

### Global warming

## War war is better than jaw jaw

### Action now might still avert the worst of climate change. But how likely is that?

**I**N 1996 the European Union became the first significant political body to suggest that the goal of preventing “dangerous anthropogenic interference in the climate”, to which the world had signed on at the Rio Earth summit of 1992, meant, in practical terms, keeping global warming below 2°C relative to the late 1800s. This two-degree limit had been an informal measure of the point where climate change gets serious since the 1970s. William Nordhaus, a pioneer of climate economics who this week shared the Nobel prize for his efforts (see Free exchange) seems to have been the first to use it as such. But between 1996 and the Copenhagen climate summit of 2009 it was transformed from one possible interpretation of the Rio goal to the target on which the world agreed.

At the Paris climate summit of 2015, though, this changed. In light of both new evidence and new concerns, notably those of low lying countries that might not survive the amount of sea level rise two degrees would bring, the nations of the world agreed a new target: keeping warming “well below” 2°C above pre-industrial temperatures. Indeed, they urged themselves to “pursue efforts towards 1.5°C”.

This lower target would presumably be better for all, not just the likes of Kiribati.

But exactly how much better has been far from obvious. So the Paris agreement also gave to a body called the Intergovernmental Panel on Climate Change (IPCC) the task of finding out. Given that the world is actually on track for a rise of more than 3°C, regardless of the pieties of Paris, it was also charged with finding out whether limiting the rise to 1.5°C is in any way feasible.

### The judgment on Paris

On October 8th, nearly three years, several drafts and some 40,000 reviewer comments later, the panel unveiled the fruit of its labours at a gathering in Incheon, South Korea. The 1,200-page report, written by 91 researchers from 44 countries, presents no truly new science. The panel’s brief was to survey all relevant literature—more than 6,000 studies, many spurred by the report’s commissioning—and to synthesise the results. It makes for sobering reading, both in terms of what the half-degree difference between the two targets may mean for the planet, and regarding the effort needed to meet the tougher goal.

The authors profess “high confidence” of a “robust difference” between 1.5°C and 2°C worlds. At 1.5°C, 6% of insect species, 8% of plants and 4% of vertebrates would lose more than half their habitat. The figures for

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2°C are 18%, 16% and 8%, respectively.

At that temperature rise, ecosystems covering between a twelfth and a fifth of Earth’s land mass can be expected to undergo transformation to another type—savannah to desert, say. That is 50% more than would happen with a rise of 1.5°C. Most dramatically, the IPCC finds it almost certain that a 2°C rise would wipe out more than 99% of corals. By contrast, a rise of 1.5°C would leave 10-30% of them alive, and with them the hope of regeneration if temperatures subsequently stabilised.

Permitting a rise of 2°C rather than 1.5°C could also see 420m more people exposed regularly to record heat. “Several hundred million” more would have to contend with climate-induced poverty. Food security would decline and water scarcity increase, especially in poor and already-fragile areas such as the Sahel region of Africa, just south of the Sahara desert. And an additional 10cm of sea-level rise could hurt the livelihoods of more than 10m people living on the coast.

The report also nods towards the chance of dangerous feedback loops. A two-degree temperature rise could lead to the thawing of 1.5m-2.5m km<sup>2</sup> of permafrost—about the area of Mexico. That, in turn, would release methane, a potent greenhouse gas which would lead to further warming, thawing and so on.

The IPCC does not quantify the effects of such feedback. But work which appeared in August, after the deadline for consideration in the report, attempts to do so. This study, led by Will Steffen of the Stockholm Resilience Centre and published in the *Proceedings of the National Academy of Sciences*, concludes that five ►►

▶ feedback loops unleashed by a rise of 2°C are likely to be important. These involve the permafrost, natural carbon sinks such as the ocean, increased methane emissions from marine bacteria, and the dying of Amazonian and boreal forests. Together these could add between 0.24°C and 0.66°C of extra warming.

Such alarming conclusions are necessarily subject to the huge uncertainties inherent in climate science. Though they have survived scrutiny by peer review in the journals in which they appeared, and then again by the IPCC's authors, individual studies may yet be challenged. Taken together, however, they paint a picture that looks bleak. There is, remarks Glen Peters of the Centre for International Climate Research in Oslo, who was not involved in the report, perhaps one-tenth of the material where there might be disagreements, but scientists agree 100% about the remaining nine-tenths.

**Cooking in gas**

The same uncertainties apply to the report's outline of possible pathways to a 1.5°C future. On the bright side, the IPCC concludes that such a future remains geophysically within reach, thanks to what remains of the Earth's "carbon budget" for 1.5°C—the cumulative sum of emissions at which the climate system stands a good chance of remaining below a particular temperature. The panel's Assessment Report, a septennial compendium of the latest climate science, most recently published in 2013-14, warned that an eventual minimum rise of 1.5°C, though it would not manifest itself until mid-century, would be "baked" irreversibly into the climate system by 2020 if economic activity continued to belch carbon dioxide at the present rate. In the past few years climate modelers have, controversially in the eyes of some, revised the Earth's remaining budget to around 12 years' worth of current emissions, thus pushing back the date of bake-in.

