so poor, he says, that we need to be grateful for the EU’s money.

Many Czechs think Mr Okamura’s pugnacity has something to do with his youth. A Czech documentary in 2019, “The Okamura Brothers”, includes a television interview in which Mr Okamura called the orphanage the most intense experience of his childhood. “I was bullied there. From that time I had a stammer until I was about 22,” he says. He realised he would “always [have] to rely solely on myself”.

Like the Coudenhove-Kalergi brothers, the Okamura brothers have handled their mixed identities differently. Tomio’s older brother, Hayato, has deferential Japanese manners. He has had a career as a tour guide in Prague, partly through Tomio’s agency. Upset at the effect of Tomio’s politics on the family name, he has repeatedly run for parliament as a Christian Democrat. This year he got in. Asked about Hayato, Tomio cannot resist a dig: he would be happy to offer his brother more work someday. “He is a very good tour guide.”

The youngest brother, Osamu, is a successful architect who votes for liberal parties. He and his brothers try to stay out of each others’ politics. But one of Tomio’s statements in April made that difficult for Osamu, who is gay. In parliament Tomio had denounced a bill that would permit same-sex couples to adopt children. “I grew up in an orphanage for part of my childhood,” he had said, “and I can tell you that if a same-sex couple adopted me, I’d rather jump out the window.”

Dreams and nightmares are formed in childhood, those of Europe, too. What room in Ronsperg Castle did Richard Coudenhove-Kalergi see when he imagined his united Europe? His father’s library, with its statues of Buddha and Plato? What room does Tomio Okamura see when he thinks of the EU, with its open doors of nationality and sexuality, and its directors lecturing in unfamiliar languages?

In Pobezovice today only the medieval centre recalls the Ronsperg that Mitsuko rode into 125 years ago. The Nazis burned down the synagogue and murdered the Jewish inhabitants, and post-war Czechoslovakia expelled the German-speakers. On a rainy day in September it was impossible to find anyone who spoke German, though the border is just 10km away. A few young people spoke halting English. They had never heard of Coudenhove-Kalergi.

Ronsperg Castle boasts a visitor’s centre but it is run on a shoestring budget. On the gates of the lower courtyard, marble plaques in Czech and German commemorate Coudenhove-Kalergi as the “father of the idea of European Union”. The palace is crumbling, its windows painted over with fairy-tale characters in a forlorn effort at civic renewal. At the entrance a stone arch bears a legend in Latin: *erit hora*, “the hour will come”. Some nobleman’s motto, or perhaps one of Hansi’s fakes. Across the street at the EuroOil station a woman understood enough Russian to point the way to the Jewish cemetery. ■

FOOD HISTORY

NO SPRING CHICKEN

Humans have been finding ways to make meatless meat for at least a thousand years

ONE NOZZLE moves back and forth piping red goo into a rectangle. Another follows adding white layers of a similar substance. The nozzles are labelled “muscle” and “fat”. A third, marked “blood”, works alongside them. They are part of a machine, developed by Redefine Meat, an Israeli startup, that can print a steak made entirely of plant-based ingredients.

This method may seem like something out of science fiction, but what it produces has a long history. For hundreds of years humans have sought alternatives to animal milks and meats because they were scarce and expensive.

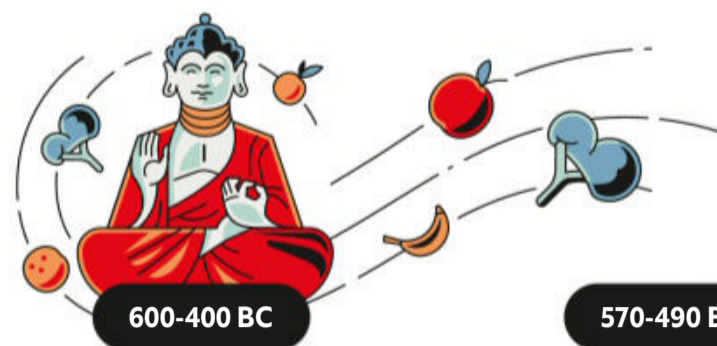
During the Tang dynasty (618-907AD), cheese was increasingly brought from Europe and India to China. Little dairy milk was available so the Chinese used the same method as Western cheese makers but substituted soya milk for cows’ milk to create their own “bean cheese”: tofu. During the late 19th century this gained, if not popularity, at least a certain acceptance in the West.

But in America the expansion of the railways, commercial refrigeration and intensive farming made meat cheaper and more readily available from the 1880s. One man was convinced this was a mistake. In 1896 John Kellogg, breakfast revolutionary, started to sell “Nuttose”. Around three years later he followed that with “Protose”, concocted from peanuts and wheat gluten. Both were marketed as the “perfect substitute for flesh food”.

Kellogg’s meat substitutes did not catch on, perhaps because canned, room-temperature, nut-flavoured slurries are not terribly appealing. Today others are proving more popular. Over 1,000 different plant-based meat products are available in America according to data from Instacart, a food-delivery company. Almond milk—which records suggest was first used in Europe during Lent in the 13th century (see timeline)—and its newer competitor, oat milk, are both growing in popularity. Between 2019 and 2020 total sales of plant-based food in America increased by 27%, to \$7bn.

Plant-based food sales are expected to rise even further in part because of concerns about the environmental impact of the world’s diet. The global food system currently accounts for 21-37% of human emissions. The OECD, a club of mostly rich countries, reckons that growing, wealthier populations in developing countries will mean a 14% rise in global meat consumption by 2030.

Some in the rich world are reducing their meat consumption. Nearly one-third of Americans said they had eaten less meat in the past year compared with the year before, according to a recent survey from YouGov, a big cheese in the world of polling, many for environmental reasons. Flexitarianism—eating less meat rather than refraining from it entirely—will probably drive demand for meat-free products more than strict veganism, especially if companies succeed in producing steaks and pork chops in labs, without any involvement from animals. Those who insist on sticking to a meaty diet could end up looking pig ignorant. ■



600-400 BC

570-490 BC

Siddhartha Gautama, known now as **Buddha**, ate meat only when given it as alms because his faith prohibited hurting animals. That proves fatal; his final meal is believed to have been a bowl of “Pig’s Delight”. This leads to a divide in Chinese Buddhism that persists today: to eat or not to eat meat

Pythagoras believed in reincarnation and so to avoid devouring his ancestors the philosopher and his students refrain from eating meat

13th century

Christians in Europe start using **almond milk** as a replacement for cows’ milk during Lent. The recipe may have travelled from the Middle East where historical texts show it was used as cough medicine

1346-1353

After the **Black Death** people start eating more meat, especially the lower classes. By 1353, 15% of workers’ diet is meat, up from 4% 100 years earlier



1899

1890s

John Kellogg, creator of the eponymous cornflakes and another Seventh-Day Adventist who believed in the efficacy of a vegetarian diet in preventing sins such as masturbation, begins selling Protose, a “perfect substitute for flesh food”

The Seventh-Day Adventists, a religious group, start using seitan in America

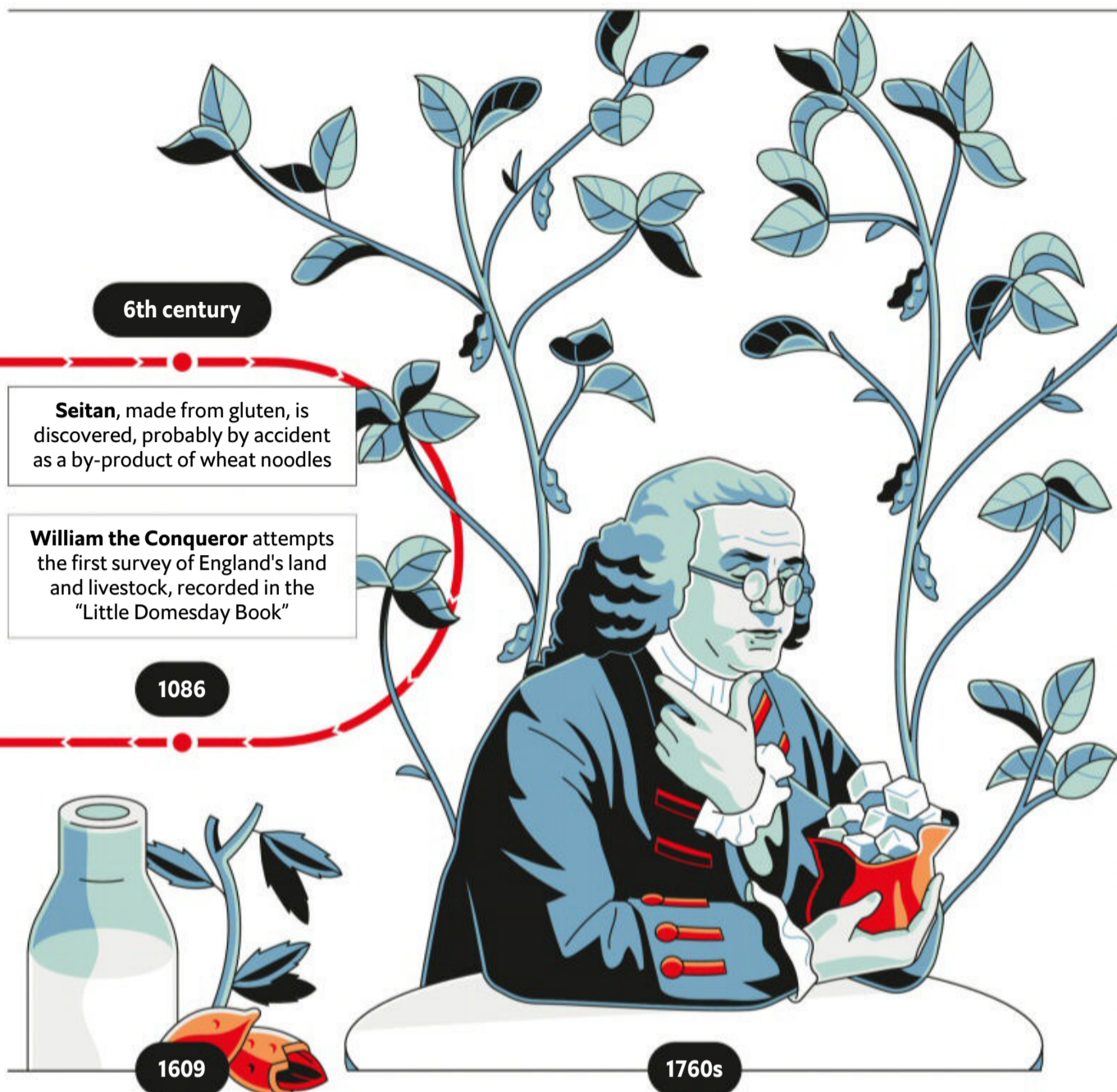


1944

1994

Donald Watson and Dorothy Morgan, British animal-rights activists, coin the term “**vegan**”, using the first and last letters of “vegetarian”

Oatly, the world’s biggest producer of oat milk, is founded and credited with inventing the stuff

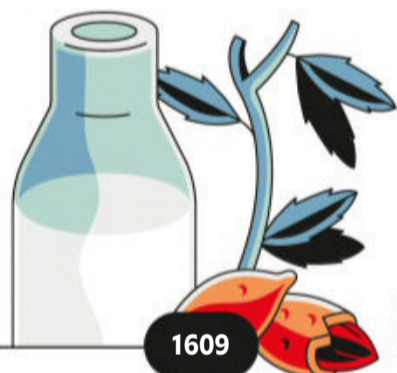


6th century

Seitan, made from gluten, is discovered, probably by accident as a by-product of wheat noodles

William the Conqueror attempts the first survey of England's land and livestock, recorded in the "Little Domesday Book"

1086



1609

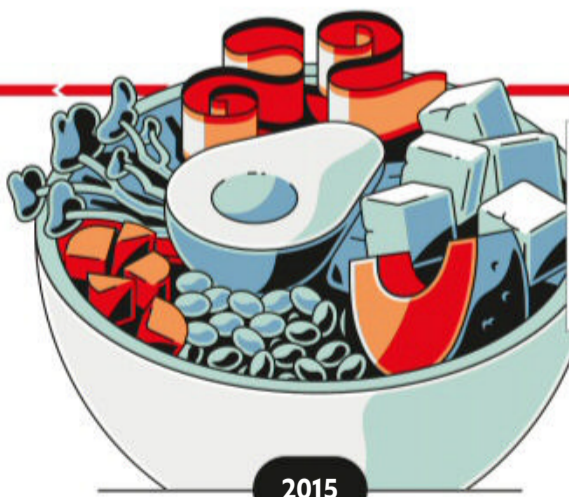
1760s

People embrace plant-based substitutes in part because they are cheaper than dairy products. An Austrian recipe from 1609 calls almond milk "lard for poor people". The Sifter, a historical database based on 8,000 cookbooks and 56,000 recipes, includes references to nut, hemp and poppy milks

Benjamin Franklin tastes tofu in London. Delighted, he sends soybeans to America with an accompanying letter telling a friend about "the universal use of a cheese made of them, in China, which so excited my curiosity"

1885

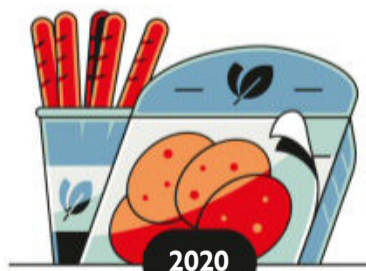
1812



2015

Leo Tolstoy adopts vegetarianism. He goes on to write "The First Step: An Essay on the Morals of Diet" which is thought to have helped persuade Mohandas Gandhi to remain a vegetarian

First vegetarian cookbook is published in English

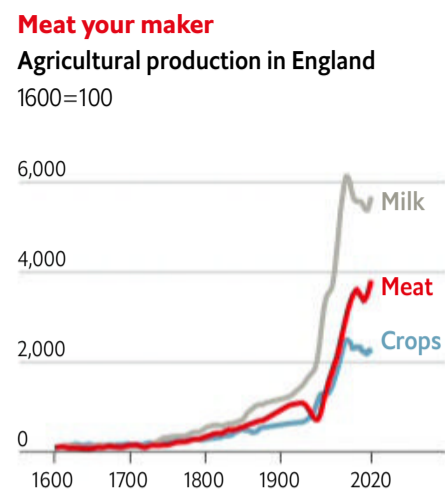


2020

Meat eating starts to decline in **Britain**. By 2019 consumption is 17% lower than it had been a decade earlier

Beyond Meat, a vegan meat company founded in Los Angeles, is the first of its kind to go public, at a valuation at \$1.5bn

Rügenwalder Mühle, a big German sausage company, sells more vegetarian alternatives than meat products for the first time in its history



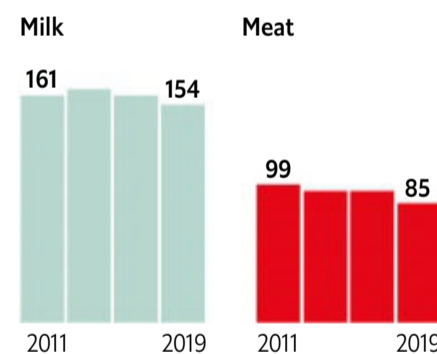
\$85 BN The forecast amount the world will spend on plant-based protein in 2030

353 M The amount of meat, in tonnes, estimated to be produced worldwide in 2021

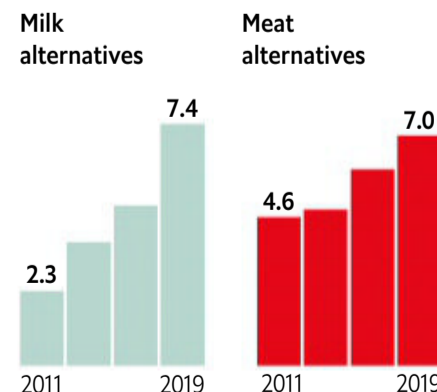
1/3 RD The estimated share of the world's vegetarians who come from India

43% The proportion of Americans who buy meat alternatives who also buy animal meat

Daily intake per person, Britain
Three-year average, grams



Share of people consuming milk and meat alternatives, Britain
Three-year average, %



Sources: Bank of England; Defra; Instacart; "The role of plant-based alternative foods in sustainable and healthy food systems", by C. Alae-Carew et al.; UBS; UN FAO; The Economist



MIDDLE EASTERN TRAINS

MURDER OF THE ORIENT EXPRESS

MEDINA, OUJDA AND LYDDA

*The mystery of the severed railway lines that
once connected the Middle East*

SHE LEFT her husband digging for pottery in Syria's northern desert, handed her passport to the uniformed Turk at Nusaybin, and, as the steam whistle blew, clambered aboard the Express bound for Aleppo. On arrival, she checked into the Baron, the city's only first-class hotel, and in room 203 began writing what is probably the most famous mystery novel of all time.

"It was five o'clock on a winter's morning in Syria. Alongside the platform at Aleppo stood the train grandly designated in railway guides as the Taurus Express. It consisted of a kitchen and dining-car, a sleeping-car and two local coaches." So Agatha Christie began "Murder on the Orient Express". Set on the homeward leg of her journey through the Middle East, it conjures a lost world of interconnecting cabins, liveried conductors, embroidered handkerchiefs and passengers who dressed for dinner.

The victim is an American swindler stabbed a dozen times in his sleeper car. But though the tale made Christie the world's best-selling novelist, it was a footnote compared to the crime unfolding around her—the dismemberment of the vast railway network that tied the Middle East together.

The passengers aboard the 0500 to Istanbul came from Baghdad, Kirkuk and Mosul. They might also have come from Khartoum, Alexandria, Jerusalem, Damascus and Basra. Maps from the time show a region criss-crossed with tracks. For the supposed "sick man of Europe", the Ottoman empire in its last decades was remarkably energetic. In 1888, Sultan Abdelhamid II embarked on the most ambitious engineering project in six centuries of Ottoman rule, to link the four corners of his empire by rail.

From Morocco to Iraq not a single train crosses borders

Abdelhamid began with Islam's holy sites. With the help of Christian and Jewish entrepreneurs, he cut a line from the Mediterranean through Judea's limestone hills to Jerusalem. It deposited its first load of pilgrims opposite the al-Aqsa mosque in 1892. Eight years later, he commissioned a track 15 times longer linking Damascus, the traditional starting point of the *haj*, or Muslim pilgrimage, to Medina, where the Prophet Muhammad is buried. Completed in 1908, the line changed the pilgrimage from a perilous 40-day camel trek through Arabia's deserts to a cushioned three-day ride. The Damascus terminal, renamed Allah's Gate, was a showpiece of Islamic baroque.

This construction accompanied other feats. In the empire's twilight years, the sultans connected three booming Levantine ports—Tripoli, Beirut and Haifa—to ancient silk-road cities such as Damascus, Homs and Aleppo. On the eve of the first world war, the sultans allied with the German Kaiser to build a line from Berlin to Baghdad, bypassing Britain's choke point, the Suez canal. German engineers helped bridge the Taurus mountains in the last weeks of the war—too late to reinforce fronts against the British pushing north.

The European empires that overran the Middle East implemented much of what the Ottomans left on the drawing board. By the 1930s passengers could travel from the English channel to Cairo with only three changes of train. The last leg, in third class, cost the equivalent of about two days' work for a labourer. It left Haifa daily at 0830, steamed south to the Mediterranean port of Gaza by lunchtime, turned west into Sinai and arrived in the Egyptian capital by 2230.

From there, travellers could continue aboard one of the first air-conditioned carriages along the Nile to Luxor's Valley of the Kings and on to Sudan. "Direct and quickest route to Damascus, Beyrout, Baalbek and Aleppo," read a Palestine Railways brochure advertising the connections from Haifa. Sami Abu Shehadeh, a Palestinian historian and member of the Israeli Knesset, or parliament, says that "from Jaffa station you could commute across the Arab world."

THE SUSPECTS

The Middle East had been a cosmopolitan hotchpotch of languages, ethnicities and sects since civilisation began. The railroads tossed them together like fruit in a bowl. Christie's 13 suspects were "of all classes and nationalities". On these trains, Muslim pilgrims heading from Tulkarm shared carriages with Jewish workers on package holidays from Haifa to Damascus that were organised by the Zionist trade union, the Histadrut. The Lebanese tourist board competed by printing adverts for its ski resorts in Hebrew. As a child Mahmoud Zahar, a leader of the Palestinian Islamist movement, Hamas, remembers catching the sleeper from his mother's hometown of Alexandria to Gaza. The staff were no less diverse. Jews and Arabs worked under British command at Palestine Railways, along with 30 other nationalities. On Christie's Express, the conductor was a Frenchman.

Seventy years later the tracks that joined continents lie in wreckage. From Morocco to Iraq not a single train crosses borders. Rusting carriages and engine hulks litter the sands. Cypress trees sprout between Lebanon's lines. Rails were smelted into bullets like ploughshares into swords. Sleepers reinforced trench walls, and stations and repair yards became barracks

and prisons. As in the murder on the Orient Express, the network fell victim to multiple blows. Tracing culpability is one of the region's great whodunits.

The first suspect was another guest at the Baron, in the room next to Christie's. For much of the first world war Thomas Edward Lawrence, a British intelligence officer, connived behind enemy lines to rupture the Hijaz railway to harry Ottoman troops. He raised a Bedouin band, fired them with jihadist zeal, blew up 79 bridges and derailed dozens of trains. Back home "Lawrence of Arabia" was a hero. His tactics were those of a terrorist. The wounded, many of them civilians, were left to die in the gorges. "This killing and killing of Turks is horrible," Lawrence wrote in a letter home.

That said, the British have alibis. They built railways in the Middle East before and after the Ottomans. Robert Stephenson, an English pioneer of the steam train, began laying Egypt's tracks in the 1850s. As British troops advanced they extended the lines.

The investigation into Lawrence reveals other leads. Many of his Bedouin recruits hated the Hijaz line for breaking their monopoly on transporting pilgrims and grain. "Jahash al-Sultan," they called it, the Sultan's donkey. It brought foreign mores, too, that disturbed time-honoured codes. Under the puritanical Al Saud dynasty, the Bedouin ripped up tracks from their new border to Medina. Follow the line south of Jordan today and for almost 800km all that remains is the naked embankment snaking past rust-coloured mountains. In places, wind-swept Ottoman stations and forts wait for a train that last passed a century ago.

Yet the Saudis also have alibis. Once the Bedouin carved out his kingdom, King Abdelaziz Ibn Saud slaughtered them in their hundreds. The Saudis point to other beneficiaries from the Bedouin assaults. Britain and France had long sought ways to interrupt the flow of their Muslim subjects to Mecca and limit their exposure to anti-colonial Islamists.

Zionists could also be found at the crime scene. The more militant considered Britain's railways an iron spider's web ensnaring their land, and they killed scores in dozens of attacks. On the "Night of the Trains", on November 1st 1945, the three main Zionist militias blew up the lines at more than 150 points and planted bombs in the stations at Jerusalem and Lydda junction. Seven months later, a "Night of the Bridges" destroyed ten bridges connecting Palestine's railways and roads to the Arab world. A website honouring the fighters of the Irgun, the militia headed by a future prime minister, Menachem Begin, still hails the achievement: "The operation achieved its objective, and the country was cut off from all its neighbours."

The dismantlement continued with Israel's independence in 1948. Israel blew up the bridge at Rosh Ha-Nikra to cut off Beirut and plugged the tunnel through the South Lebanon hills, severing the line that linked Europe to Africa. The Israeli government also dissolved the Palestine Railway Company and dismissed many non-Jewish workers. After the 1967 war Israel abandoned the Ottoman lines in the West Bank, used Sinai's tracks to fortify its Bar Lev defences along the Suez canal and locked Gaza—the old crossroads between continents—behind turrets and walls.

But the Israelis also have alibis. Had they not broken the lines, they say, the Arabs would have smuggled arms and men to destroy them. The Israelis argue that it was Arabs who undid the network. Palestinian mili-▶▶

▶ tants targeted rail infrastructure during their revolt against the British in the 1930s. And with self-destructive zeal, Palestinians ripped up the last of Gaza's rails to make tunnels and rockets.

Regional conflicts and civil wars finished the victim off. The French controlled their North African holdings with railways fanning out from Algiers. But after independence Morocco and Algeria battled over Western Sahara, and in 1994 the trans-Maghreb train to Tunis stopped 1,300km short. Two border towns, Oujda and Maghnia, face each other, united by ethnicity, religion, language and intermarriage but divided by army barricades. Their stations, once trading posts, are terminals. "Halte police," read the no-entry signs. Peacocks pick at rubbish between the lines.

The last train left Tripoli for Beirut at the start of Lebanon's civil war in 1975. Syria's invading forces converted Rayak, the big junction and repair centre near its border, into a military base and turned an adjacent hotel into torture chambers. Israel's offensive in 1982 finished off what remained of the line to Beirut.

For years, Agatha Christie's Express was the stubborn survivor. The leg to Baghdad folded in the 1980s, but the night train from Aleppo to Turkey limped on. Then came Syria's civil war in 2011. It terminated all but a fraction of Syria's 2,450km of track. The platform still stands in Aleppo where Christie's "Murder" began, but her route east to Iraq was damaged in the bombardment of Islamic State. Mosul station was destroyed. The Arab Union of Railways dissolved in 2016. After a spate of mortar attacks, Christie's writing retreat, the Baron hotel, shut its doors in 2014.

Like the 12 killers aboard the Orient Express, the region's rulers each had a motive. The colonial powers carved up the Middle East. The generals who succeeded them prioritised their parcels of territory over the common market and culture developed across millennia. Tinpot dictators saw cosmopolitanism and connectivity as threats to new national identities. Religion lost its universality and shrank into cults tied to plots of land. Syria expelled its French inspectors. Iraq's railway administration sacked its Jewish managers. Bereft of expertise, many lines fell into disrepair. Train lines became like ancient silk-road souqs and bazaars, relics of a past when riches came from regional trade rather than the rent of a single raw material, be it oil, gas or phosphates. Defence came not from neighbourly relations but from a superpower far away.

The new love was the motor car. In 2019 Egypt paved over its Victorian tramway between downtown Cairo and the suburb of Heliopolis. To cover their tracks, the culprits gentrified the ruins. In 2014 hipsters turned Beirut's Mar Mikhael station into a bar. Israel converted the old terminals in Jaffa and Jerusalem into nightclubs and swanky restaurants. With a nostalgic nod, each makeover sends the message that the original use had reached the end of the line.

THE VERDICT

Christie's novel ends when the crime is solved. The story of the Middle East, though, never ends. As the oil age draws to a close, there are signs the region is rediscovering the value of its old connections. Many states plan to diversify their economies towards trade and industries such as tourism. Rulers worry they can no longer rely on America and are investing in regional diplomacy. And after the horrors of sectarian bloodletting, identity politics is losing its currency. Governments and political movements are cautiously rediscovering the benefits of religious multiplicity. Jewish communities are sprouting across the Middle East. Israel has its first Muslim party in government.

In tandem, railway branches are reaching outwards again. Morocco opened the region's first high-speed network in 2018, with plans to extend it to west Africa within 20 years. "With access and movement comes trade," says Muhammad Rabie Khilie, the head of Morocco's rails. "It's the spinal cord of development." A century after the Saudis smashed the Hijaz line, trains with cars built in Spain race between the holy cities at 300km/hr. A line to Jordan's border should open in March, seemingly preparing for the day of peace when via Israel passengers can reach the Mediterranean.

Harbouring similar hopes, Israel is building four lines, stretching tantalisingly eastward. If the Chinese company operating the Haifa container terminal has its way, at least one line will extend China's belt-and-road via Jordan. Competing for influence, Iran says it has agreed with Iraq to fill the 32km gap in its railway to southern Iraq, also with Chinese help, and from there along the old silk road to Syria. In October Iraq reopened the line to Mosul and announced plans to push on to Turkey. There are plans for lines linking the Arab states along the Gulf. Egypt is pursuing a massive expansion, which includes the world's largest monorail and new lines to Libya, Sudan and Saudi Arabia. Unlike Christie's American swindler, the Orient and Taurus Express trains, and with them the Levantine dream, may yet ride the railways again. ■



→ How it was once possible to cross the Middle East by train



FASHION

ONE WOMAN'S TRASH

NEW YORK

Technology has made it easy and worthwhile to sell old clothes. That is changing how people perceive clothing, and what they buy

A FLAT WHITE might last three minutes; a bottle of fine whiskey a year if it is savoured slowly. iPhones are typically replaced after two or three years, and cars after a decade or so. Some possessions are likely to outlive you, most notably your house. Some outlast civilisations: look at Ancient Roman jewellery. Everything you own lies on a spectrum, with consumption goods, such as a coffee or newspaper, at one end and investment goods, such as a house or a diamond, at the other. In the middle are durable or “durable-ish” goods, such as cars, coffee tables and washing machines.

Investment goods decay so slowly that, if scarce, their value may increase. Durable ones have utility and thus value for many years, but tend to depreciate while you own them. (Rare exceptions include vintage cars and Moon-landing editions of the *New York Times*.)

Where goods lie on this spectrum determines not only how long they last but what sort of market develops to trade in them. Many more people buy used homes or rent properties than buy new-builds, and only around a quarter of car purchases are of new vehicles. No one, by contrast, tries to resell bagged lettuce. Clothing lies in between. Well-made leather or denim items may last for a decade; a flimsy silk camisole for a season. But durability is not the only factor. Fashion matters, too: desirability can be fleeting.

All the more so in an era of just-in-time supply chains and social-media influencers. People now spend a lower share of their income on clothing than ever before, but the number of items purchased each year has ballooned. Many items are worn a few times before being discarded; 95% of the clothes Americans send to landfills are in good enough nick to be reused or resold. This is wasteful and environmentally troubling. Reliable estimates are scarce, but industry studies reckon that clothing manufacture and distribution account for between 2% and 8% of global carbon emissions. The fashion industry probably emits more carbon than aviation (3% of emissions) or shipping (2%).

Yet technology is reducing the friction in trade of all kinds. This started in financial markets, where whizzy algorithms and vast amounts of data have pushed trading costs practically to zero. More recently online platforms such as OpenDoor and Redfin, which use data about property features and locations to estimate values of homes algorithmically, have started to drive down estate agents' commissions. The trend then extended beyond investment goods. That was entirely more radical since it made markets where none had existed. Look at Airbnb and Uber, which turned empty homes and idle cars into sources of income.

