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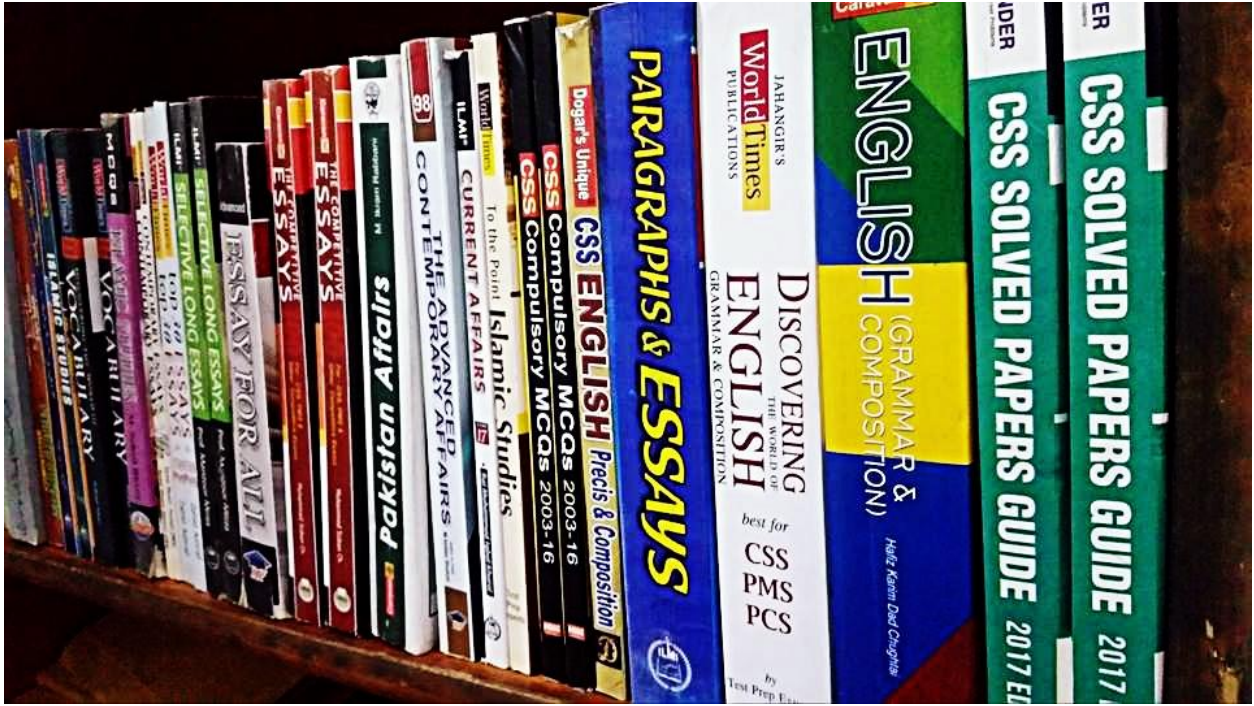
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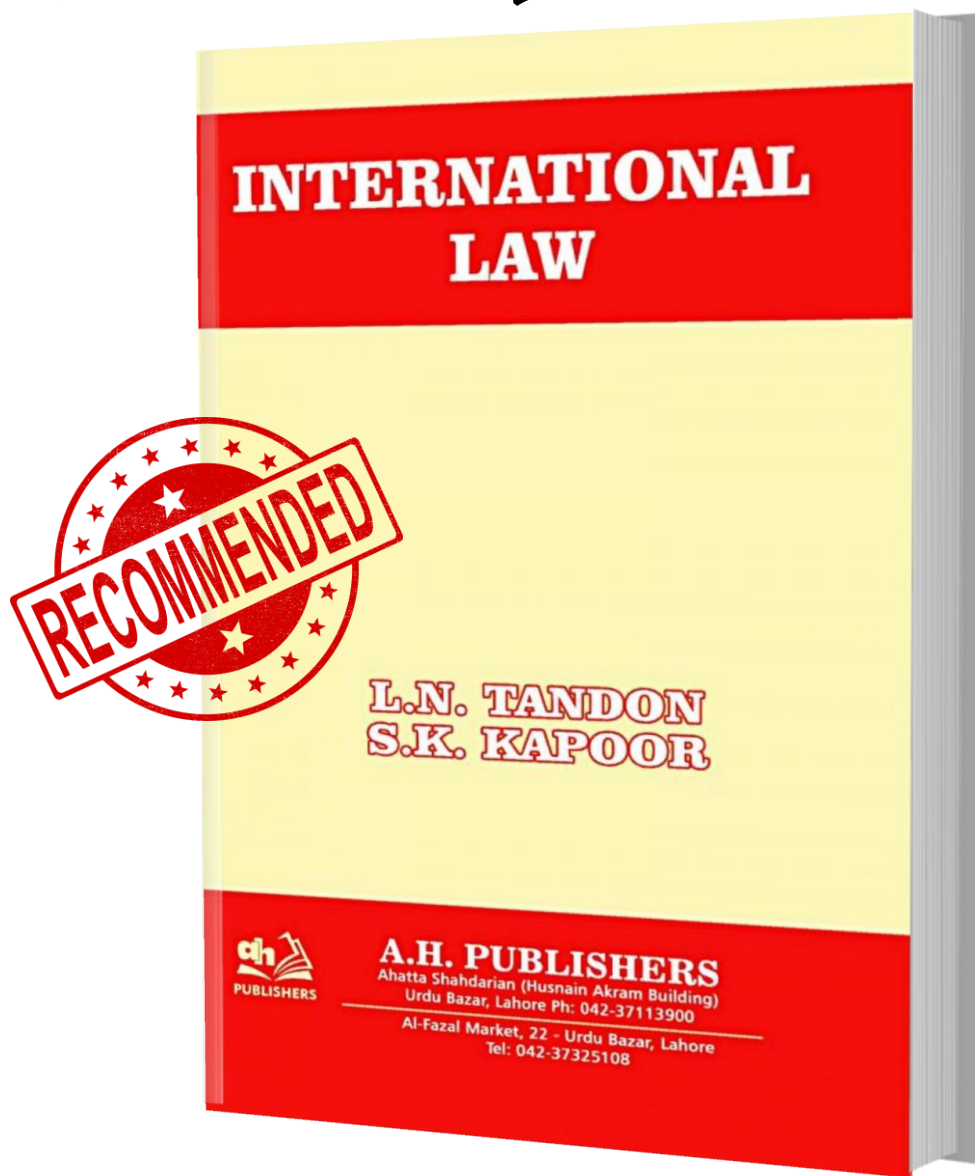
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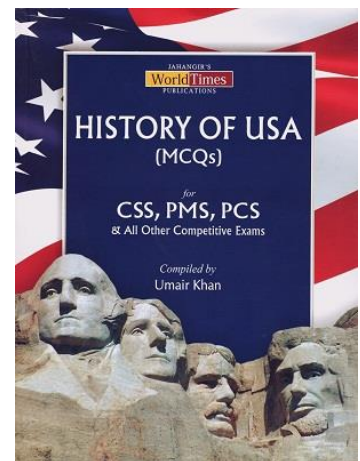
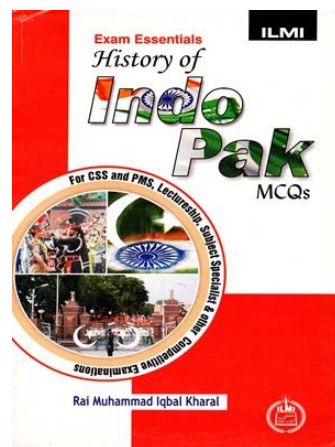
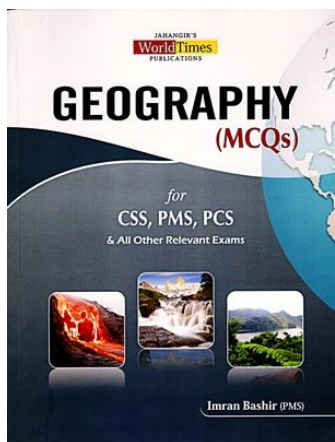
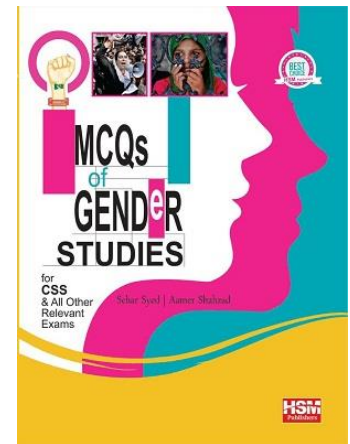
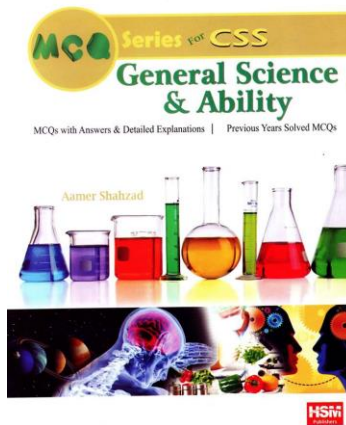
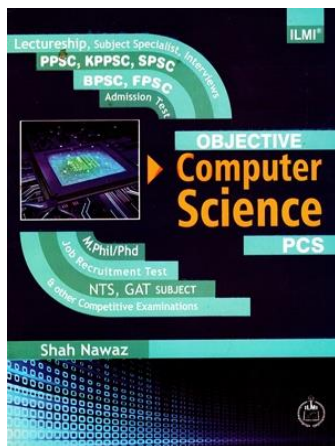
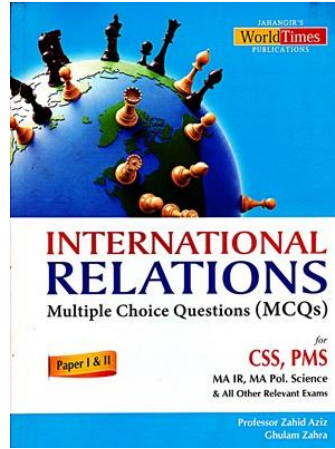
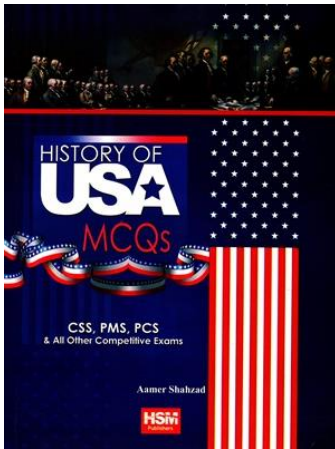
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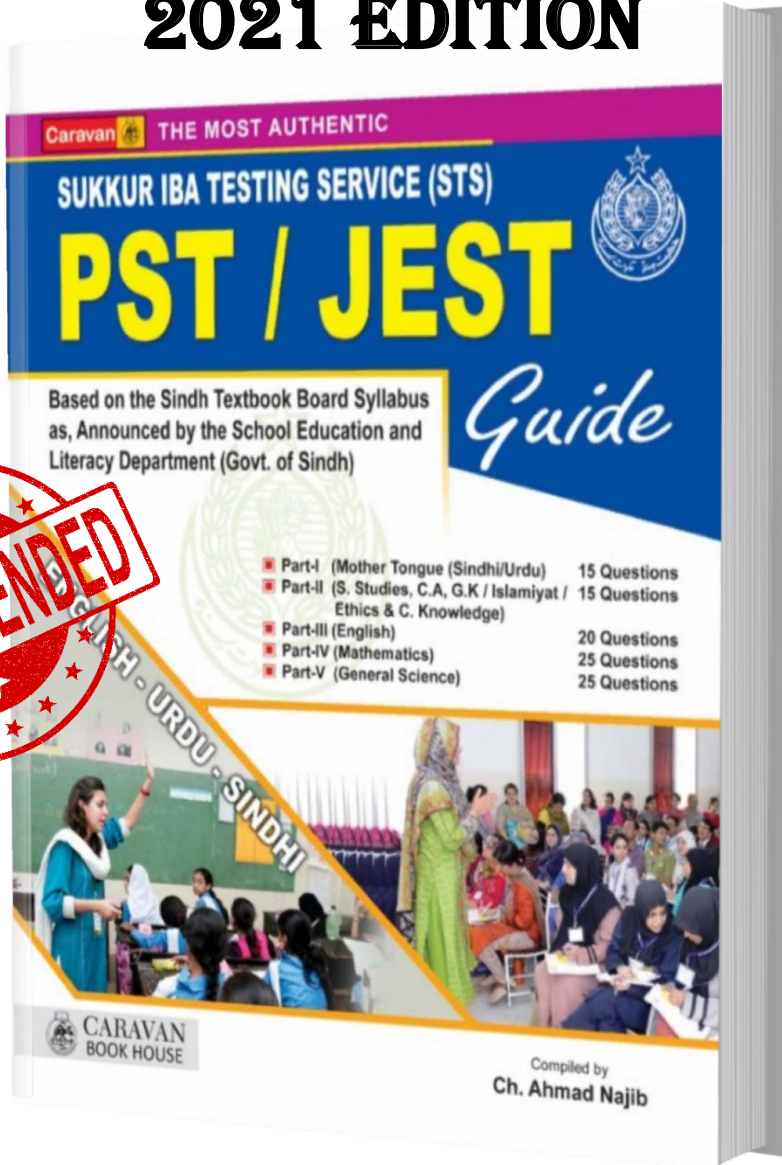
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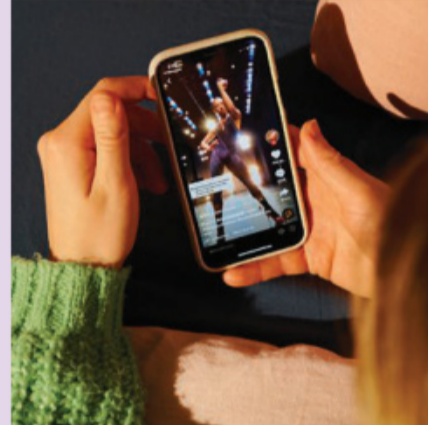


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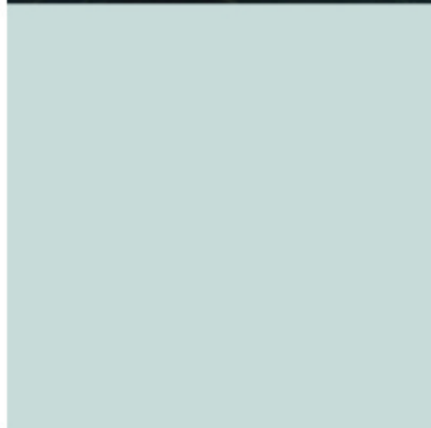
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TIME 100



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PRIORITY:YOU

Conversation



WHAT YOU SAID ABOUT ...

CLIMATE IS EVERYTHING The April 26/ May 3 issue, which argued that tackling the global climate crisis requires a new mindset, lit a fire under many TIME readers. Former 2020 Democratic presidential candidate Tom Steyer wrote on Twitter that the issue “shows the recognition that the climate crisis deserves,” while @akazkucha tweeted that he got “chills” watching a video of the artist Red Hong Yi setting aflame her matchstick map of the world (pictured above on the cover) to demonstrate our interconnectedness. But Leif Johnson of Swannanoa, N.C., argued that cultural divisions must also be noted and that solutions can come only when we “start to see beyond nationality, religion, gender, race, ethnicity, target audience or any other culturally imagined sense of self.”

‘This is the most significant issue of our time and our future.’

MIKE BUZA,
Swartz Creek,
Mich.

‘LOOKING BACK TODAY, my generation did nothing to stop pollution and even made it worse,” wrote Rick Madej of Omaha, remembering his ninth-grade science teacher pointing to smog outside a classroom window in 1963 and lamenting that pollution wouldn’t

be solved in his lifetime. “Now I have to say that it’s up to the next generation to solve the problem.” And Jane Bullard in Charleston, S.C., “sickened” by Aryn Baker’s story on Kenya’s climate refugees, wrote of parallels with the frequent flooding in her hometown: “Thank you for bringing this global issue home to my front door.”

‘Our treatment of the earth is an insult to the universe ... a wholesale damning of humanity.’

JOHN WAWRZONEK,
Northborough,
Mass.

BEHIND THE COVERS TIME’s May 10/May 17 issue features eight original covers. Subscribers in the U.S. or Canada can call customer service at 1-800-843-8463 or email time-customerservice@time.com to request an alternate cover. Prints of all the covers are for sale at timecoverstore.com, which ships worldwide.



JUSTICE—NOT YET FOR ALL: Artist Ange Hillz’s portrait of George Floyd was created moments after the verdict in the trial of former Minnesota police officer Derek Chauvin.



THE FUTURE OF BUSINESS: Artist Mike “Beeple” Winkelmann shared an inside look at his “canvas” for a cover on the digitization of everything.



INDIA IN CRISIS: Saumya Khandelwal took this photo at a crematorium in New Delhi on April 27, as a man carried the body of a loved one who died of COVID-19.



THE 100 LIST: Five business leaders mark TIME’s 100 Most Influential Companies.

Photographs for TIME by (clockwise from top left): JUCO; Brittany Greenson; Stefan Ruiz; Joshua Kissi; Ryan Young



SETTING THE RECORD STRAIGHT ▶ In an obituary for Prince Philip (April 26/May 3), an attribution for the featured image was omitted. The credit should have cited NFB/Getty Images.

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For the Record

‘Honestly, a bunch of people probably will die in the beginning. It’s tough sledding over there.’

ELON MUSK,
in an April 22 interview about his company’s plans to send humans to Mars

‘I cannot find any justification for [how] I was treated... So I have to conclude that it happened because I am a woman.’

URSULA VON DER LEYEN,
European Commission president, speaking on April 26 about being denied a chair while meeting Turkey’s President Recep Tayyip Erdogan earlier in the month

40

Number of days **15** volunteers spent in a cave in France without clocks or light, before emerging on April 24, as part of an experiment monitoring the brain’s perceptions of time in isolated environments



‘MY MUM MET MY DAD. THEY HAD SEX. IT’S AMAZING.’

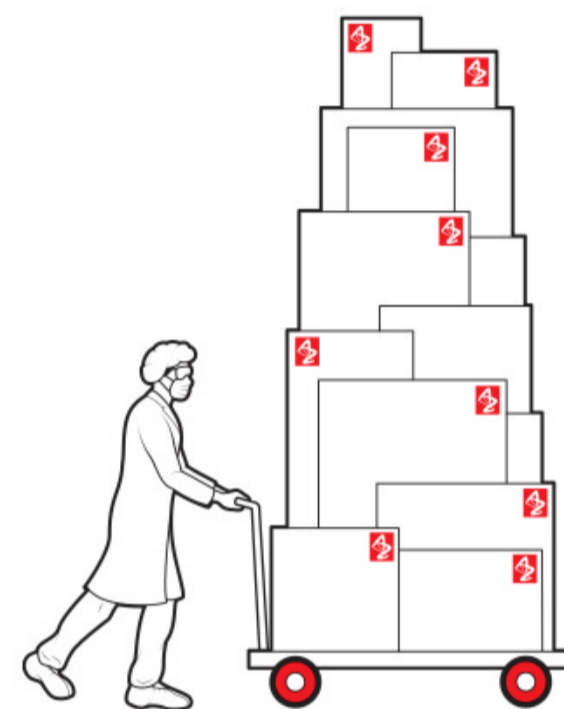
DANIEL KALUUYA,
in an April 25 speech at the 2021 Oscars, accepting the Best Supporting Actor award for his role in *Judas and the Black Messiah*; in the audience, Kaluuya’s mother could be seen asking, “What is he talking about?” in response

‘He will always be present.’

MIGUEL DÍAZ-CANEL,
President of Cuba, lauding Raúl Castro in an April 19 speech in which Díaz-Canel accepted the position of First Secretary in Cuba’s Communist Party, which Castro retired from days earlier

‘Four times in a row is too much.’

JUKKA LINDSTROM,
Finnish comedian, speaking with the *New York Times* on April 20 about the recently released 2021 World Happiness Report, which has since 2018 consistently ranked Finland as the world’s happiest country



60 million

Number of doses of the AstraZeneca COVID-19 vaccine the U.S. will share with countries around the world, according to the White House on April 26



GOOD NEWS of the week

The State Department authorized U.S. embassies around the world to fly the Pride flag, rolling back a Trump Administration rule in a diplomatic cable reported April 22



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The Brief



**BUILDING
BACK
BIGGER**
The dimensions
of Joe Biden's
\$6 trillion plan

INSIDE

A NEW LOOK AT MARS FROM
NASA'S INGENUITY HELICOPTER

REMEMBERING MICHAEL COLLINS,
NEARLY A MAN ON THE MOON

OLYMPICS STRIFE IN AN
UNVACCINATED JAPAN

PHOTOGRAPH BY PATRICK SEMANSKY

The Brief is reported by Madeleine Carlisle, Suyin Haynes, Jeffrey Kluger, Sanya Mansoor, Ciara Nugent, Billy Perrigo, Madeline Roache and Olivia B. Waxman

The Brief Opener

THE PRESIDENCY

Biden's bet on Big Government

By Alana Abramson and Brian Bennett

PRESIDENT JOE BIDEN WAS HUDDLING WITH aides in the Oval Office in late April, preparing for a Zoom tour of Proterra, an electric bus and battery plant in Greenville, S.C. The company does the kind of eco-friendly manufacturing that Biden hopes will balloon if Congress passes his \$2 trillion infrastructure proposal, which includes nearly \$80 billion in federal investment in these types of clean-energy jobs. Biden was blunt about the larger goal. "This is how we show people that the government has a role to play," he said before getting on the call.

That vision of government has been at the heart of Biden's first 100 days in office. He has pumped nearly \$1.9 trillion into the economy, more than any other President at this point in a first term, through a stimulus bill that offers everything from rental assistance to vaccine distribution. Biden has laid out plans for an additional \$2 trillion to create millions of jobs while redefining infrastructure, and \$1.8 trillion for education and paid leave, paid for largely through tax increases on the wealthy. If all become law, the three initiatives will constitute the biggest federal investment in the middle and lower classes since President Lyndon B. Johnson's Great Society.