Even with a bigger carbon kitty though, keeping the temperature rise below 1.5°C would take an epic effort. Of 90 published models purporting to chart the most economically efficient way to achieve this goal, the IPCC considers that just nine stay below the threshold throughout this century. The rest overshoot it, and so require removal of carbon dioxide from the atmosphere to offset the excess emissions.

These "negative emissions" could come from planting more forests, which draw in carbon dioxide as they grow. Planting "energy crops" such as fast-growing grasses, which could be burned instead of fossil fuels (with the carbon dioxide thus generated captured and stored underground), is also possible. Either approach, though, would mean converting to that purpose an area of agricultural land somewhere in size

between India and Canada. An alternative is "direct air capture"—artificial devices that retrieve carbon dioxide directly from the atmosphere. These exist but they, too, would need to be deployed at a gargantuan scale. (Solar geoengineering, a controversial idea to disperse particles of matter into the atmosphere to reflect heat back into space, was not considered in detail.)

Negative emissions or solar geoengineering might ease the need to decarbonise economies quickly—but not eliminate it. As the charts show, even with negative emissions carbon-dioxide release still needs to fall by 45% or thereabouts by 2030. To have any hope of achieving this, two-thirds of coal use must be phased out in little more than a decade. By the middle of the century virtually all electricity must come from carbon-free sources (up from a quarter today), and all cars will need to run on electric motors (up from one in 500), as will trains and most ships.

Some of the technology needed to achieve this (solar panels, nuclear-power plants, electric cars and so on) is around, but not all of it. For aeroplanes to keep flying, either novel aviation biofuel will need to be developed or negative emissions used to offset those from aircraft. Because cows produce lots of methane people will either have to switch to laboratory-grown burgers or change diets (see Briefing). Even when appropriate technology does exist, market forces alone will not improve it and spread it fast enough to have the necessary climatic effect.

Were any of this actually to happen, it would transform economies beyond recognition. And it would cost money. How much, the IPCC has resisted predicting, blaming limited economic research in the area. But, for the same reason, it does not

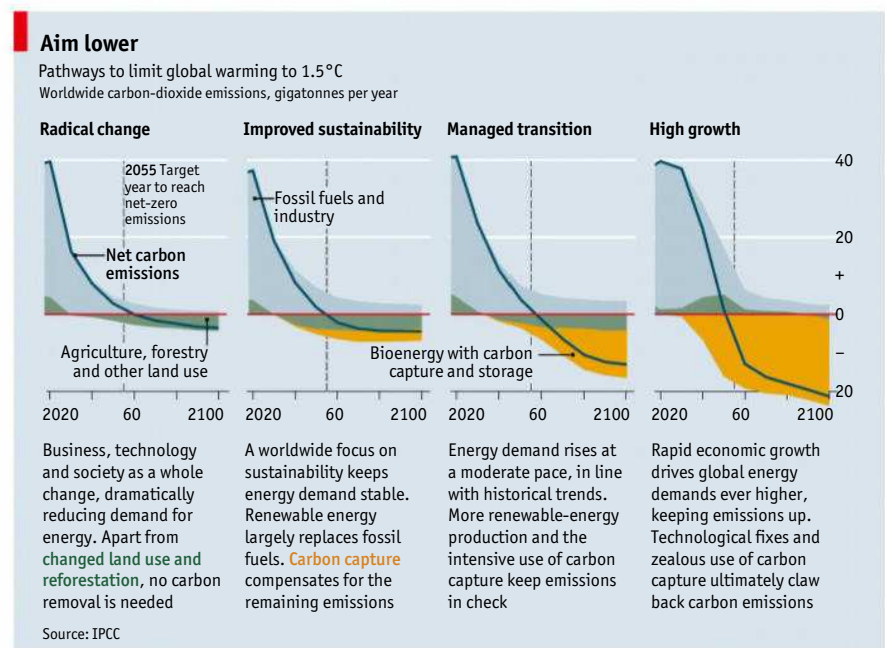
attempt to value the flip side—the damage caused by delay.

Another paper that missed the deadline, by Simon Dietz of the London School of Economics and his colleagues (one of whom worked on the IPCC report), tries to fill the first of those gaps. It estimates that keeping temperature rises to 1.5°C would cost 150% more than keeping them to 2°C, though it gives no absolute figures. Like the IPCC, Dr Dietz stops short of comparing this to averted losses. But earlier work by others suggests that a rise of 1.5°C would shave 8% from global GDP per person by 2100, relative to a world with no more warming. A rise of 2°C, by contrast, would cause a discrepancy of 13%.