Now it has moved to goods in the middle of the investment-consumption spectrum. A decade ago you would have struggled to offload second-hand clothing, let alone get paid for it. Emptying your closet meant a trip to a charity shop. A few high-value items could be resold, says Julie Wainwright, the founder of The Real-Real, an online second-hand-clothing site, but largely in “pawn shops or local consignment stores, where the experience and the payouts were not good”.

This all meant that the market, in economist-speak, was thin and illiquid. Matching buyers and sellers was tricky; transactions were rare; commissions were high. “One kind of illiquid market used to be the market for knick-knacks in the attic,” says Alvin Roth, an economist at Stanford University who won a Nobel prize for his work on market structure. “But the inter-▶▶

net made it possible to have your lawn sale on eBay.”

Once Airbnb and Uber had propelled the idea of a sharing economy into the mainstream, firms turning used clothing into an asset class were not far behind. As with accommodation and transport, not just resale but rental was revolutionised. By Rotation and Rotaro act like sharing-economy apps for wardrobes. Now, whether people are reselling knick-knacks, lending out old clothes, renting a spare room or picking up passengers in their spare time, they are making better use of their assets than before.

In 2021 resold clothing fetched around \$15bn, up from less than \$1bn in 2013. A further \$21bn was spent on garments from charity and thrift shops. The total spent on second-hand garb, some \$36bn, is slightly bigger than the \$30bn spent on “fast fashion” in shops such as Zara or H&M. By 2025, according to GlobalData, a research firm, the value of resold and thrifted clothing will climb to \$77bn as resale revenues triple to \$47bn annually and charity-shop revenues climb to \$30bn. Combined revenues will dwarf those from fast fashion which are expected to grow to just \$4bn.

Online clothing resellers’ business models vary. The RealReal and Vestiaire Collective target higher-end fashion—think Chanel bags and Gucci loafers. They make selling easy by, for example, sending couriers to collect items. But they are fussy about what they take. The RealReal charges at least 20% of the sale price (and as much as 60%). In return they stand between buyers and sellers, setting or suggesting prices, organising shipping and authenticating garments so that buyers can trust that their purchases are genuine.

ThredUP also takes possession of items, but will accept anything a seller wants to get rid of, from high-street fast-fashion brands through to designer labels, before sorting, pricing and listing items that pass a quality inspection (rejects are returned or recycled). Users get paid a fraction of the sale price (as little as 5% for a \$5 item; up to 80% for those that sell for more than \$200). Others, such as Depop and Poshmark, are peer-to-peer platforms. These allow users to list their own items at a price of their choosing, but also leave them to do the legwork and shipping. They take simple flat-rate commissions: Depop’s is 10%; Poshmark 20%.

FROM BAGS TO RICHES

All are now firmly established. The RealReal became the first to go public in 2019. ThredUp and Poshmark listed in 2021. Depop, which was founded in Britain, was acquired by Etsy, a New York-based online marketplace, in June. Vestiaire remains privately held. Between them these fashion resellers are valued at around \$8.4bn, a tiny fraction of the market capitalisation of the fast-fashion giants, Inditex (which owns Zara) and Hennes and Mauritz (which owns H&M along with & Other Stories, COS and Weekday), of \$100bn and \$30bn respectively.

But retailers, too, have cottoned on to the idea that old clothes can sell. ThredUP works with high-street brands such as Madewell, which now offer used (or “preloved”) items alongside new stuff in stores and online. Brands can customise what they take. “Madewell wanted to tell a particular story about denim,” says James Reinhart, the co-founder of thredUP. Merchandise and tech from thredUP lie behind the resale arms of many major retailers, such as Walmart. The proceeds are split between the retailer, thredUP and

The fashion industry probably emits more carbon than aviation or shipping

the sellers who ship stuff in to be resold.

The boredom of covid-19 lockdowns may have boosted resale by giving people time to clear out their wardrobes and browse second-hand fashion online. According to estimates from GlobalData last year saw over 33m new buyers and 36m new sellers of old garb.

The idea that clothing is for a season, not forever, is even clearer in the peer-to-peer rental market. Eshita Kabra-Davies set up By Rotation, a wardrobe-swapping app, in 2019. It allows users to list items available to borrow. The fee is usually around 5% of a garment’s retail price per day. Dresses tend to be rented for three or four days, to wear over a weekend, or to take on holiday. Ms Kabra-Davies was inspired by trying out an American service that rented garments it owned, only to be disappointed when the selection felt outdated. “I actually want to borrow the outfits that women are wearing on Instagram right now,” she says. “That was when I thought we should just let people share.”

With renting out clothes, as with allowing strangers into your car or home, comes the worry that they will ruin your prize possessions. By Rotation allows lenders to bill borrowers extra if a hem is ripped or a dress stained (it steps in if owner and borrower cannot agree). But mishaps, especially ones requiring intervention, are rare, says Ms Kabra-Davies. And rental yields can quickly add up. Some frequent lenders with big wardrobes make up to £2,500 (\$3,300) per month.

Clothing is not the only high-value durable good being shared for a fee. FatLlama, a British platform, allows people to rent out anything (fancy camera equipment does well). Indeed, the idea of renting out durable, or durable-ish, goods makes such sense that it is surprising that it did not take off before. In the case of clothing that may be because perceptions needed to shift. Only close friends could have been asked for the loan of a jacket or dress—and even then they might not share your taste, or indeed vital statistics.

The very thought that an item might be rented out or resold in the future changes how consumers approach buying it in the first place. Ms Wainwright of The RealReal says that most of its users regularly shop at posh department stores. Its proprietary surveys find that they “are starting to check The RealReal first to see how a luxury item retains value on the secondary market before making primary market purchases”. That is, they are more likely to buy high-quality garments, knowing that at least part of the cost may be recouped.

The biggest shift in perception, however, is not among people who sell or rent their clothing, but at the other end of the deal. A poll in 2016 by GlobalData found that 45% of adults had bought second-hand clothing, or said they would consider doing so. That share is now 86%. Influencers document trips to charity shops and show off their purchases. A decade ago wearing second-hand clothes was uncool, and teens hung out in Abercrombie & Fitch or Jack Wills. Stroll a hipster neighbourhood today—Williamsburg in Brooklyn, say—and passers-by will have bought their outfits in thrift stores like Goodwill and Housing Works, or curated shops like Awoke Vintage.

In this way the shift towards second-hand fashion is self-reinforcing, with fashion tastes changing because...well, because fashion tastes have changed. Once a trendsetter wears something, others seek to emulate the look. The more people sell their old stuff, the cooler wearing it becomes, too. ■

\$30_{BN}

The total spent on “fast-fashion” in 2021

\$77_{BN}

The predicted global spend on second-hand clothing by 2025



INDIAN POPULAR CULTURE

THE ARRIVAL OF A TRUCK

LEH AND MUMBAI

India's touring cinemas are dying, and being reborn

FOR MUCH OF the year Pusegaon, six or seven hours' drive from Mumbai, is an unremarkable village of fewer than 10,000 people. But every winter its population swells several times over when it hosts a *mela*, or fair. Religion, commerce and entertainment meet at such fairs, which are common throughout India. In Pusegaon cattle traders show up, and so do pilgrims to the Sevagiri temple. There are Ferris wheels, food stalls and merchants hawking all manner of goods. When this correspondent visited in January 2002, there was also, by the banks of the Yerala river, an enormous red-and-white striped tent set up by one of India's fabled travelling cinemas, Amar Touring Talkies.

An ancient lorry was parked alongside the tent. On its cab was a poster for the films being screened, and on its hood was a loudspeaker to advertise them to the many potential viewers who might be unable to read. When a film projector mounted on its flatbed shone its light through holes lined up between the truck and the tent, the silver screen suspended in the middle of the marquee came alive with image and sound. Tickets cost 10 rupees (\$0.20 at the time).

Inside, facing both sides of the screen, as many as 1,000 men, women and children from Pusegaon and surrounding villages sat cross-legged on the dusty red soil, enraptured. For some, it was their first time at the cinema. For others it was their annual treat. And so it went, all day and pretty much all night, five or six screenings daily, until the villagers had had their fill and Amar Touring Talkies rolled up its tent, rewound the film and canned the prints, and sputtered on to the next village fair somewhere on the Deccan Plateau.

"It was one of the most romantic, most beautiful manifestations of cinema," says Jonathan Torgovnik, who was with the group that visited in 2002. On his first trip to India several years earlier, he was fascinated by "how important cinema was to Indian people and to India's social identity". He kept returning to document how film manifested itself in the everyday lives of Indians, for "Bollywood Dreams", a book of photos (some of which accompany this story). Over five years taking pictures, "the raw joy of the villagers" at the touring cinema was the highlight, he says.

India produces some 2,000 feature films—in dozens of languages—every year, far more than any other country. About a third find theatrical release. The rest go straight to television or online, or just sit around in cans, says Amit Khanna, an industry veteran and the author of "Words. Sounds. Images: A History of Media and Entertainment in India". There are thriving industries dedicated to making movies in Bengali, Bhojpuri, Kannada, Malayalam, Tamil, Telugu and other languages. But it is Bollywood—a once-ironic, often reviled and now mostly uncontroversial nickname for the Hindi film industry—that dominates the imaginations and passions of the country as a whole.

Indians offer any number of reasons to explain the hold Bollywood has, each at least somewhat true. One is that a country as diverse as India needs some common denominator and Hindi, for better or worse, is the one language comprehensible to the majority. Another is that the Hindi film industry is the biggest and richest, so its films are the slickest and most exciting. Their stories, geared towards escapism and happy endings, are a balm in a difficult, conservative country where day-to-day life, for most people, involves navigating between humiliation and oppressive duty. ▶



screen by working-class filmgoers. Making movies is about more than just making money—it is about giving rise to love and devotion. Cinemas are where that passion finds its congregational expression.

Yet it is one more paradox among the millions of contradictions that constitute India that what is perhaps the most film-mad country in the world also has among the lowest ratios of screens to human beings. There are just eight screens per million people in India today, compared with 37 in China and 124 in America. Yet Indians bought 1.98bn movie tickets in 2017, while Chinese cinemas saw a more modest 1.62bn admissions and American ones a meagre 1.24bn.

AN EPIC IN EVERY POCKET

The screens that do exist are unevenly distributed. Mumbai has them in abundance; Pusegaon has none. PVR, India's biggest cinema operator, has more screens in Chandigarh, a prosperous city of about a million people, than it does in Rajasthan, a poor state of 80m. Pankaj Tripathi, a Hindi-film actor who grew up in the 1980s and 1990s in Bihar, an even poorer state in the east of the country, says he did not go to a cinema until he was 11 or 12—the nearest hall was 25km away. It was in this world that the touring talkies played a crucial role: if Muhammad could not go to the movies, the movies had to come to Muhammad.

When Mr Torgovnik visited Pusegaon 20 years ago, there were 11,692 cinema screens in India, plus another 1,400-odd touring talkies. Today there are around 8,000 permanent screens—as many as 1,500 shut just during the pandemic—and only 52 travelling cinemas. Amar Touring Talkies, whose name means “immortal”, is long gone.

The decline of India's film halls has many causes: the rocketing value of the land they occupied; falling standards for cleanliness and comportment that made them unattractive to families and women; high entertainment taxes; labyrinthine licensing requirements; television, home video and, more recently, streaming. But the collapse of the touring talkies has been greater and swifter, for two interlinked reasons.

One is smartphone and internet penetration. There are at least half a billion screens in India today, not in cinemas but in the pocket of every third person. And what Indians use them for more than anything else is to watch video. It accounts for the majority of mobile internet traffic in the country. There are dozens of streaming services, and YouTube is probably the most visited website. Autorickshaw drivers rubber-band phones to their handlebars and watch movies as they idle in traffic. At night the dim light of the screen illuminates the faces of the men and women who live in shanties by the sides of the road. In remote villages without running water teenagers make Instagram reels set to hit film tunes while their grandparents watch mythological epics on their devices. Mohammad Naurangi, who owns Sumedh Touring Talkies in the western state of Maharashtra, of which Mumbai is the capital, sums it up: “Everyone is watching movies on mobile,” he says. “People don't have any interest in sitting on the ground in a *mela* anymore.”

Which leads to the other reason for the collapse of the touring cinemas: they failed to move with the times. Mr Naurangi started working in the travelling tents as a child—his small stature unimposing as, hawking refreshments, he skipped among the cross-

↑ Amar Touring Talkies

Moreover, Bollywood's cultural influence extends far beyond the movies. India's popular music is dominated by the soundtracks of Hindi films; in advertisements on television and hoardings, Bollywood actors hawk cola and mobile phones, underwear and cement. Movie stars host tv shows, they appear in public-health messages, they own cricket teams, and eventually they find their way into politics. Some have even made it into the cabinet. It should hardly be surprising, then, that the idols, ideas and images of the industry form the scaffolding upon which Indians build a common identity. Apart from politics (an increasingly divisive subject), religion (ditto, but more so) and cricket (which lacks songs, dancing and romance), there is nothing else to tie the country together.

Cinemas, as much as the films, are part of this mythology. Satish Kaushik is an actor, director and producer who grew up in west Delhi in the 1960s and 1970s. Even today he can reel off the names of his favourite movie halls, fondly remembered like old girlfriends: “Naaz, Liberty and Filmistan where I lived; Rivoli and Regal were close by when I was in school; Palace, Amba, Alpana when I was in college”.

In Mumbai, the home of Bollywood, long-shuttered cinemas—Minerva, Naaz, Bandra Talkies—are stubborn landmarks of the city's psychogeography; they still give their names to bus stops. At Gaiety-Galaxy, a pair of enormous halls in the western suburbs where many film stars live, one of the ushers is a “duplicate”, or stunt double, for Anil Kapoor, a famous actor. Stars and producers buy tickets in the balcony for the Friday matinee, entering and leaving while the lights are down, curious to see how the audience reacts in the stalls below. They could read the collections in the trade papers or go to a posh multiplex. But numbers on a page or the hushed appreciation of the bourgeoisie are no substitute for the ecstatic cacophony of whistles and claps or the tinkling of coins thrown at the

Once the film came on, it was easy to forget you were sitting in a barren field

▶ legged audience. He is determined to keep the business going by diversifying into children's games and Ferris wheels as more reliable money-spinners at the village fairs. "The theatre has become our office in the *mela*, and we live and eat in it," he says. "But I will continue to run it. There are just a few of us left. We have to keep the tradition going."

Sushil Chaudhary, the founder of a new chain of touring talkies called PictureTime, is making a different bet on the possibilities of cinema. The son of an army man, he spent his childhood moving to a new city every few years. He graduated from one of India's elite engineering colleges and then worked as an IT consultant across Latin America. He has no background in cinema. Scouting for entrepreneurship opportunities when he returned to India a few years ago, he found himself wondering about the paucity of screens. Concluding that high property prices and a burdensome regulatory environment were, as he puts it, "very silly reasons", he reckoned he could solve both problems with travelling cinemas. Renting public space is cheap; in much of India, touring cinemas need just three licences.

MR CHAUDHARY'S INSURGENCY

Old-fashioned touring cinemas have little to offer today's smartphone-equipped small-townners. But provide a transporting experience at an affordable price and people will be queuing up around the block.

Mr Chaudhary started his company in 2015 and has since set up 37 moving screens seating between 100 and 250 people. He is on track to open 100 in the short term. His goal is 3,000 screens. A quarter will be in cities—especially at railway stations—and the rest will go to underserved areas, including some of the most remote. Already he has cinemas wandering around in Tawang, a comically inaccessible town in the eastern Himalayas where Bhutan, China and India converge, and the badlands of central India, which are infested with Naxals, Maoists dedicated to the violent overthrow of the state. Insurgents, it turns out, like Bollywood as much as the next Indian.

This summer, he set one up in Ladakh, a remote territory where in 2020 Indian soldiers clashed with Chinese counterparts along a disputed border, and which, more urgently for its residents, has not had a screen since the last cinema shut decades ago.

↓ Jonathan Torgovnik captures cinema-goers and makers



In Leh, Ladakh's capital, some 11,500 feet (3,500 metres) above sea level, a PictureTime truck settled in the city's cricket ground, surrounded by the peaks of the Karakoram. The touring cinema that emerged from the truck was nothing like the one in Pusegaon. In place of the tent was an inflatable yellow cube, with dimples for better acoustics. It was air-conditioned. The floor was carpeted and there were plastic chairs. The picture was crystal clear, the sound Dolby. Once the lights went down and the film came on, it was easy to forget you were sitting in a barren field.

PictureTime's tickets are cheap, at between 30 and 70 rupees, compared with an average ticket price of 191 rupees at PVR's multiplexes. Mr Chaudhary argues that 3,000 hundred-seater screens selling tickets for 70 rupees and operating at just 30% capacity could add as much \$122m to India's annual box-office collections.

It is an audacious plan. Whether it works comes down to an abstract question, the sort spreadsheets remain unequipped to answer: is there really something magical about going to the cinema? Certainly there was in 1896, when the Lumière Brothers screened "The Arrival of a Train", a 50-second documentary which showed a mail train pulling into a platform and which, the legend goes, so terrified viewers that they leapt up and ran away. That magic was still there in 2002, when Mr Torgovnik witnessed "the raw joy of the villagers" in Pusegaon. But what can be the magic of the moving image in 2022, when video saturates the world like high-fructose corn syrup in American food?

Perhaps audiences will discover it in the feeling of sitting in a darkened hall, or in the rituals of buying samosas and popcorn and sugary drinks. Or maybe it will be in the communal experience, the cinematic equivalent of a live concert. Or in the single-minded attention they must pay to the big screen, so unlike the notification- and distraction-filled experience of looking at a mobile phone.

Cultural artefacts, from Guignol to Punch and Judy, from village fetes to county fairs, and from the circus to the cinema, live on because older generations inculcate in younger ones a love for the things they love. As long as parents introduce cinema to their children and help them form memories of being spirited to another world, the tradition of going to the movies will endure. All that the world's film industries need to do is to provide the spaces for that magic to happen. ■

OF D B W A

EVERY FOREIGN correspondent's first posting should be Belgium. For that prosperous but quarrelsome kingdom is a fine place to see, in miniature, some of the large forces that shape human events around the world. Notably, pocket-sized Belgium is home to an unusually severe case of north-south antipathy. In my near quarter-century as a foreign reporter in four continents, one quirk of human nature has kept cropping up. People love to judge, mock or distrust those who live either above or below them on a map.

Formally, Belgium's splits are linguistic, with its 11.5m people mostly shared between a Dutch-speaking north and a French-speaking south. In reality, language is clearly seen as a badge of tribal belonging. In both Dutch-speaking Flanders and Francophone Wallonia, it is common to hear people declare that the country's linguistic border—which runs from east to west, dividing the capital, Brussels—is nothing less than the frontier between the Germanic and the Latin worlds.

The stereotypes are harsh. As northerners, the Flemish are called hardworking, dour and thrifty, a race of early-to-bed merchants and farmers, inhabiting a land of flat cabbage fields and drab coastal lowlands. As southerners, the Walloons are deemed wily, lazy and corrupt: a race of drinkers and dreamers, faded gentry and public servants employed in vast numbers by a bloated patronage system. Flemish nationalists have little sympathy for French-speaking coal and steel towns once among Europe's richest, but now sunk in post-industrial blight. In Flanders the grumble is that Walloons—who in the 19th and 20th century lorded it over their Flemish neighbours—are too arrogant and welfare-addicted to learn Dutch and move to their country's dynamic north.

For outsiders, it can be confounding to see such animosity crammed into so narrow a space. It is just 222km (138 miles) from Belgium's northernmost town, Meerle, to Torgny in its far south, or less than the distance from New York to Boston. The same chilly grey skies hang over Flemish and Walloon towns. Yet to hear nationalists on each side talk, their country encompasses Europe's extremes, as if a tiny Prussia shares a border with a colder Sicily. Belgians invoke long-ago events to explain the puzzle. In 1921, a historian, Emile Cammaerts, traced his country's divisions back to fifth-century wars that saw pagan Frankish tribes from the Germanic north attack Christian Belgo-Romans in the south, only to be stopped by an impenetrable physical barrier: the Silva Carbonaria, a long-vanished forest that ran along the line of today's linguistic frontier.

North-south antipathies are much more than a cultural curiosity. The euro

crisis of 2009-12 began as a row about European banking rules and government debt. As a Brussels-based columnist, the beat became a blur of emergency summits, as the flashing blue lights of motorcades ferried European leaders to another late-night meeting before markets opened the next day. For all the focus on bail-out funds and fiscal discipline, it became clear that a less technical question was also in play: namely, did north and south Europeans like each other enough to share a currency? German and Dutch newspapers talked angrily of "Club Med" countries in Europe's south, where—they charged—tax-dodging layabouts retire at 55. Gloomy Eurocrats cited the fables of Jean de La Fontaine, imagining priggish northern ants condemning profligate southern grasshoppers to starve.

To be sure, the wealthiest and most productive regions of the European Union are mostly in its north and west, with poverty found in the south and ex-communist east. International surveys of corruption rate Denmark, Finland and Sweden among the cleanest countries in the world. Among western EU countries, Greece and Italy fare less well, and former eastern-bloc ones worst of all.

Over the years, however, I have noticed a phenomenon that cannot be explained by international league tables. Within many countries, strikingly similar north-south stereotypes crop up time and again. Such prejudices are often defended by references to climate, topography and history. Northerners are hailed for hard work and thrift. Northern agriculture is praised for its efficiency, which is often linked to an early abolition of feudalism creating lots of small farms owned and worked by sturdy, self-reliant yeomen. Southern regions are deemed friendlier but blighted by clannish corruption and idleness. If southern farms are less productive, harsher weather is only one explanation. Another involves the legacy of vast estates on which hard-pressed, semi-literate peasants laboured well into the 20th century.

The really startling detail is how often these stereotypes reset at national borders. Start in the southern Netherlands. According to common prejudice, the Dutch see their Flemish-Belgian neighbours as living an agreeably soft life, filled with fine food and drink (though almost any cuisine looks tasty from the Netherlands, where a business lunch may consist of cheese sandwiches and a glass of buttermilk). Cross the border into Belgian Flanders though, and national stereotypes place you in Germanic northern Europe. Keep driving into French-speaking Wallonia and Belgians reckon you have hit the south. But head across the international border into France, and—by common consent—you are back in a region that is unmistakably ▶▶

NORTH V SOUTH

BEIJING AND DONGXING

Our Chaguan columnist on a resentment that persists around the world

▶ northern. Fans of France's far north praise the locals as generous, earthy and plain-spoken. But the landscape is often bleak, with run-down industrial towns and seemingly deserted villages of grey houses with closed shutters. Head farther into France, past central regions called snooty though prosperous, and the lavender fields and hillside olive groves of the south are reached. Popular French prejudice credits southerners with knowing how to enjoy life in a hot, sunny land, but also accuses them of idleness and dishonesty.

A CHANGE OF PERSPECTIVE

Cross into northern Spain, and the clichés reverse. The north is cold and severe. Galicians are melancholic and Catalans proud and a bit miserly. The great bourgeois cities of the north, like Barcelona, look down on a backward south deemed too fond of fairs and fiestas to get anything done. To many Spaniards, these stereotypes are common sense: a reflection of real-world physical differences. But there is a hitch. Look at a map, and it becomes clear that one person's north is another's south. Take supposedly cold, northerly Barcelona. It lies some way south of the sun-baked, southern French city of Marseille, and enjoys almost the same climate.

A similar reset may be experienced in Italy. By common consent, northern Italy is business-minded and a bit unfriendly; the south is Mafia-infested, inefficient and poor. Within Italy, regional stereotypes are matched by real-world differences: much about life is harsher in the south, from the climate to crime. Yet on a map of Europe, distinctively northern Italy is not in the north. Indeed haughty, handsome Florence lies on a lower latitude than Avignon, in the southern French region of Provence.

Some nasty prejudices lurk. The idea that warm places are lazy is impossible to separate from long-debunked theories of racial superiority, seeking to explain why white Europeans conquered African, American and Asian colonies with such brutal ease. Over the years, north-western Europeans came up with self-serving theories to explain why Providence had ordained that they should run the world. They boasted that their climate was just bracing enough to inspire men to industry, whether that meant weaving fine clothes or building cities of brick and stone, without being so cold as to make agriculture impossible. They scorned hot places where fewer clothes are necessary, and food supposedly falls from trees. In fact, the link between temperate weather and invention is distinctly weak. Until well into the Middle Ages, northern and western Europe were backwaters. Whether studying the history of mathematics, medicine or literature, civilisation flowed from east to west, car-

ried from the Mediterranean basin, the Islamic world and China to damp, chilly places like Germany or the British isles.

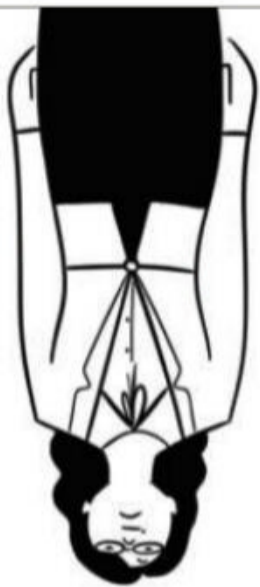
In the 20th century, the long shadow of Max Weber and his claims to identify a distinctly Protestant work ethic loom over any discussion of productivity. I admit to scepticism, born of many years working in America, whose diversity mocks any attempt to claim economic dynamism and innovation for Protestantism, or any other creed. Nor, for that matter, does modern America lend itself to simple north-south generalisations, for all the clichés about taciturn, diligent New Englanders and drawling, bourbon-sipping southerners. For when the "South" is used to stand for racial inequality, rural poverty and prejudice, that means the old Confederacy. True, the legacies of the slave era are shockingly long-lasting. During the covid-19 pandemic, a comparison of states with high and low vaccination rates resembles a Civil War map. To this day, voting patterns in the rural Midwest correlate with areas settled from the north by demobilised Union soldiers, and from the south by defeated Confederate veterans.

Elsewhere, however, wave after wave of internal migration and immigration have redrawn American maps, many times over. The far rural north of Florida votes like Alabama and Louisiana. But the rest of the state is a melting pot in miniature, from snow-haired Jewish New Yorkers in Palm Beach to Cubans and Venezuelans in Miami, or Puerto Ricans in Orlando. Reporting from the south-western Sunbelt, I met conservative whites who had just migrated to Arizona and Hispanic farmers whose roots in New Mexico predate the founding of the United States. In a restless, continent-sized country, any debate about regional clichés must first answer: which north and which south?

Yet north-south stereotypes are more than a European quirk. Vietnam boasts both genuine north-south differences, and stereotypes that draw on harder-to-credit notions about climate and topography. Vietnam's division from 1955 to 1975 into two warring halves, a communist north and an American-backed south, caused cleavages that were still visible in the mid-1990s. Northern Hanoi was in 1995 an austere place, filled with political slogans and war memorials. The old southern capital of Saigon, now Ho Chi Minh City, was already a capitalist boomtown.

History explains much of that gap, says Le Hong Hiep, a Vietnam scholar at the Institute of Southeast Asian Studies in Singapore. Southern Vietnam, historically a great trading hub, knew only a few years of communist central planning between the American retreat in 1975 and the start of market reforms in the 1980s. Later, return- ▶▶





▶ ing members of the southern Vietnamese diaspora, especially from America, were a source of investment and entrepreneurial energy. In contrast, the north spent decades as a communist, wartime economy.

Prodded during a Zoom interview to describe regional stereotypes, Mr Le at first demurs, for he is a serious academic. Then, as he is also a genial sort, he plays along. By reputation, he says, northerners are more interested in politics and jobs in government, but southerners are drawn to commerce. Northern winters are very cold, he goes on. And because that is hard on farmers, life as an official is an appealing alternative. In the hot, tropical south, there is only a dry season and a rainy season. “They have an abundance of fruit and fish and rice, especially in the Mekong delta. So people don’t have to work as hard. So they are maybe a bit lazy,” says Mr Le.

That is fascinating, I tell Mr Le from my office in Beijing, but also puzzling. For almost identical stereotypes—involving harsh winters that drive northerners into government, while southerners enjoy a life of ease—are applied to different bits of China. And here is another thing: on a map, China’s hot, southern, commercially minded regions lie above your frigid north. Mr Le pauses. “What is winter for Vietnamese people is maybe summer for other people,” he laughs.

China is a handy place to explore such mysteries. To generalise, the Chinese relish stereotypes. Indeed, sensitive foreigners are best off avoiding any discussion of regional, national, ethnic, racial and religious differences when in China, unless they want to hear all about the athleticism of black people and the cleverness of Jews.

Food, a beloved topic, is often linked to regional character. By common consent, China’s north is shaped by wheat-growing and noodle-eating, but its south is influenced by its staple crop, rice. Some years ago American and Chinese researchers published a “rice theory”, after finding higher levels of individualism among students surveyed in north China, and more group loyalty among southern ones. They saw a link with the traditional culture of rice farmers, who must pool labour and cooperate when flooding paddy-fields. In contrast, wheat farmers mostly rely on rain and need not work with neighbours, for theirs is not as labour-intensive a crop.

Dongxing, a coastal town on China’s border with Vietnam, lies 2,500km south of Beijing. A balmy spot in the far-southern province of Guangxi, its population is swelled each year by tourists and long-term visitors from northern China, especially retirees fleeing freezing winters. It is a fertile place in which to harvest north-south stereotypes. The nearest Vietnamese city, Mong Cai, lies just across the Beilun

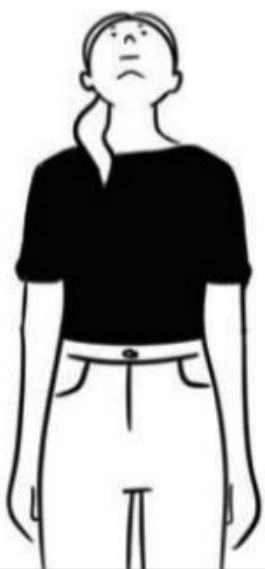
river, a sluggish, brown creek 50 metres wide. It is so close that, with the naked eye, it is possible to see Vietnamese border guards lounging in folding chairs on the far bank, fishing rods at their sides. Before covid-19 controls closed the nearby Friendship Bridge, Vietnamese tourists arrived each day. A trader in teak chopping boards, who will give only his surname, Deng, calls folk from northern China well-educated but standoffish. They are better suited to officialdom than business, he mutters. A veteran traveller to both Hanoi and Ho Chi Minh City, he calls southern Vietnamese food tastier, and southern women prettier. Mr Deng’s pro-southern chauvinism is ironic, given that northern Vietnam is the source of the wood on which his business depends. It is illegal to cut large teak trees in China, he explains, but luckily Vietnam does not enforce laws well.