Biden is making a \$6 trillion bet. He has calculated, aides say, that the twin shocks of the past four years—President Donald Trump's gutting of the federal government and a historic pandemic—have created a once-in-a-career opportunity. By embracing a pre-Reagan vision of expansive government that delivers for a hurting nation, he hopes to capitalize on the post-Trump political moment. "It's comparable to the Great Depression and World War II, where there were massive emergencies that affected everyone, and people were very, very responsive to a major [government] role," says Celinda Lake, a Democratic pollster who advised Biden's campaign.

SO FAR, Biden's bet seems to be paying off. His approval rating has hovered in the mid-50s, according to Gallup, modest by historical standards but strong in the acutely polarized political climate. (Trump never cracked 50%.) Some 46% of Americans say the country is headed in the right direction, according to a Monmouth University poll released on April 14—the highest number in eight years.

But even Biden's allies acknowledge that goodwill is

tenuous. The country remains deeply divided. Biden has a narrow, fragile majority in Congress, and holding together progressives and moderates in his party is already proving hard. Republicans are eager to make it harder, seizing on crises like the surge of unaccompanied migrant children at the U.S.-Mexico border to attack him and dampen his approval ratings. With midterms 18 months away, and the Democrats facing challenges on multiple fronts, Biden has little time to get his ambitious agenda enacted.

That he is pursuing it at all is a surprise for a man who was a middle-of-the-road Democrat for most of his 35-year career in the U.S. Senate. "I really kind of thought he would be much more of a traditionalist," says Representative Jim Clyburn, the House majority whip who gave Biden a critical endorsement during the campaign, "though I am very pleased and excited." Allies say Biden's shift is partly a function of his new role: the Senate requires compromise, while the presidency offers greater unilateral power. It's also true that the country has

changed. For much of Biden's Senate career, politics demanded a commitment, in principle at least, to minimizing the government's role and limiting spending. Biden has concluded that what voters want, above all else, is for the government to deliver. In 2015, Pew Research found 68% of Democrats and 23% of Republicans said the government should do more to solve problems. By September 2020, those numbers had increased to 82% of Democrats and 32% of Republicans.

If Biden's first 100 days were all about getting shots in arms and cash into people's wallets, his next 100 will be more complicated. Biden aims to pass both the \$2 trillion American Jobs Plan and the \$1.8 trillion American Families Plan by the end of the year. He pitched the latter plan in his first address to Congress on April 28, pledging to work across the aisle. Fights among Democrats may prove just as challenging. Already, Biden's party is squabbling over whether to include a tax break that mostly benefits Northeastern states, just one of the friction points he'll have to grease to get a bill passed on party lines.

So far, Biden's been helped by circumstance. The Trump Administration ordered the bulk of the vaccine shots Biden inherited and distributed. He's also benefited from an opposition party with few unifying principles beyond fealty to an unpopular former President. That has left room for Biden to evangelize for government solutions wherever he can. As he told an executive at Proterra, the South Carolina company building electric school buses and city buses, "We have a lot of catching up to do, but we're going to be in a position where we ought to own the future here." For Biden, success may come down to how much he and the American public are willing to pay for it.

\$6 trillion

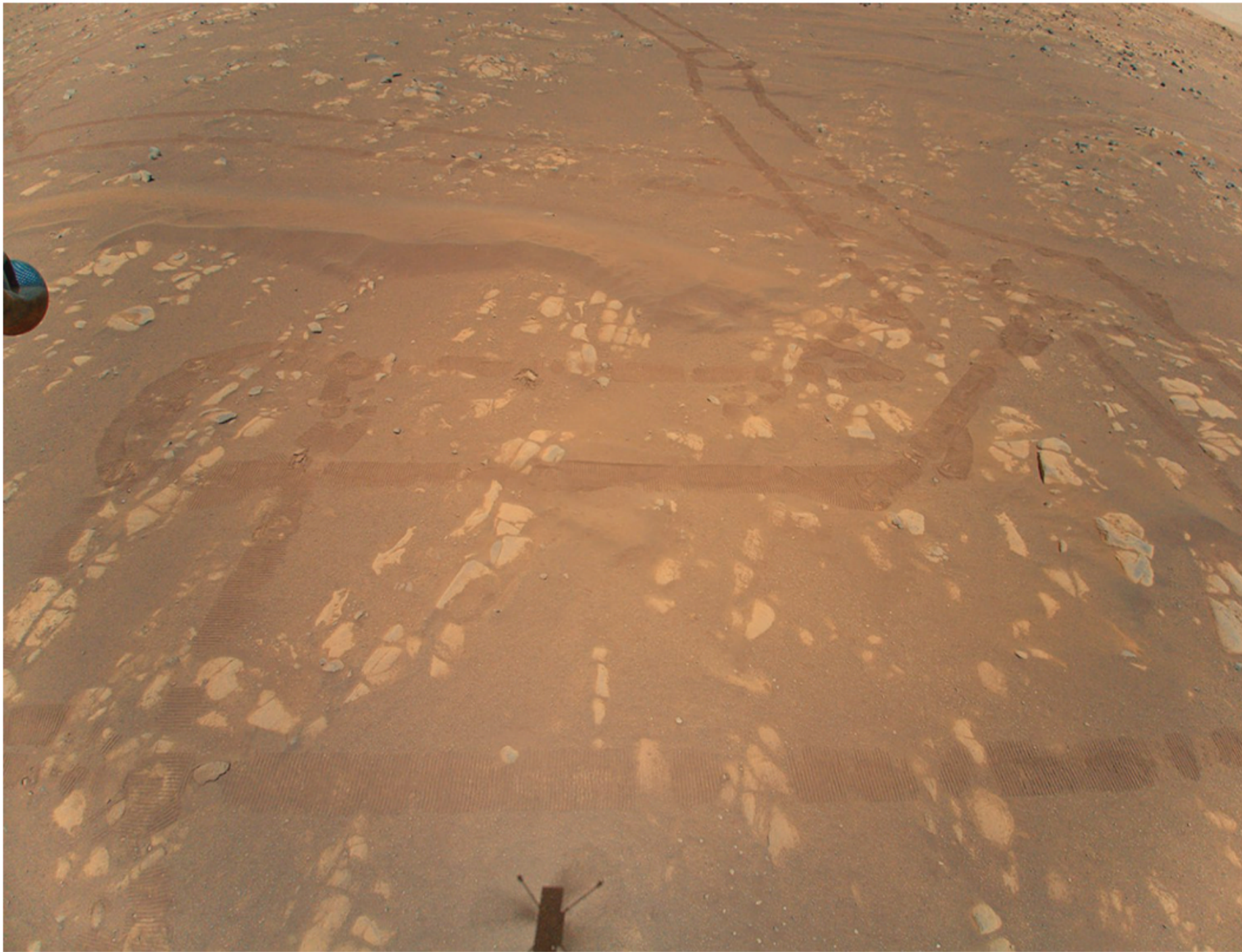
Cost of Biden's proposed federal pandemic, infrastructure, education and other programs, per government estimates. Congress passed \$1.9 trillion of it in March

69%

Biden's approval rating for handling the pandemic. His overall approval is 53% and disapproval is 39%, according to an April 25 NBC News poll

6.5%

Estimated U.S. GDP growth in 2021, up from a 2020 Fed forecast of 4.2%, thanks in part to the March relief bill



RED PLANET The Martian helicopter known as Ingenuity flew 300 million miles to fly 17 ft. The longer journey was the trip it made from Earth to Mars, tucked inside NASA's Perseverance rover. The shorter trip came as Ingenuity made its second flight on the planet, remaining airborne for 51.9 sec. on April 22 and climbing to its peak 17-ft. altitude. It was then it took this aerial photo, with one of its landing pads visible on the upper left and its shadow on the rusty red ground below.

WORLD

U.S. formally acknowledges Armenian genocide

IN WHAT MANY VIEW AS A LONG-OVERDUE step in reckoning with history, President Joe Biden declared on April 24 that the mass killings of Armenians by Ottoman forces during World War I constituted genocide. "We do this not to cast blame but to ensure that what happened is never repeated," Biden said in a statement on Armenian Genocide Remembrance Day, marking the first time the U.S. has formally deemed the killings genocide. At least 30 other countries, including France and Canada, have also formally recognized the genocide. Other U.S. allies, such as the U.K. and Israel, have not.

ATROCITIES During WW I, the Germany-aligned Ottoman Empire accused Armenians of treachery after suffering a heavy defeat at the hands of Russian forces. One and a half million Armenians were later killed in massacres or in forced marches through the Syrian desert that resulted in many starving to death. About 500,000 Armenians survived, many immigrating to Russia, the U.S. and elsewhere. Turkey, the modern-day state built on the ruins of the Ottomans, acknowledges that atrocities occurred during that period—but denies they constituted genocide.

REACTIONS Biden's announcement has given Mary Kouyoumdjian, an Armenian-American composer based in New York, renewed "faith in the President's commitment to human rights," she says, adding that many Armenian-American families still experience "survivor guilt." But she believes that the wounds of the past will not fully heal until Turkey acknowledges the genocide. The Turkish government said Biden's statement "opened a wound" in relations between the two NATO allies and has "deeply injured the Turkish people."

ANOTHER WAR Simon Maghakyan, an Armenian-American lecturer in international relations at the University of Colorado, says the U.S.'s recognizing the Armenian genocide "only truly matters" if the White House takes measures to help protect the security of Armenians, including in Nagorno-Karabakh, a disputed region over which Armenia and Azerbaijan recently went to war. The conflict saw at least 6,000 Armenian and Azerbaijani soldiers killed and 40,000 Karabakh Armenians displaced. "Recognizing Armenia's past without its present is not meaningful," he says. —MADELINE ROACHE

NEWS TICKER

Rights group accuses Israel of apartheid

Human Rights Watch published a report April 27 accusing Israeli officials of committing "**crimes against humanity of apartheid and persecution,**" on the basis of its treatment of Palestinians. Israeli officials have fiercely rejected the international rights watchdog's claims.

Bolsonaro faces COVID-19 inquiry

Brazil's Congress launched an inquiry April 27 into the **government's response to the coronavirus pandemic.** One likely focus is President Jair Bolsonaro, who has criticized lockdowns, masks and vaccinations. Nearly 400,000 Brazilians have died during the pandemic.

California to vote on recalling gov

A Republican-led petition to recall Democratic California governor Gavin Newsom has received 1.6 million signatures, officials confirmed on April 26—**enough to trigger a special election,** expected to take place in the fall. Reality-TV star Caitlyn Jenner is among those challenging Newsom.

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Only your healthcare professional knows the specifics of your condition and how OPDIVO in combination with YERVOY may fit into your overall therapy. The information below does not take the place of talking with your healthcare professional, so talk to them if you have any questions.

What are OPDIVO and YERVOY?

OPDIVO and YERVOY are prescription medicines used to treat people with a type of advanced stage lung cancer called non-small cell lung cancer (NSCLC). OPDIVO may be used in combination with YERVOY as your first treatment for NSCLC when your lung cancer has spread to other parts of your body (metastatic) **and** your tumors are positive for PD-L1, but do not have an abnormal EGFR or ALK gene.

It is not known if OPDIVO and YERVOY are safe and effective when used in children younger than 18 years of age.

What is the most important information I should know about OPDIVO and YERVOY?

OPDIVO and YERVOY are medicines that may treat certain cancers by working with your immune system. OPDIVO and YERVOY can cause your immune system to attack normal organs and tissues in any area of your body and can affect the way they work. These problems can sometimes become serious or life-threatening and can lead to death and may happen anytime during treatment or even after your treatment has ended. You may have more than one of these problems at the same time. Some of these problems may happen more often when OPDIVO is used in combination with YERVOY.

Call or see your healthcare provider right away if you develop any new or worse signs or symptoms, including

- **Lung problems:** new or worsening cough; shortness of breath; chest pain
- **Intestinal problems:** diarrhea (loose stools) or more frequent bowel movements than usual; stools that are black, tarry, sticky, or have blood or mucus; severe stomach-area (abdominal) pain or tenderness
- **Liver problems:** yellowing of your skin or the whites of your eyes; severe nausea or vomiting; pain on the right side of your stomach area (abdomen); dark urine (tea colored); bleeding or bruising more easily than normal

- **Hormone gland problems:** headaches that will not go away or unusual headaches; eye sensitivity to light; eye problems; rapid heartbeat; increased sweating; extreme tiredness; weight gain or weight loss; feeling more hungry or thirsty than usual; urinating more often than usual; hair loss; feeling cold; constipation; your voice gets deeper; dizziness or fainting; changes in mood or behavior, such as decreased sex drive, irritability, or forgetfulness
- **Kidney problems:** decrease in the amount of urine; blood in your urine; swelling in your ankles; loss of appetite
- **Skin problems:** rash; itching; skin blistering or peeling; painful sores or ulcers in mouth or nose, throat, or genital area
- **Eye problems:** blurry vision, double vision, or other vision problems; eye pain or redness

Problems can also happen in other organs and tissues. These are not all of the signs and symptoms of immune system problems that can happen with OPDIVO and YERVOY. Call or see your healthcare provider right away for any new or worsening signs or symptoms, which may include:

- Chest pain; irregular heartbeat; shortness of breath; swelling of ankles
- Confusion; sleepiness; memory problems; changes in mood or behavior; stiff neck; balance problems; tingling or numbness of the arms or legs
- Double vision; blurry vision; sensitivity to light; eye pain; changes in eye sight
- Persistent or severe muscle pain or weakness; muscle cramps
- Low red blood cells; bruising

Getting medical help right away may help keep these problems from becoming more serious.

Your healthcare team will check you for these problems during treatment and may treat you with corticosteroid or hormone replacement medicines. Your healthcare team may also need to delay or completely stop your treatment if you have severe side effects.

What should I tell my healthcare provider before receiving OPDIVO and YERVOY? Before you receive OPDIVO and YERVOY, tell your healthcare provider about all of your medical conditions, including if you:

- have immune system problems such as Crohn's disease, ulcerative colitis, or lupus
- have received an organ transplant



Talk to your doctor about OPDIVO + YERVOY

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- have received or plan to receive a stem cell transplant that uses donor stem cells (allogeneic)
- have received radiation treatment to your chest area in the past and have received other medicines that are like OPDIVO
- have a condition that affects your nervous system, such as myasthenia gravis or Guillain-Barré syndrome
- are pregnant or plan to become pregnant. OPDIVO and YERVOY can harm your unborn baby
- are breastfeeding or plan to breastfeed. It is not known if OPDIVO or YERVOY passes into your breast milk. Do not breastfeed during treatment with OPDIVO or YERVOY and for 5 months after the last dose of OPDIVO or YERVOY

Females who are able to become pregnant: Your healthcare provider should do a pregnancy test before you start receiving OPDIVO or YERVOY.

- You should use an effective method of birth control during your treatment and for at least 5 months after your last dose of OPDIVO or YERVOY. Talk to your healthcare provider about birth control methods that you can use during this time.
- Tell your healthcare provider right away if you become pregnant or think you are pregnant during treatment with OPDIVO or YERVOY. You or your healthcare provider should contact Bristol Myers Squibb at 1-844-593-7869 as soon as you become aware of the pregnancy.

Tell your healthcare provider about all the medicines you take, including prescription and over-the-counter medicines, vitamins, and herbal supplements.

Know the medicines you take. Keep a list of them to show your healthcare providers and pharmacist when you get a new medicine.

What are the possible side effects of OPDIVO and YERVOY?

OPDIVO and YERVOY can cause serious side effects, including:

- **See “What is the most important information I should know about OPDIVO + YERVOY?”**
- **Severe infusion reactions.** Tell your healthcare team or nurse right away if you get these symptoms during an infusion of OPDIVO or YERVOY: chills or shaking; itching or rash; flushing; shortness of breath or wheezing; dizziness; feel like passing out; fever; back or neck pain

- **Complications, including graft-versus-host disease (GVHD), of bone marrow (stem cell) transplant that uses donor stem cells (allogeneic).** These complications can be severe and can lead to death. These complications may happen if you underwent transplantation either before or after being treated with OPDIVO or YERVOY. Your healthcare provider will monitor you for these complications.

The most common side effects of OPDIVO when used in combination with YERVOY include: feeling tired; diarrhea; rash; itching; nausea; pain in muscles, bones, and joints; fever; cough; decreased appetite; vomiting; stomach-area (abdominal) pain; shortness of breath; upper respiratory tract infection; headache; low thyroid hormone levels (hypothyroidism); decreased weight; and dizziness.

These are not all the possible side effects of OPDIVO and YERVOY. Call your doctor for medical advice about side effects.

You are encouraged to report side effects of prescription drugs to the FDA. Call 1-800-FDA-1088.

OPDIVO (10 mg/mL) and YERVOY (5 mg/mL) are injections for intravenous (IV) use.

This is a brief summary of the most important information about OPDIVO and YERVOY. For more information, talk with your healthcare providers, call 1-855-673-4861, or go to www.OPDIVO.com.

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NEWS TICKER

Investigators raid Giuliani's NYC home

Federal investigators executed a warrant to **search the Manhattan apartment and office of former New York City mayor Rudy Giuliani** on April 28. The search reportedly was a part of a probe into whether he violated lobbying laws while serving as President Trump's personal lawyer.

Navalny's opposition group banned

On April 24, Russia suspended the activities of jailed **opposition leader Alexei Navalny's Anti-Corruption Foundation**, banning the group from posting online, organizing protests or having access to its bank account. Its members have been arrested and forced to leave Russia.

2020 Census numbers shift House seats

According to the U.S. Census Bureau, 331 million people now live in the U.S. Census data released on April 26 also revealed that population shifts away from the Northeast will give **six states new congressional seats**, including two for Texas, while seven states will each lose a seat.

GOOD QUESTION

Will Japan's low vaccination rate be an Olympic problem?

WITH FEWER THAN 100 DAYS TO GO BEFORE the Tokyo Olympics begin on July 23, the torch relay is crisscrossing Japan. But far from building excitement for the 2020 Games, the flame is sparking anxiety about holding an international event amid the pandemic. Torch runners are being heckled by protesters who want the Olympics canceled.

It doesn't help, of course, that Japan is in the middle of a fourth COVID-19 wave. Tokyo, Kyoto and two other regions declared states of emergency on April 23 as daily cases surged above 4,500 nationwide.

Fears are compounded by a vaccination rate of less than 2% across Japan's population, which is the world's oldest, with 28% of Japanese ages 65 or older. Despite foreign fans being banned, and testing requirements in place for athletes and officials, the potential for the Olympics to be a superspreader event isn't lost on anyone.

The reasons for Japan's low immunization rate are complex but reflected across the Asia-Pacific region, where many of the nations that controlled COVID-19 best are now falling behind in the vaccine race, potentially undoing early gains in the pandemic and stalling economic recoveries. New Zealand has fewer than 3% of its people vaccinated; South Korea and Indonesia fare little better with fewer than 5%.

Problems with some jabs have also spurred vaccine hesitancy across the region. The AstraZeneca vaccine, for example, was briefly suspended in Indonesia and Thailand because of the very rare occurrence of blood clots.

In Japan, an extremely conservative attitude toward vaccine approval compounds the problem. The government has agreed to buy 314 million vaccine doses from Pfizer, AstraZeneca and Moderna—enough for the entire population. But only the Pfizer vaccine has so far received authorization—and there won't be enough doses to cover everyone until the end of September. "The government is very cautious and cannot proceed as quickly as people want," says Mieko Nakabayashi, a professor at Waseda University's School of Social Sciences in Tokyo and a former lawmaker.

As the Games loom, Japan's sluggish rollout also means it will be difficult to insist that visiting athletes and officials get vaccinated. Draft COVID-19 protocols for the Olympics currently rely on frequent testing and isolation bubbles but not vaccines or strict quarantines.

International Olympic Committee president Thomas Bach is due to travel to Tokyo in mid-May to assess preparations. But if the Games do proceed as scheduled, it seems likely that the athletes won't be getting the warmest of welcomes. Nakabayashi, the ex-politician, says a close friend of hers, chosen to be an Olympic torchbearer, was among those verbally abused during the relay. "People are very nervous," she says.

—CHARLIE CAMPBELL/SHANGHAI



NATURE

Bugging out

Billions of Brood X cicadas are expected to emerge across the eastern U.S. over the coming weeks, having last swarmed the U.S. in 2004. Much of America's cultural landscape has changed during the 17 years they spent underground feeding, but the world they find will not be wholly unfamiliar. To wit: —*Madeleine Carlisle*

BEYHIVE BUZZ

At the 2004 Grammys, Beyoncé won her first solo Grammy Award for her debut solo album, *Dangerously in Love*. As of the 2021 awards, held March 14, she's accrued 28 trophies—becoming the most decorated female artist in Grammy history.