**Third-degree treatment?**

The world's press reacted to the IPCC's tome with alarm sometimes verging on hysteria. News bulletins, front pages and op-eds harangued governments to get their act together and ratchet up climate action—especially since all of them signed off on the report's 30-page précis. That included the government of America, which President Donald Trump plans to yank out of the Paris agreement. (Mr Trump has since expressed doubts about the précis's legitimacy.)

On October 9th, a day after the volume's release and ahead of an important UN climate summit in Poland this December, environment ministers from 15 of the EU's 28 members pressed the bloc to revise its climate targets in line with the 1.5°C target. This is welcome. But in a world where even the existing target looks likely to be missed by a mile, how much difference it will make is open to doubt. In climate change, as in so many other areas, words are cheap. It is actions that are eloquent. ■



## Probiotics for vegetables

## A little help from my friends

Some plants nurture soil bacteria that in turn serve to keep them healthy

THE bacteria which inhabit human beings, particularly the guts of those beings, have been found in recent years to be important for fending off disease. That something similar happens in other animal species is doubtless true as well. But work by Seon-Woo Lee at Dong-A University and Jihyun Kim at Yonsei University, both in South Korea, suggests that it is not only animals which benefit from such bacterial shielding. Their study, just published in *Nature Biotechnology*, shows that plants do, too. And that may have important implications for agriculture.

Crop plants of the nightshade family, such as potatoes and tomatoes, are susceptible to a soil bacterium called *Ralstonia solanacearum*. This enters their roots and spreads through their water-transport systems, causing them to wilt. Infection is usually lethal; the disease costs potato farmers alone \$1bn a year. Some apparently suitable plants, though, seem exempt from *R. solanacearum*'s attentions. In particular, a variety of tomato called Hawaii 7996 does not suffer from such bacterial wilt. Dr Lee and Dr Kim wondered if the explanation for this exceptionalism lay with other bacteria in the soil.

To test that idea they grew crops of Hawaii 7996 and a second, wilt-vulnerable, tomato variety called Moneymaker. Once the plants were established, the researchers analysed bacteria in the soil around the plants' roots and found systematic differences that depended on which tomato strain was growing. This observation made their hypothesis plausible.

They then transplanted some of their Moneymaker plants into soil that had previously supported Hawaii 7996s, and some of the Hawaiian plants into soil that had been home to Moneymakers. As controls, they similarly uprooted individuals of both varieties and replanted them in soil once inhabited by the same variety. That done, they exposed all of their plants to *R. solanacearum* and monitored them over the course of 14 days.

They found the disease progressed almost 30% more slowly in Moneymaker plants grown in "Hawaiian" soil than it did in those Moneymakers that had been replanted into their own soil. In contrast, it progressed rapidly in the normally resistant Hawaiian variety when this was transferred into Moneymaker soil.

Further study revealed that a single type of soil bacterium, called TRM1, ap-

## Extraterrestrial life

## Where is everybody?

Why has ET never been found? Perhaps people have not looked hard enough

“IF ALIENS are so likely, why have we never seen any?” That is the Fermi Paradox—named after Enrico Fermi, a physicist who posed it in 1950.

Fermi's argument ran as follows. The laws of nature supported the emergence of intelligent life on Earth. Those laws are the same throughout the universe. The universe contains zillions of stars and planets. So, even if life is unlikely to arise on any particular astronomical body, the sheer abundance of creation suggests the night sky should be full of alien civilisations. Fermi wondered why aliens had never visited Earth. Today, the paradox is more usually cast in light of the inability of radio-telescope searches to detect the equivalent of the radio waves that leak from Earth into the cosmos, and have done for the past century.

Thinking up answers to this apparent contradiction has become something of a scientific parlour game. Perhaps life is really very unlikely. Perhaps the priests are right: human beings were put on Earth by some creator God for His own inscrutable purposes, and the rest of the universe is merely background scenery.



peared to be providing the protection. Dr Lee and Dr Kim therefore cultivated this bug in their laboratory and used it to treat soil into which Moneymaker plants were then planted. When these were infected with *R. solanacearum* they proved, though not completely resistant to it, certainly more resistant than others that had been planted into untreated soil as controls. More than 40% of them were still alive after 16 days. Only 12% of the control plants lasted that long.