Belgium feels a long way from the muddy, jungly riverbanks of Dongxing. But the conversations in this humid Chinese town are oddly familiar. As in Belgium, the proximity of a proudly northern bit of the world, a few metres away, in no way shakes the locals’ conviction that here, they are southerners in every respect.

THE UPSIDE DOWN

Delightfully, north-south clichés reverse on the far side of the equator—a discovery I made during a posting to Australia. To meet starched establishment types, I headed south, to Melbourne, Adelaide and other genteel cities with mild climates. In contrast, to interview Pauline Hanson, then a fast-rising nativist politician, I flew to Cairns in Queensland’s sweltering north. I found her stirring up alarm about immigration making Australia “a foreign country”, by which she seemed to mean less white. “I’m not anti-immigrant, but we don’t want to be Asianised,” she explained. “We’ve got crime with machetes now.”

Regional generalisations suggest some larger truths about human nature. For one thing, people are hard-wired to make relative judgments: defining lives as harsh or lazy in comparison with those lived by neighbours. Also, human beings are overwhelmingly interested by their own societies. That is why so few notice, or care, if their country’s supposedly hot, lazy south sits atop another nation’s chilly, business-like north. This is no cause for dismay. If over two decades on the road teaches anything, it is that the world is not a machine whose workings can be explained with the laws of physics. Foreign affairs more closely resemble a noisy, ceaseless family argument that outsiders can never fully understand. Faithfully recording that cacophony, and trying to extract some sense from it, is the foreign correspondent’s job, at every latitude. ■



CRYPTOCURRENCIES

RIDE TO
FREEDOM

Under the hoodie of the most powerful people in crypto



THE HONG KONG den of FTX, a cryptocurrency exchange, is where high finance meets teenage chaos. It is 7.30pm and staffers in shorts and T-shirts are still arriving for work, slaloming among desks fitted with six screens each. Booze, boxes and general junk, from guitars to badminton shuttles, lie everywhere. A buffet of delivery food tempts the peckish; traders and developers face off on wooden chess boards. Art casting Sam Bankman-Fried, FTX's founder, as the King of Clubs or Uncle Sam in the trenches adorns the walls. When bitcoin prices are booming, poker tournaments often take place in a cluttered meeting room (tonight the house is closed).

Two-year-old FTX is the hottest firm in crypto. In October it raised \$420m from star investors including BlackRock, the world's largest asset manager, and Sequoia, a giant of venture capital, which valued FTX at \$25bn—just three months after the previous funding round had valued it at \$18bn. Its name graces the home arena of America's Miami Heat basketball team, the uniforms of elite baseball umpires and appears on Super Bowl ads following a series of sponsorship deals worth hundreds of millions of dollars signed in 2021. It will soon be emblazoned on the Mercedes Formula One team's cars and drivers' overalls, too. It is stealing market share from rival exchanges and now consistently ranks in the top four. Mr Bankman-Fried, known in the trade as SBF, has a net worth estimated at more than \$22bn. He is just 29 years old.

The whizz-kid is one of four main players in an epic contest to rule a universe that has grown 12-fold in total market value, to \$2.3trn (as of mid-December 2021), since the start of 2020. He is taking some shine off Changpeng Zhao, the Chinese-Canadian boss of Binance, the largest crypto-exchange (who, at 44, is the oldest of the four). Mr Zhao, who goes by CZ, himself three years ago dethroned Arthur Hayes, the African-American co-founder of BitMEX, which pioneered the most popular—and riskiest—products in crypto. Brian Armstrong, the introverted, unflappable CEO of Coinbase, the only exchange listed and regulated in America, is playing the long game, hoping that being the most above-board will help lure punters wary of trading through less-policed offshore exchanges.

All four have amassed multi-billion-dollar fortunes, and huge influence, in just a few years. In conventional finance, where money is commonly borrowed, spent or saved, the most powerful intermediaries are bankers, payment firms and asset managers. But private currencies today are mostly used to speculate, which makes exchange bosses, who provide punters with the tools and venues to trade, the kings of a world whose *raison d'être*, paradoxically, is to do away with mighty middlemen.

Crypto's demigods are ambivalent for other reasons. They argue that regulation is not a threat, yet most hop from one lenient base to the next when local watchdogs start to growl. Some outsiders doubt their sincerity; others attribute their success to timing rather than entrepreneurial vision. Believers marvel at their skill in riding wildly gyrating markets, though some wonder how long they can keep doing it. Little is known about their personal lives, beliefs and aspirations. Through interviews with three of the founders, as well as insiders, *The Economist* got a sense of what it takes to be the most powerful people in crypto—and what they may leave behind once gone. Mr Hayes, who ▶▶

▶ has been charged in America with anti-money-laundering failings and is awaiting trial, declined to take part, but your correspondent spoke to sources who know him well. He denies wrongdoing.

Born to cerebral middle-class parents, most started with good cards in hand to do well at school. SBF, the son of law professors at Stanford, says he was “strongest” at maths. CZ, whose father taught geophysics after fleeing China’s Cultural Revolution, ranked among the top ten in Canada’s national maths competition. California-born Mr Armstrong’s mother earned a PhD in bioinformatics. Mr Hayes’s parents worked in manufacturing, at General Motors in Buffalo and Detroit, but he favoured chemistry and economics, having won a scholarship to a private school.

THE SQUARE ROOTS OF SUCCESS

Even that early, however, there were hints of restless entrepreneurialism. In high school Mr Armstrong taught himself how to code and founded an e-commerce website listing refurbished computers, selling “maybe 50” in total. He was not alone in often finding university too abstract. “I actually struggled in maths and physics, because they got too much into theory,” CZ says. As a second-generation immigrant, he wanted to learn how to achieve “financial freedom”.

This quest for money-fuelled liberty began at trading-technology firms, where CZ wrote code. Mr Hayes and SBF cut their teeth on Wall Street. Mr Armstrong drew a winning “lottery ticket” by joining Airbnb, a holiday-rental firm now valued at \$115bn, in which, like all joiners, he was given a stake. That he chose to leave early shows how much he believed in crypto, says Dan Romero, one of Coinbase’s first employees.

For Mr Armstrong the trigger was a trip after leaving college to Argentina, where reckless money-printing was fuelling hyperinflation. For Mr Hayes the trigger was more literal: his bank fired him. Having read about bitcoin on Zerohedge, a libertarian financial blog, he became enamoured with its built-in scarcity—bitcoin’s blockchain is designed so only 21m coins can ever be “mined”. A gold bug, he was intrigued by the idea that, as with the yellow metal, limited supply could give it value. CZ quickly grasped that bitcoin “would do to finance what the internet did to information”. SBF simply saw an opportunity to do “really good trades”.

The founders’ loftiest visions have not been realised: bitcoin’s price has exploded, from \$700 in 2016 to \$50,000 in mid-December, but it is rarely used to make payments. Still, they argue, it will, in time, foster “economic freedom” by offering an alternative to mismanaged “fiat” currencies, boosting financial inclusion, cheapening cross-border payments and enabling startups to raise funds wherever they are. CZ predicts 80% of people will accept crypto payments within five to ten years. Two years ago, he says, it “felt rude” to ask if he could pay for a bottle of wine in crypto. No longer.

Given their professed credo it may seem odd that the founders are not running payment firms but what, to sceptics at least, look like giant digital casinos. Mr Hayes started his crypto career by buying bitcoin overseas and swapping them for cash in China, where they were trading at a premium, before crossing the border with bags of banknotes. BitMEX, which he co-founded in 2014, pioneered crypto “derivatives”—contracts allowing punters to bet on the future performance of digital assets. It took off when it started offering 100x

Brain power, idealism splashed with opportunism and physical stamina seem to be key ingredients for making it in crypto

leverage, meaning a \$10,000 account at BitMEX could be turned into a \$1m bet; FTX and Binance then pushed the cap even higher. Regulators ban exchanges from offering such high-risk products to non-professional investors in America, but they can still buy them using cheap software, such as a “VPN”, to circumvent restrictions. Today, the volume of derivatives traded far exceeds that of actual cryptocurrency transactions.

The founders see no contradiction. When he launched Coinbase—which does not list derivatives but has applied for a licence to do so—Mr Armstrong argued that setting up a trusted exchange would help make what was then a fringe product easier and safer to use. Nine years later that is still his view. CZ says his mission is not “as low as making money, but not as high as saving the world”: it is about providing people with more choice.

Whether for purpose or profit, all are toiling away. Mr Armstrong, a self-described “night owl”, starts at 10am and finishes at midnight. CZ, who works solely from home, has remote meetings with his lieutenants six days a week. SBF mostly sleeps on a bean bag next to his desk, four to five hours a day, in between meetings scheduled around the clock. He makes little distinction between dinner and breakfast, “other than which restaurants are open for delivery”. The day he spoke to *The Economist* his “last call tonight” was scheduled for 5am.

NO TIME TO DICE

Brain power, idealism splashed with opportunism and physical stamina seem to be key ingredients for making it in crypto. In three domains, however, the founders differ markedly—and it is those that could decide not just who gets even richer, but who ends up shaping, and dominating, the future of the industry.

The first is management style. People close to SBF describe him as capable of handling extraordinary detail while juggling many things, from issues at the exchange to ambitious side projects (including Solana, a superfast blockchain). He admits he is “pretty hands on”. By contrast CZ jokes that he is a “poor manager”, prone to delegating. Binance dominates the trading of crypto futures, a type of derivative, but CZ is rarely involved. In 2018 it bought Trust, a popular crypto wallet; when *The Economist* interviewed him, he had not spoken to its founder, who still runs it, in six months.

Mr Armstrong is somewhere in between in terms of engagement, while leading the pack when it comes to transparency and humility—in keeping with his good-pupil credentials. He has asked his senior managers to nominate six potential successors each, so the firm “stands the test of time”. He encourages staff to complain, though his promised reward of \$20 (in crypto) to whoever offers “the most raw, negative” feedback sounds a little stingy. Mr Hayes is the closest of the four to a superstar executive. He is charming, muscular and good on TV. “He’s trying to play like it’s James Bond running the company,” says Rich Rosenblum of GSR, a crypto-trading firm. He is also the closest to a self-styled visionary: his fortnightly essays muse on the present and future of digital finance.

Mr Hayes’s high-octane lifestyle certainly comes closest to that of the fictional British spy. In 2018 he arrived at a crypto trade show in an orange Lamborghini, tweeting later to his throngs of followers, “Did you see my ride today?” He skis in Hokkaido, plays squash in ▶

\$2.3 TRN

The capitalisation of crypto-markets in mid-December v \$200bn at the start of 2020

31%

The percentage of Americans aged 18-29 that say they have ever invested in, traded or used a cryptocurrency



► Hong Kong's amateur league, practises yoga daily and has just taken up kiteboarding. He wears tightfitting T-shirts and luxury watches. His favoured tippie, however, is a far cry from Bond's martini, shaken not stirred: "low-intervention" wine, made using few chemicals. In 2018 he kitted out BitMEX's flagship office in Hong Kong with a giant aquarium featuring live sharks, evoking a Bond villain rather than the spy himself. His distaste for discretion contrasts with the tamer temperaments of the other founders, none of whom own cars, prestigious properties or predatory fish. SBF shares a flat with friends from a previous job. CZ uses only one room of his rented flat. He does, however, like to splash out on gadgets: six iPhones adorn his desk.

Mr Hayes's flamboyance may help explain why American regulators have not taken kindly to him. But his attitude towards authority, the third point of difference among crypto bosses, is what riles them most. In 2020 they accused him, along with his two BitMEX co-founders, of failing to run proper anti-money-laundering controls on the platform. His indictment has angered crypto buffs. He is paying a price for being the first mover, they say, at a time when rules had yet to be written. Some even argue the financial establishment felt threatened by a successful black man who did not mince his words.

But many outsiders reckon he painted a bullseye on his own back. In 2016 he said BitMEX's strategy was focused on "degenerate gamblers"; at the time the firm targeted potential customers based in America, boasting that to "sign up takes less than 30 seconds". Asked about why BitMEX was legally domiciled in the Seychelles in 2019, he noted that bribing American regulators costs more and that the archipelago's price had been "a coconut". Backers dismiss such quips as showmanship on the part of an otherwise profound man. The FBI did not like the joke; a year later its New York chief warned he and his comrades would "soon learn the price of their alleged crimes will not be paid with tropical fruit".

Contrast that with Mr Armstrong, whose business model is premised on being the most trusted, compliant exchange. From the start, he says, he could see that the minute crypto got big there would be "a lot of scru-

tiny". He hired a lawyer and a compliance officer among his first ten staffers and even "put on a suit" to meet regulators. It was "painful at times" to watch what more freewheeling competitors were getting up to, he says. His intuition has been borne out: in recent months watchdogs around the world, alarmed by crypto's giddy growth, have started tightening the noose. China has declared all transactions in virtual coins illegal, and America's Securities and Exchange Commission is seeking new powers to regulate what its chairman calls the "Wild West" of crypto.

Mr Armstrong now says he wants to be an "education resource" for regulators, hinting that he will seek to influence the rules as they are created. That is not something the other founders' offshore exchanges can easily do. SBF, for his part, accepts that local clamp-downs could very soon have practical implications for FTX: were Hong Kong to go the way of mainland China, it might have to relocate most of its staff, which could well happen "a couple of years from now".

THE ENDGAME

The uncertain outlook leaves the founders mulling many questions, not least what impact a firmer regulatory crackdown, or a prolonged bitcoin bust, would have on their fortunes. All are huge on paper, but Mr Armstrong is the only one whose wealth is liquid (he sold \$292m-worth of shares in Coinbase during its stockmarket listing in April 2021). CZ's is all held in cryptocurrencies, with just a few thousand dollars in cash to pay for near-term expenses. SBF's treasure is mostly shares in his private firm. Mr Hayes allegedly withdrew \$140m from BitMEX along with his co-founders, according to early investors in the firm who sued it in 2019 (the lawsuit was settled out of court in December 2020).

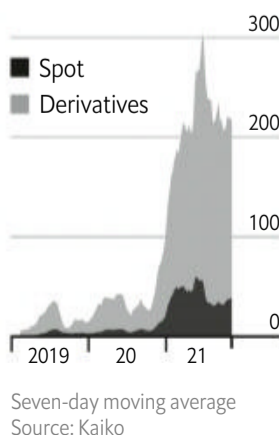
Equally hard to predict is what the quartet's legacy might be. Will one or more become an icon of global finance (like Jamie Dimon of JPMorgan Chase), a transformer of our way of life (like Steve Jobs, who placed a smartphone in everybody's hands) or even a reinventor of rocket science (like Elon Musk or Jeff Bezos), once they hang up their sneakers?

Mr Armstrong, an admirer of Mr Musk, shares his ethos most closely: he is saving the bulk of his capital, he says, for "moon shot-like projects" or "philanthropic stuff". Sources say he is into "longevity" and biology, and, like Tesla's boss, enjoys learning about fields he does not know by canvassing experts who do. He recently hung out with the founders of WhatsApp to understand how they "built a global product".

CZ, meanwhile, has no grand plans to splurge his wealth in space, or indeed spend it any other way: "Anything over \$100m I don't need." He intends to donate the rest to medical research and charities. SBF may do something similar. A vegan, he values causes such as curing tropical diseases, boosting pandemic preparedness and improving animal welfare.

The crypto contest, however, is far from over. Just like elite players of Texas Hold 'Em, all four founders have so far kept their most important cards close to their chests, taking big gambles only when the pay off seemed worth the risk. But to come out on the other side of the crypto boom with all their chips, they will need more than probabilistic genius and discipline. For winning a full game of poker is often less about skill than persistent luck. ■

Bitcoin volume, \$bn



OF BIRDS AND MEN

Since humans
have existed,
they have
envied birds.
They long to
fly like them;
to see as they
do, sharply...

*How men (and women) yearn to be
at one with the spirits of the air*

...with a hawk's eye; and to sing like them, through instruments or with their own duller, heavier bodies. For some, it is not just a matter of strapping on feather wings, caulked with tar or wax, and jumping off a church tower; or of putting on a feather-suit, like Papageno in "The Magic Flute", and trilling on a pipe. For a handful of men (it seems always to be men), the aim is to become birds, as far as they can.

In March 2006 the most famous birdman of recent times, Angelo d'Arrigo, fell to his death in Sicily. He was 44, a passenger in a tiny plane that suddenly nosedived at an air show. For him, this was a large and lumbering craft. Normally a hang-glider carried him, floating on currents of air. Thus he had drifted over Everest at nearly 30,000 feet (9,000 metres), and over Aconcagua in the Andes at 9,100 metres, a world record. He also held the record for the longest horizontal free flight, 1,830km (1,140 miles) without landing, relying only on the wind and the rigid wings that replaced his arms.

For his stunts over the highest mountains, a friend would give him an aerotow with a microlight to a suitable altitude. Lower down he used a small 5kg motor for take-off and landing, but for nothing else. He kept quiet because he was gliding alongside birds, learning at source how their great migrations were done.

His first such journey was in 2001, flying with desert hawks from Senegal to the Mediterranean. In 2003 he made a similar voyage with six endangered western Siberian cranes. The six had been raised in captivity, so he had to show them their migration route from Siberia to the Caspian Sea in Iran, some 5,500km. It took six months. Each evening he would choose their resting place. As they flew through a polar storm the cranes, trusting in his gaze like children, understood that with him they were safe. His last project, almost completed when he died, was to introduce two young condors to the Andes by soaring with them among the peaks.

He had raised both the condors and the cranes from the egg. While they were still in the shell he made bird-sounds to them and played them the noise of the hang-glider motor, so they would think it natural. When the condors, Inca and Maya, were hatched, he put a black mask over his shaggy hair to commune with them. When they fledged he put on his hang-glider wings, painted black and white like their own, so that he could mantle them like a parent as he fed them. When they were ready to fly he took them up on Mount Etna and taught them with his own crouching, running and jumping-off. Eventually the three soared together. He called his project "Metamorphosis": man into bird.

His hang-gliders were based mostly on Leonardo da Vinci's sketches in 1505 for his *uccello*, or great bird. Leonardo had used wood, leather, rope and canvas, dooming it with too much weight, but d'Arrigo could use aluminium tubes and polyester to create, as closely as possible, the wings of a bird. The hang-glider wings he settled on ended in a single upturned blade, as close to a condor as he could get. In these, as he glided over Aconcagua, he felt he had become the bird.

His aim was neither fame nor world records. It was simply to "ride the waves of the sky and the wind", utterly free and as birds did, by instinct. His desire to soar was like a fever. Plane-speed was purely mechanical; aviators had lost their link to nature. That was why he had to learn the secrets of lower-speed flight by merging with birds. He flew, like a great pianist playing, with his eyes closed. And then he was truly alive. ▶▶

▶ Great raptors fascinate humans not only for the way they fly but the way they see. Hawks spy from a great height, hover, then “stoop”: plummeting on the slightest sign of life. All the stranger, then, that the man who most closely became a hawk in recent decades was a mild, pullover-wearing, short-sighted chap who lived most of his life in Chelmsford, in Essex. As he pursued the peregrine, which came to obsess him, J.A. Baker had only foot and bicycle for transport. Yet in winter, when peregrines came to Essex, he was out in all weathers, bumping frantically along the lanes, running across fields, crawling through cover, to enter the hawk’s world. As he wrote in “The Peregrine” (1967), “The eye becomes insatiable for hawks.”

Soon, indeed, his way of looking and the hawk’s became the same. He could view the land as if from a height, flowing out “in deltas of piercing colour”. Stepping out each morning, always in the same clothes (for so was the hawk), he would know “the way of the wind and the weight of the air”. He shared the fear and exaltation of the bird, and its boredom as it waited for prey to stir. In snow, he shared its solitariness.

His view of himself, too, was now the peregrine’s: a hostile human shape, stumbling, unpredictable, with trembling white hands. And his idea of time was the hawk’s, “a clock of blood, and as you hunt...it contracts inward, like a tightening spring”.

The hawk came to know him. But it would not share its skill. This he had to sense vicariously, rejoicing in its clever feints before its prey and its conjuring of rising flocks of panicking birds; picking out the laggards, as the hawk did; marvelling at how it could flick a fieldfare from its perch, “as lightly as the wind seizing a leaf”, or strike a death blow so quickly that he missed it, diving “as if hurled from the sky”.

Hawklike, he also sought out the kills. He admired the beautiful butchery and noted, from the warmth and wetness of the blood, how fresh the prey was. A kill of a black-headed gull seemed so fresh and sweet to him, “like a mash of raw beef and pineapple”, that he could have eaten it himself. As he crouched over the bodies he became a mantling hawk, watching for men.

He was no longer, at such times, a man himself. Finding a hawk’s knobby claw-prints in the snow, he rested his own hand in them, a fellow being and companion. Their bond was indefinable and impalpable, but it was there: “the strange bondage of the eyes”. He would shut his own and sink “into the skin and blood and bones of the hawk”. After seeing the world through those great brown targeting eyes, he dreaded being “inglorious again”. But all too soon it was back to 20 Finchley Avenue, his wife Doreen, and tea.

The aerial masters screech, bicker and cry; the most celebrated bird-musician, however, sings out of deep cover, a small dull lark obscured by night. That secrecy adds to the age-old preciousness of its song. Sam Lee, a London-born folk-singer and conservationist, knows where they are because for several years he has entered their world and sung with them.

The bond was instant. When he first heard one sing, it was “an otherworldly baptism”; in 2014 he became a collaborator. He sang then for a radio broadcast from the garden of Beatrice Harrison, a cellist who, 90 years before, had famously played as a nightingale sang. Sam’s instrument was his voice, so he sang “The Tan Yard Side”. As a nightingale joined him, he felt they were in a wild and ancient conversation.

The nightingale is the harbinger of summer, longing and love

From that point, as he writes in “The Nightingale” (2020), he has come closer and closer to the birds. For six weeks a year, in April and May when the nightingale sings most ardently, Sam is “almost feral”. He is nightingale-invisible in the woods, going barefoot and wearing a woollen jacket that makes no sound in the rain. No phone, no torch; he relies on instinct, and finds his peripheral vision sharpened (as Baker did) to a full circle of awareness, the view of the watching bird. Every so often he falls into stillness, to take in the feel of the woods. The best cover he has found, the nightingale’s own choice, is a shell of thorns.

That song surprised him on first hearing. The nightingale is traditionally the harbinger of summer, longing and love. But what Sam heard was “mercurial, spacious, gymnastic, brazen, exuberant...flamboyant, histrionic and wounded”, all from a creature that sang, like him, unaccompanied and alone. Nightingales helped him with his improvisation. They also helped him understand himself, because—like all great performers—they seemed to expose and amplify whatever mood he had brought with him into the woods.

Gradually, instead of singing his human songs to them, he began to lure them with sounds they would understand. He approaches them now with harmonic whistles in the same pitch as the birds’ song, and they respond to him as to one of them. The tonality still strikes him as acerbic and strange, but each time it becomes beauty, and then he wants nothing else.

With the nightingales, singing or listening, he feels he is “spinning myself farther back into the web of nature”. Thoughts are washed away and the bird “rinses right through you”; there is a sense of dissolving, even flying. Like d’Arrigo, like Baker, he loses for a time the heaviness of human existence. Unlike them, he has also discovered that men (and women) may come closest to birds when they are simply whistling. ■



→ Angelo d’Arrigo



New GHS Index finds all countries remain dangerously unprepared for future epidemics and pandemics



Jennifer B. Nuzzo,
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Biological threats—naturally occurring, accidental, or deliberate—have long been a part of daily life, but in 2020, pandemic became a household word. Even if covid-19 fades from our daily lives, global travel, urbanisation, changes in land use, climate change, advances in biotechnology and the threat of biological weapons, ensure that more threats will appear in the future, and more frequently. To prevent the devastating consequences experienced during the current pandemic, we must identify weaknesses, measure progress and strengthen global health security today.

This is where the Global Health Security (GHS) Index comes in. The GHS Index, a project of the Nuclear Threat Initiative (NTI) and the Johns Hopkins Center for Health Security at the Bloomberg School of Public Health, working with Economist Impact, assesses health security and related capabilities across 195 countries. The GHS Index informs leaders of the necessary elements to prepare their countries for future

outbreaks, including where to prioritise planning and durable funding.

The 2021 GHS Index reached the sobering conclusion that despite significant steps taken by countries to respond to covid-19, **all countries remain dangerously unprepared to meet future epidemic and pandemic threats.**

Even as many countries proved they could ramp up new capacities during this emergency—including setting up labs and creating cohorts of contact-tracers—some responses were crippled by long-unaddressed weaknesses, such as lack of healthcare surge capacity and critical medical supplies.

Leaders now have a more acute understanding of what this lack of preparedness means for their health and prosperity. The response to covid-19 has shown that many factors—including public health and healthcare capacities, scientific understanding and countermeasure distribution, and social and economic resilience—shape how countries are able to respond. Weaknesses in those areas have contributed to a devastating loss of human life and battered economies across the globe.

In some countries with a foundation for preparedness, high levels of public distrust in government and other political risk factors hindered their ability to successfully respond. In other cases political leaders opted not to use it, choosing short-term political expediency over quickly and decisively moving to head off virus transmission.

One of the core principles of the GHS Index

is that global health security is a collective responsibility. Although political attention is high, unless the global community closes gaps in countries' abilities to respond to biological threats, the world will face covid-19's staggering toll—or worse—again. The 2021 GHS Index report includes an action plan to improve capacities and ensure the world is prepared for the next pandemic:

- **Countries** should allocate health security funds in national budgets and conduct assessments using the Index to develop a national plan to identify risks and address gaps
- **International organisations** should use the Index to identify countries most in need of additional financial and technical support
- **The private sector** should use the 2021 GHS Index to look for opportunities to partner with governments; and,
- **Philanthropies and funders** should develop new financing mechanisms and use the Index to prioritise resources

Leaders have a choice: Will they sustain new capacities and use the resources and attention generated by covid-19 to fill in remaining preparedness gaps for the long term—or will they fall back into the decades-long cycle of panic and neglect that will leave the world at grave risk for the inevitable health threats of the future?

The Global Health Security Index assesses 195 countries across six categories, 37 indicators, and 171 questions. For country rankings, findings, and recommendations visit ghsindex.org

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Denmark

No room at the inn

COPENHAGEN

Why is the world's second-happiest country so averse to immigration?

MJOLNERPARKEN, A HOUSING project in Copenhagen's multi-ethnic Nørrebro district, is pleasantly landscaped and dotted with sports pitches. The only signs of anything amiss are banners hanging from white balconies bearing slogans like "I'll never move". By next autumn many of the 1,500 residents may have to. That is because Denmark's government deems Mjølnerparken to be a "parallel society". Too many of its residents are hard-up, or jobless, or poorly educated, or have criminal records and are of "non-Western" origin. To comply with its policy of breaking up what the government until recently called "ghettos", Mjølnerparken's owner is to sell two of the four apartment blocks to investors. Other citizens will move in.

This is one of a number of ways in which Denmark is trying to control where and how immigrants live. On December 1st its Social Democratic government enacted a law to prevent the formation of parallel societies by obliging local authorities to give preference in "prevention areas" to

well-educated people with jobs when assigning housing. It is even keener to deter migrants from arriving in the first place. In March it was the first EU country to say it would send Syrians back to Syria, arguing that Damascus and its environs are now safe. Mette Frederiksen, Denmark's prime minister, has set a goal of "zero asylum-seekers". On December 13th a Danish court sentenced Inger Støjberg, who was immigration minister in an earlier centre-right government, to 60 days in jail for ordering unlawfully that married asylum-seekers younger than 18 be housed separately from their spouses. She says the policy's intent was to discourage child marriage. Anti-immigrant parties hail her as a martyr.

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Denmark is hardly the only country to pull up the drawbridge. Europe suffered political convulsions after an influx of refugees in 2015; most governments are eager to avoid a repeat. But in some ways Denmark stands out. Unlike their counterparts in Hungary, say, its politicians do not denounce immigrants to distract attention from their own failings. Denmark differs from neighbouring Sweden, which in 2015 took in more Syrian asylum-seekers as a share of its population than any other European country except Turkey. Sweden "cherishes multiculturalism", says Tina Gudrun Jensen, an anthropologist at Malmö University. "In Denmark multiculturalism is really a negative word."

This approach is earning Danes a bad press. "Denmark leading the race to the bottom" ran a recent headline. But for some governments it is a role model. Mattias Tesfaye, the immigration and integration minister, said recently that he had just hosted a delegation from Greece and expected one from Austria. Britain has reportedly talked to Denmark about co-operating to process asylum applications in some faraway place such as Rwanda. Even Sweden is becoming more like its southern neighbour.

The Danish difference has deep roots. After the Danish crown lost the largely German-speaking duchies of Schleswig and Holstein to Prussia in 1864 it drew the lesson that the country must "stick together" ▶▶

▶ [and] be homogeneous”, says Ulf Hedetoft, a scholar of nationalism at the University of Copenhagen. A law two years later stipulated that only people who spoke Danish and wore Danish clothes could become Danes. It is still difficult. MIPEX, an index that ranks countries according to how well policies promote integration of immigrants, scores the access Denmark gives to citizenship as a “halfway favourable” 41, compared with Sweden’s “favourable” 83.

In the 1960s and 1970s Denmark recruited “guest workers”; refugees from Vietnam and Iran came in the 1970s and 1980s. The welcome waned in the 1990s with the arrival of refugees from the war in what had been Yugoslavia. The nationalist Danish People’s Party (DF), founded in 1995, agitated to shut the door on them. In 2001 it backed a conservative-liberal government, which devised today’s two-pronged strategy of repelling would-be migrants and remoulding those who settle.

Its policies included lengthening immigrants’ wait for permanent residency from three years to seven and ending schools’ obligation to teach in pupils’ mother tongues. To bolster Danishness it introduced “canons” of culture, history and democracy into the school curriculum. Without such steps “it would have been really catastrophic”, says Peter Skaarup, the DF’s parliamentary leader.

In Sweden, such sentiments are spreading; in Denmark they are now conventional wisdom. “The social democratic welfare state can only survive if we have migration under control,” says Mr Tesfaye, whose father was a refugee from Ethiopia. Denmark may be the world’s second-happiest country, according to a recent survey, but its happiness feels fragile.