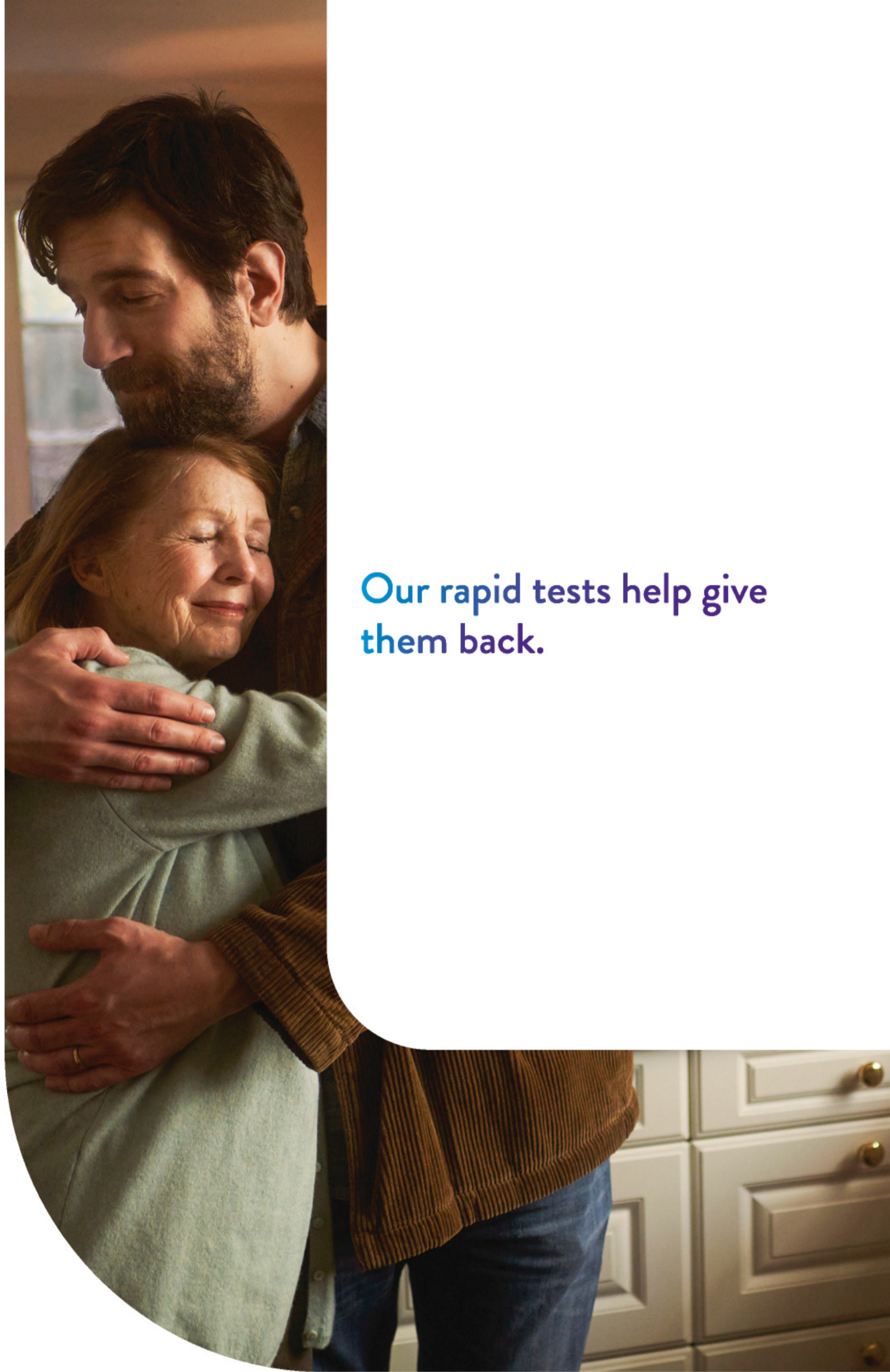
OLD FRIENDS

On May 6, 2004, NBC aired the Season 10 *Friends* finale—with over 52 million viewers tuned in. Executives confirmed on April 10 that the original cast has finished filming a reunion special that will air on HBO Max later this year.

SPACE TAXIS

In a major milestone for space travel, the first privately crewed space flight was completed on June 21, 2004. Today the private company SpaceX is sending its shuttles to the International Space Station, with four astronauts arriving April 24.

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The Brief Milestones

DIED

> **The 53-person crew of an Indonesian navy submarine** that sank off the coast of Bali, according to an official statement on April 25.

> **Idriss Déby**, President of Chad, at 68 from injuries he sustained while fighting with rebels, state TV said April 20.

> **Former U.S. Vice President Walter Mondale**, who served under President Jimmy Carter, on April 19 at 93.

VOTED

The U.S. House of Representatives, on April 22, to pass a bill to make Washington, D.C., the 51st state. The bill must now pass the Senate, where it faces steep opposition.

WON

The 2021 Best Director Oscar, on April 25, by *Nomadland* director **Chloé Zhao**, the first woman of color and the second woman in history to win the award.

APOLOGIZED

Mary Lou McDonald, current leader of Sinn Féin—the Irish nationalist party with links to the Irish Republican Army—on April 18, for the 1979 assassination of Lord Mountbatten, uncle of the late Prince Philip.

SENTENCED

British-Iranian nonprofit worker **Nazanin Zaghari-Ratcliffe**, who was first detained in Iran in 2016, to an additional year in prison, on April 26, after being found guilty of propaganda against the regime. She denied the charges.

REPORTED

A newly developed **malaria vaccine** that showed 77% efficacy in recent trials in Africa, per a “preprint” study, published April 20, in what could be a major medical breakthrough.



DIED

Michael Collins

Made giant leaps for mankind

MICHAEL COLLINS BECAME FAMOUS FOR THE SIMPLE act of not walking on the moon. Collins, who died of cancer on April 28 at 90, is best remembered as Apollo 11’s command-module pilot—in some ways the unluckiest man on the luckiest mission of all time. It was Apollo 11 that, in the summer of 1969, stuck the first crewed lunar landing, taking Neil Armstrong and Buzz Aldrin down to the surface, while Collins remained in orbit 60 miles above.

Not just an extraordinary pilot and astronaut—he went to space once before Apollo 11, aboard the 1966 Gemini 10 flight, when he became the first person to walk in space twice—Collins was also a reflective, poetic man. “A withered, sun-seared peach pit,” was how he described the lunar surface in his 1974 autobiography, *Carrying the Fire*.

It was that reflectiveness, that lyricism, that long view of his mission—and all of the Apollo missions—that made him best suited for his supernumerary role on Apollo 11. As Armstrong and Aldrin cast off in the lunar module, he offered them a casual goodbye: “You cats take it easy.”

And in the interval he spent aloft, alone in his command module, he quietly did his job, ensuring that his compatriots would have a spacecraft to return to. “I’d be a liar or a fool if I said I had the best seat on Apollo 11,” he told TIME in a 2019 interview. “But I can say absolutely, with total honesty, I was delighted to have the seat that I had.”

Michael Collins served and flew and thrived and wrote and left his rich, nearly musical voice behind. That’s more than enough. —JEFFREY KLUGER

DIED

Alber Elbaz

Beloved couturier

WHILE FASHION DESIGNER Alber Elbaz was perhaps best known for his 14-year tenure as the creative director of Lanvin, his legacy is better defined by the warm generosity of his spirit, embodied in both his exquisite designs and his exuberant personality.

Elbaz, who died on April 24 at 59 from the coronavirus, began his fashion career working for U.S. designer Geoffrey Beene. He was later tapped for lead gigs at French labels Guy Laroche and Yves Saint Laurent before taking the helm at Lanvin in 2001, revitalizing the fashion house to both critical and popular acclaim.

The through line in Elbaz’s designs was a deeply compassionate understanding of what women really wanted from fashion: beautiful yet practical clothing that could make every day feel a little more special. And that compassion resonated in an industry not always known for its empathy; Elbaz was widely beloved for his gentle joie de vivre and kind gestures—he had a penchant for hand-illustrated notes and for sending his fellow designers flowers ahead of their shows. In both design and life, Elbaz led with love. —CADY LANG



COLLINS: NASA/AP; ELBAZ: ANTHEA SIMMS—CAMERA PRESS/REDUX



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The Brief

HEALTH

Should we wear masks after the virus is gone?

By Jamie Ducharme

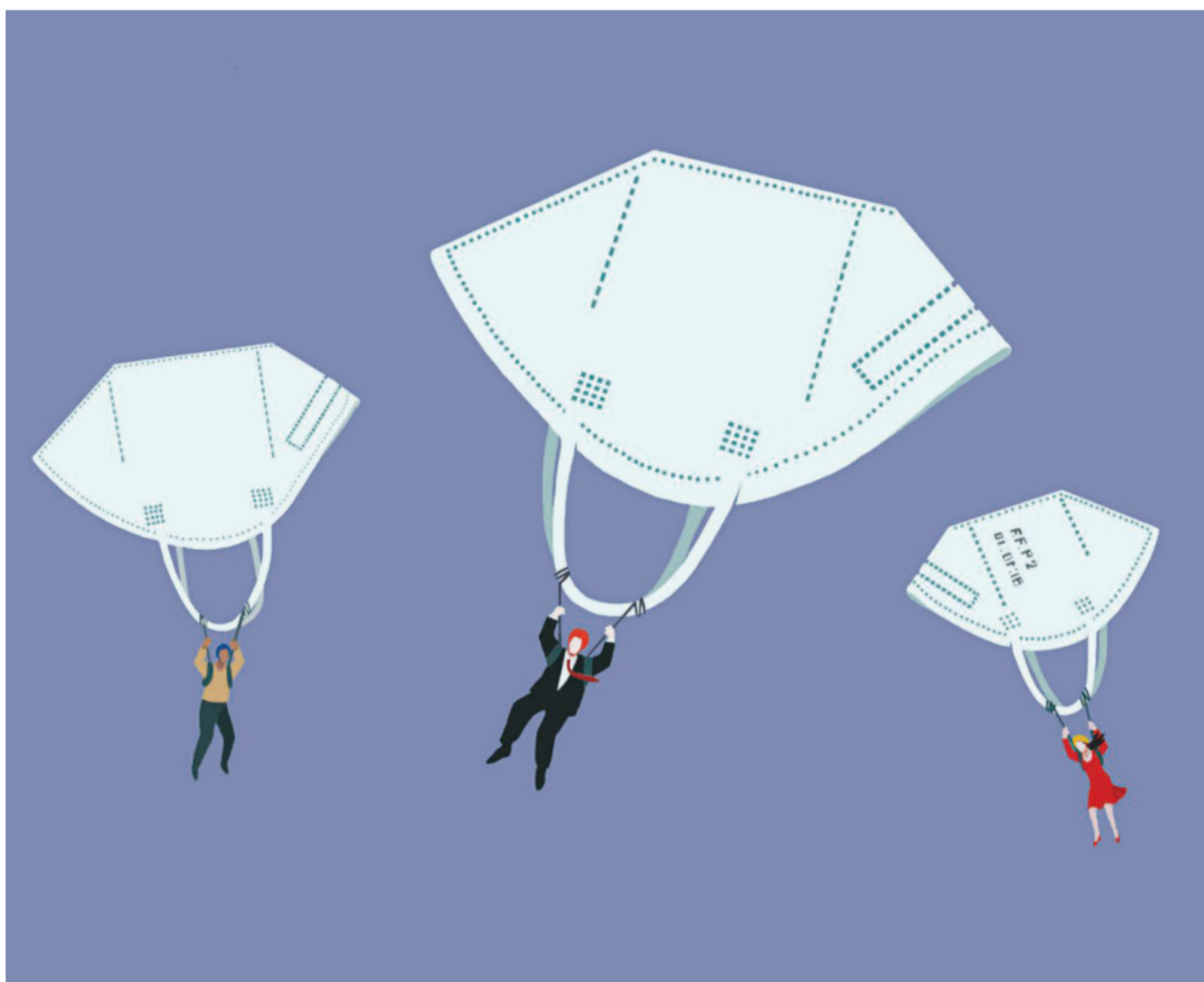
AS WHAT NORMALLY WOULD HAVE been cold and flu season in the northern hemisphere draws to a close, many (lucky) people are having the same realization: they haven't been sick since the pandemic started.

Federal data show that flu season was extremely mild this year. About 600 flu deaths had been recorded in the U.S. as of April 26, compared with at least 24,000 last flu season. There are a few reasons for that. Flu-vaccination rates were high this season; social distancing kept people away from strangers' germs; and mask wearing in public to help slow the spread of COVID-19 likely limited influenza transmission too. Masks are only one piece of that puzzle, but the impressive results do raise the question: Should masks stay after COVID-19 is gone?

Some experts say yes. Masks are "minimally invasive, safe, cheap, effective" tools that could help reduce the spread of respiratory disease, says Raina MacIntyre, a professor at Australia's University of New South Wales who studies the efficacy of face masks. Where masks were mandated in the U.S., the rates of COVID-19 cases and deaths slowed within 20 days, according to research from the U.S. Centers for Disease Control and Prevention.

During a pandemic, masks are useful because they help with "source control"—they prevent people from exhaling potentially infectious particles into others' airspace, ideally cutting down on the amount of virus that can spread within a community. Because COVID-19 can be spread by people who aren't showing symptoms, everyone needs to wear one in areas where the virus is known to be afoot.

But Dr. John Conly, an infectious-disease physician at Canada's University of Calgary, questions whether masking will be necessary once COVID-19 is better contained.



A November 2020 research review co-authored by Conly found that masks didn't make a huge difference in protecting the wearer from catching flu-like illnesses. That's not shocking; experts have long known that cloth and surgical masks are better for source control than for filtering out pathogens that could infect the wearer. Conly considers that an argument against wearing masks during non-pandemic times, when there's less dangerous disease spreading through the community and therefore less need for source control.

AND THERE ARE DOWNSIDES to masking, like stunted communication, accessibility concerns for the deaf community, acne and even trace microplastic inhalation with long-term wear. It's also not clear how long-term masking would affect disease patterns in the U.S., says Dr. Richard Malley, an infectious-disease physician at Boston Children's Hospital. If lots of people consistently wore masks, viruses could feasibly spread at low levels all year long, rather than during intense but contained seasons. Permanent masking could even affect human immunity, which builds up in response to pathogen exposures.

Once we're not living with the constant threat of COVID-19, Conly says, masks' drawbacks and unknowns

would likely outweigh their positives. But there may be an argument for a hybrid approach. Even if masks aren't worn 24/7, MacIntyre says, mask wearing is easy and safe enough to recommend it in high-infection settings like public transit, long-term-care facilities and hospitals.

People in many Asian countries used masks before the pandemic, and Westerners could do the same. But masks turned into political symbols in the U.S. during the pandemic. Given the thrum of antimask sentiment, and the mixed messaging from officials about whether they're effective and necessary, it's unlikely that many people in the U.S. would be willing to wear them after the COVID-19 era, Malley says. Already, many states have repealed or softened mask mandates (prematurely, many experts argue).

Like COVID-19 itself, masks probably won't be our constant reality forever—but they may not fade away completely, either. And even if masking doesn't stick, there are other pandemic-related public-health lessons that may catch on. Never before have Americans been so attuned to how diseases spread and what can be done to stop them. Malley says he hopes that consciousness, and conscientiousness, will outlast the pandemic. Lessons doctors have preached for years, he says, "may finally sink in." □

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Graphic memoirist **Alison Bechdel** is no longer trying to outrun death

By **Eliana Dockterman**

THE FATE OF AN AUTHOR WHO GREW UP IN A funeral home may be that every book she writes becomes a contemplation of mortality. That certainly seems to be the case for Alison Bechdel, the cartoonist who shot to literary fame with the 2006 graphic memoir *Fun Home*, named after the family funeral home where she spent her formative years. That book dealt with Bechdel's coming out during college, the subsequent revelation that her father had had sexual relationships with men, and his untimely death, which Bechdel believes to have been a suicide. Her next book, *Are You My Mother?*, sought to unpack Bechdel's complicated relationship with her mom.

"After spending a long time writing these intense family memoirs that were kind of grueling, I thought it would be fun to talk about my exercise life, which has always been the one part of my life that wasn't conflicted," she says during a Zoom call from her home in Vermont, chosen in part because of its access to biking trails and cross-country skiing. She pitched *The Secret to Superhuman Strength* as a humorous account of her lifelong obsession with exercise, but the resultant book is hardly a breezy read: the cartoon version of Bechdel turns to physical activity in an attempt to outrun death in her younger years. Then, after she's accepted the inevitable, she exercises in an effort to achieve enlightenment.

Bechdel, 60, recently came across a journal entry she wrote when she was 16. "I said, 'You better still be running when you're old and gray,'" she says. "It was funny to hear myself speaking to myself across the decades. So I feel like I've always been conscious of the problem of aging and death."

The book also reckons with a more ephemeral threat: creative death. Bechdel chronicled much of gay culture in her 25-year-long syndicated comic strip, *Dykes to Watch Out For*. She made famous the "Bechdel test," a simple query that asks if two female characters in a movie talk to each other about something other than a man. She won the MacArthur "genius" grant in 2014. The musical version of *Fun Home* was a Pulitzer finalist that same year and won five Tony Awards in 2015. It's now being made into a movie starring Jake Gyllenhaal as Bechdel's father. Given her phenomenal success, she worries about matching the peaks of her previous work.

For guidance, Bechdel turns to Transcendental-

BECHDEL QUICK FACTS

Recognition
Fun Home won an Eisner Award, an honor for achievement in the comics industry, in 2007.

Karate
Bechdel earned her black belt in a martial-arts class taught by a female sensei who was kicked out of a dojo for insisting women could do knuckle push-ups too.

Politics
When Bechdel brought back her old comic strip *Dykes to Watch Out For* to respond to Trump's election in 2016, fans crashed her site.

ists like Margaret Fuller and Romanticists like William Wordsworth, whose biographies she weaves into *Superhuman Strength*. These writers also detailed their own exercise in pursuit of inspiration—primarily vigorous walking with other literary giants. "Where does creativity come from? How can I tap into that? Can I engineer it, or does it just somehow descend from the heavens unbidden?" Bechdel asks. "Getting a handle on how they all lived helped me to figure that out a bit for myself."

She's particularly interested in Jack Kerouac. Like many a young feminist college student, Bechdel hated the casual misogyny of *On the Road*. But later in life, she fell in love with another of his works, *The Dharma Bums*, an autofictional account of his journey up Matterhorn Peak in California with the poet Gary Snyder. In hopes of climbing out of her own creative rut while writing this book, Bechdel persuaded her partner, artist Holly Rae Taylor, to make the same trek on their honeymoon. "When I was younger, I thought he was such a jerk," she says. "But now it's interesting to me to see someone attain success and then self-destruct. Now that I'm much older and have had some brushes with success myself, I can see what a challenge that is."

Shortly before the pandemic, Taylor, who provided the coloring for *Superhuman Strength*, suggested they cut out meat and reduce their alcohol consumption, a promise they've stuck to. But in the book, Kerouac's drinking serves as a gateway for Bechdel to explore her own struggle with alcohol. "I was really starting to go off the rails once Trump was elected," she says. "I was drinking a lot, but I also started running more." On Election Day 2016, she went on a long run to ease her anxiety. "It wiped my mind clean," she says. "And so I had to keep doing that. I just kept running and running because that was my way of saving myself."

AS A KID, Bechdel fixated on fitness magazines, striving to be as strong as the buff men they featured. In the opening pages of *Superhuman Strength*, she reckons with what she believes to be her own hypocritical preoccupation with attaining brute strength: "This fantasy of physical fitness is for fascists! I'm a feminist for *@#&'s sake."

In retrospect, she realizes that part of the appeal was the androgynous workout clothes, especially tantalizing to a kid not allowed to get sneakers because they were considered unladylike. "I grew up in the times when they told girls they were physically incapable of doing push-ups," she says. "I grew up before there was such a thing as a sports bra. The sports bra alone has revolutionized so much in our culture."

Bechdel earned a black belt in a feminist martial-arts class in the 1980s, but quit after a guy



groped her on the New York City subway, and she realized that she couldn't follow through on her strikes. The man returned her half-hearted attack with a punch to her face, and she had a black eye for weeks. "I think about that moment a lot," she says. "It was an important lesson in nonviolence. That's not how you solve things."

Since then, Bechdel has tried just about every exercise fad, from indoor cycling to a regrettable stint with the "Insanity" DVDs that were all the rage in the 2000s. She's bought straps that suspend her from the ceiling as she practices yoga. She's skied, downhill and cross-country. In hotels on book tours, she still does the "Scientific 7-Minute Workout" the *New York Times* published in 2013. She began this latest book just as her age began to hamper her vigorous workouts. "I was starting to lose strength, which was very disturbing," she says.

But in many ways, the mental benefits have begun to outweigh the physical ones. "Through repetitive, intense aerobic activity, I can get out of my busy, annoying mind," Bechdel says. When she goes for a run, she does so without headphones. If

'Through repetitive, intense aerobic activity, I can get out of my busy, annoying mind.'

ALISON BECHDEL,
author of *The Secret to Superhuman Strength*

she has an idea while on the trail, she'll switch her wedding band to her other hand in hopes that it'll remind her she had *some* idea for *something*. It's a trick she picked up in some book by a runner, and it works only some of the time.

Bechdel references these metaphysical moments, or "aerobic inebriation," throughout her book. With these revelations, the vision of the individualistic strongman she coveted as a little girl has faded away: "I realized it wasn't so much I wanted to be physically stronger as that I wanted to be not dependent on other people. I've always had this fantasy of self-sufficiency, just given my own family and upbringing. I am learning no one can be self-sufficient. We're just part of the same big human organism, which I think the pandemic has illustrated quite profoundly. We're all vulnerable, as much as we would like to think we're not."

"I was just looking at Marjorie Taylor Greene's Instagram, and she's doing these crazy overhead presses with really heavy weights saying, "This is my COVID protection." Bechdel rolls her eyes. "That's not what my book is about." □

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The View

NATION

WE NEED TO TAX WEALTH

By Daniel Markovits

The coronavirus has been nothing less than a calamity. But more than a year into the pandemic, it is distressingly clear that although the virus affects everyone, we are not all in this together. Instead, the disease highlights and worsens existing fault lines in American society, especially economic inequality. ▶

INSIDE

WHAT PUTIN WAS UP TO
ON UKRAINE'S BORDER

LEADING MEDICAL JOURNALS
DON'T WRITE ABOUT RACISM

HOW BIG DATA CAN HELP IN
THE FIGHT AGAINST CANCER

The View Opener

The Biden Administration recognizes the problem. The American Rescue Plan (ARP) Act, signed into law in March, is the most economically progressive legislation in a generation. But for all that it does to fight poverty, the ARP will do distressingly little to reduce inequality.

The statute works almost entirely through public spending. But the economic inequality that separates the rich from the rest has become so great that spending alone can't repair it or even reverse inequality's increase over the course of the pandemic. The rich have too much money. We simply can't spend our way back to equality.

Curing economic inequality requires redistribution, and redistribution means taxes. National solidarity in the face of a universal threat like the pandemic requires the rich to contribute to the relief effort. Income taxes can help, but the best way to reduce inequality and honor shared citizenship is to tax wealth.