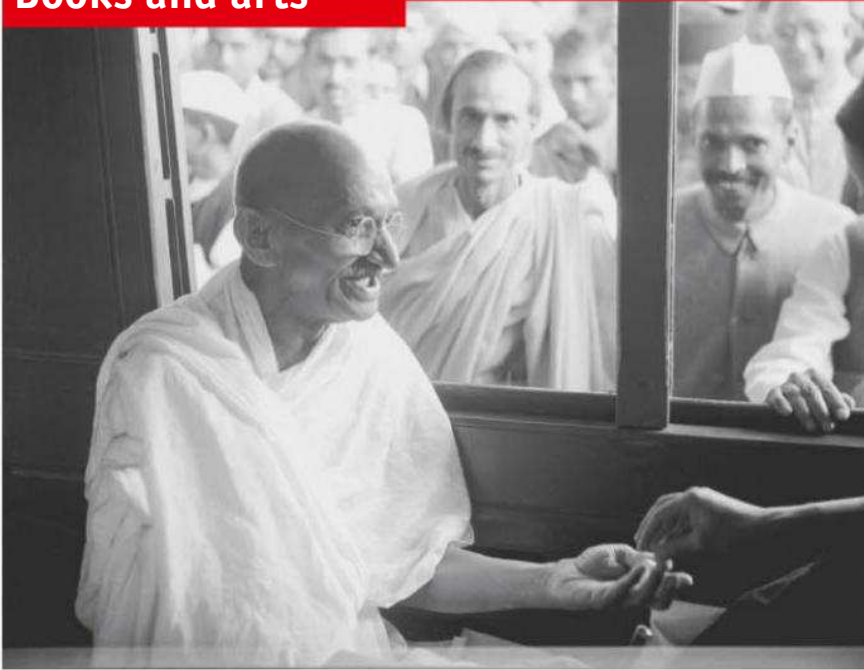
These findings suggest to Dr Lee and Dr

Perhaps there are plenty of aliens, but they have decided that discretion is a safer bet than gregariousness. Or perhaps galactic society avoids communicating with Earth specifically. One chilling idea is that technological civilisations destroy themselves before they can make their presence known. They might blow themselves up after inventing nuclear weapons (an invention that, on Earth, Fermi had been part of), or cook themselves to death by over-burning fossil fuels.

In a paper published last month on *arXiv*, an online repository, a trio of astronomers at Pennsylvania State University have analysed the history of alien-hunting and come to a different conclusion. In effect, they reject one of the paradox's main pillars. Astronomers have seen no sign of aliens, argue Jason Wright and his colleagues, because they have not been looking hard enough.

Dr Wright's argument echoes that made by another astronomer, Jill Tarter, in 2010. Dr Tarter reckoned that decades of searching had amounted to the equivalent of dipping a drinking glass into Earth's oceans at random to see if it contained a fish. Dr Wright and his colleagues built on Dr Tarter's work to come up with a model that tries to estimate the amount of searching that alien-hunters have managed so far. They considered nine variables, including how distant any putative aliens are likely to be, the sensitivity of telescopes, how big a portion of the electromagnetic spectrum they are able to scan and the time spent doing so. Once the numbers had been crunched, the researchers reckoned humanity has done slightly better than Dr Tarter suggested. Rather than dipping a drinking glass into the ocean, they say, astronomers have dunked a bathtub. The upshot is that it is too early to assume no aliens exist. Fermi's question is, for now at least, not a true paradox.

Kim that the roots of Hawaii 7996 are releasing compounds which encourage the growth of TRM1. What those compounds are has yet to be determined. But the two researchers' work suggests at least three ways in which bacterial wilt might be tackled. One is to apply TRM1 itself to the soil, if it can be cultured in sufficient quantities. The second is to apply the stimulating chemicals to soil, once they have been identified. The third is to tweak the DNA of vulnerable crops to produce the stimulating chemicals directly. ■



Gandhi's life and influence

## A hero for our time

The Mahatma's values are as relevant to his country as ever

THE stock of national heroes fluctuates over time. For decades Jawaharlal Nehru, India's first prime minister, was venerated at home. A gifted writer, he turned out impressive books while incarcerated in British-run prisons. In power he kept his multi-religious country democratic and stable, despite enormous strains. Abroad he guided it away from cold-war entanglements. Yet today the admiration is fading: "the popular mood in India has turned fiercely against Nehru and his legacy," observes Ramachandra Guha, a historian.

The shrivelling of Congress, once India's dominant party, partly explains that shift. Official propaganda used to fete Nehru and his descendants, prime ministers Indira Gandhi and Rajiv Gandhi. When Congress was in power, every dynastic birthday was celebrated on billboards and in fawning press notices. Today Hindu nationalists hold office and forcefully reject that legacy. The old rulers are ridiculed for corruption, economic mismanagement and the military enfeeblement they are said to have overseen.

Narendra Modi, the current prime minister, reveres others instead. Foremost among his heroes is Nehru's deputy, Vallabhbhai Patel, a more muscular nationalist and pro-Hindu politician. Patel supervised the sometimes violent incorporation of Muslim-run princely states

**Gandhi: The Years That Changed the World 1914-1948.** By Ramachandra Guha. Knopf; 1,104 pages; \$40. Allen Lane; £40

into India proper. This month a monument to him—at 182 metres, the world's tallest statue—will be inaugurated in a remote area of Gujarat, Mr Modi's home state.