Denmark’s defence of its welfare state is ruthless and, say critics, racist. In October the finance ministry, in its annual report on the issue, estimated that in 2018 immigrants from non-Western countries and their descendants drained from public finances a net 31bn kroner (\$4.9bn), some 1.4% of GDP. Immigrants from Western

countries, by contrast, contributed a net 7bn kroner (see chart). Data on immigration’s fiscal effects were what “changed the Social Democrats’ point of view”, says Torben Tranaes of the Danish Centre for Social Science Research.

Muslims are at the core of the issue. This year was the first time the ministry reported separately on the contributions by people from 24 Muslim countries. They account for 50% of the non-Westerners, but 77% of the drain. Alongside that worry are fears that Muslims bring notions about democracy and the role of women that Danes

find threatening. Muslims are welcome, says Mr Tesfaye, but, “We can’t meet in the middle. It’s not half sharia and half the Danish constitution.”

To Muslim ears that sounds like bias. A law passed in 2018, aimed at conservative Muslims, obliges new citizens to shake hands with a municipal official in naturalisation ceremonies. Politicians “make you feel like you have to not celebrate Ramadan or Eid or anything”, says Agob Yacoub, a Syrian refugee. Other groups are not subject to such pressure. Chinese immigrants have not become culturally Danish but are ▶▶

Another view

The Lolland exception

MARIBO

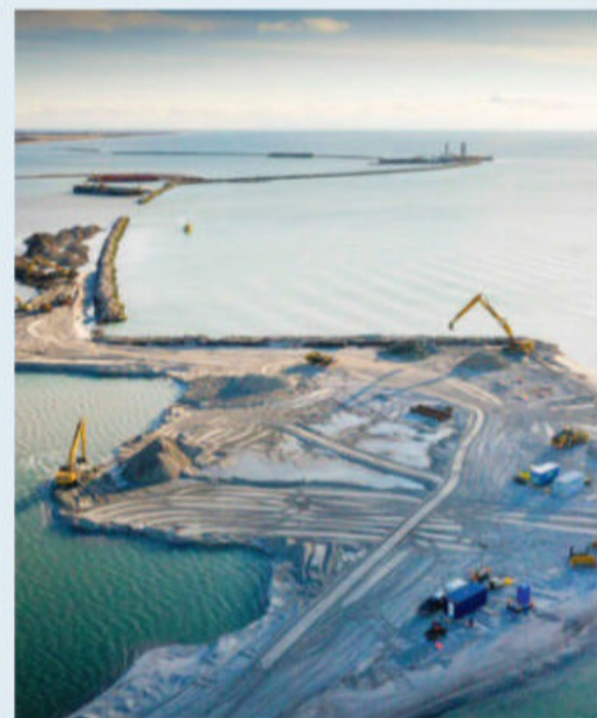
One bit of Denmark feels differently about immigrants

WHEN DANES think about Lolland, which is not very often, they tend to feel sorry for it. The island in the Baltic sea, a flat expanse of fields and beaches, enjoyed brief notoriety in 2015 thanks to a TV documentary series, “On the Ass in Nakskov”, about privation in its largest town. Nakskov fell on hard times after its shipyard closed in 1986. People have been leaving the island for decades. Since 2007 its population has dropped from 49,000 to 41,000. Those outsiders Lolland still attracts are largely low-income households seeking cheaper lodgings than they can find in Copenhagen.

But now work has begun on a tunnel linking Lolland to the German island of Fehmarn, 18km (11 miles) away. When it opens in 2029 Lolland will no longer be “just a small rural community as far from Copenhagen as you can get,” says Thomas Knudsen, its top civil servant. It will cut in half, to 90 minutes, the time it takes to drive to Hamburg. More German tourists will flock to Lolland’s beaches, he hopes. Green industries will set up shop, taking advantage of the windy island’s surplus of renewable energy.

If Lolland is to fulfil its ambitions it will need immigrants. The Fehmarnbelt tunnel will itself require thousands of workers, many of whom will be non-Danes. Unlike the national government in Copenhagen, Lolland has no qualms about welcoming them. In August the local government opened an international school. Its 55 pupils have origins as far afield as Tanzania and India. Some are Muslims. The locals’ response has been “optimistic positivity”, says Dominic Maher, the school’s head teacher.

Lolland does not just need tunnellers; it has placed English-language adverts to recruit doctors, too. Private firms need everyone from “engineers to unskilled



Help needed

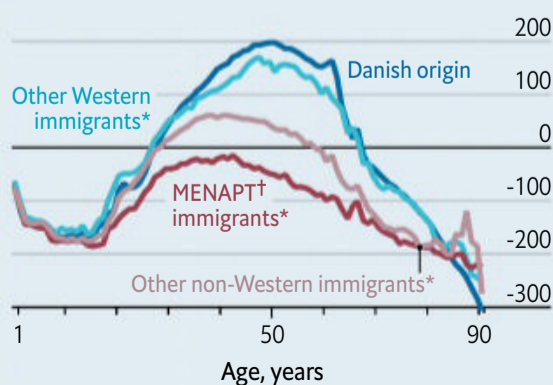
labour”, says Mr Knudsen. Lolland would happily take Afghan refugees. Its plans to recruit foreign labour were blessed by the local branch of the generally anti-immigrant Danish People’s Party.

One reason for its openness is earlier experiences of immigration. Poles came to harvest sugar beet in the years before the first world war. Some refugees from the Balkan war in the 1990s stayed and thrived. The refugees Mr Knudsen is most worried about are those “from the Copenhagen real-estate market”.

That puts the islanders at odds with the national government, which wants to keep immigration from non-Western countries as low as possible. But they do not disagree about everything. Lolland would not welcome poorly educated refugees who would burden the economy rather than buoy it. But in this part of Denmark, productivity matters more than passports.

It’s complicated

Denmark, average net contribution to public finances, by age, 2018, DKr’000



Source: Danish Finance Ministry

*And their descendants †Middle East and north Africa, Pakistan and Turkey

A better world through innovation

Semiconductors are leading the charge towards a data-driven society, with Tokyo Electron (TEL™) a key player in the evolution of semiconductor process technology.



Toshiki Kawai
President & CEO, Tokyo Electron Limited



The past two years have ushered in significant changes in the world as we know it—many of which have been for the better. Businesses and society as a whole have become more digitally connected, thanks to increased adoption and usage of information and communication technology (ICT). In addition, rapidly evolving technologies such as artificial intelligence, the Internet of Things (IoT), big data, 5G telecommunications networks, and even post-5G technology are making our ICT tools faster, smarter, safer and more reliable.

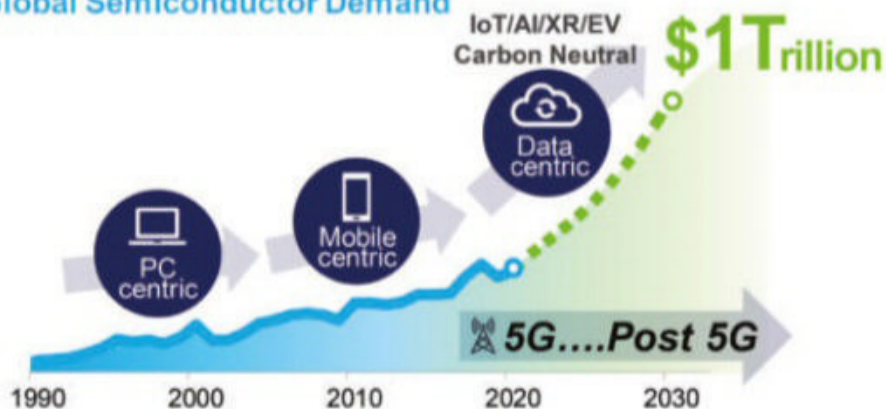
“The recent crisis has sped up digital transformation and technologies by several years, accelerating our evolution to a data-centric digital society”, says Mr Toshiki Kawai, president and CEO of Tokyo Electron (TEL). With revenues of more than US\$11 billion since FY 18, TEL is the leading global manufacturer of equipment and services for the semiconductor and flat-panel display industries.

A BRIGHT FUTURE AWAITS

Not only do semiconductors feature within various devices at home and for leisure, they also empower businesses of all types, leading to the creation of entirely new digitised industries—from automated vehicles, to smart agriculture, telehealth, and smart cities. The semiconductor market will more than double in value from over US\$440 billion in 2020 to about US\$1 trillion by 2030. Semiconductors are at the heart of this ecosystem.

Yet industry-wide growth must not be at the expense of the environment or people’s well-being. In tackling environmental issues, TEL considers innovation in semiconductor technology to be the most important factor. “As a company that provides equipment to semiconductor manufacturers, TEL is committed to ensuring the industry grows sustainably, balancing ‘digital’ and ‘green,’” explains Mr Kawai. TEL has committed to a 30% reduction in CO₂ emissions

The Growth that TEL Serves Global Semiconductor Demand



Sources: 1990–2020 WSTS, 2021–2030 IBS, April 2021

per wafer made from TEL products by 2030 based on 2018 levels. The company also plans to reduce CO₂ emissions from its plants and offices by 70% within the same period by sourcing 100% of its power needs from renewable energy.

To meet the environmental challenges that reside within its supply chains, TEL established E-COMPASS (Environmental Co-Creation by Material, Process and Subcomponent Solutions). The initiative aligns TEL products and operations more closely with its environmental mandates, strengthening the company’s ties with business partners, and solidifying its industry leadership.

“We will utilise every management resource at our disposal to drive the major trends of digitalisation and greening of society, and actively endeavour to preserve the global environment through the supply chain,” says Mr Kawai.

While technological advances will help drive these goals, these achievements will ultimately be realised by TEL employees. The company believes that corporate growth is first and foremost about people, and that employees are the source of both corporate value creation and economic growth.

FROM STRENGTH TO STRENGTH

Since TEL’s founding in 1963, the company continues to grow from strength to strength. TEL is the only company in the world that manufactures the four sequential key types of processing equipment indispensable for the patterning of semiconductors—these include deposition, coater/developer, etch, and cleaning. TEL estimates that its products are either number-one or number-two in terms of market share, and it owns 100% of the inline coater/developer for extreme ultraviolet lithography market worldwide. TEL holds the world’s largest installed base of about 78,000 units, and prides itself on its low turnover, which ensures business continuity and safeguards technical information. “Virtually every semiconductor in the world passes through TEL-made equipment,” says Mr Kawai.

TEL will invest more than ¥400 billion (US\$3.5 billion) in research and development (R&D) over three years from FY 20. The company maintains a strong pipeline of next-generation products, enabling TEL to pursue profits from high value-added equipment that customers will need in the future. The company has also targeted the ambitious financial model of achieving ¥2 trillion (US\$18 billion) in sales, and an operating margin and return on equity of 30% or more by FY 24—targets that are likely within reach.

The company’s corporate philosophy of “contributing to the development of a dream-inspiring society through our leading-edge technologies and reliable services and support” reflects the pledge TEL has made to continuously invest in R&D. “Together with our employees, we can grow into an even more dynamic company,” says Mr Kawai.



www.tel.com



nonetheless “extremely welcome”, notes Mr Hedetoft. The Muslims’ drain on the treasury probably has little to do with religion. More than half came as asylum-seekers or through family reunification, compared with 30% of other non-Westerners.

Like its Scandinavian neighbours, Denmark enrolls new migrants in programmes that include language and civics classes. But its benefits system is, characteristically, a bit tougher. Payments are lower for people who have not lived in the country for seven out of eight years. This serves both to deter immigrants and to encourage those who do settle to work. Denmark can boast that the gap in unemployment between natives and non-European immigrants is smaller than Sweden’s. But that may be in part because Sweden has higher effective minimum wages in relation to its average wage, which prices many new immigrants out of jobs, especially if they do not speak Swedish well.

The justification for breaking up neighbourhoods like Mjølnerparken seems flimsy. Its parallel-society status is based in part on the fact that 2.69% of its residents had a criminal conviction a couple of years ago. The allowable limit is 2.35%. The number of young men involved in crime is “less and less every year”, believes Majken Felle, a primary-school teacher who lives in one of the blocks slated for sale. Far from forming a parallel society, Mjølnerparken’s Muslims come from many countries and speak to each other in Danish; it is the younger generation’s mother tongue.

The example of Malak Tumeh, a medical student, is a rebuke to Danes who think Muslims do not belong, but should also give pause to those who think Denmark’s monoculturalism will inevitably alienate them. The daughter of an Iraqi mother and Palestinian father, she arrived in Denmark in 2001 at four months old. Without residence permits her parents could not work in their professions (her mother trained as a microbiologist, her father was a biochemist). He sold pizza and worked in construction to make ends meet. When Ms Tumeh was six, police searched her home for fake passports; they “yanked” her by her bag, she says. Religious studies at school centred on Christianity.

Yet Denmark and the Tumehs have adapted to each other. Religion teachers “asked my parents to share their experiences with Islam”, says Ms Tumeh. They brought a Koran to class. Ms Tumeh and her father finally became permanent residents in 2020; her father got citizenship last year. Not yet a citizen herself, Ms Tumeh considers herself to be Danish. “The past could have been easier, but it’s still a good life, better than many people could imagine,” she says. It is not easy to become a new Dane. But for the few that do, the struggle is worthwhile. ■



Bulgaria

Here come the Harvards

SOPIA

A pair of new brooms

IN 2021 BULGARIANS voted in three general elections and a presidential one. They ended 12 years of domination by Boyko Borisov, a bull-necked former bodyguard whose period in power saw incomes rise, the population fall and lurid tales of corruption proliferate. But it was only this week that a new coalition government finally took the reins of power. Make way for “the Harvards”, the political pairing now performing a double act.

Kiril Petkov, aged 41, and Assen Vassilev, aged 44, are the new prime minister and finance minister respectively, having earlier this year served in the country’s interim government. Both studied at Harvard Business School. Both became successful entrepreneurs after returning home. But that is not the only reason they are dubbed “the Harvards”. In 2008 they together opened a centre in Sofia affiliated to the school, offering courses on economic strategy and competitiveness. Many of their graduates are either already MPs for the new government or will fan out to run bits of the administration.

In September the pair created a party called We Continue the Change, echoing what they had started as interim ministers. In the most recent election, on November 14th, it came first, winning almost 26% of the vote; it has taken them a good month to put a coalition together.

Bulgaria is the poorest country in the EU, but the Harvard duo say it shouldn’t be. “Bulgaria is not a poor country,” says Mr

Vassilev. It has simply been “brutally plundered”. Mr Petkov says they became frustrated because, according to the economic models they were teaching, all of Bulgaria’s advantages (location, EU membership, a decent education system) should have made it “an amazing growth success story”. Instead, it has stagnated thanks to corruption and bad management. Mr Petkov says they hoped that a new leader would emerge whom they could advise as experts. When that did not happen, they decided, “ok, let’s do it!”—on their own.

When he was 13, Mr Petkov’s parents emigrated to Canada. He earned a degree in finance and landed a job working for a Canadian food giant, McCain. But his sights were set on bigger things than oven chips. In 2005 he wrote in his application to Harvard that he wanted to be finance minister of Bulgaria. On graduating he raised money for a retail park outside Sofia, then invested first in equipment for clearing birds off runways and next in probiotics.

Mr Petkov and Mr Vassilev were not widely known in Bulgaria until recently, but they are not political novices. Mr Vassilev was briefly minister for the economy in 2013. Mr Petkov has long been a champion of green causes and hit the news in 2018 when he flew to Nepal on a mission to find a missing Bulgarian mountaineer.

Ognyan Georgiev, editor of “Kapital Insights”, an online business publication, says the duo remind him of Tony Blair and Gordon Brown’s partnership in Britain during the 1990s. He says Mr Petkov is “energetic, outspoken, optimistic and wildly charismatic and wants to be the face of the whole thing”, whereas Mr Vassilev is the reserved, cerebral half of the duo.

Vessela Tcherneva of the European Council on Foreign Relations, a think-tank, warns that the pair must act fast to achieve results, especially with their anti-corruption agenda, because the popularity that has come with being new and upbeat can quickly evaporate. The pair need to secure a prompt and impressive corruption conviction, she says, and that is easier said than done. The chief prosecutor, whom the incoming government cannot legally remove, is a man of the *ancien régime*. Indeed, all Bulgaria’s institutions and much of its media are run by people loyal to Mr Borisov and his allies. The Borisov team may be out, but they are far from gone.

Other EU members, meanwhile, want Bulgaria to lift its veto on the initiation of talks on membership with North Macedonia—part of a row over language and historical identity. Mr Petkov says he has a plan for that, but that it will take time. His first concern, he says, is to put an end to a shabby understanding whereby the EU turned a blind eye to Bulgaria’s corruption so long as Bulgaria did not become a troublemaker like Hungary. ■

“Twilio is ranked #1
for market share in
Customer Data Platforms.”

– IDC, “Worldwide Customer Data Platform Market Shares, 2020”*



Charlemagne | A bittersweet Noël

The French president's tricky Christmas present



WHEN EMMANUEL MACRON peers under his Christmas tree this year, he will find that *le Père Noël* has left him an unusually big, tantalisingly shiny, but awkwardly shaped gift. Call it a year in a present. For 2022 brings a double challenge. From January for six months, France will run the European Union's rotating jamboree, the presidency of the Council of the EU. Yet Mr Macron is also expected to be campaigning for re-election as French president in April. To run Europe, as the job will doubtless be portrayed at home, as well as France, sounds like a Macron fantasy come true. For other Europeans, the president's gift, like a toy trumpet, could turn out to be noisy, unpredictable and exhausting.

This is not the first time the rotating presidency coincides with a French election. In 1995 a frail François Mitterrand did a four-month stint, before handing over to his successor, Jacques Chirac, for two. Squads of bureaucrats ensure continuity. These days the rotating EU inter-ministerial presidency is largely procedural. Much of the stuff to be discussed in 2022—the regulation of big tech and hate speech online, an external-border carbon tax, a minimum wage—has been in the works in Brussels for months.

But Mr Macron is not one to let process hobble his ambition. There he was beneath the chandeliers at the Elysée Palace on December 9th, setting off an avalanche of ideas under the cryptic heading “recovery, power, belonging”. Europe, he declared, will finalise a common security-threat assessment, discuss new rules on deficits and debt, agree to green clauses for future trade deals, rework the border-free Schengen zone, and more. There will be summits on the ocean, Africa, a new European growth model and the Western Balkans. The overarching aim, he declared, was to fashion a Europe “powerful in the world, fully sovereign, free in its choices and master of its destiny”. Nothing less.

Those who had thought Mr Macron might scale back his grand vision were bamboozled. Days earlier an official report, led by Thierry Chopin at the Institut Jacques Delors, had advised “more humility” and less grandstanding: in its words, “more Robert Schuman, less Victor Hugo”. Fellow Europeans do not like to feel bossed about by France. Many suspect it of wrapping national interest in an EU flag. But his lofty European ambition helped to propel Mr Macron into the French presidency in 2017, and in office it

shaped a landmark speech at the Sorbonne. A return to that zeal also marks, unofficially, the start of his re-election campaign.

To see how these two political moments might interact, consider a project in the northern industrial town of Douai, which sits amid flat agricultural plains on the edge of a mining basin. Mounds of harvested sugar beet lie on the dark earth in surrounding fields. Terraced two-storey homes are of the distinctive red brick of the French north. On the town's fringe, next to a vast boxy Renault car plant, work will soon begin on a “gigafactory” to build electric-vehicle batteries. With €200m (\$225m) in public subsidy, under the EU's green-deal rules, and a private-sector investment of €2bn, the plant could employ over 2,000 workers by 2030.

For Mr Macron, who toured the site six months ago, the gigafactory exemplifies his Sorbonne vision of “European sovereignty” or “strategic autonomy”: the reinforcement of the EU's ability to build, decide and defend itself more. Back then Mr Macron was judged a dreamer, protectionist, or worse. But the European conversation has shifted. Even Germany's new coalition government, under Chancellor Olaf Scholz, embraces “strategic sovereignty”, a term that conveniently merges two of Mr Macron's own. Douai, so to speak, is where the tyres of the Macron Euro-vision hit the road.

Locally, the factory is welcomed as a means of “anchoring” Douai and showcasing its industrial culture, says Frédéric Chéreau, the Socialist mayor. Jobs are much needed. There is talk of an “electric valley”. Yet the plant also exposes two problems for Mr Macron. First, the investor, Envision AESC, is Sino-Japanese. Although batteries will be French-built, this hints at the limits to European self-sufficiency. Second, voters may not thank the centrist Mr Macron for it. In 2017 Douai backed him in the second round, but in the first preferred the populist-nationalist Marine Le Pen and the hard-left Jean-Luc Mélenchon. The rust belt is not Mr Macron's natural territory, however many new factories have emerged on his watch. The EU, says Douai's mayor, is seen as a “necessary evil”, not a force that stirs the mind or warms the heart.

O come, o come, Emmanuel

Indeed, Europe as a campaign theme has just got trickier for Mr Macron. Polls had suggested that his chief opponent would be Ms Le Pen. He champions the EU; she derides it; nobody is confused. Yet the election of Valérie Pécresse, a pro-European ex-budget minister, as the centre-right Republicans' nominee blurs that line. Polls give her a good chance of facing Mr Macron in the run-off; one says she could beat him. Europe does not divide the pair. Mr Macron will try, instead, to use the EU to expose the Republicans' internal divisions over it, which helped him in 2017 to steal so many of them, and which Mrs Pécresse may struggle to disguise. But it will be harder.

The president's present carries other risks. As Mr Macron crisscrosses France, and home news channels label him “*le président de l'Europe*”, rival candidates will denounce unfair electioneering. As he pushes pet projects, such as the reform of EU fiscal rules, other countries will struggle to consider France an honest broker, not least because of its own rule-busting budgets. Smaller countries are anyway wary. They recall that the last big country in charge, Germany, pushed through a controversial investment pact with China in the closing days of 2020, to others' irritation.

Mr Macron's Christmas present may yet turn out to be just what he asked for. Success in Europe could help him secure victory in France. But neither is by any means guaranteed. The president could end up wishing that he had simply asked for socks. ■



Covid-19

A dose for the world

The Oxford-AstraZeneca vaccine has attracted lots of criticism. It is still a triumph

IN A SOLEMN pre-recorded address, Boris Johnson warned Britons that a “tidal wave” of Omicron was on its way, and that the best chance of escape lay in booster vaccines. All adults, the prime minister announced on December 12th, would be offered one by the end of 2021. Yet their choice is to be more limited than in the last vaccination push, with Moderna and Pfizer leading the way. Nearly a year after it was first approved, Britain’s flagship Oxford-AstraZeneca jab will be rarely used.

It is the latest indignity for a vaccine that is both a national symbol—praised by royalty, hawked around the world by the prime minister, made by the country’s most famous university and biggest listed company—and a source of angst. AstraZeneca has taken flak for data-presentation issues, delayed deliveries and rare adverse events. The share prices of Moderna and Pfizer have soared since covid-19 struck; AstraZeneca’s is pretty much back where it started (see chart 1 on next page).

Nor, to the bemusement of many involved, has the company won a great pub-

lic-relations victory. On some measures, it manufactures the most successful covid vaccine there is. According to Airfinity, a data firm, 2.2bn doses have been delivered, compared with 2bn by Pfizer and 0.5bn by Moderna (see chart 2). Because rich countries increasingly use other jabs, and poor countries mostly use their supply for initial doses rather than for boosters, AstraZeneca’s vaccine is almost certain to have saved more lives than any other.

Yet it was always unlikely to be a big money-spinner. Ministers were happy for it to be sold at a small profit; the University of Oxford, which came up with the vaccine, was not, both for humanitarian reasons and to avoid being “seen to be cashing in on what was inevitably going to be an enor-

mous amount of human suffering”, says Sir John Bell, Regius professor of medicine at the university. A dose sells at less than \$4, compared with more than \$20 for Pfizer. “Do [AstraZeneca bosses] look at Pfizer’s [profit and loss] and say, ‘Oh, shit, how did that happen?’ You know, they might,” says Sir John. But it was agreed to be the right thing to do, he adds.

AstraZeneca’s vaccine has struggled for market share in the rich world. Relations with America’s Food and Drug Administration (FDA) soured after the firm failed to notify the regulator about a possible adverse event in a trial elsewhere; the FDA has still not approved the vaccine. After AstraZeneca failed to meet the European Union’s delivery targets, national leaders criticised it and the commission placed an enormous order with Pfizer. “The truth is AstraZeneca had signed an exclusivity deal with us and a best-efforts deal with the European Union,” says Matt Hancock, Britain’s health secretary at the time.

The vaccine, which uses an adenoviral vector, has proved less effective than its mRNA rivals at stopping infection, further reducing demand in the rich world, and is perhaps marginally less effective at preventing death. Soon after it became available, evidence emerged that in rare cases it caused blood clots (as does Johnson & Johnson’s vaccine, another adenoviral-vector jab). This helped persuade the JCVI, an expert body, to recommend using other vaccines in Britain’s booster round. Sir Me- ▶▶

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► nelas Pangalos, AstraZeneca's head of research, says the firm hopes to tweak the recipe to avoid the issue.

But, he adds, there is "little to no" evidence of such adverse events outside the West: "It may be driven by genetics, it may be driven by overreporting, who knows?" Indeed, AstraZeneca's vaccine is increasingly used elsewhere. Since production surged in September, the countries with the most doses are India (which banned the export of vaccines made there), Brazil and Mexico. Covax, which distributes jabs to poor countries, is another beneficiary. The vaccine is "starting to hit places like Malaysia, Nepal, Vietnam and Thailand, and there's a ton of people in these countries", notes Sir John.

The surge of deliveries in the second half of 2021 is the flipside of AstraZeneca's struggles in the first. The firm worked with partners to establish 25 manufacturing facilities in 15 countries. Its vaccines are made to a formula detailing just about everything that can be controlled in a production facility. At first the firm's scientists were too optimistic about how quickly output yields would rise, but reality has since caught up. India's Serum Institute illustrates the scale of the growth. In January it made fewer than 60m doses; by November it had hit 250m.

One question is whether there will be another inversion in 2022, with demand failing to meet potential output. In November AstraZeneca said it would start to make a profit on doses, and had signed deals on that basis for 2022, with prices on a sliding scale depending on the wealth of the purchaser (the vaccine will remain available to poor countries at cost, and even in richer ones the firm will still charge less than its rivals). Its two main selling points are cheapness and the logistical advantage that doses do not need to be kept very cold. AstraZeneca has established a new internal unit for its vaccines, as well as its promising antibody therapy, which was approved by America's FDA on December 8th. This can prevent covid in

Unionism and social attitudes

Saving Ulster

Parties that support ties with Britain are gradually modernising

SHORTLY BEFORE taking command in May of the Ulster Unionist Party (UUP), a now-diminished force that once dominated Northern Ireland, Doug Beattie gave a memorable speech. "I am a straight man," he told the region's assembly. "There is no fix or cure for me; there is no therapy that will make me a gay man...Why would we say that a gay man can be fixed or cured?"

Those words from a decorated veteran of the war in Afghanistan helped convince Northern Ireland's legislators to call for a ban on "gay conversion therapy" similar to a bill under consultation in England. No bill has yet been drafted—but the vote was consequential, all the same. Its most immediate effect was to trigger turmoil in the Democratic Unionist Party (DUP), which over the past two decades has supplanted the UUP as the main voice of citizens, mostly Protestant, who favour keeping Northern Ireland in the United Kingdom.

Arlene Foster, then the DUP's leader and Northern Ireland's first minister, abstained; few party members followed her lead, instead voting against a ban. Within days her political career was over and the DUP was embroiled in leadership changes. Only in hindsight is the catalysing role of the conversion-therapy vote clear.

Faced with the prospect of Sinn Fein, the voice of militant Irish nationalism, topping next year's elections and taking the post of first minister, you might think that pro-Union groups would make common cause. Instead they remain scratchily divided over matters of culture, identity—and sexuality. A poll in November suggested 18% would plump for the DUP, against 14% for the UUP and 11% for the ultra-conservative Traditional Unionist Voice. (Sinn Fein would get 24%.)

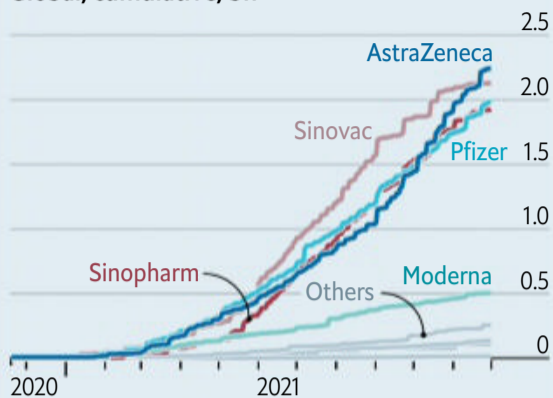
Despite being taunted as a "queer-lover" at public meetings, Mr Beattie has stuck to his guns. In October the UUP released a video with few words but telling images: a girl playing Gaelic sports, people of different races and a same-sex couple. He is also liberal on abortion; on December 14th he helped vote down a DUP bid to restrict late terminations. Such shifting attitudes on social issues have prompted some politicians to join the UUP and others to leave. Harold McKee, a standard-bearer of unionism in the Mourne Mountains, quit on October 30th, lamenting that gay marriage was counter to the "infallible word of God".