THE FIRST WAVE of the pandemic hit the rich, who were exposed to the virus through travel and public appearances. But privilege quickly reasserted itself. COVID-19 infections soon became concentrated among low-paid workers, who cannot afford to leave their jobs and whose working conditions make social distancing difficult. In one study, the least economically privileged fifth of counties experienced COVID-19 death rates 67% higher than the most privileged fifth. Another study reports that Black Americans have died from COVID-19 at more than twice the rates of their white counterparts. Unemployment, and the lost income and dignity that follow, have also hit the worst off hardest.

Perhaps no facet of inequality has grown more dramatically than wealth. The 15 richest Americans

have become over \$400 billion richer since the markets bottomed out in March 2020. Meanwhile, a yearlong bull market—triggered by the CARES Act's passage at the market trough and supported since then by a series of government rescues—has added roughly \$4.8 trillion of wealth to the richest 1% of American households. More comprehensive measures, which include real estate and privately held companies, report that the richest 1% of Americans gained over \$7 trillion of wealth from the end of March to the end of December 2020.

By comparison, the money in the ARP—\$1.9 trillion over 10 years—sounds relatively modest, and truly is. The ARP's spending is front-loaded, so that \$1.2 trillion will be spent in 2021. On average, each percentile in the bottom 80% of the income distribution will get a little over 1% of this sum, or about \$12 billion. That's less than 1/500th of the increased wealth that the richest 1% have accumulated over the pandemic year—a drop in the ocean.

The only truly effective way to tackle wealth inequality this extreme is to meet it head-on, by taxing wealth itself. A levy on the superrich figured prominently in the presidential campaigns of Senators Bernie Sanders

and Elizabeth Warren, who have now teamed up on a joint proposal to impose an annual 2% tax on household wealth above \$50 million, rising to 3% above \$1 billion. I propose a simpler and broader onetime wealth tax with lower exemptions and higher rates, tied directly to a national response to pandemic emergency: a onetime tax starting at 5% on the richest 5% of households, that is, on wealth in excess of \$2.5 million.

Americans agree that the extraordinary catastrophe caused by COVID-19 calls for an extraordinary

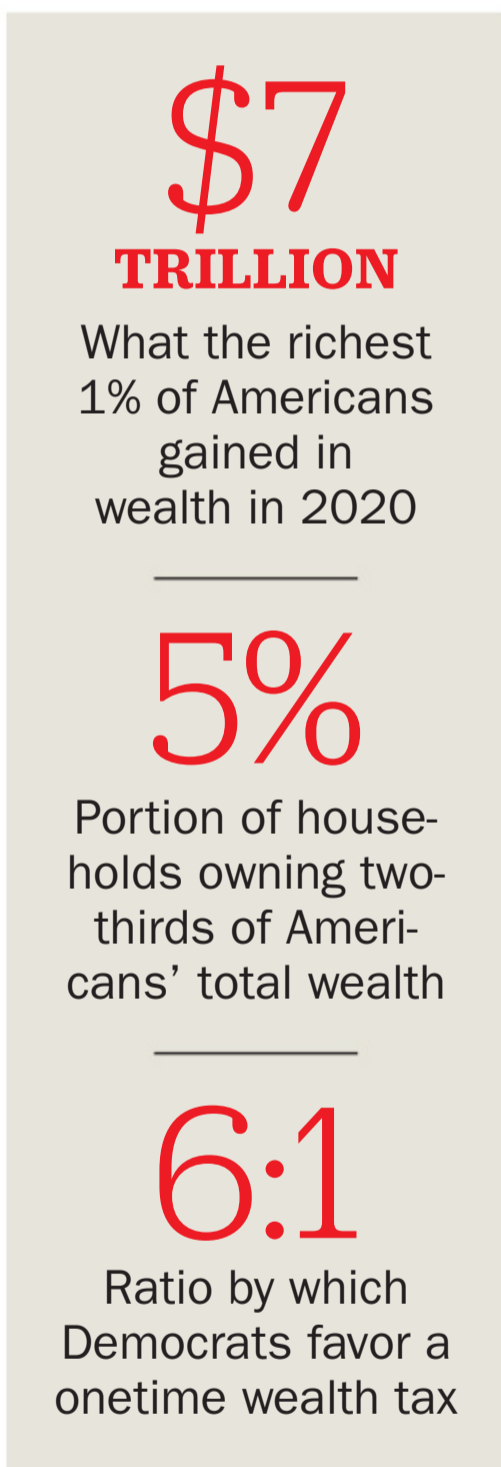
response—one that draws not on the income used to fund everyday government expenditures, but rather on the stock of advantage that the most privileged have accumulated across decades of good times. When asked in a poll about the onetime tax, Democrats favored the plan by a ratio of 6:1, independents by nearly 3:1, and even Republicans favored the tax by 2:1.

All the proposed wealth taxes have strengths and weaknesses. Ongoing taxes can have higher exemptions and lower rates and might raise more revenue over the long run. On the other hand, the complexity of the extreme fortunes (offshore trusts, private investments, art, etc.) on which ongoing taxes focus make them difficult to administer; the superrich have many opportunities for tax avoidance; and the prospect of regular wealth-tax bills might discourage capital accumulation and reduce economic growth. A onetime tax can reach a broader tax base with a simpler structure and fewer unwanted side effects.

The richest 5% of American households own two-thirds of the country's total wealth, much of it in forms (publicly traded securities, real estate property) for which data on valuations already exist. Using a past date—for example, the date on which the wealth-tax bill was introduced in Congress—to fix valuations makes tax avoidance much less of a problem. And a onetime tax will create no economic distortions on savings and investment going forward. A onetime tax can also raise more immediate revenue and reduce inequality more quickly than an ongoing tax, even as it leaves unresolved future battles over economic justice.

Oliver Wendell Holmes once said, "I like to pay taxes. With them, I buy civilization." He should be taken literally. World history teaches that oligarchies are almost impossible to unwind except by war or violent revolution. Extreme wealth inequality confronts the U.S. with a civilizational threat. Wealth taxes answer the threat.

Markovits is the Guido Calabresi Professor of Law at Yale Law School and the author, most recently, of The Meritocracy Trap



THE RISK REPORT

Why Putin flexed his military muscle on Ukraine's border

By Ian Bremmer



RUSSIA HAS BEEN pulling back tens of thousands of troops from its border with Ukraine following a show of strength that rattled nerves

from Kyiv to Washington. Russia's Defense Ministry said the drawdown would be complete by May 1, part of a routine training exercise; Ukrainian, European and U.S. officials were waiting to exhale.

So, what does Vladimir Putin's latest muscle flex tell us about his priorities?

First, Putin is determined to mark Russia's territory across its "near abroad," particularly Ukraine and Belarus, and he won't treat Ukrainian President Volodymyr Zelensky as an equal negotiating partner. Zelensky has recently taken action against a pro-Russian oligarch in Ukraine, and he's reiterated his call for a path to NATO membership for his country. The U.S. has sent unfriendly signals toward Moscow with increased sanctions, and Turkey has provided Ukraine with defensive weapons. Putin wants all of them to think carefully before they take further action.

Second, the show of strength tells us that Putin wants U.S. and European leaders to see that Russia is determined and willing to take risks to protect Kremlin interests. There's little chance that Putin will order an invasion of Ukraine that would cost the lives of large numbers of Russian troops and force a prohibitively expensive occupation of a country of 40 million people across territory larger than that of any current E.U. member, but Ukraine and Western governments know they'd better watch closely. In that sense, Putin got just what he wanted. President Joe Biden was calling for a summit meeting and at the same time talking tough, but then Biden changed his mind. Ending these military "exercises" on Russian terms gives Putin the last smirk.

But this exercise also tells us that

Putin needs a show of strength for reasons that have little to do with Ukraine and much to do with Russia's future. Russia remains the world's No. 2 exporter of crude oil and the No. 1 exporter of natural gas. In the early years of his reign, during the hydrocarbon boom that ended with the 2008 global financial crisis, Russia's economy was red-hot, growing, on average, by close to 7%. But oil markets have never recovered from the oil-production surge in the U.S. that followed, and since then, Russia's economy has grown each year by on average just 1% a year. Russia hasn't done much to diversify its economy away from hydrocarbons. Oil and gas still make up around 60% of Russia's exports and some 40% of

its revenue. Living standards are in decline, and though an election later this year has Putin promising all sorts of goodies, his 21 years in power inspire little confidence that better days lie ahead.

WESTERN MEDIA ARE now paying close attention to the fate of Alexei Navalny, a de-

termined Putin critic who finds himself in prison and in failing health. Putin can't be too concerned. A clear majority of Russians either dislike Navalny or don't care about him. But even if Navalny doesn't survive, his message will. Rising frustration with slow growth, poor prospects and massive corruption leaves Putin in need of muscular displays to bolster his popularity.

For now, Russia has financial reserves to weather near term economic storms, and Putin still has an approval rating above 60%. But that number is falling, and while Russia's rainy-day funds are in solid shape, the Kremlin's inability or unwillingness to diversify the Russian economy ensures there is little reason to believe things will change for the better.

That's the bad news for Putin. The bad news for Ukraine and the West is that as conditions get tougher, Putin will feel the need to look tougher still. □

Putin needs a show of strength for reasons that have much to do with Russia's future

HEALTH

Racism in medicine

Our new report published in *Health Affairs* examined four leading medical journals and found that they almost never publish scientific articles that name racism as a driver of poor health outcomes. Of the more than 200,000 total articles published over the past 30 years in the *New England Journal of Medicine*, the *Lancet*, the *Journal of the American Medical Association* and the *British Medical Journal*, fewer than 1% included the word *racism* anywhere in the text. And among the few articles that did, upwards of 90% were predominantly opinion pieces, not scientific investigations. In a field that maligns anecdotal evidence, our examination found that the primary "evidence" published about racism was people's scholarly opinions. That alarms us. Racism threatens and shortens lives. It is a public-health crisis. It is past time for the world's leading medical journals to name racism, publish evidence on how racism harms health and articulate how dismantling racism can prevent health inequities. —Rhea Boyd, Nancy Krieger, Fernando De Maio and Aletha Maybank



Boston medical workers at a vigil for George Floyd in 2020

SACRED STONE OF THE SOUTHWEST IS ON THE BRINK OF EXTINCTION



Centuries ago, Persians, Tibetans and Mayans considered turquoise a gemstone of the heavens, believing the striking blue stones were sacred pieces of sky. Today, the rarest and most valuable turquoise is found in the American Southwest—but the future of the blue beauty is unclear.

On a recent trip to Tucson, we spoke with fourth generation turquoise traders who explained that less than five percent of turquoise mined worldwide can be set into jewelry and only about twenty mines in the Southwest supply gem-quality turquoise. Once a thriving industry, many Southwest mines have run dry and are now closed.

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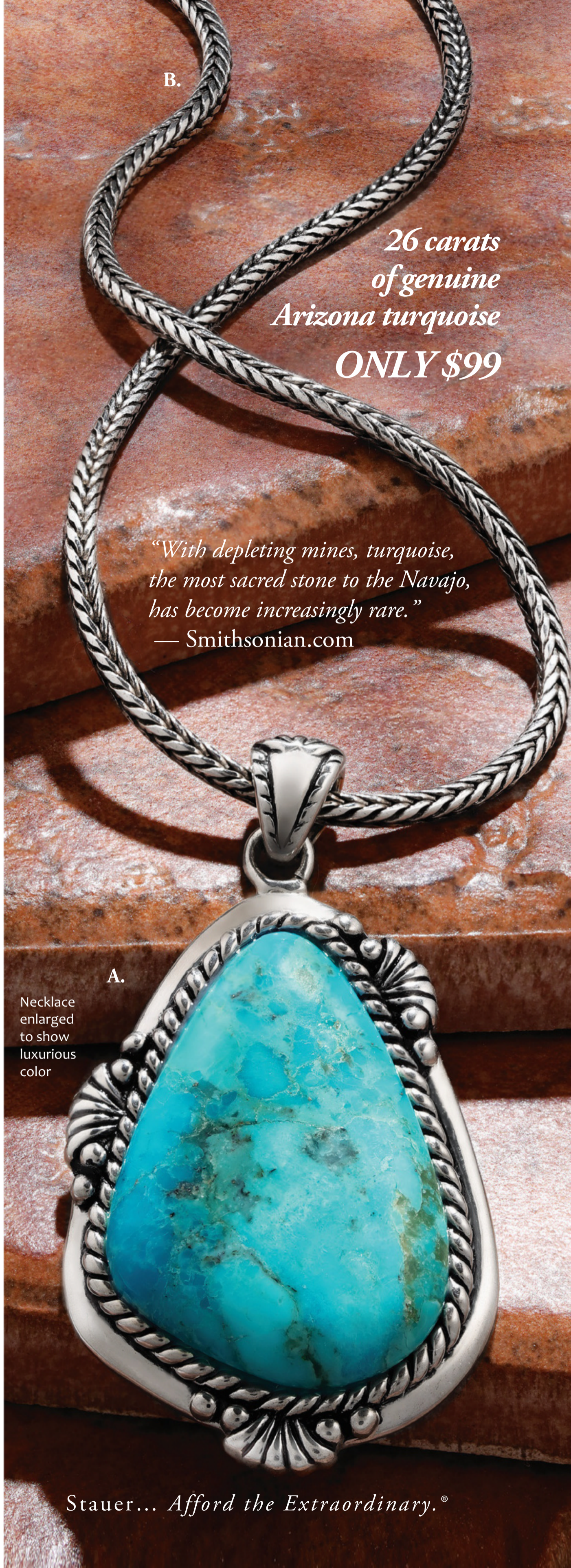
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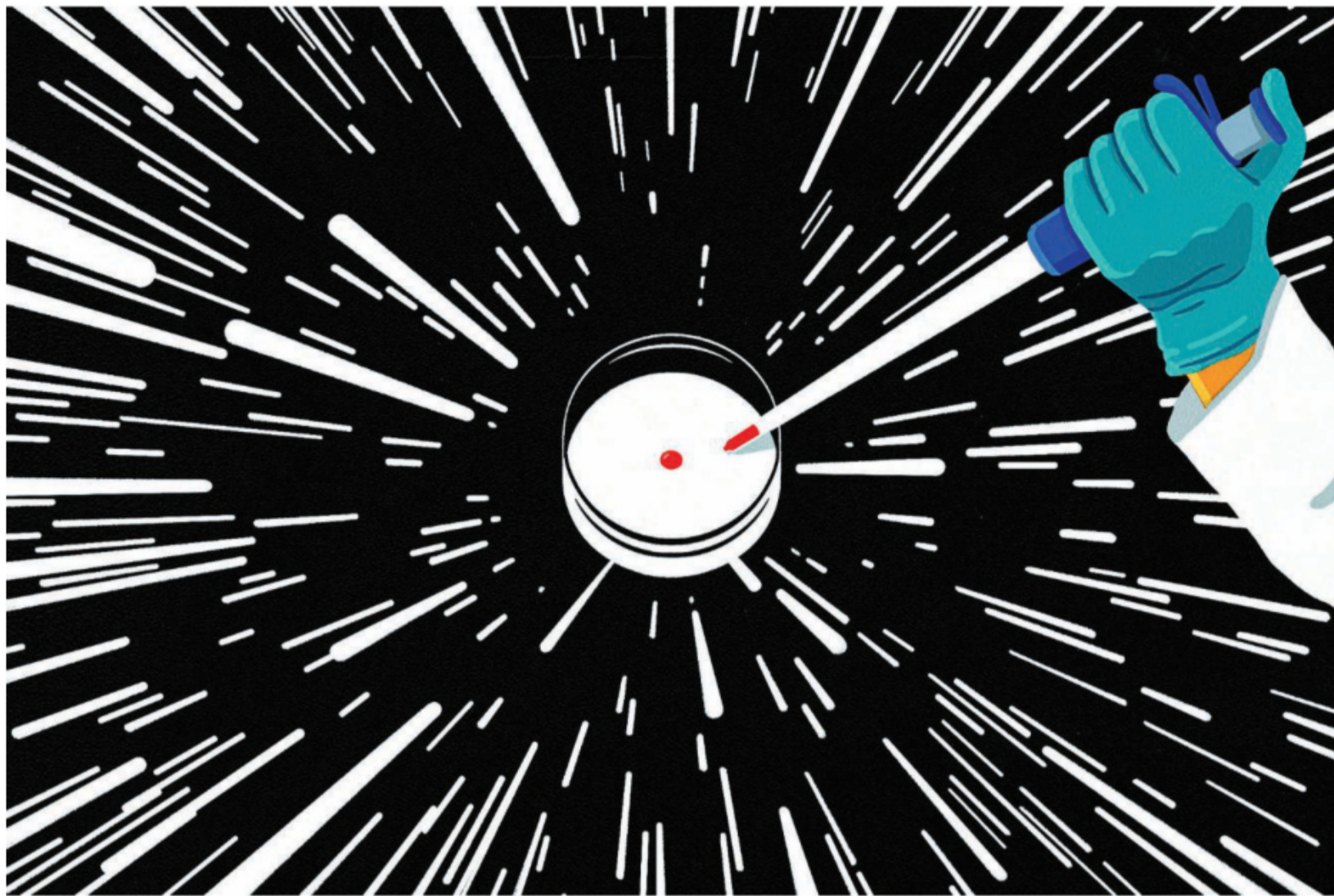
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HEALTH

Fight cancer with data

By David B. Agus, Elizabeth M. Jaffee and Chi Van Dang

FOR THE FIRST TIME IN OVER A YEAR, WE ARE STARTING TO see a light at the end of the tunnel from the devastation caused by COVID-19. While much work remains to end and avoid a resurgence of the pandemic, public and private investments in scientific research will get us to a new normal. The speed to develop, test and manufacture COVID-19 vaccines has shown how science and technology, supported by leadership from governments and the private sector, have the ability to save lives. For example, the CDC's V-safe program, which recorded side effects, led to the collection of data from tens of millions of people after vaccination, creating a new paradigm for data collection after drug approval.

These successes show just how much can be done when we invest in science and the systems to deploy it effectively. That is why we believe President Biden has the opportunity to lead on another major investment in scientific leadership: the battle to end suffering from cancer.

Despite recent advancements in medicine, cancer still kills more Americans each year than the COVID-19 pandemic has to date. Significant disparities exist, with African-American men having the highest death rates from cancer of any group in the country.

Now in its fifth of seven years, the Cancer Moonshot program, launched under the leadership of then Vice President Biden, has made significant progress. But with challenges remaining, there is a need to renew commitment, refresh priorities and increase funding for Cancer Moonshot 2.0. These efforts will complement and accelerate the National Cancer Institute's (NCI) existing work.

WE SEE SEVERAL INTERRELATED PRIORITIES for a second Cancer Moonshot, which can unlock new and needed progress in the war on cancer. To begin: standardizing and collecting cancer-patient data (using the same vocabulary to describe medical events and collecting patient data in the same way so they can be compared), especially on outcomes that matter to patients. Patients want to be part of the solution and

participate, through use of their privacy-protected data. For too long, electronic health records have been health system-centric, making it difficult for patients, doctors and researchers to track an individual patient's data over time and across systems. With standardized, patient-centric data, artificial intelligence (AI) can help identify measures for intercepting cancer early, reducing disparities in outcomes and using precision medicine to get treatments to patients who will most benefit from them. With standardized data, we can also create a national cancer data (NatCanDa) repository that researchers can use to inform treatment development, and better pool and share our data with the world. Data holds the clues to better treating cancer.

In addition, we have to modernize systems at the NCI, the FDA, Centers for Medicare and Medicaid Services and other government agencies that collect cancer-related data. Modernized systems, including outcomes, clinical-trial and claims data, will allow us to use real-world evidence to determine which treatments work best for which types of patients and under which models of care, and the most cost-effective ways of delivering those treatments. This will also serve as the foundation of a coordinated cancer clinical trial infrastructure to support faster and more effective drug development.

Together, these initiatives can set up a national "learning health system" for cancer treatment and prevention, where research informs clinical care, and clinical care informs research. Better data sharing and use of real-world evidence can lay the foundation for similar progress on other diseases, especially complex chronic conditions like heart disease and diabetes.

The ability of science to respond to the COVID-19 pandemic shows that, with the right government, scientific, health care, technology and community leadership, we can come together to save lives.

Data holds the clues to better treating cancer

Agus is the CEO of the Ellison Institute for Transformative Medicine at USC, Jaffee is the deputy director of the Sidney Kimmel Cancer Center at Johns Hopkins, and Dang is the scientific director of the Ludwig Institute for Cancer Research. Agus and Jaffee were on the board of directors of the Biden Cancer Initiative

With hospitals full,
COVID-19 patients
receive oxygen
outside a Sikh
temple in Delhi,
on April 25

PHOTOGRAPH BY
ATUL LOKE

World

A NATION OVERWHELMED

INDIA IS FACING THE WORLD'S WORST COVID-19 OUTBREAK.
IT DIDN'T HAVE TO BE THIS WAY BY NAINA BAJEKAL





D

DUSK IS FALLING IN THE INDIAN CAPITAL, and the acrid smell of burning bodies fills the air. It's the evening of April 26, and at a tiny crematorium in a Delhi suburb, seven funeral pyres are still burning. "I have lived here all my life and pass through this area twice a day," says local resident Gaurav Singh. "I have never seen so many bodies burning together."

Scenes of mass death are now unavoidable in what's often called the world's largest democracy. Social media is filled with images of body bags and urgent requests for medical aid. Indians gasping for breath are being turned away from overwhelmed hospitals, sometimes simply because they don't have lab reports confirming COVID-19 infection. Health workers plead for basic supplies. "We feel so angry," says Kanchan Pandey, a community health worker in Azamgarh, Uttar Pradesh. "At least give us some masks and gloves. Is there no value to our lives?"