Other historical figures and episodes have been re-evaluated, too. Mr Modi has encouraged popular acceptance of the Rashtriya Swayamsevak Sangh (RSS), a movement that was banned under Nehru after Mohandas Gandhi was shot dead in 1948 by a Hindu extremist associated with it. Occasionally Mr Modi celebrates Vinayak Damodar Savarkar, a brilliant radical who reviled Gandhi and advocated violence against Muslims (and was close to the RSS and the assassin).

What of the reputation of the most venerated luminary of all? Gandhi was India's pre-eminent nation-builder. He did more than anyone else to secure the end of imperial rule. His decades of agitation, civil disobedience, marches, fasting, lobbying, imprisonment and publicity-seeking—techniques he first practised in British-run South Africa—gradually made India's freedom inevitable.

He built up Congress from an elitist to a mass movement. He pressed for Hindu-

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Muslim harmony, for the interests of Dalits (formerly "untouchables"), for women's equality and the shunning of industrialisation in favour of village-based crafts. In all of these endeavours, except the last, he shaped India's subsequent democratic character. Crucially, he also nurtured successors, most obviously Nehru. The contrast with militaristic, unstable and often repressive Pakistan under Muhammad Ali Jinnah could not be more striking.

Every generation of Indians must revisit Gandhi for themselves, argues Mr Guha in his magnificent new biography. It isn't only that the changing political climate entails a reassessment. The growing mounds of Gandhi-related material require constant resifting. At times he churned out 80 letters a week; his collected works run to 97 volumes. Researchers, including Mr Guha, continue to unearth neglected writings.

### Great soul, no saint

Mr Guha's book—the second of two volumes—begins in 1914, as his subject returns from South Africa. His narrative is sympathetic, if needlessly detailed in places: sadly its bulk may deter many would-be readers. He conveys Gandhi's playfulness as well as his intellect. Dispensing endless health advice to correspondents, Gandhi referred to himself self-deprecatingly as a "quack" doctor. Mr Guha celebrates his skill with a pen. Seepersad Naipaul (father of V.S.) praised Gandhi for writing passionately and directly, "from the belly rather than from the cheek".

The Mahatma, or great soul, does not emerge as a saint. Gandhi admitted he could be a "beast" to his wife, Kasturba. He was often inconsistent, self-regarding or irrational, as when he claimed his habit of celibacy could somehow end religious vio- ▶▶

lence. He was a bore in his insistence that others should shun sex and contraception. He erred in telling German Jews, Czechs and Britons not to resist Nazi attackers. Mr Guha also reveals a long-kept, juicy secret: in the 1920s Gandhi had a prolonged (if unconsummated) infatuation with the niece of Rabindranath Tagore, a Bengali poet, whom he called his wife in some letters.

The author skilfully traces the evolution of Gandhi's political beliefs. For example, he was an early campaigner against the ill-treatment of Dalits, yet for much of his life kept faith in Hinduism's caste divisions and failed to support inter-caste marriages (initially he was also against Hindu-Muslim unions). Only gradually did he reject caste outright. "No upper-caste Hindu did as much to challenge untouchability as Gandhi," Mr Guha concludes, convincingly. He rejects revisionist, left-leaning critics such as Arundhati Roy, who have labelled Gandhi a sell-out on caste.

Many details in the book are fresh. More closely than any other biographer, Mr Guha tracks the forgotten influence of Gandhi's long-serving secretary, Mahadev Desai. He offers lively trivia. Gandhi, it transpires, saw just one film in his lifetime and had no idea who Charlie Chaplin was when they met. He charmed many he encountered. Dressed only in a loincloth, Gandhi had an amicable exchange with King George V, though the pope refused the Indian an audience, objecting to his attire.

But Mr Guha's analysis is most valuable on the big issues. Even more important than securing independence, reckoned Gandhi, India had to seek Hindu-Muslim peace. Upset by the bloodshed of partition, he especially pressed moderation on fellow Hindus, enshrining the idea that India should not be dominated by one religion, becoming a Hindu raj. He did this despite earlier British efforts to set Muslims and Hindus against each other, and notwithstanding the antics of Jinnah, Savarkar and others who stirred up antipathy for narrow partisan gain.

It would be reckless to forget Gandhi's warnings. But, with good reason, Mr Guha fears that is indeed happening. At a time of hardening Hindu nationalism, crude attacks on Gandhi have become routine online: "worryingly, there is a wider disenchantment with Gandhi's ideas of religious pluralism," Mr Guha notes. The likes of Mr Modi may offer lip-service to Gandhi, but then they "seek to diminish his stature by elevating their own heroes," such as Savarkar.