Mr Beattie says his live-and-let-live ►►

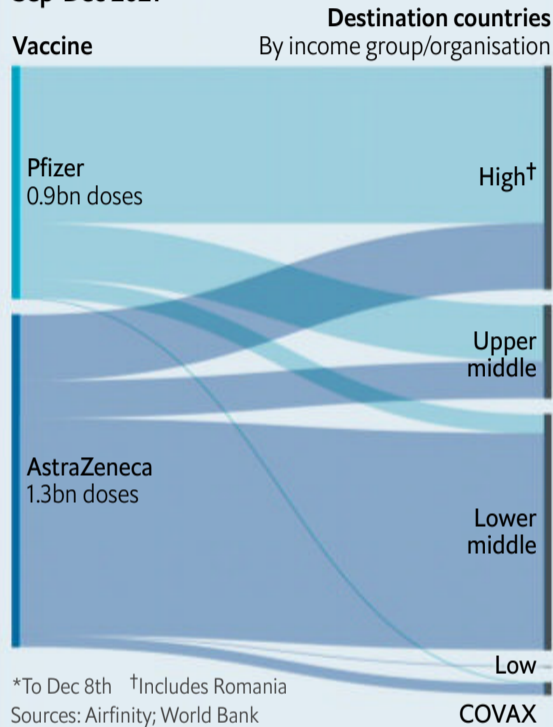
Shot-putters

Covid-19 vaccine deliveries

Global, cumulative, bn



Sep-Dec 2021*



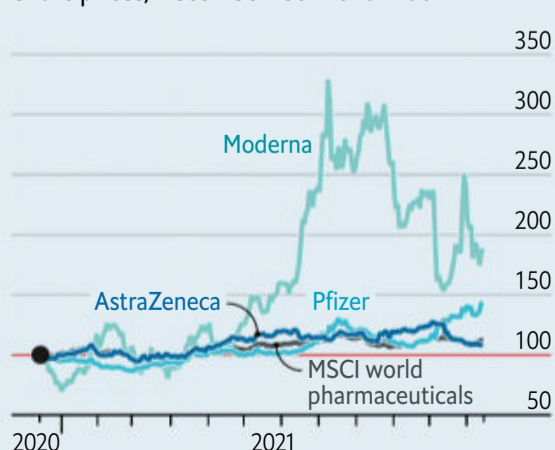
people who do not respond to vaccines, including the immune-suppressed.

Forecasting demand has been made difficult by Omicron, against which two doses of AstraZeneca appear to offer scant protection from infection and reduced protection from hospitalisation. If vaccines need to be retooled, the process will take a bit longer than for mRNA jabs. Even if demand outside the rich world remains high, analysts do not expect the vaccine to contribute much to AstraZeneca's bottom line, especially when compared with the firm's strengths in oncology and cardiovascular disease. "When I think about the stock, I don't even think about the vaccine as a driver," says Gareth Powell of Polar Capital, an investor in the firm.

Pascal Soiro, AstraZeneca's boss, has always insisted the decision to make the vaccine was fundamentally altruistic rather than commercial, saying that his children would have killed him if he did not take the chance. Given the number of storms his firm has had to weather, and the attention the vaccine has absorbed, shareholders may not be entirely grateful for the gamble. Everyone else should be. ■

In need of a booster

Share prices, December 15th 2020=100



Source: Refinitiv Datastream

► convictions are born of three decades of military service in Africa, the Balkans and Iraq, from which he learned that “people of all kinds have a need to be respected”. And gay rights are not entirely a new concern for the UUP. In 1981 Jeffrey Dudgeon fought and won a battle in European courts to get Northern Ireland to follow Great Britain—belatedly—in decriminalising gay sex. In 2014 he was elected a UUP councillor.

The UUP’s modernising tone aims to capitalise on a striking feature of Northern Irish politics, says Jon Tonge of Liverpool University. Plenty of people, especially the young and women, support the Union with Britain but dislike pro-Union politics’ theocratic bent—to the point where many abstain from voting. At least in theory, the DUP’s social conservatism creates political space for an alternative line. Founded by Ian Paisley, a preacher who vowed to “Save Ulster from Sodomy”, it opposed same-sex marriage until the change was, in effect, imposed by London in January 2020.

In June Paula Bradley, the DUP’s deputy leader, formally apologised for its “atro-

ciuous” record on gay rights. But some of its most promising figures have been ostracised when they have tried to persuade colleagues to become less socially conservative. One was Guy Spence, who became deputy mayor of Belfast in 2015, aged 23. Last year he abruptly quit the DUP and the political arena. One point of friction, he says, was his belief that the party should move in a progressive direction, for example by supporting Gay Pride events.

Anton Thompson-McCormick, a gay writer who lives in England but had an Ulster Protestant upbringing, spies a streak of pragmatism in the DUP’s natural voters that he thinks will eventually bring them around. When same-sex marriage was imposed by London, he says, this raised hackles among people in the province who take pride in being “thran”, a local word for stubborn. Ultimately, he believes, they will realise that “thranness and queerness can live together”. Until then Mr Beattie will continue to ruffle feathers—and Sinn Féin, which is staunchly pro-gay rights, will rejoice over its adversaries’ confusion. ■

ing, and leave through the interior, a maze of scaffolding that creaks with every step.

Before covid-19 Oxford Street was already struggling, over-dependent on department stores that were losing the retail battle to online shopping, and lacking the restaurants, bars and gyms that would attract visitors round the clock. Air pollution and traffic made it a miserable place to stroll. Pedestrianising could have helped, but was opposed by residents of other parts of the West End who feared displaced traffic.

During the pandemic Oxford Street also suffered disproportionately. According to Cushman & Wakefield, a property consultancy, and MyTraffic, a data-analytics firm, in the year from March 2020 footfall declined more than in any other major European shopping district. Sales are below the level of 2019, says Marie Hickey of Savills, an estate agent. Between March 2020 and August 2021 a fifth of its stores closed. Five department stores are downsizing or converting retail space into offices.

Westminster Council’s proposal for revival, announced in February 2021, was a £150m facelift. It included making temporarily widened pavements permanent, installing public art, upgrading nearby parks—and the mound. Some of this is sensible, in particular the wider pavements: shoppers are more likely to visit bricks-and-mortar outlets if walking between them is more pleasant. Rents have come down since before the pandemic, too, which makes retail more viable. But the only long-term solution for Oxford Street, says Ms Hickey, is becoming less retail-heavy and more mixed-use.

Look past the gimmicky mound, and there are early signs that things are heading in the right direction. IKEA will open up shop in 2023. Some department stores are planning gyms, pools and restaurants. Perhaps the pandemic was just what Oxford Street needed. Business had got so bad that it forced much-needed change. ■

The Marble Arch mound

Over the hills

How to lure shoppers off their computers? With a heap of earth, apparently

THE 25M-HIGH artificial hill at one end of Oxford Street dubbed the Marble Arch Mound opened in July. It was supposed to help lure shoppers freed from lockdown away from internet stores and back to Britain’s best-known shopping thoroughfare. But once the first visitors were allowed on it, it was revealed to be a mess. Rain swept turf off the slopes, leaving bare scaffolding on view. What grass remained turned brown. To Britons familiar with children’s television, it was reminiscent of a shabby, low-rent Teletubbyland.

During construction the cost ballooned from £3.3m (\$4.7m) to £6m. After it opened, plans to charge for entry were scrapped. The deputy leader of Westminster Council, which commissioned the mound from MVRDV, a Dutch design company, resigned. Opposition councillors said the mound was “an international embarrassment” and called for it to be dismantled immediately. It is due to come down as planned on January 9th.

It has managed to draw in passers-by, perhaps in search of a chuckle. By December 13th 215,000 had visited, not far off Westminster Council’s goal of 280,000 (which was based on plans to charge up to £8 for entry). On a sunny day the view is de-

cent, taking in Hyde Park, the Shard and the London Eye (an unfortunate reminder that other, better views are available). On a recent morning a dozen people milled about on its rickety viewing platform. “We wouldn’t have paid, mind you,” says a couple from Bristol. The structure feels “temporary”, says another sightseer. You enter via a ramp alongside some scrappy plant-



Time for Tubby bye-bye!

Bagehot | Wakey wakey

Britain's foreign secretary wants to end the age of introspection



BRITAIN CAN look rather self-absorbed these days. It spent four years wrangling over Brexit, which was often more to do with how Britons felt about each other than about Brussels. Boris Johnson, a flop as foreign secretary elevated to Downing Street, uses international summits for playfights with the French over fish and sausages. Revelations about Downing Street's illicit Christmas parties fill news channels; the fate of Ukraine does not.

Tory MPs are tiring of their prime minister, and many like what they see in Liz Truss, who became foreign secretary in September's reshuffle. She is the figurehead for a new foreign-policy doctrine: ideological; unhitched from Europe; seeking alliances beyond America; pitched squarely against China and Russia. The themes were spelled out in a security-policy review in March, but she is their most forceful advocate. If Global Britain means anything, it will be defined not by Mr Johnson but by Ms Truss.

Her speech to Chatham House, a think-tank, on December 8th was dismissed by critics as facile and reductive. That misses its significance. It had a Manichean quality more familiar to American ears than to British ones. According to Ms Truss, an ideological battle is under way between the "free world" and the autocratic powers of China and Russia: a struggle between systems that serve the individual and those that put individuals at their service. "Non-aligned" states are pulled between the two orbits. She lamented the "age of introspection" that followed the cold war, when democracies nodded off, cutting defence spending and becoming distracted by home comforts and campus culture wars. Preoccupied abroad by the war on terror, they sucked up China's cheap technology and Russia's cheap gas, and kidded themselves that those countries were their partners.

Her response is to revive economic diplomacy, which she thinks is neglected. She imagines a "network of liberty", spanning democracies and undemocratic allies that at least uphold international rules. She is keen for Britain to join the Comprehensive and Progressive Agreement for Trans-Pacific Partnership, a trade deal of modest economic value but in which she sees a bulwark against China. Britain is joining its allies to offer poor countries a rival source of infrastructure finance. Since David Cameron left Number 10 in 2016, Britain has made a Sinosceptic U-turn, but the shift

was painted as pragmatic and technocratic. Ms Truss recasts it as something approaching a struggle for civilisation.

Her vision is, in its essence, Thatcherite. The Chatham House speech held echoes of Margaret Thatcher's warnings, as the Berlin Wall fell, against complacency and what Francis Fukuyama, then an up-and-coming political scientist, called the "end of history". Some Tories think her a grating pastiche: she can be found on Instagram riding British tanks in Estonia ("the frontier of freedom"). She brushes off the comparison to Thatcher—it is made of any Conservative woman with strong views—but her supporters say she is a loyal student. She spent her childhood on anti-war marches with her parents, but was struck by the grim reality of their friends' lives behind the Iron Curtain. She ditched their politics but kept their radicalism. She is one of several cabinet ministers itching for the supply-side reforms Brexit was meant to usher in.

Over the past three decades the Foreign Office's budget has been cut, and may yet be cut further. Ministers and mandarins holidayed as Kabul fell to the Taliban. Powers were hived off to rival ministries. Some are returning: last year it swallowed the international-development department. Ms Truss would like it to have more influence over trade, her previous remit.

For British diplomats, she is a culture shock. Like Thatcher, she finds them too prone to abstraction. She was irritated by an internal memo describing their diplomacy as "honest and humble". She wants them to be patriotic, and to advertise the freedoms that make Britain great. Sceptics in the Chatham House audience found the boosterism too much and the analysis simplistic; diplomacy means dealmaking in places where goodies and baddies are in short supply. Still, they were struck by her grasp during questions. Unlike Mr Johnson, she is good at getting Whitehall to do what she wants, says a former minister. Civil servants who don't, and particularly the public-school-educated men who tend to get on her wrong side, can get a put-down and an eye-roll.

Mr Johnson has damaged Britain's standing in Washington, which sees him as a threat to peace in Northern Ireland. The trade deal that Brexiteers hoped for has not materialised. Ms Truss, for her part, fears America is becoming inward-looking and protectionist. The relationship is now "special but not exclusive"; Britain is strengthening security links with Australia, India and others.

Still, Ms Truss's idea of an ideological struggle with China converges with President Joe Biden's. Her rise coincides with a new British energy in defending European security. Britain is being noticed again as a player if not a leader, says Ben Judah of the Atlantic Council, a Washington think-tank. It has been vocal on Russia's threat to Ukraine, and quick to impose sanctions on Belarus and send troops to Poland to aid a migration crisis.

Rise and shine

Tory Europhiles think Ms Truss is their best chance of a rapprochement with European governments. She voted Remain, but has since changed her mind on Brexit, saying that it has enlarged Britain's diplomatic toolkit. Still, she stresses a bigger picture: that despite scraps over fish and sausages, European countries are fellow freedom-lovers in a tough world. It is a truth often lost on those Tories who mistook Brussels for tyranny. She thinks highly of Annalena Baerbock, Germany's new Russia-sceptical foreign minister. At Chatham House she offered a modest olive branch, praising an EU aid scheme to counter Chinese loans. Setting aside quarrels with the neighbours will be the true test of whether Britain's age of introspection is drawing to a close. ■



The spread of the Omicron variant

Seeing the need for speed

The new variant advances at an incredible rate. That means action is urgent

EXPONENTIAL GROWTH is a dizzying thing. In the week to December 8th Britain saw 536 new cases of covid-19 ascribed to the Omicron variant, less than 0.5% of the number caused by the dominant Delta variant. But the week before there had been only 32 cases of Omicron—and by December 14th the case number was over 10,000. Omicron looks set to become the country's dominant strain in terms of cases before advent calendars run out of windows.

Cases lag behind infections. On December 13th Britain's health minister, Sajid Javid, said that there were estimated to have been 200,000 infections in the country that day, most of them Omicron. Three more doublings and the total number of infections a day will be more than 1m.

It is not just in Britain that Omicron is outstripping Delta. It has already displaced it in South Africa, where it first came under scrutiny and where its growth, though possibly now slowing a little, has been spectacular. Studies in various European countries show similar growth, though with a later start. The same is true in America. The variant has now been detected in almost all

countries, including China. The numbers involved are often small. But with exponential growth small is not much comfort: it doesn't last.

Omicron seems to have two attributes that enable such rapid spread. Some subset of its many mutations seems to make it more transmissible. Contact-tracing studies in Britain have found that the risk of a given Omicron infection spreading is two to three times that for a Delta infection.

And because it is better at infecting people who have previously been vaccinated, or infected, it has a larger pool of people to infect. On December 14th Discovery Health, South Africa's largest health insurer, produced the initial results of work on Omicron undertaken with the South African Medical Research Council. They found that, whereas two doses of the Pfizer-BioNTech mRNA vaccine offered 80% protection against infection before the Omicron wave, against Omicron the protection dropped to 33%. Its effectiveness in reducing the risk of severe disease is also lower: two doses of the Pfizer vaccine reduced the risk by 70% (down from 93% for Delta).

That still makes being vaccinated a very good thing. Most of the people who have been hospitalised with Omicron in South Africa, and 84% of those in intensive care, are unvaccinated. And it does not look as if the sort of vaccine someone was given matters all that much. The other vaccine in use in South Africa, made by J&J, an American company, relies on a modified adenovirus, rather than mRNA, to get its message into the body, as does the more widely used AstraZeneca vaccine. It, too, seems to protect against severe disease.

These real-world findings support the hope that two doses of all the existing vaccines will continue to offer significant protection against severe disease, even if they are not so good at blocking infection. That makes sense. Evolution has shaped the immune system to reduce the risk of death. Stopping a virus which the body has seen before from infecting it again is a helpful step in that direction, and one of the primary purposes of the antibody response. But it is not the only step; the defence is deep and layered. Incoming Omicron may be good at evading the antibodies produced by vaccines and previous infections—it is 3-8 times more likely to infect someone who has previously been infected than other variants. But further foes await it.

After infection has started, cell-based immunity joins in the fight, seeking out and destroying the cells which the virus has suborned. This response is greatly strengthened by prior vaccination. And it is less easily fooled by a few changes to the ►►

▶ proteins on the virus particles' surface. That is why vaccines can still protect against disease even if the antibodies they provoke no longer recognise the pathogen as well as they did originally, or if they have waned over time.

That said, a better antibody response would be nice to have; slowing the rate of infections would slow the spread of disease and give health systems breathing space. This is where vaccine booster shots come in. Boosters improve all forms of immunity: one of their effects is to raise antibody levels, at least for a while. This increased quantity can go some way to making up for the reduced quality of their response, lowering the risk of infection. Boosters may improve the quality of the antibodies, too; the more the immune system sees a virus, the better attuned to it some antibodies become.

A reasonable expectation that vaccines offer protection against serious disease, especially after a third jab, is one piece of good news. Another may be that Omicron infection leads to less severe disease all round. There is some evidence of this from Gauteng, the South African province where the variant has run rife. Data from Discovery Health suggest adults with Omicron have a 29% lower hospital admission risk relative to that seen in the country's first wave of covid-19 in mid-2020. The proportion of those hospitalised who end up in intensive care is much lower than in previous waves, too, and fewer of those on general wards need supplemental oxygen. Angelique Coetzee of the South African Medical Association, who was one of the first to raise the alarm about Omicron, has consistently argued that it is a milder variant.

A paper recently submitted for peer review by Michael Chan and colleagues at Hong Kong University suggests one reason why this might be. They found that in the first few days of infection Omicron reproduced 70 times more readily than Delta in the airways leading to the lungs. But in the lungs themselves it reproduced ten times less well than earlier variants.

The details of how viruses cause disease depend on a lot more than simple reproductive rates. But this finding might go some way to explaining a lower incidence of severe disease; it is infection in the lungs that does most damage. And greater replication higher up the respiratory tract might improve transmissibility. Being very good at getting into, and reproducing in, the lining of the airways could make it easier for the virus to set up shop in someone exposed to it. What is more, a lot of activity in the airways might also mean more particles get back out into the air. Indications that the symptoms of Omicron infection are more like those of the common cold might fit with this interpretation.

But neither that laboratory work nor the

data from South Africa amount to a strong case that Omicron will be a lot less dangerous than earlier strains everywhere. The South African data are preliminary; so far they cover only the first three weeks after infection. Typically, new waves of covid variants start in younger groups and work their way into older, more vulnerable populations over time. And the rates at which infection leads to severe disease and death can differ between countries and populations. Factors at play beyond the youth of the South Africans might include the fact that most vaccinations in the country are relatively recent and the fact that a fair number have been previously infected. There may also be salient factors stemming from genetic variation or prior health histories. Things could look quite different in older populations elsewhere in the world which have seen fewer infections.

Da capo, molto vivace

The degree to which the variant can infect the previously infected may also make things look rosier than they really are. Natalie Dean, a biostatistician at Emory University, points out that Omicron's success at reinfecting people may give the impression a smaller fraction gets severely ill just by inflating the denominator. It could thus seem more benign even if, among those contracting covid for the first time, it were just as dangerous as Delta (see chart).

As the debate about the comparative severity of the infection goes on, public-health officials are stressing that what

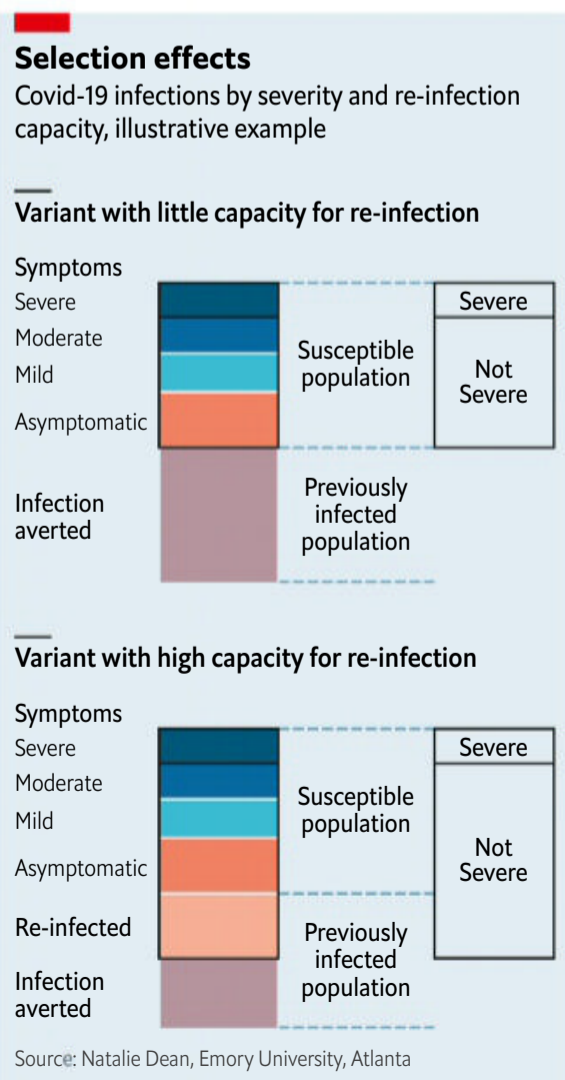
matters to the individual and to the health system are not all that well aligned. For an individual, a less deadly variant is preferable to a more deadly one, regardless of how transmissible it may be. For a health system, the number of cases at any given time is a critical concern, which makes the rate of transmission crucially important. There is a level beyond which the system cannot cope with the number of hospitalisations. A fast-spreading virus can reach that level even if it produces a lower proportion of severe cases simply because the total number of cases at any given time is so high.

To provide a sense of this, researchers at the London School of Hygiene and Tropical Medicine have compared models for the spread of Omicron with the situation in England during the worst previous peak, in early 2021. Of their various scenarios, the one which currently looks most plausible makes Omicron pretty good at infecting people who have been vaccinated or infected but also treats boosters as being quite good at stopping it. That would produce a peak in hospital admissions in late January well over the 3,800 a day seen in 2021. It would lead to 23m-30m infections between now and May 2022, and 37,000-53,000 deaths. Models from the same team have, in the past, proved overly gloomy, but they believe they understand why and have made appropriate adjustments.

The prospect of hospitalisation rates that high saw England go into two national lockdowns, one in November 2020 and one in January 2021. This time the government has recommended working from home and reintroduced some infection-control measures, such as mask-wearing on public transport. It may introduce more. Its greatest stress, though, is on a hell-for-leather dash to provide booster shots to all adults by January 1st.

In a report published on December 15th the European Centre for Disease Prevention and Control warned that a range of enhanced precautions were now necessary, including reduced contact in social and work settings, fewer large gatherings, more mask-wearing and more testing. Reducing travel and mixing between households and generations over the holidays may also be on the cards. Some countries are sure to see tougher measures soon; some individuals are already taking them. But if the perception that Omicron is not so dangerous—whether well founded or not—becomes widespread, people may see little reason to adhere to stricter rules.

Countries where Omicron rates are still very low have a little more time to prepare, to learn from those further along the curve, and to estimate what is necessary to flatten and lower the peak. But the growth rates seen so far strongly suggest that time is best measured in days, maybe weeks. Exponential growth is a dizzying thing. ■





Container shipping

All at sea

Long delays and high costs will not abate soon

FATHER CHRISTMAS and the global container-shipping industry have similar objectives, though the timescales differ. Santa's world-spanning logistics operation aims to deliver presents all in one night. Shipping firms step theirs up around September to ensure that gifts and other seasonal goods join a vast global supply chain. But a system that usually operates unnoticed (and unremarked upon) is still in chaos. For months a covid-induced maelstrom of delays and sky-high shipping rates has left goods lingering at sea and shop shelves bare around the world. Politicians insist that the snarls will disappear. But survey the horizon and there is little sign of smoother sailing.

The pandemic has hit shipping firms' operations along the supply chain. Labour shortages have been worsened by workers forced to isolate. China's zero-tolerance measures have closed port terminals after the discovery of one or two covid-19 cases. The spread there of the new Omicron variant makes more closures likely. But the most significant impact of the pandemic

has been to ignite demand for goods from self-isolating shoppers, particularly Americans eager to buy Chinese products using stimulus money. The value of merchandise goods exported from China to America was 5% greater in the first six months of 2021 compared with 2019, before the pandemic. In September and October it was 19% higher than two years earlier.

The result is that shipping rates are not coming back to earth. A set of benchmark spot rates from Freightos, a digital freight marketplace, between China and America's west coast are below a recent peak. But at around \$15,000 per FEU (40-foot equivalent unit), they are ten times pre-pandemic levels (see chart 1 on next page). The out-

size appetite for goods in America has had a knock-on effect elsewhere. A shortage of vessels, drawn by high rates to the trans-pacific routes, has pushed the cost of sending boxes between China and Europe to record levels. That raises costs for businesses that rely on shipping firms. Small items such as smartphones or sports shoes can be packed by the tens of thousands into a container. But a rough estimate of the average value of goods in a box travelling between China and America is around \$50,000. Another \$15,000 makes a significant difference.

To eye-watering costs add lengthy delays. Ports, unused to such volumes of traffic, face long queues of ships waiting weeks to unload. In a system already stretched to the limit by lack of lorry drivers and warehouse space, up to 15% of the global container fleet is currently sitting at anchor outside the world's ports.

Apparent signs of improvement are illusory. A widely watched indicator, the armada waiting to offload goods at the twin ports of Los Angeles and Long Beach, America's main entry points for Chinese imports, now numbers some 30-40 vessels, down from 70-80 in October. However, that is mostly because a recent change to the queuing system means that ships are now asked to wait far out at sea (some even linger off the Chinese coast). The real queue is over 100 ships.

Relief from this congestion does not look imminent, and the longer it builds the

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Spot the pandemic

Spot container-freight rates, from China to selected destinations, \$'000 per 40-foot container



longer it will take to unwind. Most pundits see little hope of improvement until after Chinese new year in February. Disruptions may last all of 2022. Though rates may have hit a peak, they are unlikely to fall much in the next six months and are set to remain elevated into 2023, thinks Lars Jensen of Vespucci Maritime, a consultancy. Only then will new vessels ordered in response to high rates start to hit the waves.

Even if spot rates have peaked most customers will face higher bills in 2022. The long-term contracts that govern the bulk of container traffic are currently far lower than spot rates—perhaps \$2,500-3,000 per FEU between China and America. But as David Kerstens of Jefferies, a bank, points out, spot rates inform contract rates. In 2021 two-thirds of the contracts signed by Maersk, the world's biggest container-shipping firm, which controls a fifth of the global market, have been long-term ones. As Maersk's contracts and those of its rivals roll over, the rates could double. And with customers more concerned about securing scarce capacity than haggling over price, some are signing contracts for two years rather than one.

Fears that a trend for “near-shoring” might hit demand seem unwarranted for now. Soren Skou, boss of Maersk, sees little evidence of it so far. Many firms that source supplies from China are having doubts about relying on one country. A “China plus one” policy of adding a supplier in another part of Asia, such as Vietnam or Thailand, needs more ships to transport these goods directly to America or to giant Chinese hub ports for their onward trip.

The industry's response to the crunch reflects changes to its structure that pre-date covid-19. In the words of Rahul Kapoor of the *Journal of Commerce*, a sectoral must-read, “The era of cheap shipping is behind us.” Shifting goods around the world has been inexpensive because the response to high rates has historically been a frenzy of orders. That, in turn, has led to a flood of vessels that arrive just as economic conditions worsen and trade slows.

But bloody price wars over market share may be gone for good. Since 2016, when a previous ship-ordering binge collided with slowing trade, collapsing rates and big losses, the industry has consolidated—20 big firms have become seven bigger ones in three global alliances. This has helped them manage capacity more ruthlessly. As a result, the cyclical industry may suffer shallower and shorter downturns, says Parash Jain of HSBC, another bank.

The strange result of the pandemic is that the industry is awash with cash. Simon Heaney of Drewry, a consultancy, says that profits could reach \$200bn in 2021 and \$150bn in 2022, an unimaginable bonanza beside the cumulative total of around \$100bn for the previous 20 years. As well as returning cash to shareholders, Maersk may acquire more firms in e-commerce fulfilment and air-freight as part of its effort to build an end-to-end logistics business that ferries goods by sea, land and air, taking on DHL and FedEx. Other big container-shipping companies such as China's COSCO and France's CMA-CGM are doing the same.

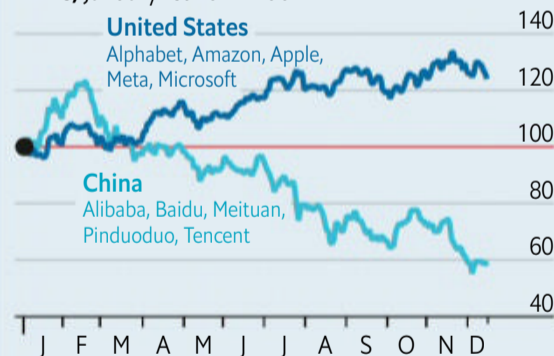
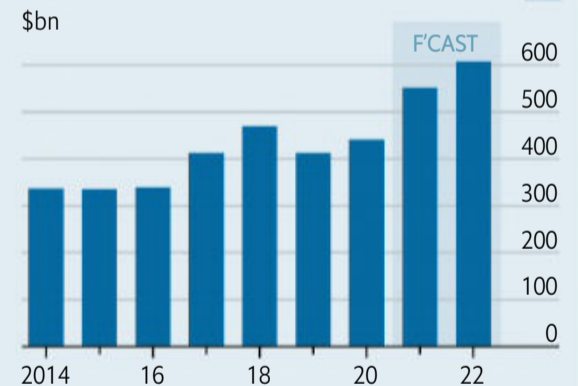
The big question is how much new capacity is in the offing. As world trade boomed in the years before the financial crisis of 2007-09, order books were rough-

Ship, ship, hooray!

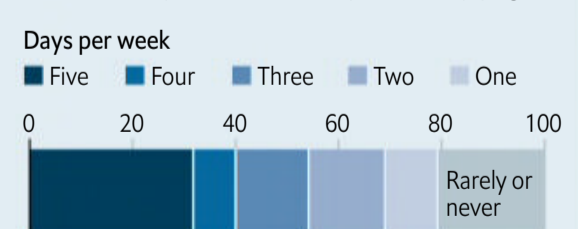
Container ships, order-book-to-fleet ratio, %



ly equivalent to 60% of the existing fleet. They now stand at a little over 20%. Restraint is due in part to uncertainty over the technology needed to make vessels which have a 25-year lifespan compliant with tougher carbon-emissions rules that the industry is expecting. Still, capital discipline may have its limits. Orders have begun to swell again (see chart 2). But it will take two to three years before ships ordered today start rolling down slipways. The era of pricey shipping could well last for another Christmas or two. ■

Plots uncovered in 2021**Share price indices*, selected technology firms, January 1st 2021=100****Worldwide semiconductor revenues****Worldwide mergers and acquisitions****US, “after covid-19, how often would you like to have paid workdays at home?”**

Workers surveyed[†], Mar 2020-May 2021, % replying



*\$ terms, weighted by market capitalisation

[†]To Nov 23rd [‡]Excluding those unable to work from home

Sources: Refinitiv Datastream; World Semiconductor Trade Statistics; Refinitiv; WFH Research

A year in four charts

2021 has brought mixed blessings for business. American tech giants thrived while Chinese ones suffered (chart 1). Chip firms couldn't keep up with soaring demand (chart 2), helping snarl up supply chains. Wall Street rainmakers have been working overtime (chart 3). Yet even many of them have toiled from home (chart 4).