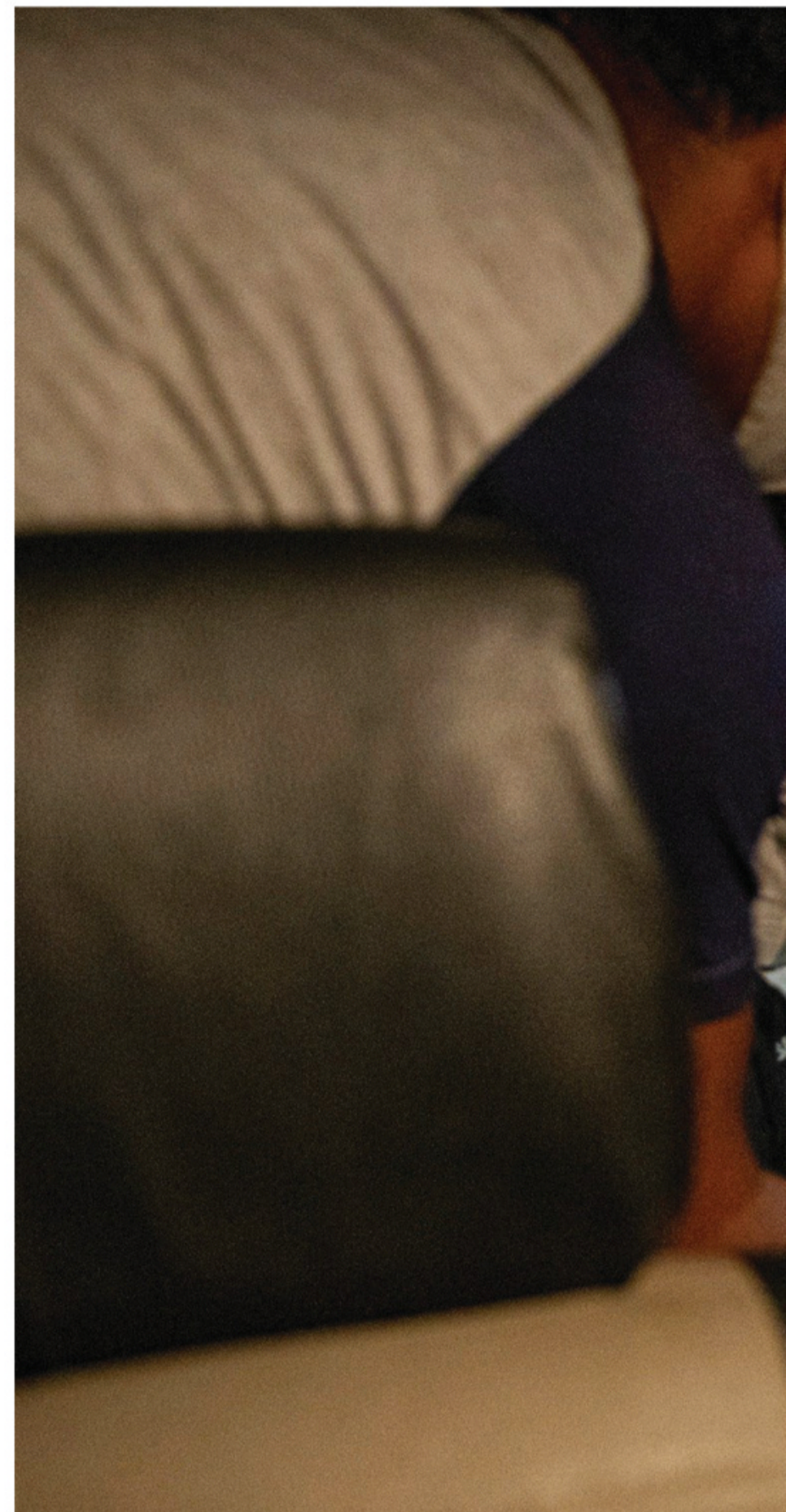
Such devastation would have been hard to imagine just a few months ago. Children were back in school, politicians were on the campaign trail, and people were dancing at weddings. "Soon the winter of our discontent will be made glorious summer," India's usually staid central bank said in a Jan. 21 bulletin. The next day, Prime Minister Narendra Modi heralded the spirit of *atmanirbhar Bharat* (self-reliant India) that had helped India secure victories in two major battles: on the cricket field against Australia and in the pandemic. "A positive mindset always leads to positive results," he declared. That ebullience did not fade even as epidemiologists noted that cases were starting to rise in a few key states. On Feb. 21, Modi's ruling Bharatiya Janata Party passed a resolution unequivocally hailing the "visionary leadership of Prime Minister Modi" in turning India into a "victorious nation in the fight against COVID."

Two months later, India's crisis has

blown well past the scale of anything seen elsewhere during the pandemic. For six of the seven days beginning April 21, India set new global records for daily COVID-19 infections, repeatedly surpassing the 300,000 tally previously set by the U.S. Its total confirmed cases—more than 18 million—are second only to that of the U.S. By official counts, more than 200,000 have now died, and some 3,000 are dying per day. The true daily death toll is at least two times higher, says Bhramar Mukherjee, an epidemiologist at the University of Michigan, from a caseload likely at least 10 times higher, based on modeling of data from the first wave.

India's health system is on the brink of collapse. Hospitals across the country are running out of oxygen supplies, ventilators and beds. Indians are rushing to buy drugs like remdesivir, causing prices to surge, while labs struggle to process growing backlogs of COVID-19 tests. Its humanitarian crisis will not just be devastating for the country's nearly 1.4 billion citizens. In the words of the director general of the World Health Organization, the pandemic is a global inferno: "If you hose only one part of it, the rest will keep burning." In India, where crematoriums have been burning so long that their metal structures have started to melt, the hose isn't even turned on yet.

WHEN THE PANDEMIC SWEEP the world last year, India braced itself. Modi announced a sudden national lockdown in March, sparking an exodus of migrant workers, hundreds of whom died en route from cities to their hometowns. India's economy was one of the hardest-hit in the pandemic, and lockdown was eased in June to allow businesses to reopen. Cases peaked around 93,000 per day in September—less than a third of the daily tallies India is reporting this April—and then the curve began to flatten. A narrative emerged that India may have quietly achieved herd immunity, thanks to its comparatively young population—the median age is 27, and just 6.4% of Indians are over 65—and the fact that 66% of its population live in rural areas, spending most of their time outdoors. That optimistic account has since been complicated by two facts: cases are now hitting the young, and also surging in poor, rural states like Bihar and Uttar Pradesh.



▲
A volunteer performs CPR on a woman with breathing problems in Ghaziabad, Uttar Pradesh, on April 24

The scale of the current crisis may have been driven by more-transmissible variants, though data is limited because of a lack of widespread genomic sequencing, says Dr. Ashish Jha, dean at Brown University School of Public Health. Other factors are contributing to the surge. The virus moves quickly through the multigenerational households that account for 4 in 10 Indian homes. Chronic underfunding of the health system over decades has also left hospitals ill-equipped to deal with the surge. India's total health care spending is a mere 3.5% of GDP, far lower than in countries ranging from the world's wealthiest like France (11.3%) and the



PREVIOUS PAGES: THE NEW YORK TIMES/REDUX; ABOVE: DANISH SIDDIQUI—REUTERS

U.K. (10%) to other emerging economies like Brazil (9.5%) and South Africa (8.3%). And only a third of India's health care spending comes from the government, with the rest mostly coming out of citizens' pockets. "It essentially means that those who can afford to purchase health can have it," says Dr. Gagandeep Kang, a virologist and public-policy researcher at Christian Medical College, Vellore.

For all those vulnerabilities, experts say the current crisis could have been avoided if the government had acted earlier. "It is the virus, but it's way more than the virus," says Sumit Chanda, an infectious-disease expert at Sanford Burnham Prebys Medical Discovery Institute in California. "It's equal parts complacency and incompetence." Many Indians who took strict precautions last year abandoned their masks and gathered indoors when the broader public messaging implied

that India had conquered the virus. They were "pristine prey," as Mukherjee puts it, when the virus resurged this spring.

Crucially, this complacency was encouraged by the government's "mission-accomplished mentality," Chanda says. India's leaders ignored warning signs in the data and the news of variants circulating in other countries. "By early March, it was really starting to be clear, and by late March, we had flashing red lights," Brown's Jha says. "Even then, the government was largely acting like there wasn't anything serious going on."

Rather than intensifying public-health messaging and ramping up interventions like banning mass gatherings and encouraging mask wearing, Modi and his officials did the opposite. They held mass rallies ahead of elections and promoted the Kumbh Mela, a Hindu pilgrimage that drew millions of worshippers to a single

town—an event Jha predicts will end up "one of the biggest superspreader events in the history of humanity." On April 17, after India had overtaken Brazil to become the second worst-hit country in the world, Modi told a rally in West Bengal that he was "elated" to see such a large crowd.

Modi's insistence on *atmanirbhar Bharat*, the principle of self-reliance, also made India slow to approve and purchase foreign vaccines, including Pfizer-BioNTech's, in favor of its own Covaxin. In the meantime, the government was keen to wield its heft as the "pharmacy of the world," exporting doses even as it vaccinated only 0.2% of its population per day. "The complete policy complacency created a scenario where we allowed COVID-19 to get the better of us," says Yamini Aiyar, president of the Centre for Policy Research in New Delhi. "We couldn't have predicted the scale, but the complete lack of preparedness and crowding in pursuit of power is really unforgivable."

THOUGH MODI HAS BEEN reluctant to admit failures handling the pandemic, his tone has become more somber as India has started airlifting oxygen generators and other supplies from abroad, with countries including Australia, the U.K. and even India's rival Pakistan offering support. The White House is sending ventilators, test kits, PPE and oxygen concentrators to Delhi, and has overturned a ban on the export of raw materials India needs to ramp up vaccine production. In the short term, this emergency disaster relief—along with lockdowns in hot spots and a national mask mandate—is key to curbing the second wave.

In the longer term, vaccinations are desperately needed to prevent a third wave. Only 9% of Indians have had at least one vaccine dose (some, like Covaxin, require two doses), and the current pace of inoculation is too slow. It's also not realistic, says Dr. Prabhat Jha, an epidemiologist at St. Michael's Hospital, University of Toronto, for India to try to rapidly vaccinate 1 billion people. With limited vaccine supply, the most effective way to reduce transmission may be to target hot-spot areas and higher-risk people—which means India needs better data, fast.

How India handles its internal crisis is already having spillover effects. Modi has suspended India's vaccine exports

World

and is looking to import doses from other countries. This will have critical repercussions for millions in Africa and Latin America, who depend heavily on India's vaccine production. Serum Institute, the Indian vaccine manufacturer, was already running behind. Expected to deliver 100 million doses for other countries by May, it so far has delivered only 20 million.

India may be far less wealthy than the Western countries now lending support, but it also has the tools to emerge from this crisis. It has a history of successful, large-scale immunization programs for diseases like polio and tetanus, first-rate scientists, highly trained doctors and powerful networks of community health workers. What has been lacking, experts say, is the political will to get ahead of the crisis—and to use data and science to its advantage. “Without data—on who is testing positive, where the hot spots of cases and deaths are, who is really vulnerable—there's no easy way for India to walk out of the pandemic,” Prabhat Jha says.

Many say the government has lost sight of its priorities. As cases soared to record highs in April, the government ordered Twitter and Facebook to remove posts critical of the authorities. Independent journalists have scrambled to identify massive discrepancies between official figures and deaths. “Those who died will never come back,” the Chief Minister of Haryana said in response to questions on April 26 about whether COVID-19 deaths were higher than official figures. “There is no point debating if the number of deaths is actually more or less.”

Modi entered the pandemic with sky-high approval ratings of nearly 80%, and polls from as recently as January suggest those numbers have barely dipped. Now, anger is rising among those spending their days trying to find beds for relatives or caring for their communities. But for most Indians, whether Modi can survive this crisis is now less urgent than whether they can. “The cries for help are growing—but not our capacities,” says Usha Thakur, a community health worker in Najafgarh, Delhi. “The governments are fighting amongst each other. They don't care about the people but it's the people who are losing their loved ones.” —*With reporting by* NILANJANA BHOWMICK/NEW DELHI, ALICE PARK/NEW YORK and BILLY PERRIGO/LONDON □





At a crematorium in New Delhi on April 27, Shivam Verma, in white PPE, helps carry the body of his sister-in-law Bharti, 48, who died of COVID-19

PHOTOGRAPH BY SAUMYA KHANDELWAL FOR TIME

VIEWPOINT

NARENDRA MODI HAS LEFT INDIANS TO FEND FOR OURSELVES

BY RANA AYYUB

IF THE APOCALYPSE HAD AN IMAGE, IT WOULD BE THE hospitals of India. Patients are dying in search of beds. Oxygen supplies are depleted. Health care workers are stretched beyond all comprehension. When I visited a state-run hospital in Mumbai on April 18, I saw a nurse sitting on the staircase with her head in her hands. She did not wish to be named, but said she herself was recovering from COVID-19. Her request for leave had been denied three times and she wished she could resign, but her family of six depends on her. “This is hell, you tell me, is this not?” she said.

There is no escape from this catastrophe. In the week before I wrote this, I lost four people to COVID-19: a distant relative; my next-door neighbor; and two of my closest friends, both in their mid-30s. Many of us are now asking how India could be caught so unprepared, as this second wave ravaged a cross section of society.

The crisis had many authors. Responsibility lies with the sycophantic Cabinet Ministers who praised Prime Minister Narendra Modi for successfully dealing with COVID-19 in India after last year’s initial surge, even as testing slowed down and allowed people to become more complacent about the virus. It lies with the state ministers who preoccupied themselves with playing politics while the virus made a comeback.

But above all, responsibility lies with Modi, who calls himself the servant of 1.3 billion Indians, yet who has criminally abdicated his duties.

ON APRIL 22, the day India reported the first in a series of record numbers of daily cases, the ruling Bharatiya Janata Party (BJP) tweeted a video of a political rally hosted by Modi as five states were heading to the polls. Alongside him was his close confidant and Home Minister, Amit Shah. In theory, Shah should have been in the capital, coordinating with various state governments to respond to the devastating spike in COVID-19 cases. Instead, Shah had been holding road shows with thousands of joyous crowds on the streets of eastern India. As thousands lay dying, our Home Minister and our Prime Minister looked the other way, continuing to campaign until April 25, when Modi finally announced he would prioritize the COVID-19 response.

As well as organizing mass political rallies, Modi also allowed religious events like the Kumbh Mela pilgrimage to

go ahead, despite clear evidence that the millions of Hindu devotees gathering to bathe in the Ganges were spreading the virus far and wide. In March, when the second wave was already under way, state BJP leaders published ads in newspapers telling worshippers it was “clean” and “safe” to attend. It wasn’t until mid-April that Modi said participation in the pilgrimage should be kept “symbolic.”

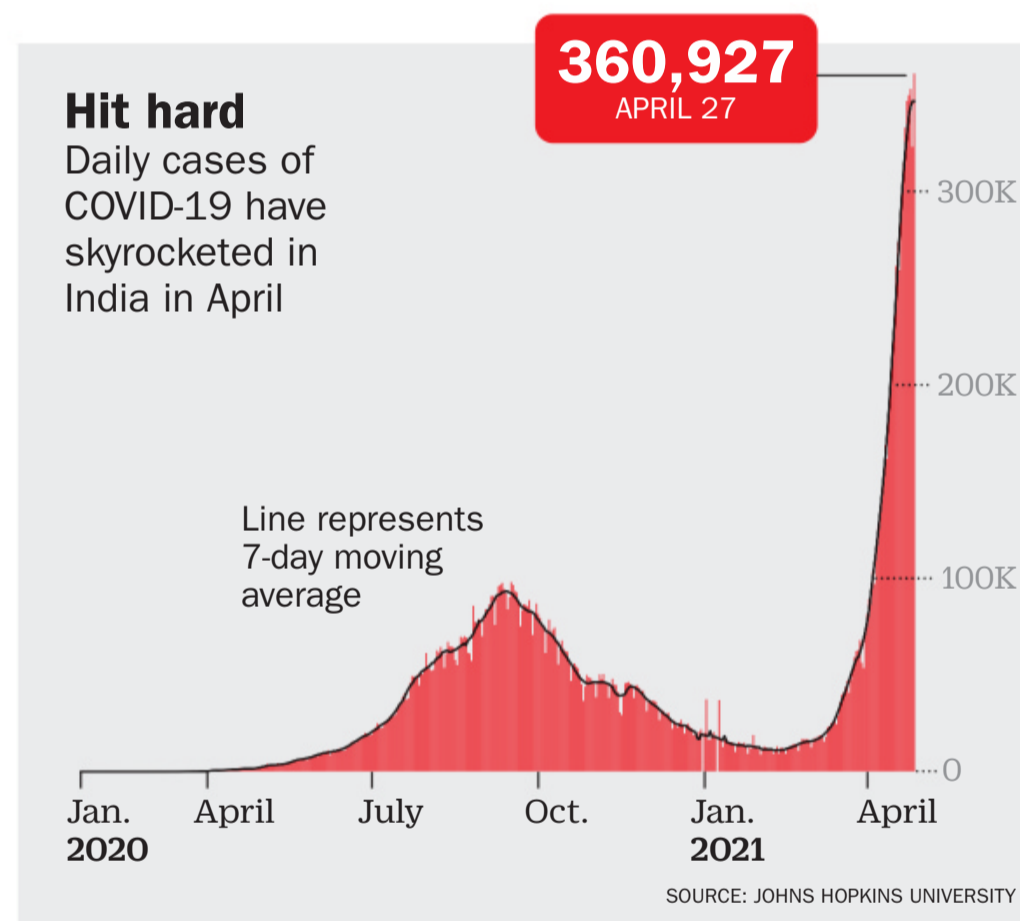
The great orator has made little effort to send out a message to the country to get the vaccine, or to dispel the myths surrounding it. In rural India, where more than 66% of Indians live, many are skeptical of the vaccine, with misinformation circulating on social media and messaging services.

The Prime Minister has done little to reinforce public-health messaging. Vijay Chauthaiwale, in charge of the BJP’s foreign-affairs department, wrote a column suggesting economists and experts were part of the “anti-Modi lobby,” and he encouraged Indians not to reject traditional remedies such as drinking cow urine and taking turmeric to boost the immune system.

When the vaccine rollout slowed, there was no effort or coordination with the states as Modi’s Cabinet indulged in a blame game with ministers from opposition parties. While epidemiologists have long urged Modi to give approvals for foreign-made vaccines, the government only gave an emergency-use license to the Russian-manufactured Sputnik V vaccine in the second week of April and is just starting to prioritize emergency approvals for others.

This is a moment when the country needs answers. Yet when Modi finally addressed the nation on April 20 about a crisis already out of control, he merely warned states that a lockdown should be considered a last resort, and urged young people to form committees to ensure COVID-19 protocols are being followed.

The address to the nation received a lukewarm response as the Prime Minister offered no immediate relief to the country. Many Indians called out the Prime Minister’s failure to take accountability, but by this time it was clear that no such message was coming. At this critical juncture in the nation’s history, Indians have been left to fend for ourselves.



Ayyub is an Indian journalist and the author of *Gujarat Files: Anatomy of a Cover Up*

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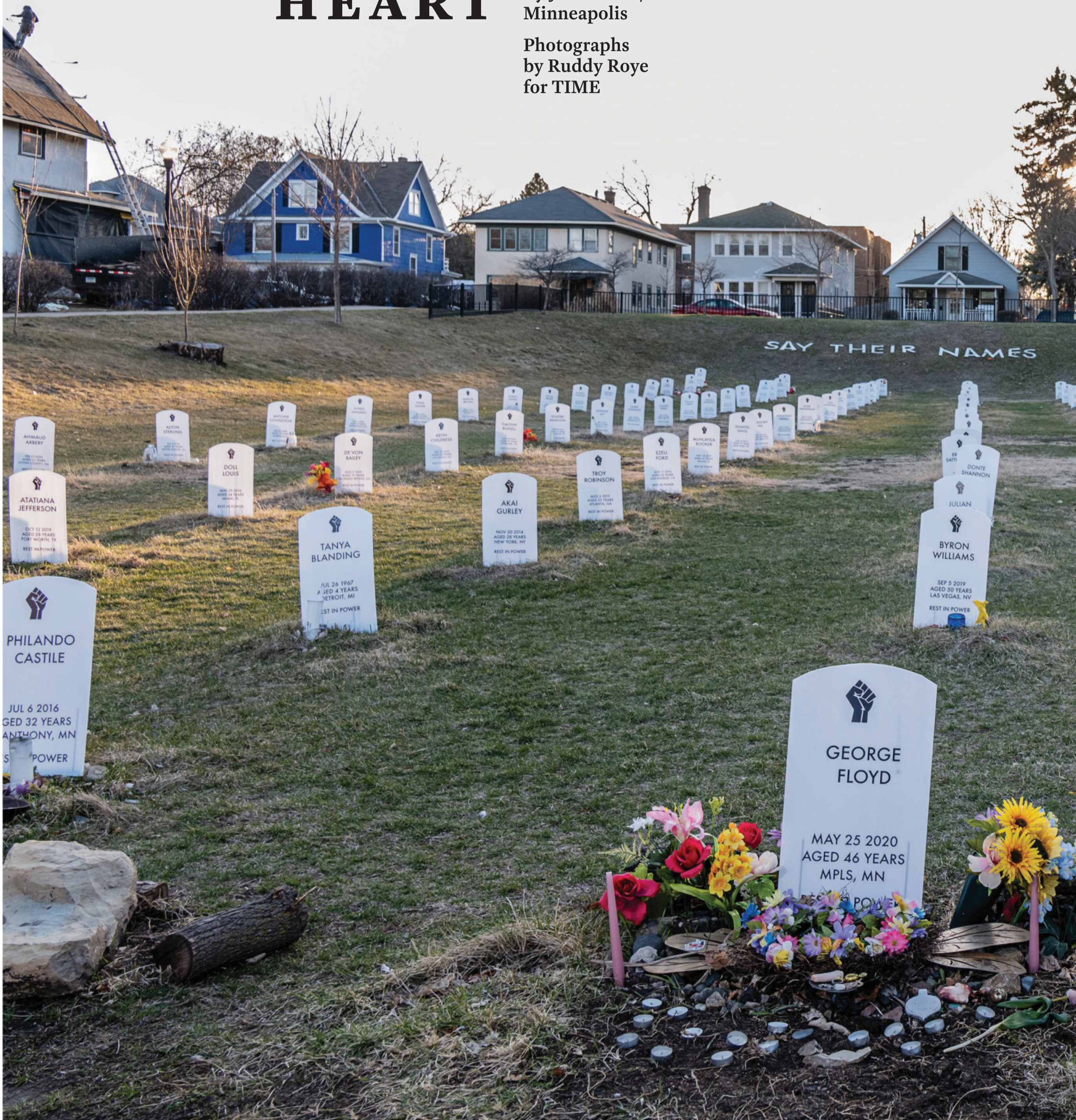
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A CRY FROM

THE The verdict in Minneapolis echoes through Black America

HEART By Janell Ross/
Minneapolis

Photographs
by Ruddy Roye
for TIME





George Floyd's brother Philonise visits a protest art installation on April 1

T

THERE ARE SOUNDS THAT HUMANS MAKE WITH INTENTION. Then there are the wordless sounds we make when our emotions take over—the sounds that, in their texture and tone, speak even more clearly.