More than ever, perhaps, Indians and outsiders would benefit from reacquaintance with Gandhi's belief in compromise. Mr Guha's magisterial account of a compassionate man provides a timely opportunity. Yet, as Gandhi knew, in the end it is political actors, not writers, who bring about real change. ■

### Sloganeering in America

## They had a dream

**Behold, America: The Entangled History of "America First" and "the American Dream"**. By Sarah Churchwell. *Basic Books*; 368 pages; \$19.99. *Bloomsbury*; £20

IT IS common for historians to examine the actions of great men. Sarah Churchwell, a professor of American literature at the University of London, does something different. Her protagonists are not people but two expressions: "the American dream" and "America first". By tracking their usage down the years in newspapers, books and politicians' speeches, her aim is to cast light not just on the country's past but also on its politics today. President Donald Trump launched his bid for the White House proclaiming that "the American dream is dead"; he has used "America first" as a rallying cry.

Both phrases are about a century old and have had a richer and more varied life than is commonly realised. The American dream nowadays tends to evoke individuals' pursuit of riches, Ms Churchwell argues, but it started out in the Progressive Era meaning almost the opposite: "the social dream of justice and equality against individual dreams of aspiration and personal success". After that, each successive

period invented its own American dream according to the prevailing conditions.

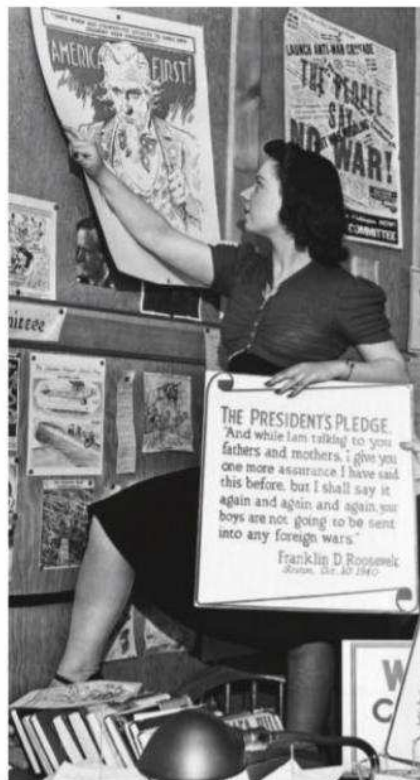
For the first 20 years the expression mainly had a political, not an economic meaning. But from the mid-1920s it took on a familiar ring, and in the 1930s, against the background of the Depression, its use exploded as it came to describe what one of its champions, the historian James Truslow Adams, called "that belief in the right and possibility of a better life for all, regardless of class or circumstance". By the 1950s and the advent of the cold war, says Ms Churchwell, the dream "had shrugged off all sense of moral disquiet, becoming a triumphalist patriotic assertion".

"America first", meanwhile, has always been a political slogan, with many applications. President Woodrow Wilson tried to wield it with subtlety, explaining that America needed to think of itself first, but to be ready to be Europe's friend once the first world war was over. Others were cruder, urging protectionism, isolationism or worse. When the nationalist mood took him, William Randolph Hearst slapped "America First" on the masthead of his newspapers. The Ku Klux Klan used it to boost white supremacy.

It has been strikingly popular. The Republican Party adopted it as a catchphrase in 1894. Wilson picked it up in a speech in 1915 and used it as a slogan for his presidential campaign the following year (as did his Republican opponent, Charles Evans Hughes). The next three presidents—Warren Harding, Calvin Coolidge and Herbert Hoover—all embraced it. The anti-war America First Committee brandished it. It seems almost an anomaly that "America first" went quiet for so long until its recent thunderous revival.

As she weaves the twin strands of her history, shuttling between the American dream and "America first", Ms Churchwell sometimes relies on tenuous connections to (and between) her yarns. Books described as "American dream novels" ("The Great Gatsby", "Of Mice and Men") turn out not to mention the phrase at all. A juicy tale of Fred Trump, the president's father, being arrested along with five "avowed Klansmen" at riots in Queens in 1927 has only a tangential connection to the America-first narrative.

Yet this book is timely and instructive. Mr Trump's critics can be mildly reassured that banging on about "America first" has plenty of precedent; yet they will also be disturbed by the nastiness of some of that history. As for the American dream, Ms Churchwell laments that it has become fossilised and flat. Americans once dreamed more expansively, she says, invoking ideas of social democracy and social justice. For all her evident abhorrence of Mr Trump, she may agree with him on one thing: reviving the dream might help make America great again. ■



America first and last

## A mirror up to nature

## She the people

NEW YORK

## Broadway takes a political turn

AT A time when the news features heroes and villains, high-stakes choices and grand revelations, audiences are bound to find echoes of contemporary life on stage. But in its impending season, Broadway is embracing politics in an unusually concerted way. The run will include plays about race and justice (“American Son”, “To Kill a Mockingbird”), gay love and shame (“Torch Song Trilogy”, “Prom Night”, “Choir Boy”), rapacious greed and hucksterism (“Glengarry Glen Ross”), perverse news-spinning (“Network”, “Ink”), and the grisly fate of a vain ruler who is undermined by his inner circle (“King Lear”).