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Information technology

Cloud atlas

LAS VEGAS

The battle of the computing clouds intensifies—and the battlefield grows more complex

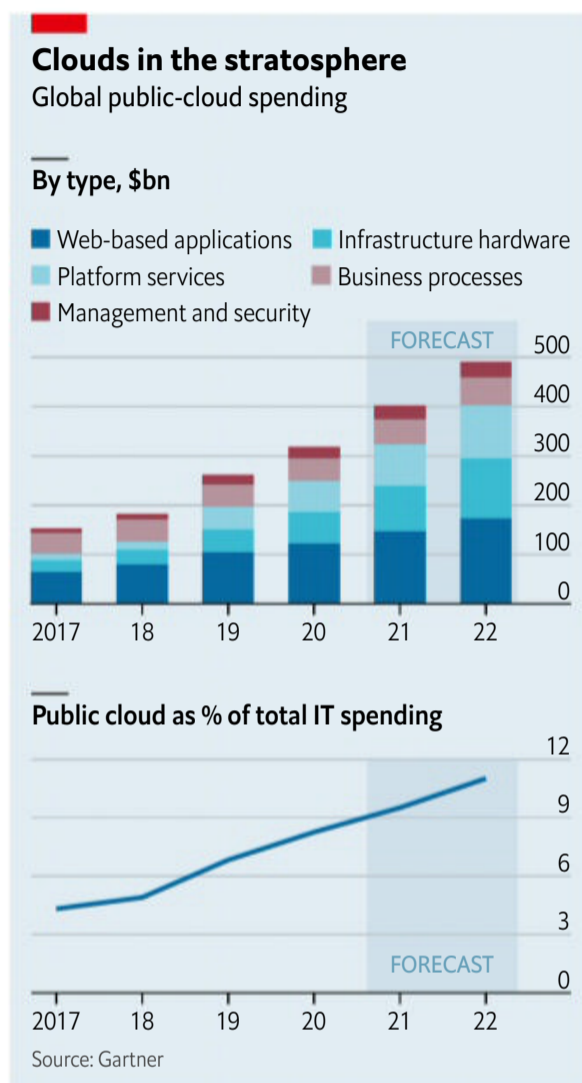
HOW MUCH have you spent on the cloud today? It takes Robert Hodges only a few clicks to find out. He pulls up a dashboard on a computer in his home office in Berkeley, California, which shows cloud spending at his database firm, Altinity, in real time. The cloud represents half of Altinity's total costs.

Mr Hodges's widget is a window onto the future. As bills soar, every firm of any size will need to understand not just the benefits of the cloud, but also its costs. Gartner, a consultancy, calculates that spending on public-cloud services will reach nearly 10% of all corporate spending on information technology (IT) in 2021, up from around 4% in 2017. Plenty of technophile startups spend 80% of their revenues on cloud services, estimate Sarah Wang and Martin Casado of Andreessen Horowitz, a venture-capital firm. The situation is analogous to a century ago, when electric power became an essential input (and prompted some firms to hire another kind of CEO: the chief electricity officer).

For cloud companies this has been a bonanza. Giants of the industry, such as Amazon Web Services (AWS), Microsoft Azure, Google Cloud Platform (GCP) and, in China, Alibaba and Tencent, have been adding business briskly. Gartner expects global sales of cloud services to rise by 26% in 2021, to more than \$400bn. But competition is stirring. On December 9th Oracle, a big software-maker, reported higher revenue than expected, mainly thanks to the rapid growth of its cloud unit. Its market value shot up by over 15%, or nearly \$40bn. And a welkin of companies is emerging to help businesses manage their computing loads. One such firm, Snowflake, is worth \$108bn. Another, HashiCorp, went public in New York on December 8th and now boasts a stockmarket value of \$15bn, three times its last private valuation in 2020.

The latest cloud formation and the winds shaping it were on full display this month at Re:Invent, the world's largest cloud-computing conference, held every year in Las Vegas by AWS. Panels discussing "cost optimisation" and "AWS billing" were among the best attended. The accompanying expo featured booths where startups

Correction In "The great reallocation" (December 11th) we mixed up the chart scale. The value of Chinese assets held by foreign entities is measured in trillions of yuan, not tens of trillions. Sorry



with names such as CloudFix, Cloudwiry and Zesty were offering to help customers manage their cloud use.

Businesses' main motive for moving to the cloud was never about cost but "scalability": having access to additional computing resources with a few clicks. But cloud bills have grown more complicated as well as higher, sometimes rivalling those from America's notoriously opaque health-care providers. The AWS bill of even a small customer like the Duckbill Group, another cost-consulting firm, can run to more than 30 pages, listing in detail the cost of every single service it has used, from bandwidth in India (\$0.01 per request to its website) to a virtual server in Oregon (\$83.59 for "Amazon Elastic Compute Cloud" running open-source software).

That is only natural, says Corey Quinn, co-founder of the Duckbill Group. Big cloud providers such as AWS, Azure and GCP are amalgamations of dozens of services. AWS sells more than 200, ranging from simple storage and number-crunching to all sorts of specialised databases and artificial-intelligence offerings. Each is

billed according to multiple dimensions, including the number of servers, time used or bytes transferred. Then come the discounts and special offers.

Ms Wang and Mr Casado have suggested that firms should think about building their own private clouds to keep costs down. So far few firms have opted for such "repatriation", which is both pricey and makes it harder for businesses to enjoy the benefits of essentially unlimited computing resources in the public cloud. Rather, businesses are trying to professionalise their "cloud financial operations" (or Fin-Ops in the compulsory tech shorthand), for example tying bonuses of executives responsible for cloud usage to cost control.

For the time being, gauging the cloud's financial impact is an arduous manual process. As cloud use grows, it will need to be automated, says Lydia Leong of Gartner. Some will probably be outsourced to upstarts of the sort thronging Re:Invent. A number sell a mix of consulting and software tools to assess cloud use and offer advice on how to lower costs. CloudFix, which unveiled its service in Las Vegas, charges a subscription to run a customer's configuration through software that optimises the client's cloud performance.

The big cloud companies have taken note, both of the upstarts and of the growing customer grumbles. Just before the Las Vegas event AWS announced that it would start charging less for data transfers to the internet, lowering the bills of millions of customers. It also helps them identify savings, for instance by offering a "Simple Monthly Calculator" (though it looks rather complex and sports a web interface straight out of the late 1990s).

At Microsoft, Azure cloud costs are often rolled into the "enterprise agreements", all-encompassing subscriptions that big companies typically sign up to. GCP, being the smallest of the top three, "strongly believes" in the "multi-cloud", says Amit Zavery, a senior executive. In other words, it aims to enable customers to choose the best and cheapest cloud services from different providers (thus making it easier for them to pick Google).

Costly, with a chance of discounts

Yet the big providers are not making life easier for customers everywhere. Having customers pay only for the IT they use, while combining different services as needed, is the whole point of cloud computing. At AWS the complexity is seen as a competitive advantage. Its assortment of services is mostly created by independent teams that can innovate faster (including by changing how clients are charged). "We decided to let our developers build what they build—and unleash their creativity," says Matt Garman, who heads sales and marketing at AWS.

▶ The three big providers also have a habit of making it cheap and easy to transfer data onto their clouds but pricey to move them out again. Critics accuse AWS, and to a lesser extent Azure and GCP, of being a digital “Hotel California”, where you can check out any time you like, but you can never leave. Locking customers in like this may push them to use other services. Mr Garman counters that the higher price of moving data off a cloud (“egress” in the jargon) reflects the higher costs of that exercise. Almost by definition, customers leave with more data than they entered with.

Whatever the truth, cloud providers’ fat gross-profit margins—more than 60% in AWS’s case, according to Bernstein, a broker—are attracting competition. In September Cloudflare, which helps clients serve up online content and deflect digital attacks, launched a new data-storage service which does not charge for digital outflows. Matthew Prince, Cloudflare’s boss, says this should “unlock the true potential of the cloud”, by allowing businesses to mix and match services from different providers. “Each cloud provider has different strengths and weaknesses,” says Mr Prince.

Investors still see CloudFlare’s strengths: despite a recent slide amid a general cooling on upstart tech stocks, the firm’s market value of \$45bn is eight times what it was after its initial public offering in September 2019.

If bets like Mr Prince’s pay off, the industry will become more competitive. As for Altinity, its dashboard is an outgrowth of its product—a cloud-based database that lets users sift through information, including bills, in real time. It is considering releasing the dashboard’s code for anyone to use and adapt. Fair weather to it. ■

Bartleby Teamwork and the Beatles

A new documentary on the Fab Four is a must-watch for managers, too

PAUL IS STRUMMING his guitar in a studio in London. George yawns and Ringo looks on listlessly. John is late, as usual. Suddenly, magic. A melody starts to take shape; George joins in on his guitar; Ringo claps out a beat. By the time John arrives, The Beatles’ next single, “Get Back”, is thrillingly recognisable.

“Get Back” provides both the standout moment and the title of a glorious new documentary by Peter Jackson, charting the days that the band spent together in January 1969, writing and recording songs for a new album. For anyone interested in music, pop culture or creativity, the film is a stocking filled with treats. When George is struggling for a line to follow “Something in the way she moves”, John has advice. “Just say whatever comes into your head each time—‘attracts me like a cauliflower’—until you get the right words.”

Executives should watch it, too. The question of what makes a team sing is a staple of management research, and the Beatles documentary is a rare chance to watch a truly world-class team at work. It reinforces known principles, and adds some of its own.

Take the role of Ringo, for example. When he is not actually playing, the band’s drummer spends most of his time either asleep or looking bewildered. When the other three musicians bicker, Ringo smiles beatifically. To a casual observer, he might appear dispensable. But musically, nothing works without him, and as a team member he softens conflict and bridges divides.

Psychological make-up matters to how teams come together. Academics at Carnegie Mellon University and the Massachusetts Institute of Technology have found that the performance of groups is not correlated with their mem-

bers’ average intelligence, but with characteristics such as sensitivity and how good teams are at giving everyone time to speak. Ringo provides backing; the band would be less cohesive without him.

Another principle reinforced by the film: look here, there and everywhere for inspiration. In a study from McKinsey, more than 5,000 executives were asked to describe the environment in which they had their own best experiences of being in a team. Among other things, the consultancy identified the importance of “renewal”, the habit of keeping staleness at bay by taking risks, by learning from others and by innovating.

“Get Back” shows a team of superstars embracing exactly that ethos: playing the songs of other bands, grabbing ideas like magpies and happily taking the advice and help of outsiders. It is the introduction of a pianist called Billy Preston, known to the group from their early days playing in Hamburg, which really makes the recording sessions start to click. (Let’s make him the fifth Beatle, suggests John. “It’s bad enough with four,” sighs Paul.)



A third message of the film concerns when and how to let it be. In an effort in 2016 called Project Aristotle, Google tried to define the characteristics of its most effective teams. One of its findings was that goals ought to be “specific, challenging and attainable”.

When they first meet up, on the second day of 1969, the band has a task that fits these criteria snugly: to write an album’s worth of new songs in just a matter of days and perform them on a TV special. But how they get there is left largely to them. That doesn’t always work out. At one point Paul yearns for a “central daddy figure” to set them straight on their scheduling. But the combination of a deadline and autonomy yields remarkable results.

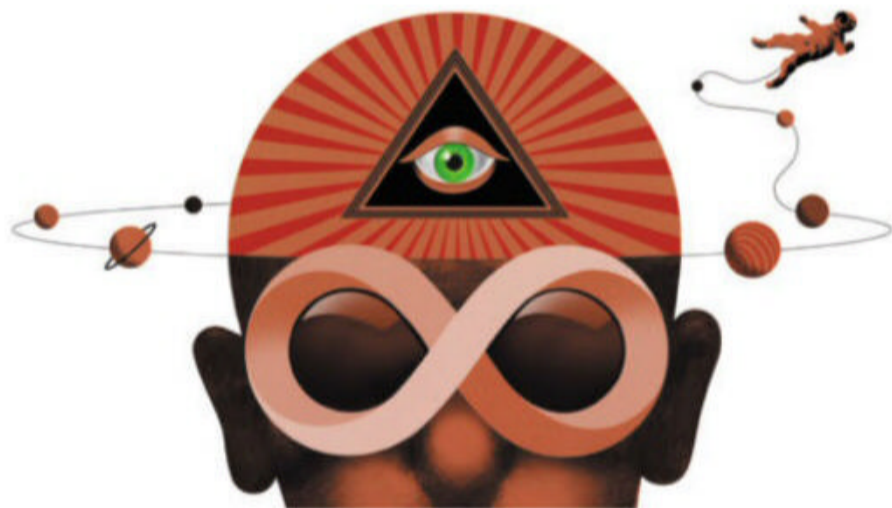
There are limits to what can be learned from “Get Back”. The Beatles are not always supportive of each other—George, feeling disregarded by John and Paul, briefly quits the band. Drugs played a part in their output: LSD may be a red line for some managers. Although technical ability is not the only determinant of success, sheer talent helped. Any band with a Lennon, a McCartney and a Harrison in it would have an advantage.

But one wider lesson comes through loud and clear. The Beatles love what they do for a living. When they are not playing music, they are talking about it or thinking about it. They do take after take of their own songs, and jam constantly. Managers who think that building *esprit de corps* requires a separate activity from work—here-comes-the-fun time, set aside for axe-throwing or GIF battles or something equally ghastly—are missing a fundamental point. The highest-performing teams derive the greatest satisfaction not from each other, but from the work they do together.



Schumpeter | Lords of the metaverse

Forget space. The next billionaire battle is to take people beyond reality



YOU HAVE to hand it to Mark Zuckerberg. When the founder of Facebook announced in October that he was changing the name of the social-media network's parent company to Meta Platforms in order to help create an alternative digital reality known as the metaverse, he was mercilessly mocked. To some, he was generating a smokescreen to distract attention from a political furore. To others, he was merely the latest middle-aged tech billionaire to chase a childhood fantasy, much as Amazon's Jeff Bezos and Tesla's Elon Musk were doing with space rockets.

And yet his timing was impeccable. Since October searches on Google for "metaverse" have soared. Wall Street is fanning the hype. According to Bernstein, a broker, the term cropped up 449 times in third-quarter earnings calls, up from 100 in the second quarter. It says markets with potential annual revenue of at least \$2trn could be disrupted by the metaverse. Jefferies, a bank, says that though the phenomenon may be more than a decade away, it has the potential to disrupt "almost everything in human life".

Other tech giants like Microsoft have set out plans to head for the metaverse. But it is big firms still under the control of their founders that may become the most ardent evangelists. Mr Zuckerberg, with a net worth close to \$125bn and almost total control of a company valued at \$908bn, is the most prominent. Others include Jensen Huang of Nvidia, a maker of graphics processors worth \$722bn, and Pony Ma of Tencent, the Chinese tech giant worth \$550bn, whose gaming investment portfolio includes a 40% stake in Epic Games, owner of "Fortnite", one of the world's most popular games. Epic's founder, Tim Sweeney, is himself a force to be reckoned with. He recently told Bloomberg that the metaverse was a multitrillion-dollar opportunity, and that companies like his were in a race to get to a billion users in order to set the metaverse's standards for the future.

It is shaping up to become a billionaire battle similar to the Bezos-Musk space race. Instead of rocket science, it will be fought with reality-bending headsets, blockchains, cryptocurrencies and mind-frazzling amounts of computing power.

Precisely what these plutocrats mean by the metaverse is as yet unclear. Will it be an all-consuming futuristic world of virtual reality, avatars, oceanside mansions and other online razzmatazz

that will make the real world a dull place by comparison? Or will it simply be a richer, more immersive version of what already exists today: a way to socialise, work, shop and play online even as life in the everyday world carries on as normal? It is even less clear whether tomorrow's internet users will be seduced by the dreams of entitled tech billionaires.

A look at the ambitions of Meta, Nvidia, Epic and Tencent give a sense of the scope of the undertaking. Each has their niches. Mr Zuckerberg has earmarked \$10bn this year mostly to develop the virtual- and augmented-reality headsets and glasses that he hopes will provide a dominant access point to the metaverse, much as Apple's iPhone does with the mobile internet. Nvidia is focused on what it calls the omniverse, a technology based on its chips that brings engineers, designers and other creative types together virtually to make things—mostly, for now, in industrial settings. Epic has been creating virtual worlds for years, including "Fortnite". In the metaverse, its killer app may be Unreal Engine, a platform that gives its own and other developers the ability to make lifelike 3D experiences, including games, films, architectural models and industrial designs. Tencent has China to crack. Mr Ma is probably wise to play it carefully, given the Communist Party's techlash. But his firm's popular WeChat super-app, including WeChat Pay, is already a 2D version of what the metaverse could become in 3D.

Behind their futuristic ambitions lie some common experiences. First, the mobile internet is reaching the end of an era. In America and Europe, politicians are threatening tighter rules against monopolies and privacy abuses, especially with respect to Facebook and Google. In China, the tech industry is reeling from the government onslaught. Not for nothing are some first-generation tech entrepreneurs in America and China calling it quits. Those who remain standing need a compelling new story to tell.

Next, they operate in constrained worlds. Apple is a particular bugbear for Mr Zuckerberg and Mr Sweeney. The iPhone-maker is using the privacy settings in its iOS operating system to control the extent to which Facebook can sell digital adverts. Epic is engaged in an antitrust battle with Apple over the fees its App Store imposes on game developers, which has so far been fairly unsuccessful. That is why both men vow so vehemently to promote interoperability—ie, no closed systems—as well as common standards. They, too, want to be architects of the operating systems of the future.

They won't have the field to themselves. Apple, though so far quiet about the metaverse, is no doubt preparing an offensive. Telecoms firms want a sniff, having invested heavily in ultra-fast, low-latency 5G spectrum. Rapidly growing platforms like Roblox, offering a build-your-own games model that attracts 200m users a month, have already captured young hearts. There are naysayers, too, notably proponents of more distributed technologies that are known as Web3, who argue that blockchains and cryptocurrencies are the next big thing—though as Ben Thompson, a tech pundit, points out, these may find much better use cases in the metaverse than in the real world.

Moonshots

There is a lot to play for. As Mr Thompson says: "Elon Musk wants to go to the Moon. Mark Zuckerberg wants to create entirely new moons in digital space." But just as space is a race, so is the metaverse. Messrs Zuckerberg, Huang, Sweeney, Ma et al may promise a future for the internet that is more open, immersive and engaging than the mobile one that exists today. But each wants to get there first, so that they can set the rules to their advantage. ■

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Private markets

Spinning around

The craze for private assets has reached fever pitch. Can the party continue?

THE BEST pauses in music are those that are least expected. As a banging tune rises in a crescendo, just a second of silence, followed by a return of the beat, can send a dance floor wild. Such is the effect covid-19 has had on private markets. In March 2020, when lockdowns sent DJs home everywhere, the beat suddenly stopped. But the pause did not last: after a tepid 2020, this year has been positively riotous. “To call it a boom feels like an understatement,” says Marcus Frampton of APFC, Alaska’s sovereign-wealth fund.

All manner of records are being broken. In the first 11 months of 2021, private-equity (PE) firms sealed over 13,000 deals globally, worth a combined \$1.8trn—more than in any previous full year. Private buyers have bought or are eyeing up Sydney airport, Italy’s phone company, the French football league and Saudi Arabia’s pipelines. Private-capital firms—which include PE shops as well as funds that target credit, infrastructure and property—have raised \$1.1trn from end-investors this year, not far off the highest-ever annual tally. The boom is

pushing up pay to even more extraordinary levels. On December 10th KKR, a buy-out firm, announced long-term share awards that could net its two new co-chief executives more than \$1bn each.

Private assets were once so obscure they were called “alternatives”. The label seems absurd today. Private-capital firms manage a record \$10trn of assets, the equivalent of 10% of total assets globally (see chart 1 on next page). This includes several types of activity. PE—which consists of taking over companies using debt, juicing up profits and reselling them at a premium—promises racy returns. Infrastructure and, to some extent, property help diversify portfolios. Private credit

lends to smallish firms with a relatively high default risk, earning attractive yields.

The boom this year reflects both wider exuberance as well as the culmination of a structural shift in finance. In order to meet their future liabilities, institutional investors such as pension funds must achieve annual returns of 6-7%. With interest rates at rock-bottom levels they piled into private assets where, it is argued, returns are more attractive. Using data from Preqin, *The Economist* calculates that the world’s biggest 25 investors by assets under management—including pension funds, insurers and sovereign funds that together manage \$22trn—now hold 9% of their assets in private markets, twice the share in 2011 (see chart 2 on next page). Australia’s Future Fund, a sovereign-wealth pot of \$142bn, allocates 35% of its portfolio to them; CDPQ, a pension fund in Quebec, nearly 55%.

With capital markets open for initial public offerings, a virtuous circle of activity is taking place: private-capital firms can sell more of their existing assets (to another buyer or by listing them) and return the proceeds to their ultimate investors, who in turn are keen to participate in fresh fundraising for private markets. For Blackstone, for example, the biggest firm of all, asset sales, cash returned and funds raised so far this year have all been roughly double the level of 2020. Greater deal “velocity” means asset managers are deploying capital faster and raising funds more often, says Kelly DePonte of Probitas, a firm that ▶▶

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▶ markets such funds to end-investors.

The belief that private returns will be superior reflects a variety of contestable arguments: that investors can earn an “illiquidity premium” for having money locked up in assets that do not trade freely, say, or that private markets are less efficient than public ones, allowing skilled managers to exhibit consistent outperformance. Sceptics think that opaque private markets allow managers to mask high leverage and volatility. For now, the magic formula is working. Some big investors report annual returns in the mid-teens across private-asset classes this year, with those on PE above 50%. By comparison, the S&P 500, an index of American stocks, has produced a return of 24%.

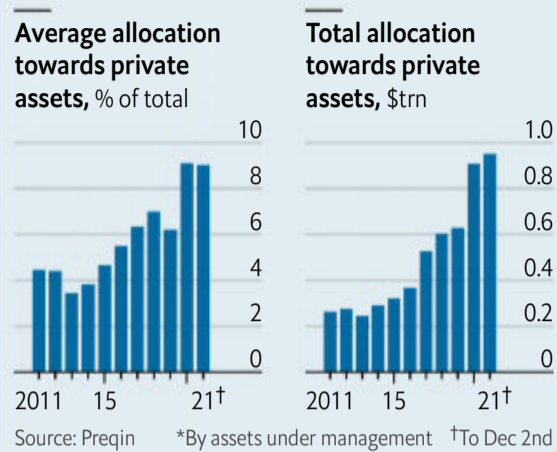
Lured by high returns, some investors are keen to be more directly involved in running private assets, rather than being passive customers of the big private-capital managers. APG, a Dutch pension manager that oversees \$703bn, aims to own at least 10-15% of every fund it backs, so as to negotiate veto rights over strategic matters, says Patrick Kanters, its private-markets boss. Many big limited partners also “co-invest” alongside funds directly in portfolio companies, which allows them more discretion over the size of their exposure, and lowers overall fees. Some bypass managers entirely. Co- and direct investments are set to reach \$265bn this year, the highest-ever amount by far. Large investors in “real” assets, which include property and infrastructure, have become full-fledged developers, enabling them to create their own pipeline of deals—whether for student housing or hospitals—and pocket a fat margin.

Changing the tune

Yet the scale of the boom is also a source of unease. Valuations are creeping up. In a survey of 71 global institutions carried out by Probitas this autumn, 65% ranked unhealthy competition for deals as the biggest risk, up from 55% last year. Frenetic activity means less due diligence. Limited

Siren song

Global, top 25 investors*



partners (as the ultimate investors in funds are known) have little time to forge relationships with new managers and diversify their bets. Some are recruiting more staff, triggering what Maxime Aucoin of CDPQ calls a “war for talent”. Meanwhile managers are feeling rushed, too. “Decisions are being made on bigger dollars in fewer days,” notes Steve Moseley of APFC. The amount of “dry power”, the total committed to funds but not yet spent, stands at a record \$3.3trn. The pressure to deploy capital means fund managers have less incentive to evaluate potential targets strictly, or to turn down deals.

Alongside frothy behaviour, the other risks are the economy and interest rates. For now a roaring American recovery means that the underlying performance of the firms and assets that private managers own is decent. In November, for example, Blackstone told investors that, for the first time ever, every one of the companies that it owned was experiencing growing revenues. Rising interest rates are a concern, however, as they can deflate asset prices, impose stress on indebted companies and make it harder to raise debt to finance deals. So far the Federal Reserve’s pivot towards tightening monetary policy has not roiled credit markets: junk-bond yields (a proxy for interest rates on riskier debt)

have risen from 4% in September to 4.5% now. But there could be more to come.

Flush with cash amid a deal frenzy, what is the industry to do? One option would be to liquidate portfolios, that is, to sell more assets than it buys, in effect trying to cash in some chips when prices are high. As yet, however, this does not seem to be happening. Take the figures for three big managers, Blackstone, Carlyle and KKR. So far this year for every \$1 of assets, in aggregate, that they have sold, they have bought \$1.30. Although Carlyle is being more cautious than the other two firms, these figures indicate that the industry overall thinks the good times will roll on.

That suggests that if there is any restraining force in the industry it is the ultimate investors. Some are hedging risks. Australia’s Future Fund is rebalancing its real-asset portfolio towards “defensive” assets, such as housing blocks with a diverse set of tenants that it can “build and hold for ever”, says Wendy Norris, its deputy investment chief. But few investors think there is an alternative to alternatives. All those canvassed by *The Economist* said their allocations would continue to edge up. Some have sour memories from the financial crisis, when they rushed to dump private assets at a loss, instead of snapping up bargains. This time, even if the music stops, they will keep dancing. ■

Economic sanctions

SWIFT thinking

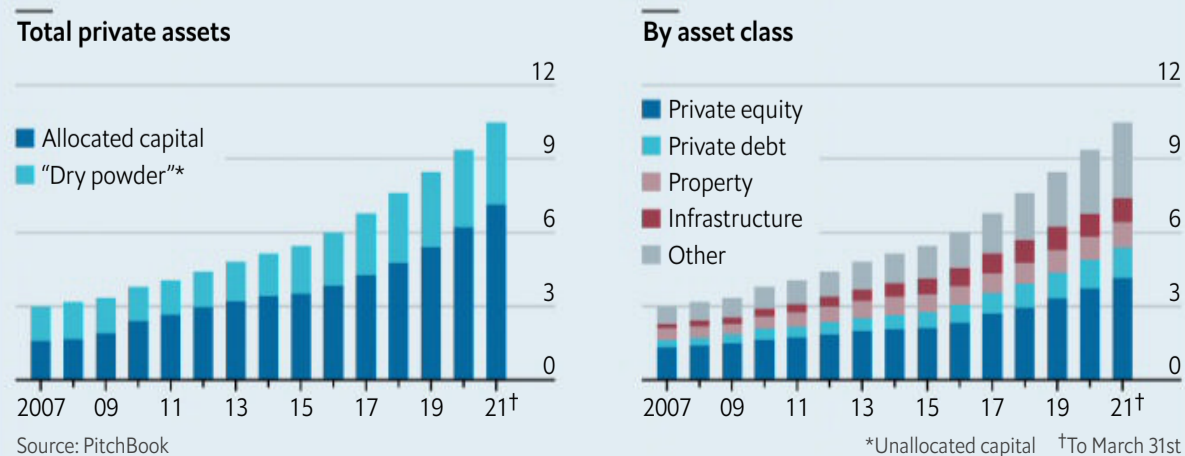
The consequences of excluding Russia from the global payments system

FOR WEEKS Russia has been massing troops and tanks near the Ukrainian border. Neither talks with nor threats from the West have stemmed the flow. With America and its allies loth to commit forces, another option is gaining prominence: cutting Russia off from SWIFT, the messaging network used by 11,000 banks in 200 countries to make cross-border payments. Flicking a switch seems safer than putting boots on the ground. But it could have dangerous consequences.

A first hurdle would be getting SWIFT to comply. The co-operative of banks, based in Belgium, vows to be politically neutral. Many European countries, such as Germany, do a lot of business with Russia, and may oppose the plan. But there is a precedent. In 2018 America managed to force SWIFT to ditch Iranian banks even in the face of European resistance. America would probably have its way again. It could threaten to pull its own banks from SWIFT, ▶▶

Upping the tempo

Global, private assets under management, \$trn



or to seize infrastructure vital to the network, such as a data centre in Virginia. In 2020 it used similar threats to force SITA, a network of global airlines based in Switzerland, to disconnect carriers from countries facing American sanctions.

But would excluding Russia from SWIFT actually be worthwhile? There are three reasons to think that it might not. It would harm but not cripple Russia; it would impose costs on the West; and it would be counterproductive in the long run.

Start with the impact on Russia. The no-SWIFT scenario is not new to Moscow. It has been bracing itself since 2014, when America first raised the idea of unplugging it from the network to punish it for invading Crimea (cooler heads eventually prevailed). If Russia were excluded today, capital flight and a run on firms and banks reliant on foreign funding would ensue. But coping mechanisms would then kick in. Russian banks and their foreign partners would use other means of communication, such as telex, phone and email. Transactions would migrate en masse to SPFS, a Russian alternative to SWIFT that is not nearly as ubiquitous and sophisticated, but still usable. As the payments infrastructure struggled at first to cope, Russia would suffer some disruption—but not disaster. Over time, investment in SPFS would make the system speedier.

Meanwhile, the West would suffer blowback. Until now America has aimed its financial firepower at small or isolated countries such as Cuba, Iran and Myanmar. Russia is twice the combined size of any economy America has ever embargoed. Any disruption in Russia would spill over to the countries that have business dealings with it. It is the EU's fifth-largest trading partner, for instance. And European banks have \$56bn-worth of claims on Russian residents. There would also be indirect damage through retaliation. Iran in 2018 had a weak hand. But Russia is the source of 35% of Europe's gas supply and is home to €310bn (\$350bn) of EU assets.

In the long run America, too, would bear costs. It holds sway over international finance thanks to the dollar's dominance and its pre-eminent role in global settlement systems. Any country with uneasy relations with America would seek alternatives to SWIFT, while Europe might redouble its efforts to develop a more independent payments network. Weaponising SWIFT against Russia would be seen by China as a "dress rehearsal", says Adam Smith, a former American sanctions official now at Gibson Dunn, a law firm. It would provide China with the impetus to bolster CIPS, its rival to SWIFT, just as America's other foes look for alternatives. The network, which already counts some big foreign banks as members, allows messages to be transmitted in both Chinese and Eng-



Caught in the cross-border cross-fire

lish. Its daily average volume of transactions of 310bn yuan (\$50bn) remains well behind SWIFT's estimated \$400bn, but it has nearly doubled in the past year. Should it reach scale, America's financial dominance would be threatened.