“Guilty,” Hennepin County Judge Peter Cahill said, reading the jury’s April 20 verdict on the first of three charges leveled against former Minneapolis police officer Derek Chauvin in the murder of George Perry Floyd Jr. That’s when I heard those involuntary sounds come up and out.

It was the collective sound of shock, filtered through deep pain, followed by relief. It filled a third-floor Hilton Hotel ballroom, where Floyd’s family watched the local NBC station on a movie-theater-size screen. Many had come from distant places for this moment—Houston; Charlotte, N.C.; New York City. They’d carefully slipped away from the direct stares of the overwhelmingly white press that had begun to tail and track them. (Photojournalist Ruddy Roye and I, as well as a documentary team, were the only members of the media in the room.) They had gathered in that ballroom, with its collapsible walls and busily patterned carpet, because COVID-19 and security restrictions kept them from the courtroom. And because they had reason to want the moment kept semiprivate. They loved George Floyd, and had faith Chauvin would be held accountable—but they all knew that statistically speaking, the trial was not likely to end the way it did.

As two additional guilty verdicts followed, the volume rose. The screams became more confident, more affirmational and appreciative of what a jury of 12 Americans had done. They had, for the first time in Minnesota history, convicted a white police officer of murdering a Black man while on duty. Chauvin, who during a May 25, 2020, arrest had held Floyd down with his knee for more than nine minutes even as Floyd declared that he could not breathe, would now face up to 40 years in prison.

Brandon Williams, George Floyd’s nephew, whom Floyd considered a son, leaped into the air. Then someone, a man on the far side of the ballroom, cried out—this time with

intention, with words that had become familiar in the more than 10 months since Floyd’s murder: “Say his name!”

“George! Floyd!”

“Say his name!”

“George! Floyd!”

“Who made America better?”

“George! Floyd!”

PEOPLE DO NOT REACT with uncontrollable cries nor with the sounds of street protest when they have confidence that the Constitution’s guarantee of universal equality will be as reliably extended to them as it is to those who are police officers. This is the way people react when history—distant and recent—obliges them to warn their children about the dangers of law enforcement and common criminals alike.

Ours has always been a country of both law and—where Black Americans are concerned—lies.

From the very beginning of this country, when Thomas Jefferson wrote the Declaration of Independence, with such moral authority and clarity that most Americans today can still recite its claims about the inalienable rights of man, he did so aided by the wealth and privilege he derived from exploiting and enslaving human beings.

In the 1840s, a Virginia-born slave named Dred Scott tried to turn to the law for justice. He sued his enslaver for emancipation on the grounds that he’d been made to work in a free territory that is today part of Minnesota. Roger Taney, Chief Justice of the U.S. Supreme Court, issued a ruling that declared Black people could not be citizens and “had no rights which the white man was bound to respect.” The decision was among the things that put the country on a collision course for the Civil War.

And just 30 years ago, a group of white officers in Los Angeles were caught on videotape, beating, kicking and punching a lone Black man named Rodney King. A suburban Simi Valley, Calif., jury did not convict any of the four officers of use of excessive force or assault.

On the morning of the Chauvin verdict, “fate and irony” brought America’s attention back to Minnesota, Benjamin

George Floyd's cousins Tedra and Shareeduh McGee embrace after the verdicts are read





The Hilton ballroom when Judge Peter Cahill read the final guilty verdict



Nation

Crump, a lawyer representing the Floyd family, told me. This is the land where Dred Scott had no rights. Just three decades ago it would have been unthinkable to get a criminal indictment, much less a conviction, against a white officer who killed a Black person, Crump said.

Chauvin's lawyer Eric Nelson had tried but failed to place a litany of conflicting, complicating and sometimes cynically racist suggestions about Floyd's cause of death in the jury members' minds—placing the blame on the person to whom the terrible thing happened, a brand of gaslighting familiar to every Black person in America who has attended school, worked, attempted to become a homeowner, sought health care or had any contact with the criminal-justice system. Chauvin's team wanted the jury to believe that the eyewitnesses to Floyd's murder were an angry and mostly Black mob who distracted Chauvin. That Floyd was large and strong enough to resist two other officers, but in ill enough health that an enlarged heart or a substance addiction or exposure to carbon monoxide from a nearby tailpipe could have really caused his death. But the prosecution was able to counter those arguments with facts. Floyd was in the main kind, strong and healthy. What had stopped his heart was Chauvin's knee and Floyd's position, handcuffed face down on the street. By the afternoon of April 20 the world had seen Chauvin leave the courtroom in handcuffs.

Perhaps more important, Philonise Floyd, the younger brother of George Floyd, who told me he'd hardly slept more than two to three hours a night since the trial began, was there to see it in the courtroom. An unassuming man thrust into a central role when George, the family's sun, was killed, Philonise Floyd likes a flashy suit but speaks softly and slowly. He came to the hotel and told his wife, his brothers and cousins, a nephew and a niece—plus a smattering of activists, civil rights icons and those who wish to be—what he'd witnessed. The justice system had affirmed that what happened to George Floyd was wrong. It was unnecessary. It was murder. Then, in bits and pieces, in scattered conversations around the ballroom, the family began to talk of what they must now do for others like them.

And there will be others. Even on that day, the list of Black people killed by police grew longer. To Black people inside and outside that Minneapolis ballroom, a conviction in the death of one Black man is unlikely to tip the scales, to make anyone feel that police accountability and equal justice can now be counted upon.

I THOUGHT OF THE DAY I turned 16. My father took the morning off to deliver me to my driving test. When the driving evaluator and I returned, I walked through the door and flashed a thumbs-up. My father, sincerely one of the best cheerlead-



ers of daughters to ever live, stood and applauded. My father insisted on a picture of me, my paperwork and the evaluator, as well as one with the woman who issued my first license.

When we left the building, he handed me the keys to his car and told me I would drive us to a celebratory lunch. But before I could put the key in the ignition, my father put his hand on the wheel and said, First we must talk. That was the day my father told me what I must do if stopped by the police, in hopes that I would come home alive. It was advice gleaned from cases he had seen, cases he had handled and grieving families he'd advised. Sharing it, my father, a lawyer who until that day I thought feared no one and nothing, said this advice was no guarantee. We are descended from people who survived the Middle Passage, arrived in chains, made this country so rich that slave patrol forces were built to keep enslaved and later free Black people inside racial boundaries. And now, was it any wonder, he said, there were people entirely uncomfortable with what it means for us to be free? This conversation is all that Daddy can offer you, Janell, he said. Take it seriously.

When you are Black and interact with a police officer—or a private citizen who wants to be one—the possibility that any-



Crowds gather
after the verdict
on the corner where
Floyd was killed

FLOYD'S DEATH WAS INITIALLY DESCRIBED BY THE DEPARTMENT AS 'A MEDICAL INCIDENT'

thing and nothing at all can get you killed is always there. And if you are Black and the police were involved, it is unlikely their claims will be properly investigated and any misconduct pursued to the full extent of the law. And yes, there is something particularly grotesque about unrequited injustice crashing in on your life when it is the handiwork of the justice system itself.

We came so close to George Floyd's killing falling into that gap. His death was initially described by the department as "a medical incident." Chauvin's superior testified during his trial that Chauvin did not immediately report that when Floyd left the scene in an ambulance he was already dead. Private citizens, most of whom were Black or Latino, reported Chauvin's conduct at least 18 times, with some mentioning that what they considered his excessive use of force had centered on

their necks. And yet Chauvin—who, under Minnesota law, had the discretion to write a summons for the counterfeit \$20 bill that Floyd was accused of spending, rather than making an arrest—was training others on the job.

Last spring, in the early days after Floyd's death, I went to Minnesota in the middle of a pandemic, with my asthmatic lungs, because I knew that something significant was taking shape if people in Minneapolis were willing to stand up, to keep yelling, to keep marching, even to burn things down, because a police officer had suffocated a Black man to death under his knee. While the death itself was brutal, death by police use of force is unfortunately common—for men of color, but particularly Black men. (Police use of force, something one of Chauvin's expert witnesses tried to tell jurors they were not seeing in the video, is, one 2019 study found, the sixth most common cause of death for young Black men.) This time the response felt different. By the time I arrived, the National Guard had been called out. Men in fatigues with long guns were visible on the city's streets. Food and water were hard to find. But no one who wanted answers seemed deterred. As far as I can tell, they still aren't today.

In the months that followed, the sense that this time was different remained. And now, with the word *guilty* uttered three times, it is. Now, the members of the Floyd family to whom

I spoke told me they will return to their homes, but not to their lives as they once were. There will be work to complete, children to school, meals to make—but also healing to do, and the looming possibility of trial for the three remaining officers, whom some expect will attempt to strike plea bargains. There's the question of what becomes of the memory of Floyd, an ordinary man in life whose face and name now dot the landscape. For those who loved him, there's been some justice; still, George, Big George, Perry, Floyd is gone.

Then there are the tasks that remain for the rest of us. Not taking police and their press releases at their word; interrogating an officer's actions when someone dies, just as we would anyone else's; humanizing Black victims of police violence, and swiftly knocking down stereotypes that have for so long passed as evidence—these things need to become the norm in courtrooms, in prosecutors' offices, in newsrooms and in elected offices. Activists, grieving families and their lawyers have already done a lot to get us where we are. What must remain in our ears, when the wordless sounds of this moment fade, are their voices. —With reporting by MARIAH ESPADA and SIMMONE SHAH/NEW YORK

BEYOND THE VERDICT

WHAT'S NEXT FOR THE POLICE-
REFORM MOVEMENT BY JOSIAH BATES

Activists and organizers who have dedicated their lives to fighting for criminal-justice reform knew just how rare a thing they were witnessing on April 20, when former Minneapolis police officer Derek Chauvin was found guilty on all three charges in the killing of George Floyd.

From 2013 to 2020, according to the Mapping Police Violence project, fewer than 2% of police killings resulted in criminal charges filed against the officer involved; convictions were even more unusual. And so, alongside the shock and relief felt by many, there was comfort to be found in the guilty verdict—even if only for that moment.

Now, with the conclusion of the trial set to serve as a foundational moment for their movement, activists are looking ahead to what could—and, in their eyes, should—come next.

Oluchi Omeoga, an organizer with the Minneapolis-based Black Visions Collective, says activists have an important task in the verdict's aftermath: to remind the general public that problems in the criminal-justice system haven't disappeared because Chauvin was found guilty, and that "the work is not over in this moment."

In fact, Omeoga and others caution that attempts to separate Chauvin's crime from common police practices are already undercutting future steps toward greater accountability. Chauvin's conviction is thus not the end of calls to action

but in many cases just the beginning, as activists hope they can use the momentum surrounding the verdict to advocate for a systemic overhaul of the criminal-justice system.

MOVING THE NEEDLE on this subject is an ongoing, painfully gradual process. It will mean persuading the public and politicians to reconsider the role of police in society. After all, the goal is not to get to more convictions in police-killing cases; the goal is to get to fewer deaths.

"Accountability for specific officers is not going to actually get us to the place that we want to be," Omeoga says. "We have to look at the system as a whole." Doing so means "continuing to talk about reallocating resources from entities that are killing us to community services and other means," Omeoga adds—in other words, ideas that tend to fall under the "defund the police" umbrella.

The most accepted meaning of that phrase is the reallocation of some or all funds from police-department budgets, so they may be invested instead in basic social, economic and educational needs as well as community-led initiatives—which in turn helps that community reach

a point where police officers aren't needed in many of the capacities in which they're currently deployed. Even activists who don't align with the idea of wholly eliminating a police presence in their neighborhood or city are broadly focused on increasing community funding.

As Joseph Margulies, a criminal-justice professor at Cornell University, points out, "the beginning of the real reform is to shrink the blue footprint so that the police respond only to those cases that unambiguously demand an armed, uniformed officer, and you develop other alternative providers for mental-health calls, most disorder calls, most traffic enforcement." The further the U.S. moves away from armed police officers, the less chance there is of a police shooting.

THE DAY AFTER Chauvin was found guilty, the Department of Justice announced an investigation into the Minneapolis police department and its practices. The following week, the DOJ said it would also investigate the Louisville, Ky., metro police department as a result of last year's shooting of Breonna Taylor, another police killing that led to widespread outcry.

And while the Biden Administration has not used executive actions to address police reform, the President made the subject part of his April 28 address to a

joint session of Congress, calling on legislators to pass the George Floyd Justice in Policing Act. The bill, which would implement reform measures ranging from a federal ban on chokeholds to changes in police training, was approved by the House in March but has since stalled in the Senate.

But organizers who spoke to TIME believe firmly that top-down reform isn't enough and that credit for the progress of the past 11 months goes to the people. Some people in particular: were it not for the actions of Darnella Frazier, the teenager who filmed Floyd's death, they believe Chauvin might have gotten away with murder.

In an ideal world, activists say, the powers that be would hold themselves accountable, and the nation wouldn't have to rely on citizens with cameras. That's not the American reality yet, they say; the shooting of Daunte Wright at the hands of another Minnesota officer, even as the Chauvin trial was under way, is evidence. But they believe that change can happen—if, and only if, those in power listen to what people on the ground are saying and center their voices moving forward. Meanwhile, whether it's protesting in the streets, educating those misinformed on the topic or building coalitions with like-minded organizations, the groundwork will continue.

"What we've consistently asked for and demanded was divestment ... from policing and investment in our communities," Ash-Lee Woodard Henderson, an activist with Movement for Black Lives, says. "To not continue to try to put 20th century solutions and reforms on 21st century problems." —*With reporting by Mariah Espada*

**'THE BEGINNING OF THE
REAL REFORM IS TO SHRINK
THE BLUE FOOTPRINT.'**

— JOSEPH MARGULIES, CRIMINAL-JUSTICE PROFESSOR



In the wake of the verdicts, a man raises his fist in Minneapolis' George Floyd Square



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TIME 100

MOST *influential* COMPANIES

Which companies are shaping our future? That's the question at the heart of our first ever TIME100 Most Influential Companies, a new list—and an expansion of our iconic TIME100 franchise—that highlights businesses making an extraordinary impact around the world. To assemble it, TIME solicited nominations across sectors including health care, entertainment, transportation, technology and more, from our global network of editors and correspondents as well as from industry experts. Then, we evaluated each one on key factors, including relevance, impact, innovation, leadership, ambition and success. The result is a diverse array of 100 institutions, from the tech startup engineering a smarter way to recycle to the cryptocurrency firm reimagining the future of money to the pharma titans creating the vaccines of tomorrow (and today). Together, these businesses—and the leaders who steer them—are helping to chart an essential path forward.

With reporting by Leslie Dickstein, Mariah Espada, Alejandro de la Garza, Madeline Roache, Simone Shah, Olivia B. Waxman and Julia Zorthian

BUSINESS

THE FUTURE OF BUSINESS

How the pandemic accelerated the digitization of everything

BY EDWARD FELSENTHAL,
EDITOR-IN-CHIEF & CEO

IN MARCH 2020, AS BUSINESSES across the world sent nonessential workers home to slow the spread of the coronavirus, a 2.6 million-sq.-ft. General Motors plant in Kokomo, Ind., sat idle. At the same time, ventilators—the breathing machines essential to keeping critically ill COVID-19 patients alive—were in frighteningly short supply. And so within a week of pausing the plant’s operations, GM CEO Mary Barra launched it back into action, quickly transforming a dormant engineering building into an assembly line that delivered 30,000 ventilators in five months.

Barra says that approach, incubated in the crisis of the pandemic, is now a permanent cultural shift that has already led to faster timetables for GM’s bet-the-company push to sell only electric vehicles by 2035. “Now as we approach different projects, we say, ‘You know, we’ve got to go at ventilator speed because we know we have the capability to do that,’” Barra says.

Amid the disruption, pain and loss of 2020, the global pandemic provided a rare window into the future of business as it unfolded in real time. As governments in the U.S. and elsewhere stumbled, business loomed larger than ever: developing vaccines at record speed; providing the technology that enabled remote school and work; and keeping millions of people fed, clothed, entertained and in touch with ramped-up digital services.

The scope and speed of change was unprecedented, accelerating digital

adaptation by as much as five years in a 12-month period. Disruption ruled, as legacy companies imploded. Everything that could be digitized was, from education and exercise to currency and cars. Nearly every business has become a tech business, one reason stocks have soared even as the pandemic devastated lives and livelihoods across the globe. Meanwhile, inequality also soared: almost 1 in 8 American adults reported that their household didn’t have enough to eat as 2020 headed toward its close; 9 million U.S. small-business owners fear their companies will close by the end of 2021. This too tells a story about the future of business.

For nearly a century, TIME has been a barometer of influence, and it’s hard to recall a moment when the corporate world has had a greater influence on our lives than it does now. That’s why we’re launching TIME Business, devoted to covering the global impact of business and the ways it intersects with our public and personal lives. Our first major project: the TIME100 Most Influential Companies, a new list—and an expansion of our iconic TIME100 franchise—highlighting 100 companies that are shaping our collective future, as well as the leaders who steer them.

The mission of TIME Business is to help illuminate the path forward. We’re in the midst of a reset, one that is already transforming the economy and what employees, customers and our broader communities expect of companies. Remote work has fundamentally changed how many of us experience our jobs and even the kind of work we do, throwing into high relief the benefits, such as flexibility and less commuting, as well as alarming shortcomings in areas such as childcare and protections for the most vulnerable workers. Millions of workers are re-evaluating their priorities. How much time do they want to spend in an office? Where do they want to live, if they can work from anywhere? What kind of company is attractive to them and provides meaning beyond the paycheck? Surveys suggest unusually large percentages of workers globally

are considering leaving their jobs this year, with those figures even higher for women—millions of whom quit during quarantine because of the impossible juggle of work and homeschooling—and higher yet for women of color.

And employees increasingly expect their companies to become leaders in social causes. This is a wholesale redefinition of corporate leadership, which for decades has focused on shareholder return. “In certain respects there’s a greater social conscience in business than when I look across some of our elected officials,” says Ken Chenault, a former CEO of American Express, who co-founded Stop the Spread—a nonprofit devoted to pulling the private sector into the COVID-19 fight—and more recently helped organize a group of 72 Black executives calling on companies to take a stand against voting-rights restrictions now under consideration in nearly every state.

TIME100 COMPANIES is a glimpse over the horizon. In talking with the leaders of these businesses—which are large and small, U.S. and international, public and private—it’s clear that this is only the beginning. Innovations in AI, 5G, nanotechnology and biotech have kick-started what World Economic Forum chair Klaus Schwab calls a fourth Industrial Revolution that will fuse the physical, digital and biological worlds.

“AI is a watershed moment,” says Jensen Huang, CEO of Nvidia, a TIME100 company that over the past year has become the most valuable U.S. semiconductor company. Huang envisions a Metaverse, a virtual world that is a digital twin of ours, a science-fiction concept that is just beginning to become reality. The Metaverse, says Huang, whose company’s chips power some of the world’s mightiest supercomputers, “is where we will create the future ... There will be a new New York City. There’ll be a new Shanghai. Every single factory and every single building will have a digital twin that will simulate and track the physical

version of it.” (The digital artist Beeple, who created one of the covers for this issue, uses Nvidia technology “all running maxxed out” to create his canvases, adding, “I think we’re just at the beginning of the next chapter of art history.”)

For all of these worlds to prosper, we must preserve our global home: sustainability pledges are another powerful development marking the future of business, and a number of TIME’s most influential companies are singled out for actions on this front. While bad actors abound here, as do unsubstantiated “greenwashing” claims by major polluters, pressure to disclose, reduce and offset emissions is steadily growing, as are opportunities to do well by doing good. The revolutionary electric-car maker Tesla, for example, brought in \$1.6 billion last year from regulatory credits it earned through selling zero-emission vehicles.

Ikea built its business on mass-produced and almost disposable furniture, but it is now working to bring about change with the goal of becoming climate positive, to reduce more greenhouse gases than it produces by 2030. “The only way we can exist as a business tomorrow ... is by being sustainable,” says Jesper Brodin, CEO of Ikea parent Ingka Group. (Harvard Business School professor Rebecca Henderson, author of *Reimagining Capitalism in a World on Fire*, puts it more bluntly: “Business is screwed if we don’t fix climate change.”)

How we shop and pay for purchases is also in rapid transformation. A shift to digital payments was already under way, but as in so many industries, it was greatly accelerated by the need in the pandemic to reduce human contact. “People no longer want to handle cash,” says Dan Schulman, CEO of PayPal, which recently enabled customers to buy goods using their cryptocurrency on its platform. Fast-food giant Yum China, also on our list, is now using

face-recognition software in some locations that allows customers to simply walk up, order and pay digitally, a sign of the possibilities but also the pitfalls of these new technologies for privacy and security.

Influence, of course, can be deployed for good or ill, and sometimes both at once. You will find on our list, and throughout our ongoing coverage, companies whose impact you admire and those whose impact you may not, even as they have reshaped entire sectors of the economy. DoorDash, along with other gig-economy companies, poured tens of millions of dollars into a California ballot initiative that would let it avoid classifying its drivers as employees under state law. Though Facebook strengthened its protections against foreign election interference to avoid a repeat of 2016, dangerous misinformation and even calls to violence continue to plague the platform. And for all its ubiquity,

It’s hard to recall a moment when the corporate world has had a greater influence on our lives than it does now

Amazon has faced a growing chorus of criticism, including reports of workers’ urinating in bottles to avoid being docked for bathroom breaks, a suit from New York State for allegedly putting employees’ safety at risk during the pandemic and a controversial fight against organizers of a unionization drive in Alabama.