“Theatre has a huge responsibility right now,” says Leigh Silverman, director of “The Lifespan of a Fact”, a new play about the relation between factual accuracy and deeper truths, which will have its world premiere at Broadway’s Studio 54 on October 18th. Ms Silverman says she was drawn to “Lifespan” because it wrestles with acutely topical questions about the moral duties of art, the relevance of small details when telling a larger story and the fragile nature of credibility. It is also very funny.

Written by Gordon Farrell, Jeremy Kareken and David Murrell, the play dramatises a real-life debate between John D’Agata, an acclaimed writer with an impressionistic notion of truth, and Jim Fingal, a young magazine intern given the task of fact-checking John’s essay about a teenage suicide in Las Vegas. Their fiddly exchanges over details, which spanned several years and spawned an unconventional co-written book, seem unlikely fodder for the stage. It is all the more impressive that this production—which stars Bobby Cannavale as the self-important essayist, Daniel Radcliffe as his pernicky fact-hound and Cherry Jones as their formidable editor—turns out to be so provocative and entertaining.

The drama is set against a backdrop of an industry in free-fall. Advertising sales are declining, subscribers are dying off and a “streamlined” editorial process has dispensed with the old fact-checking department. Although Jim’s scrupulous research veers into obsession, he is the play’s moral centre. His declaration that white lies not only weaken John’s arguments but “undermine society’s trust in itself” earned hearty applause during a recent preview.

Heidi Schreck’s arresting “What the



## Read it and weep

Constitution Means to Me”, off-Broadway at the New York Theatre Workshop, also benefits from grimly auspicious timing. A playwright and performer, Ms Schreck (pictured) knows the constitution well. She put herself through college with the money she won making speeches about it in high-school competitions. Now in her 40s, she revisits her guileless teenage talks with the wisdom of experience and finds a more troubling document. Created as it was by white, slave-owning men, the constitution’s promises long excluded women and non-whites. Dominated as it overwhelmingly has been by white, male justices, the Supreme Court has been slow to recognise the claims of others. Ms Schreck notes that women won the rights to use birth control and terminate unwanted pregnancies only in the early 1970s. Some of these gains may now be under threat.

But this quicksilver play is no dull civics lesson. Ms Schreck toggles between analysing the constitution and telling stories about the legacy of sexual abuse in her family and her own experience of having an abortion. She talks about a Supreme Court ruling of 2005 that found women have no federal right to police protection from violent partners, about a step-grandfather who raped her aunt, and about the time when, aged 17, she had sex with a boy because “it seemed like the polite thing to do”.

Her show is dark but not bleak. Ms Schreck probes the constitution’s flaws but also demonstrates the power of understanding it. Stirred viewers are sent home with a theatre-issued copy of the text tucked into their pockets.

## A novel of immigration

## No escape

**What We Owe.** By Golnaz Hashemzadeh Bonde. Translated by Elizabeth Clark Wessel. Mariner Books; 208 pages; \$15.99. Fleet; £14.99

OLD clichés die hard—and sell well. While Nordic artists profit abroad from lucrative stereotypes involving sweaters, saunas and snowdrifts, at home their societies are changing fast. Around one in 100 Swedes, for instance, has Iranian heritage, one component of a population with a “foreign background” (the state’s demographic term) that amounts to 24% of the total. Many Swedish writers strive to capture this complexity, even if publishers elsewhere still prefer morose blonde sleuths. The arrival, in translation, of a Swedish-Iranian novelist is a welcome chance to cross the bridge into another version of Scandinavia.

“What We Owe”, the second novel by Golnaz Hashemzadeh Bonde, an economist and social entrepreneur, is above all a family story. It knots the experiences of three generations of women into a taut and moving account of grief, a legacy handed down from mother to daughter “as sure as the raven-black hair”. Yet the ordeals of persecution and exile shape every scene in the family’s thwarted quest to find “both freedom and roots”. Public upheavals frame the private pain.

Shocked by a terminal cancer diagnosis in her early 50s, Nahid—the novel’s narrator—looks back on her childhood in Iran, her flight to Sweden, and her troubled relationships with her mother, violent husband Masood and alienated daughter Aram. “Such a beautiful place,” Nahid says of prosperous, placid Sweden, “and I have almost no good memories of it.” Her new starts never healed her old wounds. ▶▶



▶ One of seven daughters in “a family with no sons”, she won a place at medical school; then came the revolt against the shah, which “fell upon us like a rain of stars”. Soon the Islamic revolution becomes a tyranny that wrecks the dreams of Nahid and her secular comrades. Her beloved sister Noora dies as police crush a demonstration. Nahid and Masood flee; a half-life of regret and recrimination begins. “We didn’t escape,” Nahid laments, as she reckons the cost of their displacement.