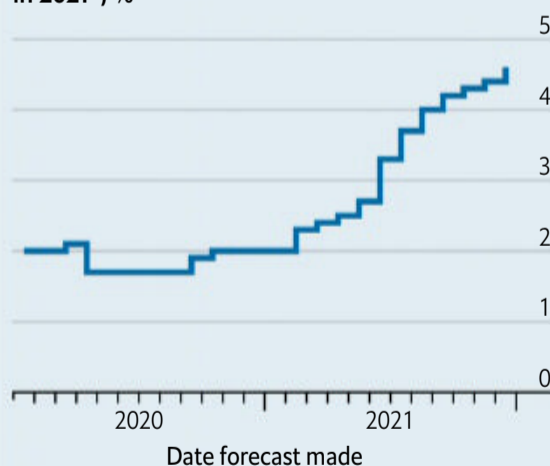
Other weapons of economic disruption exist. America could, for example, blacklist big Russian financial institutions, preventing its own banks from dealing with them. That would probably be as disrup-

tive for Russia as a disconnection from SWIFT, without undermining the global financial architecture as much. Yet the risk of immediate blowback would remain. That highlights a long-standing dilemma of wielding economic sanctions: although they are cheap when aimed at puny states, bigger targets can hit back, says Tom Keatinge of the Royal United Services Institute, a think-tank. The West still has powder left. But it must choose its battles wisely. ■

Price surprise

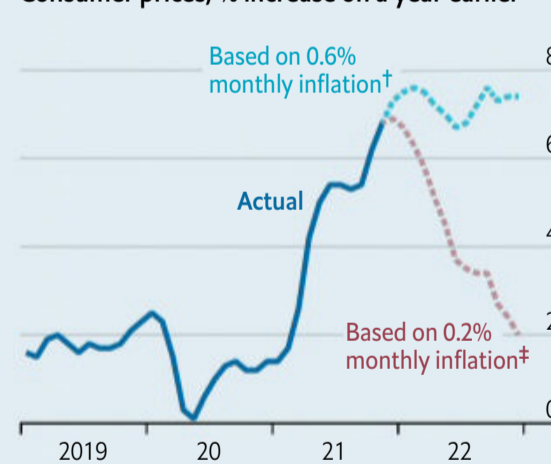
United States

Consensus forecast of calendar-year inflation in 2021*, %



Sources: Wolters Kluwer; Bureau of Labour Statistics; *The Economist*

Consumer prices, % increase on a year earlier



*Average of top analysts' forecasts for consumer-price inflation
†Average rate during Jan-Nov 2021 ‡Average rate in 2019

Follow the money

The only thing that proved transitory about inflation in America in 2021 was the consensus that it would subside. The left-hand chart shows that analysts consistently revised up their predictions, trailing reality. Consumer prices are now rising by nearly 7% compared with a year earlier, the fastest pace since 1982. What does the future hold? The right-hand chart presents two scenarios. In the first, month-on-month inflation immediately falls back to its pre-pandemic trajectory. Even so, it would take until the end of 2022 for annual inflation to slow to the 2% pace that used to be the norm. In the second case, consumer prices rise at the same monthly clip seen over the past year. Annual inflation would soar to nearly 8% in February, and stay elevated. Either way, one prediction seems rock-solid: the Federal Reserve will start raising interest rates in 2022, as the central bank itself indicated on December 15th.

Local debt in China

Lurking danger

HONG KONG

A property slowdown sheds light on a huge hidden-debt problem

WHEN OFFICIALS in the southern city of Liuzhou began a routine auction of parcels of land in June, they found few takers. Only one of five plots received a bid; the rest went unsold. As in many cities across China, a downturn in the property market has meant less demand for the land on which apartment towers are built.

That is bad news for local governments, which rely on the sales for the bulk of their revenues. It is also a troubling sign for the holders of bonds issued by local-government financing vehicles (LGFVs), the half-public, half-corporate concoctions that have become a cornerstone of Chinese development. Cities' land-sale revenues are often used to repay these bonds. After the auctions flopped in Liuzhou, rating agencies downgraded two of the city's LGFVs on fears that the government would struggle to service their debts.

LGFVs are one of China's oddest financial innovations. In the mid-1990s the central government implemented budget laws to stop local bureaucrats building up massive debts. In response, regional governments crafted LGFVs as a workaround. The vehicles, which number in the thousands, became important drivers of economic



Towering vulnerabilities

growth, helping build bridges, homes and roads. They also became one of China's biggest kinds of liabilities, building up some 53trn yuan (\$8.3trn, or 52% of GDP) in onshore and offshore debts, according to Goldman Sachs, a bank. Although such borrowing does not appear on public balance-sheets, local authorities are responsible for paying it back. The runaway debts now threaten to throw the financial system into turmoil.

The central government has spent years trying to reform China's shadow financial system, but debts that are hidden off balance-sheets have been slow to shrink. Take shadow banking, for instance. Although it has declined as a share of banking-system assets, outstanding shadow loans remain high, at 57.6trn yuan at the end of September. Similarly, a municipal-bond market now lets cities and provinces raise funds. Yet LGFV debts at the end of 2020 still exceeded outstanding central and local government bonds combined.

Many LGFVs make meagre earnings on the bridges, roads and water systems they build. Officials used to be able to make up the shortfall with land-sale revenues, but this is becoming harder. In a round of sales this year for 22 of China's biggest cities, the premium fetched on parcels was just 4.7% above the government's reserve price, compared with 16.7% earlier in the year, according to Enodo Economics, a research firm. The default of Evergrande, a develop-

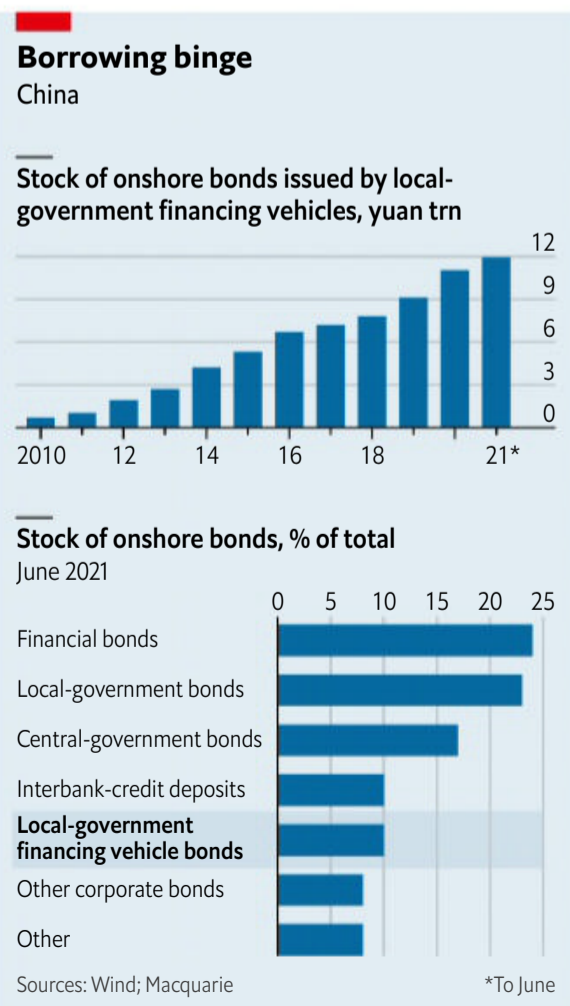
er with \$300bn in liabilities, and wider malaise in the property industry means demand for land could continue to suffer. New home prices fell for a third consecutive month in November, according to figures published on December 15th.

No LGFV has yet defaulted on a bond. But many market-watchers, such as Larry Hu of Macquarie, a bank, believe it is only a matter of time. The vehicles will face repayments of offshore bonds of \$32.2bn in 2022, up from \$26.9bn in 2021, reckons Nomura, a Japanese bank. Many of them issue short-term debt simply to pay off other maturities. Guangxi Liuzhou Dongcheng, an LGFV that was downgraded by S&P, a rating agency, in October, had 25.7bn yuan (\$4bn) in short-term maturities, for instance. An average of 60% of LGFV bond issuance has gone not to new growth-generating projects but towards paying off maturing debts in 2020 and 2021.

Many local governments appear to be preparing for a financial storm. Liuzhou has used an estimated 20bn yuan in public funds to make up a capital shortfall at Dongtong Investment and Development Group, a vehicle that was downgraded in August by Fitch, another rating agency. An LGFV in the city of Chongqing defaulted on bankers' acceptance bills in March. Subsidiaries of a provincial vehicle in Guangxi have gone bankrupt. Provincial governments in Jiangsu and Yunnan have issued guidelines calling for collapsing LGFVs to go into formal bankruptcy instead of being hidden under more debt.

Such reforms will not come easily. The value of onshore LGFV bonds stood at 11.9trn yuan in June, six times those issued by developers and a tenth of China's onshore-bond market (see chart). A slight shift in sentiment towards the government's implicit guarantee for LGFVs could roil markets. This was highlighted by the caution around "Document No. 15", an internal circular issued by the banking regulator in July, which told lenders to cut access to working-capital loans for some LGFVs. If upheld, the new rules could have caused a cash crunch for the vehicles—similar to the squeeze that brought down Evergrande. But they were quickly abandoned. Letting LGFVs fail is a line the central government is not yet willing to cross.

The situation illustrates the market-distorting power of missed reforms. Many other sectors, such as property and non-core state-owned enterprises, are no longer seen as backed by the central government. The fact that the authorities did not decisively end their implicit support for LGFVs earlier this year has led many asset managers in China to consider them safe. LGFV bond yields have fallen towards those on government bonds. Funds have poured in. "They are becoming a haven," says Mr Hu. They should be anything but. ■



Free exchange | Of Milton and money

Has the pandemic shown inflation to be a fiscal phenomenon?



HERE IS A potted history of recent economic policy and inflation. In the 2010s central banks created vast amounts of money through their quantitative-easing (QE) schemes, while governments enacted fiscal austerity. Inflation in the rich world was mostly too low, undershooting central banks' targets. Then the pandemic struck. There was plenty more QE. But the truly novel economic policy was the \$10.8trn in fiscal stimulus implemented worldwide, equivalent to 10% of global GDP. The result was high inflation. The rich country that has splurged the most, America, has had the most inflation. With consumer prices rising at an annual pace of 6.8%, the Federal Reserve on December 15th was forced to acknowledge that inflation had become a big threat.

At first glance, this apparent supremacy of fiscal policy is awkward for fans of Milton Friedman's view that inflation is "always and everywhere a monetary phenomenon". Central banks, not governments, are charged with hitting inflation targets. But does the experience of the pandemic show that inflation is really fiscal?

One way in which fiscal stimulus boosts inflation is by strengthening households' and firms' balance-sheets, making them more likely to spend. Suppose the government raises cash from investors, who receive bonds in exchange. Then it hands out the money to households, returning it into circulation. Netting off, it is as if the government has just given out new bonds. Whether those bonds truly constitute new wealth for the private sector is the subject of an old theoretical debate. When the government runs up debts the public could also expect to pay higher taxes in the future—a liability that offsets their newly created assets. Yet in reality it is clear that fiscal stimulus leads to more spending.

Now introduce a new step into the thought experiment. The central bank, implementing QE, creates new money with which it buys the bonds that the government has given out. So when you net everything off, the government is not giving out bonds. It is giving out cash. This is not far off the policy mix during the pandemic. The tsunami of fiscal stimulus was accompanied by bond-buying of almost equal magnitude: central banks in America, Britain, the euro zone and Japan have together bought more than \$9trn in assets. The result has been a surge in deposits at commercial banks. In America they have risen from around \$13.5trn in ear-

ly 2020 to around \$18trn today. As early as the spring of 2020 some monetarist economists, such as Tim Congdon of the University of Buckingham, pointed to surging measures of broad money, which includes bank deposits, and warned of inflation to follow.

So far, so Friedmanite. But which leg of the policy matters more: the fiscal stimulus, which boosted aggregate household wealth, or QE, which ensured the infusion was of cash and not of bonds? There is probably something special about infusing households' balance-sheets with cash, says Chris Marsh of Exante Data, a research firm. He has suggested that a "rediscovery" of monetarism could be in the offing after the pandemic.

Other economists, however, argue that QE is mostly ineffective, except in periods of acute financial stress, such as the "dash for cash" in spring 2020. Suppose that once that crisis had passed central banks had shrunk their balance-sheets quickly, but had still promised to keep interest rates at zero for a long time. It seems likely that America's enormous fiscal stimulus would, by boosting household wealth, still have driven up spending and prices.

Yet believing in the impotence of QE compared with fiscal stimulus is in fact consistent with monetarism—if you expand the definition of money. Distinguishing the electronic money created by central banks from debt securities issued by governments is increasingly difficult. This is partly because when interest rates are close to zero, they are closer substitutes. It is also because most central banks now pay interest on the electronic money they create. Even if rates were to rise, so-called "interest on reserves" would still leave electronic money looking a bit like public debt.

The reverse is also true. Investors value government debt, especially America's, for its liquidity, meaning they are willing to hold it at a lower interest rate than other investments—much like the public is willing to accept a low yield on bank deposits. As a result "it seems more accurate to view the national debt less as a form of debt and more as a form of money in circulation," wrote David Andolfatto of the Federal Reserve Bank of St Louis in December 2020. He also warned Americans to "prepare themselves for a temporary burst of inflation" in light of the one-off increase in national debt during the pandemic. If money and debt are substitutes, just swapping one for another, as QE does, might provide little stimulus, consistent with the experience of the 2010s. But expanding their combined supply can be powerfully inflationary.

Right on the money

The logical extreme of this argument is known as the "fiscal theory of the price level", created in the early 1990s (and in the process of being refreshed: John Cochrane of Stanford University has written a 637-page book on the subject). This says that the outstanding stock of government money and debt is a bit like the shares of a company. Its value—ie, how much it can buy—adjusts to reflect future fiscal policy. Should the government be insufficiently committed to running surpluses to repay its debts, the public will be like shareholders expecting a dilution. The result is inflation.

Explaining today's high inflation does not require you to go that far, though. It is enough to look at recent deficits, rather than to peer into the future. Yet it is striking that economists like Mr Andolfatto who focused on the supply of government liabilities foresaw today's predicament while most central bankers, whose eyes were fixed firmly on labour markets as a gauge of inflationary pressure, did not. The past decade has shown that when interest rates fall to zero, it takes more than just QE to escape a low-inflation world. Still, Friedmanism lives on. ■



Apiarism

Bees, mites and unintended consequences

Beekeepers may have accidentally assisted a parasite that plagues their charges

FEW PESTS are more feared by apiarists than the aptly named *Varroa destructor*. This mite, originally a parasite of *Apis cerana*, the Asian honey bee, has plagued *Apis mellifera*, *cerana*'s western cousin, for only 50 years or so—having arrived in Europe via what was then the Soviet Union and subsequently spread to both North and South America. But a plague it is. *Varroa* is now so common that the mites are found in nearly every hive in the United States.

Why *Apis mellifera* has proved so vulnerable is debated. It might be the case that, being naive to the new parasite, *mellifera* had evolved no defences against it. Individuals of *Apis cerana*, by contrast, constantly groom each other to remove such ectoparasites. But work by Alberto Satta and Francesco Nazzi of Sassari and Udine Universities, both in Italy, suggests an additional possibility. This is that beekeepers themselves have also, albeit unwittingly, helped the mites to multiply.

A *Varroa* infestation often starts when bees from a neighbouring colony raid for

its honey an infested hive that can no longer defend itself. Pregnant female mites hop on the raiders and are carried back home by them. Bees use the hexagonal cells of their waxy combs for two jobs: storing honey and raising youngsters. The invaders hop off the bees that have given them a lift, head for an area of cells prepared by the queen for youngster-raising, and lay their own eggs on bee larvae there.

Both the mother mites and, when they have hatched, their offspring, feed by biting through their hosts' cuticles and sucking out bodily fluids. Some larvae are thus killed outright. Survivors are weakened, making them vulnerable to infections. And that vulnerability is enhanced by open wounds left by the parasites' feeding, which are exploited by pathogens carried

by the mites. These are known to include deformed-wing virus and acute-bee-paralysis virus. Some researchers think that *Varroa* is also implicated in colony-collapse disorder, in which the bulk of worker bees desert a hive for no apparent reason.

Though honey bees are not, contrary to popular mythology, declining in numbers around the world, *Varroa* mites do thus cause serious trouble for apiarists, particularly in the West. Better understanding of how to keep the critters under control would therefore be welcome. And Dr Satta and Dr Nazzi, writing in the *Proceedings of the Royal Society*, think they have found a possible new approach.

A sticky question

A crucial factor in the *Varroa* plague is, in the two researchers' opinions, a substance called propolis—or, rather, a lack of it. Propolis is a sticky material that bees make from a mixture of wax and resins gathered from a wide variety of plants. They use it to coat the inner walls of their hives, to plug holes in the hive wall that might otherwise admit predators, and to encase the bodies of those intruders which do manage to breach that wall and have subsequently been stung to death. Evidence is mounting, however, that propolis serves as more than just a building and embalming material. This evidence indicates that it also has antimicrobial properties which help bees fend off a range of dangerous diseases, in-

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cluding American foulbrood, a bacterial infection, and chalkbrood and noseosis, which are caused by fungi.

But microbicides are not necessarily arachnidicides. So there was no obvious reason to suspect propolis would be effective against mites as well, until, in 2017, a team led by Dr Satta made the curious finding that hives invaded by *Varroa* respond by sending out more foragers than usual to collect plant resins. Since the only known use bees have for these resins is making propolis, this suggested to Dr Satta and Dr Nazzi that the hives in question were employing the stuff to fight their infestations. They therefore rounded up a group of colleagues and got to work on the details.

They began by analysing honeycombs that had been prepared by queens as nurseries. They confirmed that propolis had indeed been applied to brood cells in these. In particular, they showed that the applied material was rich in compounds called phenols. These are pretty toxic (phenol itself, the group's eponym, was the first widely used antiseptic) and would almost certainly be bad news for mites.

To make sure, the team reared honeybee larvae in artificial cells in a laboratory. They treated some cells with chemicals found in propolis. Others, not so treated, acted as controls. In both of these sorts of cells, a single pregnant mite was also introduced. A third group of cells were treated with chemicals but kept mite-free, to determine whether the chemicals harmed larval development in any way.

The upshot was that in the treated cells, 19% of newly hatched mites died, whereas in the untreated cells only 6% did. And the effect was yet more pronounced when Dr Satta and Dr Nazzi went on to monitor the subsequent fertility of the survivors. Of those mites which outlived their initial exposure to chemicals found in propolis, only 26% went on to reproduce. In contrast, 46% of surviving mites in the chemical-free cells reproduced successfully. The chemicals appeared to have no effect on the development of the bee larvae.

It seems pretty clear, then, that propolis helps protect against *Varroa* infestations. But this raises the question of why bees do not make more use of it in their brood cells. A plausible answer is that the ability to do so has been bred out of them.

Until the revelation of its antimicrobial properties, beekeepers saw propolis as nothing but a nuisance. In particular, when hives with removable frames, for the easier collection of honey, were introduced in the mid-19th century, bees retaliated to this enhanced pillaging by pasting propolis over those frames, making them hard to extract. To counter this behaviour, generations of beekeepers have favoured colonies that produced less of the stuff. As a result, modern bees are fairly economical

with its manufacture and deployment.

Reversing the consequences of such selective breeding will not be easy. It might possibly be done by hybridising domesticated *mellifera* with wild strains of the species, or with other species of *Apis* that have not lost the knack of making propolis. For that to work, though, would require a concerted effort spread over many places.

A more immediate response might be to make it easier for bees to gather the phenol-rich resins which do the mite-killing—perhaps by growing relevant plants near hives. Alternatively, a synthetic version of propolis, introduced into hives by human hand, might then be deployed by the workers in mite-unfriendly ways. Regardless of the exact path out of the mess, though, the sad tale of the honey bee, the propolis and the *Varroa* mite looks like an object lesson in the law of unintended consequences. ■

Marine propulsion

Real fintech

Nature does not use propellers. So why do people?

NO KNOWN SEA-CREATURE uses propellers. Perhaps that is because they are too difficult to evolve from existing animal body plans. Or perhaps it is because they are not particularly good at doing what they do. When pushing water around for propulsive purposes, bigger is not only more powerful but also more efficient. But the bigger a propeller is, the harder it is to accommodate to a hull and the more it risks adding to a ship's draft and thus snag-

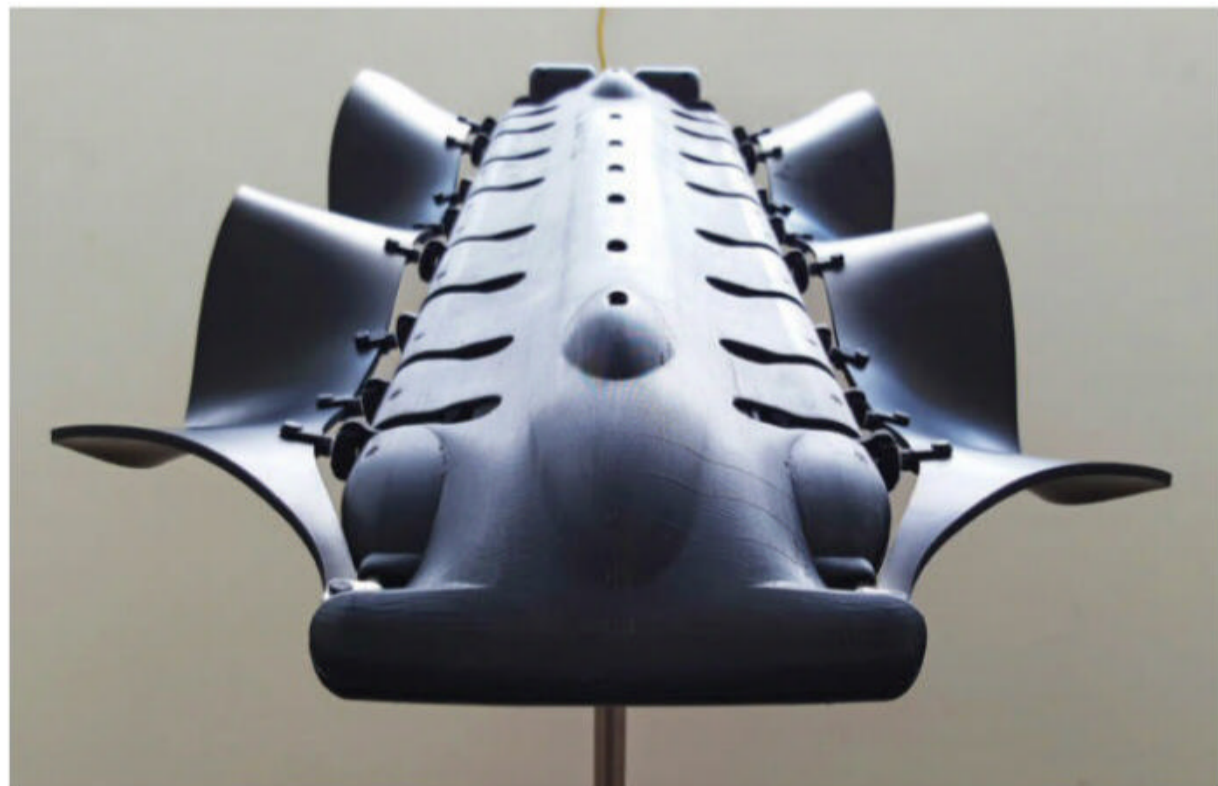
ging the seabed. Even the biggest ships' propellers are therefore only around ten metres in diameter.

Fins and flippers, by contrast, extend sideways, so do not suffer from such geometric restrictions. That means they can get big enough to push a lot more water around. Nor, unlike propellers, need they be rigid. In fact, being flexible is almost part of the definition (a rigid fin might better be described as an oar). They are therefore not easily damaged by contact with the seabed or other objects. Fins have thus become evolution's go-to accoutrement for marine propulsion. From fish, via ichthyosaurs, to dolphins and whales, they turn up again and again. So, from plesiosaurs and turtles to seals and penguins, do their cousins, flippers.

In light of this evolutionary vote of confidence in fins, ships' propellers look like a technology ripe for a bit of biomimetic disruption. And that may now have arrived in the shape of Benjamin Pietro Filardo, an ex-marine biologist and architect who was looking into ways of designing devices to extract power from water currents. His plan was to use flexible materials, so that they could easily shake off any debris which got entangled in them. He then realised that the undulations involved might also usefully be turned into thrust.

Mr Filardo has put his money where his mouth is. His firm, Pliant Energy Systems, based in New York, has developed Velox (pictured), a prototype propelled by flexible fins, port and starboard, that are reminiscent of yet another animal's approach to swimming—the undulating mantle of a cuttlefish. Velox can travel on the surface, underwater, and also across mud or ice, with its fins then acting in the manner of a pair of robotic caterpillars.

According to Mr Filardo, Velox produc- ▶▶



Waves of the future?

► es around three times as much thrust per unit of energy expended as a typical small boat's propeller can manage. And he hopes, soon, to do even better than this. Having demonstrated his device to America's Office of Naval Research, he has piqued their interest. The result is a commission for a follow-up, c-Ray, that should be lighter, faster and yet more efficient.

Unlike Velox, which is controlled by cable, c-Ray will be autonomous—the ultimate aim being to develop co-operative swarms of craft for jobs such as mine detection and removal, reconnaissance and anti-submarine patrols. From a naval perspective, however, undulatory propulsion may have a yet-more-important advantage. Submarines are often detected by the noise they make, much of which comes from the propeller and the shaft driving it. Undulatory propulsion, moving more water at lower speed, should be quieter than any propeller. Nor does it involve a noisy phenomenon called cavitation, caused by transient gas bubbles that form in response to propeller blades' pressure.

This matters, because Velox-like fins may prove to be a technology that can be scaled up to propel full-sized submarines. As Mr Filardo observes, the largest marine animals of all, the great whales, are fin-propelled, even if their fins are arranged differently from Velox's. Indeed, the biggest of the lot, a blue whale, can travel at more than 20 knots, which would not disgrace the average submarine. Previous attempts to scale-up fin-propulsion have failed, he says, because they have not found the necessary compromise between stiffness and flexibility. He reckons he has.

Travelling waves

Even if they do not make the big-time, naval-warfare-wise, swarms of Velox's descendants might be deployed for tasks from harvesting scallops without destructive trawling to mining nodules from the seabed without harming habitats—for undulatory propulsion does not disturb sediment. In a world where the creation of new carbon sinks may become big business, they might even be used to plant beds of seagrass on a vast scale. Craft propelled by undulation would also have less risk of harming swimming mammals, such as manatees and human beings, which sometimes get chewed up by propellers.

Mr Filardo is even looking into the idea of merging his interests, by designing a craft with undulating propulsion that can moor itself and then recharge its batteries from disturbances to its fins caused by passing ocean currents. Just how far he or others will be able to push this new approach to propulsion remains to be seen. But if the engineering works, and can indeed be scaled up, ship's propellers may one day look as old-fashioned as sails. ■



Geomagnetic archaeology

One with Nineveh and Tyre

Earth's magnetic field illuminates biblical history

WHEN SENNACHERIB, King of Assyria, sent his army to the kingdom of Judah in 701BC, and had it destroy the city of Lachish, 43km south-west of Jerusalem, he was doing his bit for science as well. As Yoav Vaknin of Tel Aviv University told this year's meeting of the American Geophysical Union, held in New Orleans and online, residual magnetism in the burnt-down buildings is helping archaeologists to date other finds in the area. It also helps geophysicists to chart the ups and downs of terrestrial magnetism.

Mr Vaknin's work at Lachish is the most recent of a series of studies he has performed that were enabled by arsonous ancient kings. The first examined a building destroyed when Jerusalem was burned by Babylonian troops in 586BC. According to the biblical Book of Kings, this happened "in the fifth month, on the seventh day of the month, which was the nineteenth year of King Nebuchadnezzar, King of Babylon".

Mr Vaknin says that date is considered reliable by biblical scholars. So he and his colleagues were able to pinpoint the moment when this building, the remains of which were found under a car park, was destroyed. Those remains included pieces of the polished upper floor and the burnt wooden beams that once supported it.

The fire's heat would have erased any magnetism in the minerals of this floor. Earth's magnetic field then left its mark as those minerals cooled, magnetising them

anew. Assuming the fragments have not moved since then, the alignments of their magnetic fields will point in the direction of Earth's field as it was on that fateful day.

Looking for magnetic alignments in this way was well understood when Mr Vaknin began his investigation. But he and his colleagues also did an experiment. They heated samples of the fallen floor in their laboratory and exposed them to a magnetic field as they cooled down, thus repeating what had happened when the edifice was destroyed. By comparing the resultant magnetisation with the original one, and knowing the strength of the field they had themselves applied, they were able to estimate the strength of Earth's magnetic field on the day of the sack.

They have now repeated this approach at other sites, leading to well-dated reconstructions of the magnetic fields connected with the sackings of Gath, Kinneret, Bethsaida and Ekronin, as well as Lachish and Jerusalem, courtesy of military campaigns by Aramean, Assyrian and Babylonian kings. The dates range from about 830BC to exactly 586BC.

That is more or less the maximum span for which this approach is feasible. Written accounts of earlier invasions, in the Bible and other texts, are thought insufficiently reliable. And after the Babylonians came the Persians, who were, as Mr Vaknin observes, "kind enough not to destroy cities".

It is, though, an extremely useful span, for it coincides with a hiatus in the archaeological record called the Hallstatt plateau. This "plateau" is a flat stretch of the calibration curve used for a technique called radiocarbon dating. It is a period, from 400-800BC, when, for reasons not entirely clear, radiocarbon dating breaks down.

Samples from the time of the plateau have hitherto been undatable within that four-century span. This might now change. Radiocarbon dating relies on measuring the amount of ¹⁴C, an unstable isotope of carbon, in organic materials such as wood. Thanks to the ingenuity of Mr Vaknin and his colleagues, and the ruthlessness of ancient kings, the magnetisation of inorganic materials that have been exposed to heat, such as shards of pottery from cooking vessels, offers an alternative.

Mr Vaknin's data points are also valuable for geophysicists who want to understand how movements in Earth's core change the planet's magnetic field. The period Mr Vaknin studies was one in which this field was usually about 50% stronger than it is today, and for short periods was double today's strength.