Our aspiration is for TIME, in our company and in our coverage, to be among the ranks of businesses that drive positive action. When I started at TIME in 2013, our mission was often described as “explaining the world.” Today, we see it somewhat differently—it’s about telling stories about the people and ideas that shape the world, in hopes of doing our part to improve it. □

DISRUPTERS



SHAKING UP THE *status* QUO



Francis deSouza, president and CEO of Illumina, in Foster City, Calif., on April 16

ILLUMINA

Decoding COVID-19

By Alice Park

IN NOVEMBER 2019, FRANCIS DESOUZA, PRESIDENT and CEO of California-based Illumina, learned from his client-support team based in China that something big in the infectious-disease world might be brewing. Health authorities in Wuhan were seeing cases of a mysterious pneumonia-like illness, and were starting to genetically sequence samples to figure out what they were dealing with—and “scoping out some equipment they needed” to do it at the scale and speed they needed, says deSouza. They turned to Illumina, which makes sequencing machines that can spit out the genetic code of any living thing in hours. In this case, they were hoping that the genetic information would reveal whether the culprit was a known pathogen or something entirely new.

While the orders were being arranged, to speed things along, samples from the first patients in Wuhan were sent to the lab of Zhang Yongzhen at Fudan University in Shanghai. Zhang, an experienced virologist, had in his lab an Illumina NovaSeq, a copier-size machine that is the company’s most powerful workhorse for decoding genomes quickly and accurately. On Jan. 10, his team outed the virus behind COVID-19, posting its entire genome, the equivalent of its fingerprint, on a public genetics database so researchers around the world could use it to develop new drugs and vaccines.

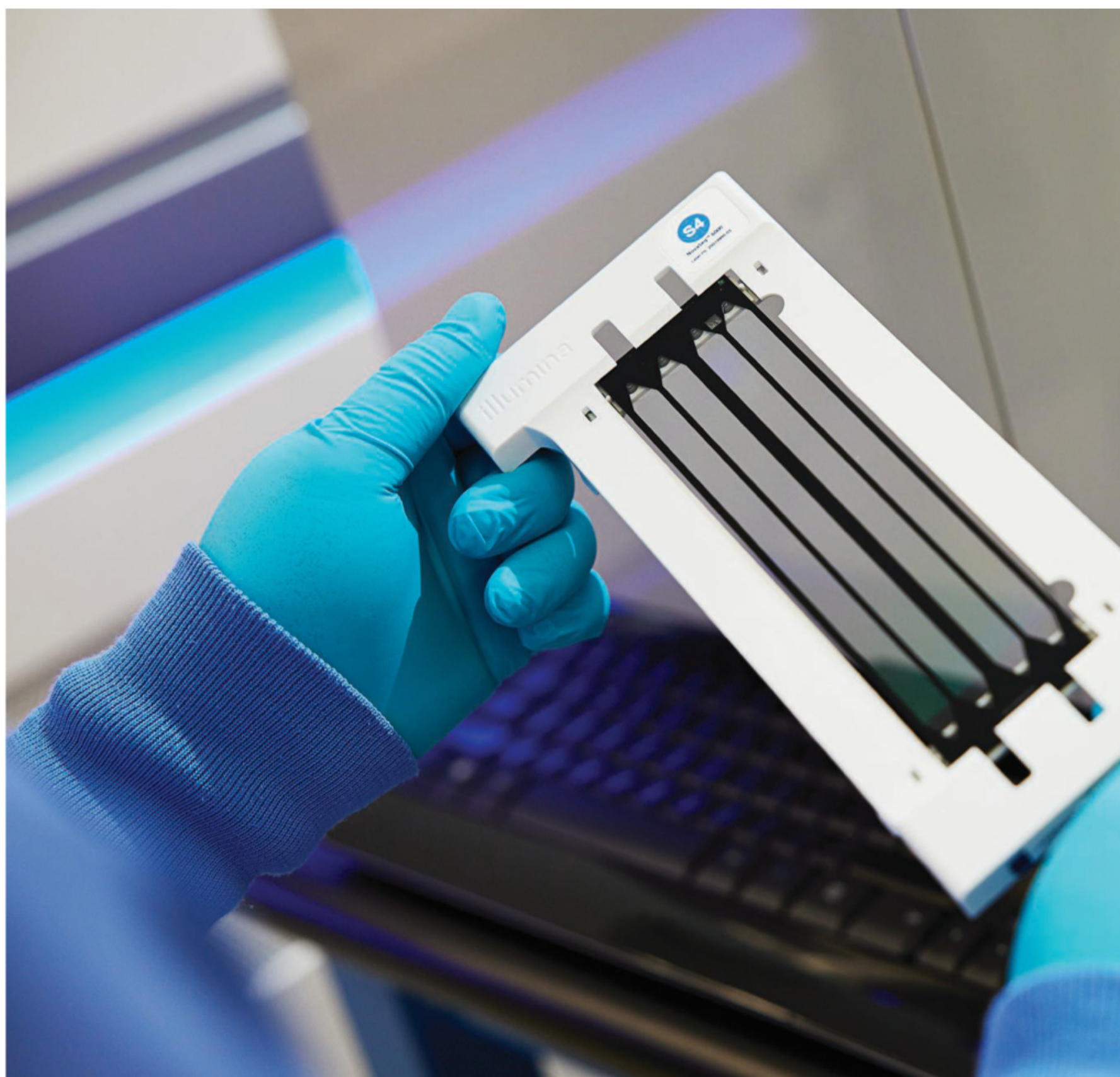
The two months or so from when those first cases appeared to the revelation of the genetic sequence of the virus, SARS-CoV-2, were lightning fast in the scientific world. (It took 13 years to map the human genome; the first draft was completed in 2001.) With the COVID-19 virus’s sequence in hand, scientists at Massachusetts-based biotech Moderna, also relying on Illumina equipment, developed a vaccine to fight the virus in record time—25 days—and were ready to test the shot in people in 63 days, another speed record. BioNTech in Germany wasn’t far behind, and after partnering with U.S. pharmaceutical company Pfizer, it became the first to earn authorization in the U.S. to start vaccinating people—less than a year after Zhang published the virus’s genome.

DeSouza says such a pace, fueled by genetic sequencing, should become routine rather than the exception. The pandemic is providing a stage for demonstrating what such sequencing can do for infectious diseases like COVID-19 as well as other conditions like cancer. “Genomics and genomic epidemiology have emerged as powerful tools in fighting this pandemic,” deSouza says. “The pandemic has brought us into the 21st century, into the era of biology and the era of the genome. We now have genomics being used in a big way in public-health systems, and the role of genomics in infectious disease is permanently changed. I don’t think we are ever going back.”

ILLUMINA IS A CHILD of the genetic revolution launched in the late 1990s during the breathless run-up to scientists’ publishing the first draft map of the human genome in 2001. Founded in 1998 (as Solexa) by University of Cambridge scientists to exploit the coming promise of genomics and its myriad uses, Illumina and its initial genetic-sequencing machine didn’t churn out its first commercial genome until 2006—at a cost of \$150,000. Over the following decades, its engineers refined the chemical reactions involved in breaking up and reading genetic fragments, providing deeper and more accurate readings more quickly.

Illumina sequencers can now decode a human genome, among the larger genomes around, in about an hour at a cost of \$600. “We’ve publicly announced plans to bring that cost down again, to \$100 in the near future,” says deSouza, who took the helm of Illumina in 2016 after being recruited from software security company Symantec. “Democratizing access and making sequencing available to everyone helps to deliver the promise of genomics to improve human health, and that’s good business for us.”

Already, any academic, commercial or pharmaceutical lab focused on doing genomics work likely owns one if not several Illumina sequencers. Cancer researchers, for example, are increasingly relying on sequencing to expose tumor cells’ genetic Achilles’ heels so they can be exploited with drugs designed to target those weaknesses. And the ubiquity of the company’s equipment extends to the research world of infectious diseases as well. About 70%



of the genomes from the globally sourced COVID-19 samples that have been posted to the public genetic database GISAID were generated from Illumina machines.

Still, when it comes to public health, genetic sequencing isn’t as routine a part of disease management as it should be in the U.S. Most state public-health labs haven’t invested in extensive sequencing capabilities, opting instead to send samples to the Centers for Disease Control and Prevention if outbreaks occur, or partner with local university labs that can run a few samples if time permits.

COVID-19 is changing that. Over the past year, the genetic code spelling out the instructions for SARS-CoV-2 has spawned tests to detect the virus, antiviral drugs to fight it and vaccines to protect against COVID-19. And increasingly important, the code has served as the foundation for exposing all the ways the virus might be mutating to spread more easily or cause more serious disease.

Genetic information is also proving invaluable in fighting a pandemic in real

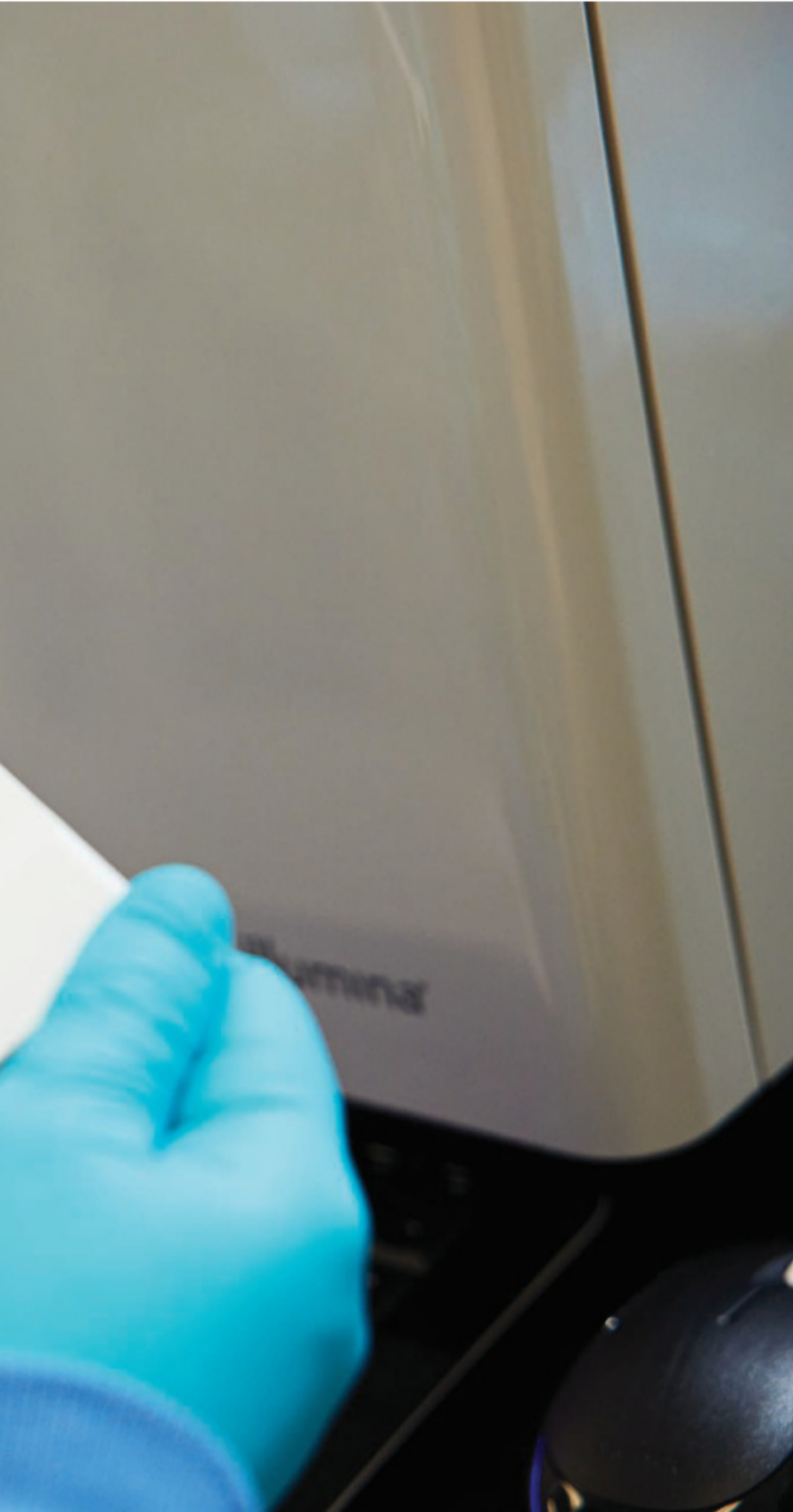
time. To figure out when SARS-CoV-2 might have started infecting people in the U.S., and how widespread the virus was, in March 2020 Trevor Bedford, a computational biologist at the Fred Hutchinson Cancer Research Center in Seattle, took samples that had been collected for a flu study in the Seattle area and sequenced them for SARS-CoV-2. Not surprisingly, he found that the virus had been circulating in the area for at least six weeks before

‘I don’t think we are ever going back.’

—FRANCIS DESOUZA, CEO, ILLUMINA

the first case in the U.S. was confirmed on Jan. 21.

That cemented for public-health officials how useful genetic sequencing could be for making smarter decisions about controlling the pandemic. If, for example, the virus sequences in a given community are slightly different from



Illumina's sequencing machinery, partially pictured here, can sequence 24 to 48 human genomes in less than two days—at \$600 each

of fronts,” says deSouza. The first challenge, he says, is creating a global network that scans and shares information on disease-causing pathogens. In 2020, Illumina donated sequencing machines to 10 countries in Africa so health departments could begin sequencing, some for the first time, microbes that doctors collect from patient samples to get a better sense of what is circulating and to identify the especially dangerous pathogens.

That information also needs to be shared with the world. If COVID-19 taught us anything, it is that an outbreak of cases anywhere can soon become a problem everywhere. So in April, Illumina partnered with the Bill and Melinda Gates Foundation and other public and private groups to launch a global pathogen genomics initiative to build genetic-sequencing capabilities in many places where it doesn't currently exist, beginning with South Asia. The company is committing \$60 million for machines and to train experts in the developing world over the next five years. Such a network could sound the alarm if a new virus sparks an outbreak, and the information gleaned from its genetic code could pave the way for quickly developing drugs or vaccines to control it.

As more scientists around the world come to rely on Illumina's machines, the company's dominance in the sequencing sector is raising concerns among industry regulators. In March, the U.S. Federal Trade Commission filed a lawsuit to block Illumina's purchase of Grail, which makes a blood test for detecting cancer, citing monopoly concerns. DeSouza counters that Illumina often sparks innovation and competitive pricing when it enters a space; for example, he says, once the company offered genetic-based analysis for prenatal conditions and for selecting cancer treatments, others followed and drove the price of that testing down.

“We provide tools to clinicians, and they are the ones that make an impact for their patients,” deSouza says. “We provide tools to the world's smartest researchers, and they are the ones that make the breakthrough discoveries.” □

one another, that would suggest that the infections are entering the region from different places, so restricting travel into that area would help to contain the outbreak. If, on the other hand, most of the cases are similar genetically, it strongly hints that the virus is already spreading within the community and that other public-health measures—such as lockdowns, mask wearing and social distancing—might be more useful.

That's the promise, but such real-time handoff of genetic information from sequencing machines to policymakers can't happen if sequencing isn't happening at a substantive level. To address that, the Biden Administration invested \$1.7 billion in April to expand genetic sequencing for infectious diseases, including creating a system for storing and sharing that information.

But many parts of the world don't have such resources to purchase Illumina machines, which can run close to \$1 million for the most powerful models—not to mention to analyze and interpret the results. “We need global cooperation to come together on a number

GOFUNDME

ENABLING GIVING

GoFundMe has become the go-to crowdfunding platform for those facing imminent financial burdens. That has been especially true during the pandemic: from March 1, 2020, to Aug. 31, 2020, more than 9 million donations raised \$625 million for COVID-19-related hardships—though CEO Tim Cadogan has repeatedly said he would rather governments, not his company, provide a social safety net. (GoFundMe takes a 2.9% processing fee from each donation.) 2020 also saw the most donations ever for one campaign: more than 500,000 people raised nearly \$15 million for the Official George Floyd Memorial Fund.

—Alison Van Houten

NEXTERA ENERGY

GENERATING GREEN POWER

Last October, the global energy industry turned upside down when the market capitalization of NextEra, the utility company that is the world's largest generator of wind and solar power, briefly eclipsed that of oil giant ExxonMobil. The moment made NextEra a clear proof point for renewable-energy advocates' longtime stance: going green is profitable. “We expect the disruptive nature of renewables to be terrific for customers, terrific for the environment and terrific for shareholders,” CEO James Robo told investors this year. Stock in NextEra rose more than 25% in 2020 after a decade of beating the market. The company, which gets 35% of its electricity from wind and solar, is expected to spend tens of billions more on renewable energy by 2022. —Justin Worland



AIRBNB

Adapting to a new travel reality

Airbnb, which transformed the hospitality industry by turning spare residences and bedrooms into rentals for travelers, is emerging from its most brutal year ever—in which bookings plummeted, resulting in a series of painful staff cuts—well positioned to leverage the changed travel landscape. As employers get more comfortable with remote workers, the San Francisco–based company believes that people are

more able to “live anywhere”; as concerns linger about interacting with staff and guests at hotels, its platform offers millions of private alternatives. While revenues have fallen, the market remains bullish on Airbnb’s prospects. Late last year, well into the pandemic, the company went public under the leadership of CEO Brian Chesky, shooting to a valuation of \$100 billion, the year’s biggest debut. —Don Steinberg

BYJU’S

EXPANDING E-LEARNING

Byju Raveendran, the founder of Indian e-learning startup BYJU’S, knows how to press an advantage. As users of his company’s signature app nearly doubled to 80 million during the COVID-19 pandemic, he went on a spending spree, fueled by funding from investors like Tencent and BlackRock. The BYJU’S summer acquisition of WhiteHat Jr, an app that teaches kids to code—along with the purchase of Silicon Valley educational-game maker Osmo in 2019—gives the company a foothold in the U.S. e-learning market. In April, the company announced plans to dramatically expand outside its home base in India, adding one-on-one lessons in the U.S., the U.K., Indonesia, Mexico and Brazil. BYJU’S also snapped up a leading Indian test-prep school for almost \$1 billion. The explosive growth has turned BYJU’S into one of India’s most lucrative startups—increasing the company’s expected value to \$15 billion, up from \$5.5 billion in July 2019. —Michael Zennie

CLUBHOUSE

STARTING CONVERSATIONS

As the COVID-19 pandemic drags on, many are desperate for gatherings—not just big events like concerts but even little ones, like in-person group conversations. Enter Clubhouse, whose app allows handfuls of people to gather in digital rooms to talk about anything from technology to art to politics. Since its April 2020 debut, it has lured more than 10 million weekly active users, including Elon Musk and Oprah; each had to be invited by an existing member, giving the app an alluring sense of exclusivity. As CEO Paul Davison takes Clubhouse mainstream, titans such as Facebook and ByteDance are reportedly rushing to launch copycat services. One problem to sort out first: moderation, as some rooms have been plagued by harassment and other issues.

—Alex Fitzpatrick





DOORDASH

Giving restaurants a lift

In 2020, as restaurants suspended indoor dining, customers went online to order takeout from hard-hit eateries. DoorDash—the U.S.’s most popular meal-delivery app, helmed by CEO Tony Xu (*above*)—offered restaurants temporary reductions or exemptions from its commission fees as they adjusted. Sales surged, and a December IPO valued the company at over \$70 billion on the day of its debut. Despite Wall Street’s buy-in, DoorDash is unprofitable, and in November, without admitting liability, it agreed to a \$2.5 million settlement over claims that it misled consumers by keeping some of the tips intended for its delivery drivers. Now the company is evolving to deliver goods from stores like 7-Eleven and Wawa. —D.S.

DIGITAL CURRENCY GROUP

MAINSTREAMING CRYPTOCURRENCY

Digital Currency Group is demystifying crypto for investors. Its portfolio includes Grayscale Investments, which manages assets worth tens of billions, and news site CoinDesk, which covers the digital-currency market. In January 2020, Grayscale’s Bitcoin Trust became the first financial product backed entirely by digital currency to report to the Securities and Exchange Commission—opening the trust (and, by extension, the blockchain) to more potential investors.