“What We Owe” refuses sentimental consolations. Nahid becomes a nurse, but

Aram protests that “we never got to have it good”. The “profound shame” of exile endures: “Fleeing sits in your blood...and like a tumour it grows inside you.” Worse, “everything is passed down” to the children. Terse, urgent prose—ably channelled by Elizabeth Clark Wessel, the translator—gives pace and heft to a novel of contagious trauma. Still, Ms Hashemzadeh Bonde lets in a closing ray of hope. The baby Aram is expecting may allow mother and daughter to “create something beautiful”. Perhaps another generation will, at last, enjoy that “Swedish peace”. ■

mean that—to a surprising extent for a production line in a totalitarian state—individual artists are able, even encouraged, to develop personal styles. Their “aesthetic priorities” are distinctive, says B.G. Muhn of Georgetown University, curator of the Gwangju show.

Take the landscapes of Jong Yong Man (see below), one of the most famous painters in a country where the best-known are household names. His depiction of Mount Kungang, with its striking use of negative space and accomplished evocation of cloud and mist, contrasts starkly with Choe Chang Ho’s more literal rendering of the same peaks. True, much North Korean art glorifies Mr Kim’s regime, but not all is simplistic propaganda. The artists, Mr Muhn says, cling to “human dignity”.

This mix of skill and kitsch has won admirers overseas. Exhibitions have been staged in London, Vienna and Assen in the Netherlands. An art-tourism industry has sprung up along the Chinese border, in cities such as Dandong, where visitors have sampled North Korean food, watched folk dancers and bought relatively inexpensive North Korean paintings. A Mansudae-themed gallery operates in Beijing’s hip 798 Art Zone.

But this nascent cultural exchange has hit a formidable obstacle, linked to another North Korean specialism—monumental sculpture. Nurtured on an insatiable domestic appetite for gigantic bronzes, Mansudae’s sculptors have created statues across Asia and Africa. They include the giant African Renaissance Monument in Senegal and the Heroes’ Acre war memorial in Namibia. Recently, however, these activities have come under scrutiny by the UN, suspected of being a front for sanctions-busting—resulting in the UN Security Council blacklisting Mansudae.

Mr Muhn could put on the show in Gwangju only because the paintings came from collectors, not directly from the factory (the sanctions apply only to current sales). Likewise the gallery in Beijing says it is independently owned and sells work from a private collection. Art can be a tool of diplomacy, but it can be a victim, too. ■

### North Korean art

## Mist on the mountains

GWANGJU

### The tangled connections between art and diplomacy

WHEN South Korea’s president, Moon Jae-in, visited North Korea last month, he was given a tour of the Mansudae Art Studio, an enormous complex in Pyongyang where most North Korean art is produced. At what is one of the largest art factories in the world, around 1,000 artists and 3,000 assistants churn out ornaments for Kim Jong Un’s regime. Mr Moon’s eye was drawn to a series of paintings of Pung-san hunting dogs; afterwards Mr Kim sent his counterpart a pair of the animals as a gift. In a guest book, Mr Moon wrote: “I wish that art would become a bridge connecting South and North Korea as one.”

That mission has already begun, albeit in fraught circumstances. At the Gwangju Biennale, a few hours south of Seoul, 22 paintings produced at Mansudae are on display in a groundbreaking exhibition. It consists entirely of *Chosonhwa*, the traditional North Korean technique of ink-wash painting. Other forms of art, such as oil-painting and printmaking, are common in North Korea, but *Chosonhwa* has long been the country’s most revered form. The

works include portraits, industrial scenes and landscapes that evoke classical Chinese ink-painting.

This kind of figurative work is a far cry from *Dansaekhwa*, the South Korean minimalist movement that has achieved widespread appeal. In the North, by contrast, there is no avant-garde or abstract tradition. Still, in some ways the show confounds presumptions about socialist realism, a genre to which some of the paintings loosely belong.

The heroic studies are intimate as well as dramatic. The artists reputedly immerse themselves in the activity they aim to capture—building a dam, for example—before painting it. The result is an unexpected emphasis on detail, a daintiness that is also inherent in the medium. Painted on *hanji*, a traditional paper made from mulberry bark, *Chosonhwa* works are delicate, a quality that offsets the ruggedness of the subjects. As with Chinese calligraphy or ink-wash landscapes, the paper is too thin to absorb more than a single brush-stroke.

The confidence and virtuosity required