As to Lachish, history did not forget it. Sennacherib celebrated victory by ordering huge alabaster reliefs of his victory (one of which is depicted above) to decorate his palace in Assyria's capital, Nineveh. They are now in the British Museum. ■

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Saudi cinema

Arabian lights

AL ULA AND JEDDAH

For more than 30 years, Saudi Arabia banned the movies. Now it is luring Hollywood to the desert

THICK CLOUDS of sand fill the air as a helicopter swoops low against a backdrop of sandstone cliffs. The crew are rehearsing a battle scene in “Kandahar”, a big-budget Hollywood war film set in Afghanistan. But the camera lies: the action is taking place 2,000 miles from Kandahar, in Al Ula, on the edge of the Arabian desert.

The location is doubly disorientating. Cinema was banned in Saudi Arabia in the early 1980s, under pressure from religious conservatives. But now the country is making an unlikely pitch to become a Hollywood of the desert. Cinemas are opening in every town. In early December Jeddah hosted the inaugural Red Sea film festival. And foreign producers are being tempted in to shoot their movies, as the government spends billions on a new local industry with international ambitions.

“Shameless and immoral” content would follow if cinemas were legalised, declared Saudi Arabia’s grand mufti in 2017. Then the country’s only screen showed documentaries at a science museum. The next year in Riyadh the first cinema in over three decades raised its curtain: a branch of

AMC, an American chain, was inaugurated with Marvel’s “Black Panther”. Around 500 more screens have since opened.

The ongoing u-turn has three motives. Saudi Arabia needs to wean its economy off oil. It must keep its young population content in the face of political repression. And it wants to improve its dire international reputation. So the conservative kingdom has become suddenly serious about the business of fun. It plans to invest \$64bn in entertainment over the ten years to 2030, and hopes consumers will double their entertainment outlay from 2.9% to 6% of household spending. The day before the red carpet was rolled out on the cobbled streets of Jeddah’s old town for the Red Sea festival, the seafront corniche hosted the first Saudi Arabian Grand Prix, with music by Justin Bieber, a Canadian pop star.

The kingdom’s first task in building a film industry is to develop a domestic audience from scratch. By 2030 it aims to quadruple its number of screens, to 2,000, and have a box office worth \$1bn. It will hit that target early, believes David Hancock of Omdia, a London-based research firm.

Chains such as AMC and VOX, an Emirati brand, are keen to invest in one of the few cinema markets that is growing amid the pandemic. Restricted supply and high-spec theatres, with sumptuous seats and bone-chilling air-conditioning, allow operators to charge the highest prices in the world, at an average of \$18 per ticket (VOX also offers truffled hot dogs and popcorn sprinkled with gold dust). Omdia forecasts that by 2025, eight years after it had no box office at all, Saudi Arabia’s will be the tenth-largest in the world.

The next step is to bring in foreign filmmakers, and learn from them. A few have already dipped their toes in the sand. In February Apple TV+ released “Cherry”, a drama about an American veteran; the scenes in Iraq were shot in Al Ula. “Kandahar”, now close to wrapping, is a co-production between Thunder Road Films, which made “Sicario”, and MBC, a Saudi-owned broadcaster. In Tabuk, to the northwest, MBC is working with Hollywood’s AGC Studios on “Desert Warrior”, with a reported budget of \$140m. Set in seventh-century Arabia, the sandals-and-camels epic stars Anthony Mackie, who in Marvel’s superhero franchise was recently anointed as Captain America.

Part of the Saudi pitch is the scenery. Al Ula’s endless dunes, punctuated by rugged outcrops and gullies, conjure “the Arabia of imagination”, says Stephen Strachan, a Briton who runs Film AlUla, a government body. Nearby are the 2,000-year-old tombs of Hegra (pictured), built by the Nabatean ▶▶

▶ architects who made Petra in Jordan. Location scouts can choose from all varieties of desert, from grey (which makes a good Afghanistan) to red (a convincing Mars). “We cheat that stuff all the time for movies, but to actually go out and shoot in the real locales, it’s pretty unique,” says Eric Hedayat, a producer on “Desert Warrior”.

The other part of the pitch is money. On December 14th the Saudi Film Commission announced that it would offer film-makers rebates of up to 40% of their costs, one of the most generous incentive packages in the world. Local production partners have deep pockets, too. The Saudi government took a controlling stake in MBC shortly after its owner, Waleed bin Ibrahim Al Ibrahim, was detained in the Riyadh Ritz along with other businessmen in 2017, in an “anti-corruption” operation widely seen as a shakedown. Following its boss’s release, MBC announced “a greater focus towards Saudi Arabia and neighbouring regions, in line with the current transformational positive changes occurring in the kingdom”. It has stumped up much of the money for “Kandahar” and “Desert Warrior”.

The riddle of the sands

All this increasingly makes Saudi Arabia a rival to locations like Jordan—Wadi Rum, a spectacular Jordanian valley, has starred in many Hollywood movies, most recently “Dune”—and Egypt, where a once-thriving film industry has been undone by market conditions and authoritarianism. Saudi Arabia’s aggressive push for business has upset some neighbours. It unsuccessfully tried to tempt the producers of “Dune” to switch locations for the sequel, according to an industry insider. In November the head of the Cairo film festival called for a “spirit of collaboration” in the region, after the Red Sea festival changed its dates, forcing Cairo to move its own to avoid a clash.

Yet starting film production from almost nothing isn’t easy. Saudi crews have experience in television and commercials, but films are different. The 600-plus crew of “Desert Warrior” came from 45 countries. Even finding extras is hard. Saudi Arabia has little tradition of freelance work, and any job that involves waking before dawn for a 12-hour day in the sun has historically been done by immigrants—who can make plausible Martians but tend to be unconvincing Arabs. “Desert Warrior”, which needs 100 extras a day on average, topped up its ranks from Jordan and Georgia. It has an entire team dedicated to securing visas, though Mr Hedayat says conditions are easier than in China, where he once had to take his entire crew in and out of the country every 90 days.

The Saudi government is trying to iron out these problems. Film AlUla is building a “film camp”, with office space and a pool, to open early next year. In February it will

launch a boot camp to train locals in the basics of movie-making. Co-productions are allowing Saudi crew to learn from the best in the business. Hollywood veterans bring “a calibre I haven’t personally seen before”, says Zeinab Abu Alsamh, who runs MBC Films’ operations in Saudi Arabia. For local crew, “it’s like having a degree”. The model is China, which in the past decade picked up the tricks of the trade from American co-productions and now makes blockbusters by itself.

To do the same, Saudi Arabia must become more than a backdrop and bankroller. Its hopes lie in Neom, an encampment of 2,000 people and a lot of diggers on the Red Sea, close to the Egyptian border. By 2030 the government expects this desert building site to be a city of 2m, specialising in digital industries. That will include the region’s “first true media hub”, says Wayne Borg, an Australian formerly of Fox Studios, who is in charge of developing media industries in the futuristic city. The hub would handle all stages of film-making, including the post-production and visual effects that are now generally done in the West. The first two sound-stages will be finished in January; at least six will be ready by the end of 2023, Mr Borg promises.

The big remaining obstacles are cultural and political. Importing talent from Los Angeles is an uphill struggle in a country where homosexuality is a crime and the abaya is still the norm for women. Executives heading to the film festival in Jeddah from Al Ula were surprised when their in-flight entertainment was interrupted by the call to prayer and screens switched to a map pointing the way to Mecca. True, some laws have been liberalised since 2018, for instance to let women drive; aside from the absence of booze, the festival felt much like any other, attracting stars including



That’s entertainment

Catherine Deneuve (pictured with Mohammed Al Turki, a Saudi producer and festival bigwig). Yet in much of the country local custom is unchanged. Female crew in Tabuk have found that local restaurants still operate segregated dining rooms, which the law no longer requires.

And the reputational risk of doing business in Saudi Arabia remains. It made its debut at the Cannes film festival in 2018, but stayed away the next year amid outcry at the murder of Jamal Khashoggi, a dissident journalist thought by Western spooks to have been killed on the orders of Muhammad bin Salman, the crown prince (he denies it). Vue, a British cinema chain, cancelled plans to build 30 multiplexes in the country. Endeavour Content, an American production company, returned a \$400m investment from Saudi Arabia’s sovereign wealth fund. Winning the Saudi Grand Prix on December 5th, Lewis Hamilton wore a rainbow helmet to decry homophobia.

Just as some Hollywood companies are prepared to look the other way, the Saudi authorities may be willing to bend their own principles. Neom will be a semi-autonomous state with its own government: “in many ways what Hong Kong was to China”, says Mr Borg. Its laws, due to get royal sign-off in 2022, are likely to include streamlined visas, easier import systems—and possibly a more relaxed social policy. Mr Borg says Neom will be an “open and inclusive environment”. Could that include a drink at the end of the day? “We have to provide the right conditions for that talent, to attract them.” Including gay talent? “Again, we’ll provide the right conditions.”

The dream of a Hollywood of the desert may yet prove to be a mirage. But Saudi Arabia’s investments have already bought it a weapon of soft power, to be deployed at home and abroad. The country will be able to spin its own narratives, on its own terms. “We can finally produce stories that look like us,” says Ms Abu Alsamh. MBC Films’ next feature aimed at international audiences is “The Ark”, a \$100m picture in which Noah’s Ark surfaces on the shores of Neom, so allowing the kingdom to promote its new city. It also has plans for a dramatised history of Aramco, the state oil company, and a biopic of Antara ibn Shaddad, an Arab warrior-poet.

Western audiences may not buy it. Saudi producers cite South Korea’s “Squid Game”, a megahit on Netflix, to show how tastes have become more cosmopolitan. Yet China’s film industry, which has achieved extraordinary success in its domestic market, has had almost no international hits. Either way, when “Desert Warrior” is released in 2022, the world will be treated to a spectacle that for Saudi Arabia may make the whole enterprise worthwhile: the surprising sight of Captain America himself fighting for the Arabs. ■



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Economic data

	Gross domestic product			Consumer prices		Unemployment rate		Current-account balance		Budget balance		Interest rates		Currency units		
	% change on year ago latest	quarter*	2021†	% change on year ago latest	2021†	%		% of GDP, 2021†	% of GDP, 2021†	10-yr gov't bonds latest,%	change on year ago, bp	per \$ Dec 15th	% change on year ago			
United States	4.9	Q3	2.1	5.5	6.8	Nov	4.4	4.2	Nov	-3.4		1.5	55.0	-		
China	4.9	Q3	0.8	7.9	2.3	Nov	0.9	5.0	Nov [§]	2.4		2.7	\$\$	-41.0	6.36	3.0
Japan	1.2	Q3	-3.6	2.1	0.1	Oct	-0.2	2.7	Oct	3.3		nil		-8.0	114	-8.9
Britain	6.6	Q3	5.1	6.7	5.1	Nov	2.7	4.2	Sep ^{††}	-2.8		0.7		51.0	0.76	-1.3
Canada	4.0	Q3	5.4	5.0	4.7	Nov	3.2	6.0	Nov	0.8		1.4		68.0	1.29	-1.6
Euro area	3.9	Q3	9.1	4.9	4.9	Nov	2.4	7.3	Oct	3.1		-0.3		26.0	0.89	-7.9
Austria	5.7	Q3	14.6	4.7	4.3	Nov	2.7	5.8	Oct	2.0		-0.1		36.0	0.89	-7.9
Belgium	4.9	Q3	8.4	5.2	5.6	Nov	2.8	6.3	Oct	1.7		nil		39.0	0.89	-7.9
France	3.3	Q3	12.6	6.7	2.8	Nov	2.1	7.6	Oct	-1.3		nil		35.0	0.89	-7.9
Germany	2.6	Q3	6.9	2.7	5.2	Nov	3.0	3.3	Oct	6.5		-0.3		26.0	0.89	-7.9
Greece	13.7	Q3	11.3	6.5	4.8	Nov	0.1	12.9	Oct	-4.4		1.2		68.0	0.89	-7.9
Italy	3.9	Q3	11.0	6.3	3.7	Nov	1.9	9.4	Oct	3.8		0.9		44.0	0.89	-7.9
Netherlands	5.0	Q3	8.0	4.3	5.2	Nov	2.7	2.9	Oct	7.9		-0.3		21.0	0.89	-7.9
Spain	2.7	Q3	8.3	4.4	5.5	Nov	2.7	14.5	Oct	1.1		0.3		33.0	0.89	-7.9
Czech Republic	2.8	Q3	6.1	3.0	6.0	Nov	3.8	2.6	Oct [‡]	3.2		2.8		146	22.4	-3.4
Denmark	3.6	Q3	3.5	3.2	3.4	Nov	1.7	3.1	Oct	7.5		-0.1		40.0	6.61	-7.4
Norway	5.1	Q3	16.1	4.0	5.1	Nov	3.3	3.6	Sep ^{††}	12.5		1.4		76.0	9.11	-4.1
Poland	5.5	Q3	9.5	5.1	7.8	Nov	4.9	5.4	Nov [§]	1.1		3.2		196	4.11	-11.2
Russia	4.3	Q3	na	4.2	8.4	Nov	6.7	4.3	Oct [§]	5.3		8.6		240	74.1	-0.7
Sweden	4.5	Q3	8.2	4.1	3.3	Nov	2.2	7.6	Oct [§]	4.9		0.1		16.0	9.13	-8.2
Switzerland	4.1	Q3	6.8	3.6	1.5	Nov	0.5	2.5	Nov	5.4		-0.3		27.0	0.93	-4.3
Turkey	7.4	Q3	na	8.0	21.3	Nov	18.1	10.7	Oct [§]	-2.8		21.0		805	14.8	-46.9
Australia	3.9	Q3	-7.5	3.8	3.0	Q3	2.7	4.6	Nov	4.1		1.6		59.0	1.40	-5.0
Hong Kong	5.4	Q3	0.5	6.5	1.8	Oct	1.6	4.3	Oct ^{††}	4.0		1.4		67.0	7.80	-0.6
India	8.4	Q3	54.1	9.2	4.9	Nov	5.0	7.0	Nov	-0.8		6.4		42.0	76.2	-3.4
Indonesia	3.5	Q3	na	3.1	1.7	Nov	1.7	6.5	Q3 [§]	-0.1		6.4		30.0	14,333	-1.5
Malaysia	-4.5	Q3	na	3.0	2.9	Oct	2.3	4.3	Oct [§]	3.5		3.6		80.0	4.23	-4.3
Pakistan	4.7	2021**	na	3.8	11.5	Nov	9.2	6.9	2019	-4.5		11.9	†††	199	178	-9.8
Philippines	7.1	Q3	16.1	4.8	4.2	Nov	4.5	7.4	Q4 [§]	-2.0		4.8		177	50.3	-4.4
Singapore	7.1	Q3	5.2	6.8	3.2	Oct	2.0	2.6	Q3	18.1		1.6		72.0	1.37	-2.9
South Korea	4.0	Q3	1.3	4.1	3.7	Nov	2.2	2.6	Nov [§]	4.6		2.2		50.0	1,185	-7.8
Taiwan	3.7	Q3	1.1	5.7	2.8	Nov	2.0	3.8	Oct	14.7		0.6		29.0	27.8	1.2
Thailand	-0.3	Q3	-4.2	1.3	2.7	Nov	1.2	1.5	Dec [§]	-2.4		1.7		51.0	33.4	-10.1
Argentina	17.9	Q2	-5.5	9.5	51.2	Nov	48.5	9.6	Q2 [§]	1.7		na		na	102	-18.9
Brazil	4.0	Q3	-0.4	4.8	10.7	Nov	8.3	12.6	Sep ^{†††}	0.4		10.6		324	5.73	-11.0
Chile	17.2	Q3	21.0	11.0	6.7	Nov	4.3	8.1	Oct ^{†††}	-1.8		5.7		295	849	-13.3
Colombia	12.9	Q3	24.9	9.8	5.3	Nov	3.4	11.8	Oct [§]	-5.3		8.1		315	3,976	-14.0
Mexico	4.5	Q3	-1.7	6.1	7.4	Nov	5.6	3.9	Oct	1.7		7.4		197	21.2	-5.3
Peru	11.4	Q3	15.0	14.7	5.7	Nov	3.9	8.6	Nov [§]	-2.4		5.9		225	4.06	-11.6
Egypt	7.7	Q2	na	3.3	5.5	Nov	5.7	7.5	Q3 [§]	-4.3		na		na	15.7	-0.2
Israel	4.1	Q3	2.4	6.1	2.4	Nov	1.6	5.0	Oct	5.1		1.0		13.0	3.14	3.8
Saudi Arabia	-4.1	2020	na	2.9	1.1	Nov	3.1	6.6	Q2	4.6		na		na	3.75	nil
South Africa	2.9	Q3	-5.8	4.9	5.5	Nov	4.5	34.9	Q3 [§]	2.7		9.4		68.0	16.2	-7.9

Source: Haver Analytics. *% change on previous quarter, annual rate. †The Economist Intelligence Unit estimate/forecast. ‡Not seasonally adjusted. §New series. **Year ending June. ††Latest 3 months. †††3-month moving average. §§5-year yield. ††††Dollar-denominated bonds.

Markets

In local currency	Index Dec 15th	% change on:	
		one week	Dec 31st 2020
United States S&P 500	4,709.9	0.2	25.4
United States NAScomp	15,565.6	-1.4	20.8
China Shanghai Comp	3,647.6	0.3	5.0
China Shenzhen Comp	2,543.5	0.9	9.2
Japan Nikkei 225	28,459.7	-1.4	3.7
Japan Topix	1,984.1	-0.9	9.9
Britain FTSE 100	7,170.8	-2.3	11.0
Canada S&P TSX	20,769.2	-1.5	19.1
Euro area EURO STOXX 50	4,159.7	-1.7	17.1
France CAC 40	6,927.6	-1.2	24.8
Germany DAX*	15,476.4	-1.3	12.8
Italy FTSE/MIB	26,666.1	-0.3	19.9
Netherlands AEX	775.5	-2.8	24.2
Spain IBEX 35	8,275.0	-2.4	2.5
Poland WIG	66,570.6	-3.1	16.7
Russia RTS, \$ terms	1,541.0	-4.4	11.1
Switzerland SMI	12,531.0	-0.5	17.1
Turkey BIST	2,162.3	7.9	46.4
Australia All Ord.	7,636.2	-0.9	11.5
Hong Kong Hang Seng	23,420.8	-2.4	-14.0
India BSE	57,788.0	-1.5	21.0
Indonesia IDX	6,626.3	0.3	10.8
Malaysia KLSE	1,482.8	-0.8	-8.9

	index Dec 15th	% change on:	
		one week	Dec 31st 2020
Pakistan KSE	44,366.9	1.2	1.4
Singapore STI	3,114.9	-0.5	9.5
South Korea KOSPI	2,989.4	-0.4	4.0
Taiwan TWI	17,660.1	-1.0	19.9
Thailand SET	1,623.7	0.3	12.0
Argentina MERV	80,939.4	-9.3	58.0
Brazil BVSP	107,431.2	-0.6	-9.7
Mexico IPC	51,163.7	0.2	16.1
Egypt EGX 30	11,622.1	1.5	7.2
Israel TA-125	1,969.7	-1.3	25.6
Saudi Arabia Tadawul	11,143.4	1.4	28.2
South Africa JSE AS	71,467.2	-1.3	20.3
World, dev'd MSCI	3,175.1	-0.7	18.0
Emerging markets MSCI	1,214.5	-2.1	-5.9

US corporate bonds, spread over Treasuries

Basis points	Dec 31st 2020	
	latest	
Investment grade	122	136
High-yield	349	429

Sources: Refinitiv Datastream; Standard & Poor's Global Fixed Income Research. *Total return index.

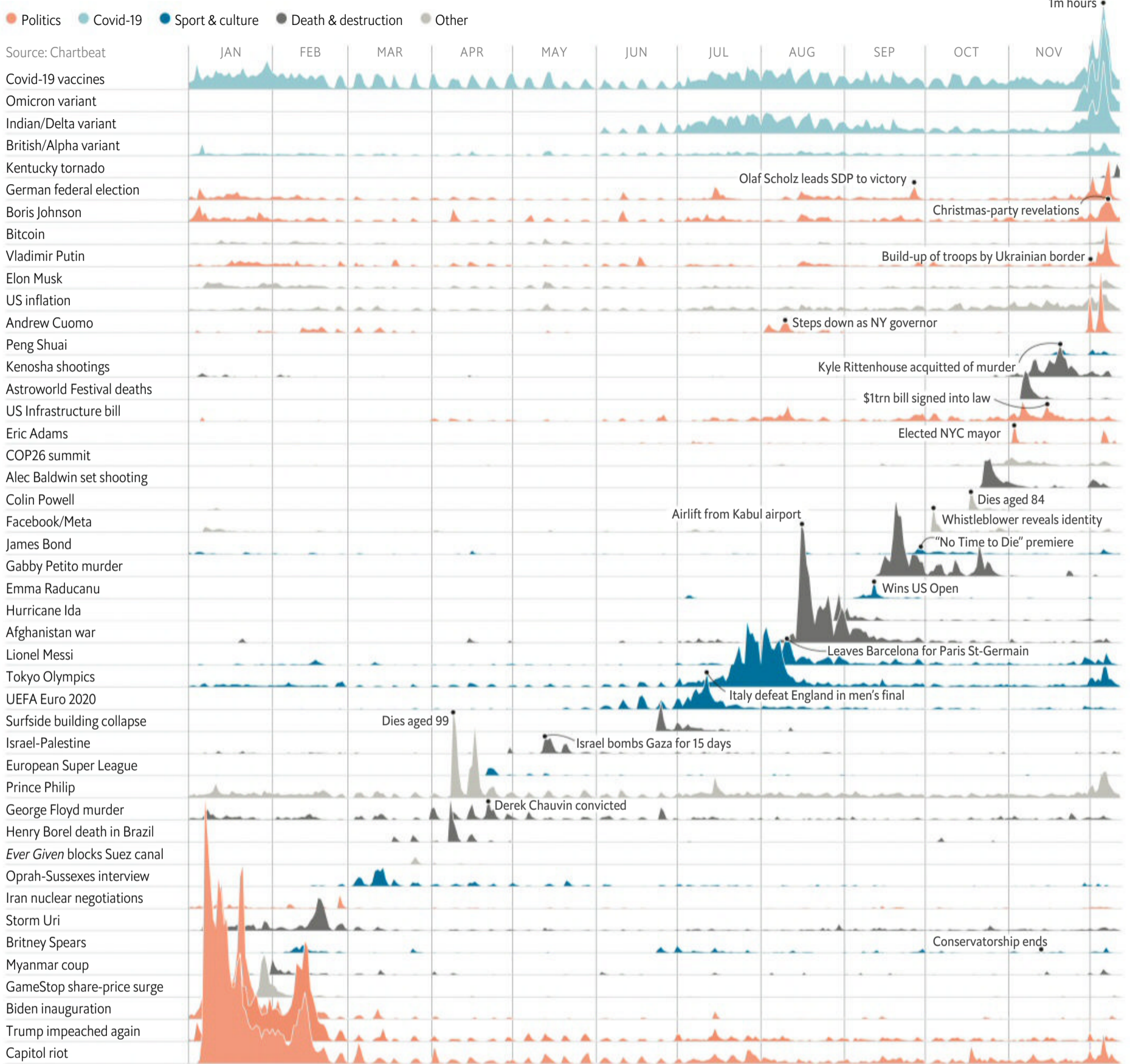
Commodities

The Economist commodity-price index 2015=100	% change on			
	Dec 7th	Dec 14th*	month	year
Dollar Index				
All Items	155.7	156.1	5.0	5.9
Food	136.1	136.1	0.3	21.8
Industrials				
All	173.9	174.9	8.7	-3.3
Non-food agriculturals	153.8	159.4	7.5	30.4
Metals	179.9	179.5	9.1	-9.5
Sterling Index				
All items	179.5	180.1	6.5	7.2
Euro Index				
All items	153.5	153.6	5.7	14.1
Gold				
\$ per oz	1,783.1	1,775.3	-4.6	-3.9
Brent				
\$ per barrel	75.5	73.7	-10.8	45.0

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.

For more countries and additional data, visit [Economist.com/indicators](https://www.economist.com/indicators)

Daily hours of readership about selected topics in 2021



If it spreads, it's read

Covid-19 and America's presidential transition got the most attention

BY ONE MEASURE the covid-19 pandemic is the biggest story of the past 75 years. In 2020 nearly half of articles in *The Economist* mentioned it, the highest share for a single subject since the second world war. This year news consumers' attention shifted to a wider array of issues. Yet according to Chartbeat, a firm that measures online

readership, covid still held the public's interest more steadily than any other topic.

Chartbeat tracks how many hours audiences spend on each story published by 7,000 news sites, mostly in English-speaking countries. We have calculated the total reading time for articles covering 45 events in 2021. Whereas interest in other topics tended to surge and fade, covid commanded constant attention. Stories about vaccines amassed 43m of the 275m total hours; those on the leading variants of the SARS-COV-2 virus got a further 27m.

The only subject whose total readership rivalled covid's was America's presidential transition. It yielded three spikes in interest, set off by the riot at the Capitol build-

ing, Joe Biden's inauguration and Donald Trump's second impeachment. They combined for 60m hours in January and February, which was by far the highest peak.

Beyond these events, audiences spread their attention broadly. One other political story, America's withdrawal from Afghanistan, gripped readers in August. In less weighty matters, audiences lapped up articles about sporting events like the Tokyo Olympics, football tournaments and the victory of Emma Raducanu, a British tennis player, in the US Open. They also found respite in stories on Oprah Winfrey's interview with Prince Harry and Meghan, the end of Britney Spears's conservatorship and Daniel Craig's final James Bond film. ■



Spiderman

Antony Sher, an innovative Shakespearean actor, died on December 2nd, aged 72

HIS FATHER had already started the car and was reversing down the drive. “Hang on a moment,” the young man said, and hopped out. All morning he’d been putting on a brave face about flying to London and starting drama school, but now he ran back to the house that glowed with Cape Town’s blue, blue light, and knelt next to his little dog, Tickey. He stroked her tight, confused face, let her lick his hand. Tickey was runtish, dark, ugly, scared—him in animal form, he always said. She’d been found as a stray and he liked to tell her his fears: about being small and needy and bad at sports, about being drawn to boys, about not fitting in—in school, in his own country, in the world.

Antony Sher knew he had to leave South Africa. Drama school in Shakespeare’s England would be his escape, though it almost didn’t happen after he made the mistake of choosing to play the tall, fat, indolent Cardinal Wolsey from “Henry VIII” for his audition. His two preferred drama schools turned him down before a third eventually said yes. The Webber-Douglas Academy would provide practical lessons in voice, movement, dance and fencing. It also offered singing (from which he was instantly banned for his tuneless tone) and make-up (which he relished), as well as a class called “Speaking Shakespeare”, which helped ease those South African vowels. But it did not teach him to act.

The actor, he would come to understand, is a portrait painter—of others, but also of himself. Only when he learns to inhabit his

own skin can he convincingly don someone else’s. Encounters with directors, texts and a wide range of roles provided vital lessons. Steven Berkoff, from the East End of London and, like the Shers, of Jewish east-European origin, charmed and frightened the drama students. He devised a violent, funny, sexy version of “A Midsummer Night’s Dream” in which Mr Sher played a demotic Puck. He felt it gave him the edge over those English students who could only speak Shakespeare beautifully. Where they came across as awkward under Mr Berkoff’s direction, he felt released. His small body that seemed so inadequate on the playing fields of South Africa, he said, here exuded a strange kinetic energy, an electric muscularity that he invested with the dancing walk and razor-sharp gestures of the young men he used to watch on the beach at Cape Town’s Sea Point.

He also picked up forthright views on acting from Alan Dossor at the Everyman Theatre in Liverpool, who offered him the chance to play the Fool in “King Lear” when he was just 24 and a year or so out of drama school. “What do you want to say as an actor?” Dossor asked him one night over a drink. He didn’t understand. What did he want to say? Actors didn’t say anything. Acting was interpretative, not creative. “Bollocks,” Dossor retorted. “You won’t become a really good actor till you put yourself on the line, till the job’s vital—which plays you do, why you do them, how you do them—it’s got to mean something to you before it’s going to mean anything to the audience. Otherwise just go be a plumber.”

As he left, he felt his head tingle with booze and excitement. Actors were taught to be passive, he had always thought, to be grateful for any work, to do as they’re told, to not think for themselves. He realised that he was catching what Jean Cocteau called “the red and gold sickness”: falling in love with theatre. Until then he’d only been in love with acting.

That conversation led to two crucial decisions that would influence how he worked for the rest of his life: to take only lead roles (essential if you’re physically slight and don’t have a naturally commanding voice) and to involve himself early on in every production, whether shaping a new text, discussing where to set a Shakespeare play or in designing the staging and lighting. He also recognised that although he had briefly been married to a woman, he was gay. He didn’t want to pretend anymore.

Those decisions in turn shaped the parts he chose: Arnold in Harvey Fierstein’s hymn to Jewish New York drag queens, “Torch Song Trilogy”, Willy Loman in Arthur Miller’s “Death of a Salesman”, Pam Gems’s Stanley Spencer in “Stanley”—all prissy and precise—the title role in “Primo” (his own adaptation of Primo Levi’s memoir of Auschwitz). And of course Shakespeare’s Richard III, the performance of his life.

He discussed the part with his shrink. He read up on evil men, studying their intelligence, cunning and sick humour. Hanging over him was Laurence Olivier, who had made Richard his own. Mr Sher found himself scurrying around Olivier’s vast shadow, always trying to find a way in, some little peephole. That he chose to play Richard on crutches made him seem bigger and stronger than he’d ever been, allowing him to charge forwards across the stage like a bison, sideways like a crab. It also gave the audience a fresh take, nearly 400 years after it was written, on Shakespeare’s bestial imagery. Queen Margaret’s special curse is “bottled spider”.

Transformation

He was a slow learner. Whether it was driving three-tonne trucks while on military service in South Africa, or learning new methods of breathing at drama school, or the sword-fights and dances that he had to master at other stages of his career. It would take for ever. But then he’d reach a tipping point, that moment when he was convinced he couldn’t do it, but he didn’t care. Only then would his performance fall into place. He would stop being little Ant, hopeless at sport, mocked in the showers—and become anyone he wanted to be. ■

CSC: Miami

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