—Matthew Gault

HUAWEI

ADVANCING A TRANSFORMATIVE TECHNOLOGY

To the U.S. government, Huawei is a Chinese Communist Party front intent on harvesting private data for nefarious goals. To the Chinese, it’s a paradigm of engineering excellence whose founder, Ren Zhengfei, is feted like Steve Jobs. What’s indisputable is that the Shenzhen-based firm is the world’s No. 2 cell-phone maker and top telecom-equipment manufacturer, embedded in the infrastructure of over 170 nations. Huawei’s leading role in developing 5G, a transformative technology that allows an exponential rise in download and upload speeds, prompted the U.S. to ban Huawei technology and campaign for allies to do the same; nonetheless, that push has done little to slow its ascent. —Charlie Campbell

LIME**SCOOTING FORWARD**

Public transit rarely gets you the last mile. But with the Lime app, anyone can snag some wheels on the street and be on their way after simply scanning a QR code. Lime, which started in 2017 as a campus bike-share service, is now best known for its dockless electric scooters, which have littered urban sidewalks since 2018—to the ire of some pedestrians. Despite pandemic-related disruptions, the micromobility company announced its first profitable quarter last year and launched in dozens of new cities. In 2021, Lime comes full circle: it will invest \$50 million in upgrading its fleet and doubling its footprint to 50 cities around the world, while also exploring new target markets in Australia and New Zealand. —*Alison Van Houten*

NEXTDOOR**LINKING NEIGHBORS**

“Over the past year, the neighborhood has taken on a whole new meaning,” says Sarah Friar, CEO of Nextdoor. Traffic to the platform, which functions as a digital bulletin board for local communities, spiked nearly 50% as people sought everything from lost pets to COVID-19 vaccines. But the content, like the ads that help fund the site, isn’t limited to locally owned entities, and Nextdoor’s supposedly safety-oriented posting function has proved ripe for racial profiling. (Facing criticism, Nextdoor added reminders to focus on specific behavioral descriptions.) The company has reportedly been targeting a valuation upwards of \$4 billion, with buzz of a future IPO. —*A.V.H.*



COURTESY SPACEX; MUSK: HANNIBAL HANSCHKE—POOL/GETTY IMAGES; SHOTWELL: JOHN SCIULLI—GETTY IMAGES



SPACEX

Pushing the frontier

Space travel was once a game only governments played—superpowers like the U.S. and the old USSR, and later the Europeans and Japanese and others. But 11 years ago, SpaceX changed all that when it became the first private company to launch a spacecraft into orbit and successfully recover it. Since then, SpaceX has gone on to demolish record after record, becoming the first private company to send a spacecraft to the International Space Station, the first to safely land and reuse the first stage of a rocket, and, as of last May, the first to send astronauts into space. Earth's orbit is only the beginning: this spring, NASA tapped SpaceX to build the lunar lander the U.S. will use to have astronauts back on the surface of the moon in this decade. And the company's leadership—including CEO Elon Musk (*below left*) and COO Gwynne Shotwell (*below right*)—has made clear that SpaceX plans to one day put boot prints on Mars. —Jeffrey Kluger



*Falcon 9
launched
Transporter-1
on Jan. 24 at
Cape Canaveral
in Florida*

TESLA INC.**PUSHING AHEAD**

In 2020, Tesla became the most valuable car company in the world, earning it a spot on the S&P 500 index. Known for making sleek electric vehicles, the Elon Musk–helmed company is establishing itself as a leader in the renewable electric-energy sector more broadly, with its Powerwall, Powerpack and Solar Roof divisions providing electric-energy generation and storage for businesses, utilities and homes. It also continues to develop driverless car technology—although federal investigations into nearly two dozen crashes involving Teslas that were or might have been using their Autopilot driver-assistance system have raised concerns. Tesla contends that its data shows that cars using Autopilot are involved in fewer accidents than vehicles on average. —*Jeffrey Kluger*

COURSERA**EASING THE SHIFT TO VIRTUAL LEARNING**

As the pandemic left millions of workers unemployed, Coursera—led by CEO Jeff Maggioncalda—was uniquely positioned to help. The online learning platform hosts over 3,000 courses and certificate programs, on subjects from successful negotiation to the science of COVID-19. As part of its Workforce Recovery Initiative, it offered most of them to jobless workers around the world for free through 2020. Meanwhile, Coursera also launched the Campus Response Initiative, providing university students free access to its course catalog for about six months of 2020. The company went public in March. —*Kathy Ehrich Dowd*

**PELOTON****Spinning to success**

When gyms closed last year, demand for Peloton's pricey at-home treadmills and exercise bikes—the cheapest of which goes for \$1,895—spun out of control. Led by CEO John Foley (*above*), the company now has 1.67 million members (up 134% from a year earlier) paying \$39 a month to take virtual classes with celebrity instructors like Ally Love. The overwhelming demand led to 10-week backlogs on orders of its equipment, but Peloton has taken steps to fix its supply issues, amping up production at its new factory in Taiwan. In December, the company acquired fitness equipment maker Precor for more than \$400 million, increasing its manufacturing capacity and gaining entry into hotel gyms and other commercial facilities—which will be of strategic importance to Peloton as the COVID-19 vaccine rollout continues and exercise returns to the public sphere. —*Eben Shapiro*

SHOPIFY**HELPING SMALL RETAILERS COMPETE**

There's no denying it: lockdowns and social-distancing rules have been terrible for brick-and-mortar small businesses. Those that managed to shift sales online often had one company to thank: Shopify. The Canadian e-commerce platform helps businesses set up and maintain their own online stores. During COVID-19 lockdowns last



spring, Shopify extended its free-trial period from 14 to 90 days and launched a new service that allowed businesses to quickly set up curbside pickup. Its users—ranging from toy retailers to clothing stores—now collectively constitute the second largest e-commerce retailer in the U.S. The ultimate goal, says Shopify president Harley Finkelstein, is to help small businesses compete against titans by offering a service that “anyone that knows how to use email can use.” —*Alejandro de la Garza*

ONLYFANS BOOSTING THE CREATOR ECONOMY

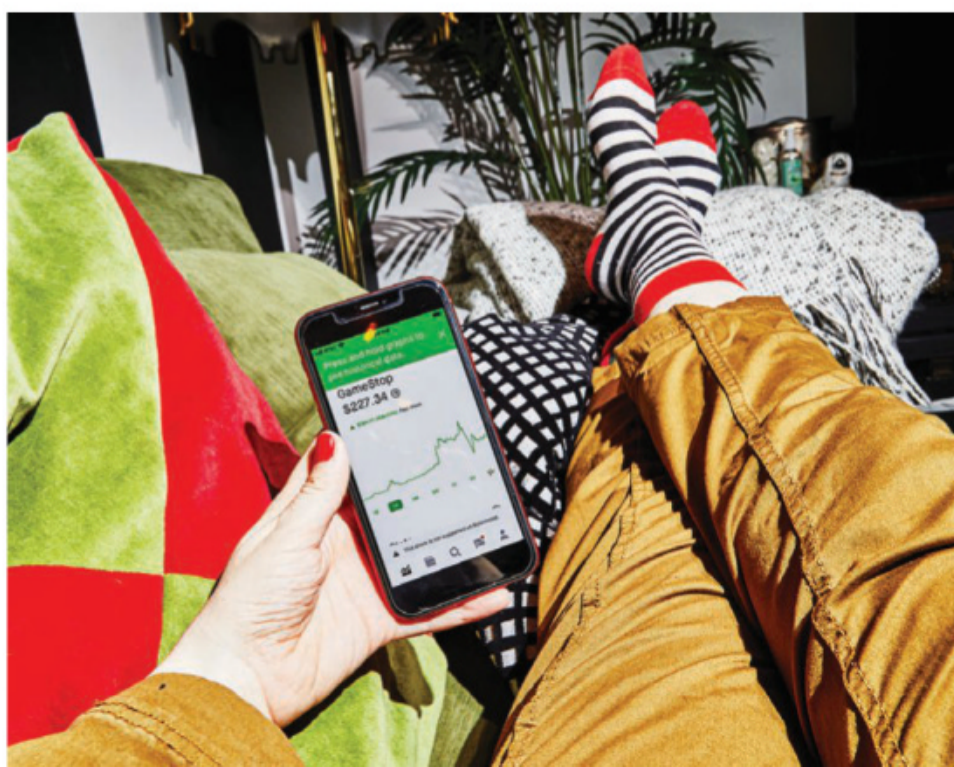
For \$4.99 a month, admirers of **Cardi B** can view her personal confessions, music-video outtakes and photo-shoot snippets not available anywhere else. It's one example of the way that OnlyFans is monetizing human connection, in many forms, at scale. The U.K.-based site launched in 2016 as a niche outlet that primarily hosted pornography; over the past year, however, a growing number of celebrities and influencers—as well as sex workers—started using it to bolster their income. (The platform was even name-checked in Megan Thee Stallion and Beyoncé's hit song "Savage.") Although OnlyFans still faces challenges in security, safety and content moderation—like keeping underage users and creators off the platform—its business is booming. More than 120 million people now subscribe to its million-plus creators, who include chefs, makeup artists and athletic trainers. To date, OnlyFans has paid them more than \$3 billion, outpacing other engines of the creator economy, including Substack, Patreon and Cameo.

—*Raisa Bruner*

ROBINHOOD SHAKING UP STOCK TRADING

What happens when you democratize access to the stock markets? Robinhood, a no-commissions trading app, has been finding out—for better and for worse. On the one hand, the company's fee-free structure and easy-to-use design have earned it more than 13 million users and a valuation approaching \$12 billion; Robinhood has also filed to go public in the next few months. On the other, it was slapped with a \$65 million SEC fine for misleading business practices, and some critics say its low barrier to entry and gamelike design encourage inexperienced traders to take big risks. Those concerns came to a head in January, when investors used Robinhood and other platforms to trigger a spike in shares of retailer GameStop. While some profited, many eventually wound up in the red. New regulations may emerge in the aftermath, but it's clear that apps like Robinhood have changed the trading game forever.

—*Alex Fitzpatrick*



DIDI CHUXING DRIVING THE FUTURE OF MOBILITY

DiDi Chuxing's nickname, China's Uber, is a little unfair considering that the Beijing-based firm has surpassed 60 million daily trips—around twice the number of its U.S. rival. DiDi hit a nadir in mid-2018 after a flurry of attacks on female passengers, including two murders in three months. Since then, the company has undergone a thorough reckoning on safety—as well as the sacking of two executives—that resulted in extensive driver background checks, compulsory in-trip audio recordings and upgraded emergency alerts. It now operates in 10 foreign markets, has driverless taxis roaming the streets of Shanghai and recently expanded into mobile payments in Latin America.

—*Charlie Campbell*

CLEARVIEW AI INNOVATING FACIAL RECOGNITION

Clearview AI's innovative facial-recognition tools—which scan a database of more than 3 billion images to identify people from photos—are used by thousands of U.S. police departments to pinpoint crime suspects; earlier this year, it helped authorities ID some of the U.S. Capitol rioters. But civil rights advocates fear abuses, with some groups and governments calling for a ban on the tools, whose use one Canadian official likened to "mass surveillance." CEO Hoan Ton-That says the company is working with law enforcement to balance privacy and security.

—*Don Steinberg*

STAYERS



DRIVING THE *global* ECONOMY

GENERAL MOTORS

Engineering a greener future

By Eben Shapiro

For more than a year, from her wood-paneled home office, Mary Barra has been leading General Motors on a quest that, if successful, will be one of the most consequential reinventions in corporate history. GM is playing serious catchup in the electric-vehicle game, and success is far from certain for the legacy carmaker that sold fewer than 21,000 EVs in the U.S. last year. Market leader Tesla accounted for an astonishing 79% of all U.S. EV registrations in 2020, according to *Automotive News*. (GM's Bolt was the only non-Tesla model in the top five slots.) GM is also facing stepped-up competition from Volkswagen, which is making its own feverish push into EVs. Barra claims that GM has all the pieces in place to meet its little-noted goal to seize "EV market leadership in North America" by 2025, but even she acknowledges that the company needs to "put a few more points on the board." To help jump-start EV sales, which currently account for about 2% of the U.S. market for cars, President Biden's recently unveiled infrastructure plan includes \$174 billion targeted specifically at EVs. Barra, the daughter of a GM autoworker who herself started at GM inspecting fenders, is a rare CEO who has spent her entire career with one company. She recently joined TIME for several conversations on GM's plan to invest \$27 billion in EVs and introduce 30 new models by 2025—and its "aspiration" to quit making cars with tailpipes by 2035.

Mary Barra, CEO of GM, with the new GMC Hummer EV, in Detroit on April 14

Let's get the Tesla–Elon Musk questions out of the way. As a car person and engineer, how do you rate Tesla and the overall driving experience?

I've driven a lot of vehicles, and I don't underestimate any competitor. I think that at General Motors, one of our core principles and foundational elements is safety. And that's what we focus on. We have a different point of view.

What specifically are you referencing?

Self-driving autopilot vs. General Motors Super Cruise. I think we've approached it in a different fashion. So we have a different strategy.

Can you expand on that? In terms of how much control the driver gives up to the car?

There's really no self-driving vehicles out on the road right now other than in pilots like we have with Cruise. [Cruise is GM's majority-owned self-driving-car startup.] They're driver-assist systems. [When] we talk about GM's Super Cruise, we keep it hands-on. We make sure you're paying attention to the road and you're engaged in the driving process because you're still responsible. [Tesla is under investigation from the National Highway Traffic Safety Administration for crashes involving its self-driving mode. Tesla did not respond to a request for comment.]

What do you think of Elon Musk as a CEO?

I really don't have any comment on that.

Have you ever spoken with him?

Once. It was in a broader group, so it wasn't a one-on-one dialogue.

Last question on this topic: Tesla's market cap is around \$700 billion. Yours, while climbing, is still under \$100 billion: \$85 billion. I know you say that shows the size of the opportunity, but as an engineer, what do you think about the efficiency of the stock market, and then on some level, does that disparity just stick in your craw as a competitive person?

[Laughs.] One of the pieces I think that sometimes investors miss is that virtually all the assets necessary to achieve our vision we already have and have demonstrated. Sometimes we will forget we actually sell more vehicles in this country than anyone else. We have strong brands. We have industry-leading loyalty. And we have an incredibly capable manufacturing team. We have to tell our story better and put a few more points on the board.

The 2006 documentary Who Killed the Electric Car? largely concluded that GM smothered its very promising EV1 model in the early 2000s. Do you ever have moments where you think, “Boy, I wish we had done that differently”?

It’s hard for me to go back and second-guess decisions that were made 20 years ago when I wasn’t in the room. I’m sure somebody will do that to me 20 years from now. What people don’t understand is that ever since that time, we have been working on electric vehicles and the technology. We’ve always been working on it.

GM is very aligned with the current Administration, which must be refreshing for you after being singled out on Twitter by the last President. [The 45th President tweeted: “It’s always a mess with Mary B” in negotiations about ventilator production.] But there’s also a view that you capitulated to Trump’s antienvironmental policies by joining the past Administration’s lawsuit against the California emissions standards and then dropping it after the election. Do you have any regrets about your initial decision on that?

No. It’s much more complicated. GM has always been very clear about believing in an all-electric future with the investments we’re making. There is not a meeting I had with the previous Administration where I didn’t talk about the importance of EVs. But we also think that to be efficient, we need one national standard, because we thought that would accelerate implementation. And frankly, that—that was always our goal. That was



our stated mission. A lot of other people interpreted it much differently. It was hard to get the correct—to help people truly understand what our path was.

You have 155,000 employees. How many of them will be performing different jobs to produce the 30 new EV launches that you’re working on by 2025? Have you had to have hard conversations with people who have spent their careers building internal combustion engines?

We already build electric vehicles. So we have training programs for people to understand the differences between an EV and an internal combustion engine. And we have an incredibly capable and skilled workforce. So, will work change? Yes, but work changes every day. A lot of the skills can be very transferable. A great software engineer, if they’re working on calibrating an internal combustion engine or doing software for an electric vehicle, it’s very transferable skills. The same is true for the men and women of our manufacturing team. We have regular training programs to make sure they know the new technology

coming into the vehicle, whether it’s the propulsion system moving to electric or all of the connectivity we have. So it’s not so much about hard conversations, it’s just helping people understand where we’re going and the new skills that they need to learn, and I find most people are very excited about that.

Some people are having trouble getting their heads around GM reintroducing the Hummer as an EV; it just doesn’t scream environmentally friendly.

It’s definitely a zero-emissions vehicle. It’s all electric. It’s a supertruck. And we’re just very excited to get it out to show that capability. We have very strong market share and loyalty in our truck franchise. We thought it was very important to show the capability. But we do think it’s causing people to look differently.

How do you reconcile the concern for the environment that the EV push shows with your current reliance on selling these enormous vehicles like Silverados, Sierras and Escalades?



Chevrolet Bolt EV and Chevrolet Sonic vehicles are assembled at the GM plant in Orion Township, Mich., in 2019

Whenever we put out new vehicles, we're always looking to make them more fuel-efficient. If we want to move to electric vehicles, we have to do it in a way that everyone's included. We're trying to solve all the potential issues and delight our customers so they move to electric vehicles because that's what they want to drive.

Why do Americans love ginormous vehicles so much?

One thing that we've seen from customer research—and this isn't just about trucks, but it's about SUVs as well—is, generally, once somebody moves from the vantage point of a sedan to sitting up higher in the command [seat]—you know, the view of the road that they have—they don't want to go back.

Regarding pickup trucks, how many people are actually using them professionally, to pick stuff up, vs. as a lifestyle choice?

There's a significant portion of people who buy full-size trucks that it's part of their livelihood. A plumber, a contractor—so definitely a truck is part of their business and part of their day.

What we saw as we rolled out this most recent generation of full-size trucks over the last couple of years, is people were moving from luxury sedans to full-size trucks.

Your dad worked in the industry for many years. Lessons learned?

Both my parents were born and raised during the Depression. Neither of them had the opportunity to go to college, but they believed in the American Dream and so hard work was how I was raised. You worked before you played. And there's a love of vehicles. Every now and then, he'd get a chance to bring a vehicle home, and the whole neighborhood would come over and my brother and I would look at every inch of it.

You first started at GM as an 18-year-old as a quality inspector, measuring the gaps between the fender and door. Were you good at your job?

I was in engineering school, so measuring accurately was not a big reach.

When you were head of HR, you famously cut GM's dress code from more than 10 pages to two words.

Just *dress appropriately*. These are people we're trusting to do really important work on the behalf of the company, and yet we're not going to trust they use good judgment to decide what to wear to work?

What is your favorite song that mentions a GM product in it?

"Little Red Corvette" by Prince. There's so many songs: talking about the Chevy truck, they're talking about the Corvette, they're talking about their pink Cadillac. For most people, the vehicle that they purchase is either the most expensive or the second most expensive thing they buy in their lives. When I see our vehicles in songs, it's because we're part of their life. It's super meaningful to me. □

COINBASE

SHORING UP CRYPTO'S CREDIBILITY

It's been a huge year for cryptocurrencies, but nothing's been as validating as the April 14 direct listing of Coinbase, which operates an exchange where 56 million users buy and sell Bitcoin and more. Coinbase ended its first day of trading worth nearly \$86 billion—making it the most valuable U.S. financial exchange, and giving cryptocurrencies a boost of Wall Street cred. For the moment, Coinbase is riding the high of surging interest in all things even remotely crypto-adjacent, but its value may come tumbling back to earth should crypto turn out to be a bubble. —Alex Fitzpatrick

SOFTBANK

MOVING MARKETS

The scale and influence of Japan's SoftBank have long given it the power to move markets. The global investment firm's \$100 billion Vision Fund, backed by Saudi Arabia's sovereign wealth fund, invested in tech unicorns like Uber and WeWork and transformed Silicon Valley. But the company's outsize sway has now landed it in hot water: SoftBank stands to lose as much as \$1.5 billion in collapsed fintech company Greensill Capital, its Vision Fund 2 is struggling to raise outside funding, and its trading arm is believed to have made a blizzard of high-risk investments last year that rattled Wall Street and called into question its long-term strategy. SoftBank's founder, Masayoshi Son, has bounced back before, having lost \$75 billion when the dotcom bubble burst in 2000. But for some investors, the bloom is off the rose. —Dan Stewart

ALIBABA COALESCING E-COMMERCE

Alibaba is China's biggest e-commerce company, with \$1 trillion in gross merchandise sales and \$72 billion in revenue in 2020. But forays into mobile payments—its service touts 1.3 billion global users—catapulted this Goliath into a major political stakeholder, unnerving China's top leaders. Friction between Alibaba's charismatic founder, Jack Ma, and the Chinese government resulted in regulators suddenly nixing the record-breaking \$37 billion IPO of Alibaba's fintech arm, Ant Group, which was subsequently ordered to restructure. In April, Alibaba agreed to pay a fine of \$2.8 billion, imposed for breaching antimonopoly rules—a sign, according to some analysts, that both sides are looking to the future.

—Charlie Campbell

AT&T KEEPING AMERICANS CONNECTED

High-speed Internet was already essential to modern American life even before the pandemic's shift to Zoom meetings and remote classes. But not everyone has a fast hookup: at least 20 million people in the U.S. do not have access to basic broadband Internet. In April, AT&T CEO John Stankey announced a \$2 billion pledge to help bridge the divide by offering more affordable broadband and expanding discounted wireless solutions to schools. The announcement builds upon a move from March of last year, when AT&T temporarily removed data caps for household Internet. —Peter Allen Clark



DISNEY

Supercharging franchises

The launch of Disney+ proved to be a saving grace for the megaconglomerate as the pandemic shut down movie theaters and reduced crowds at its theme parks. With the streaming service, Disney translated the massive theatrical success of franchises like Marvel and *Star Wars* to the small screen, surpassing 100 million subscribers in under 18 months with hits like *The Mandalorian* and *WandaVision*, and established itself as Netflix's most vicious competitor. The company plans to add more than 50 Marvel, *Star Wars*, Pixar and Disney originals to the platform in the next few years. Attracting viewers with new takes on beloved franchises isn't novel (see: Paramount+'s ever expanding list of *Star Trek* series, and Netflix's own foray into the Marvel universe). But no other media company in history has leveraged IP as successfully as Disney, which projects its eponymous streamer could reach 350 million global subscribers by 2024. —Eliana Dockterman

AMAZON

DOMINATING E-TAIL

As lockdowns descended and grocery stores emptied, Amazon's business boomed. The company—which has been pioneering online shopping since 1994—posted its highest-ever profits last summer and is now the second largest company in the U.S., with more than 1 million employees, having added over 400,000 jobs in 2020 alone. However, its size has



continued to raise concerns about its business practices and economic dominance. Founder Jeff Bezos testified in front of Congress for anti-trust hearings last summer, and warehouse unionization efforts are expected to continue, despite a recent defeat in Bessemer, Ala. In February, Bezos, who is worth a reported \$179 billion, announced he's stepping down as CEO, but promised Amazon will continue to expand. —P.A.C.

PROCTER & GAMBLE CLEANING UP AT HOME

Some of the most enduring images from early on in the pandemic were of empty store shelves, stripped bare by consumers stocking up on toilet paper and cleaning supplies. That resulted in a banner year for P&G, the company that makes Charmin, Mr. Clean and Tide. P&G ended the year with \$71 billion in sales, up 6%, after running flat out to meet demand—and not just for its usual products. Early in the crisis, a Boston-based P&G team figured out that the plastic in Gillette packaging could be used to make face shields for health care workers. “We don’t make face shields,” says CEO David Taylor. “But they said, ‘We can. We could repurpose this, change this, work with somebody here,’ and the company ended up making hundreds of thousands of them.” —*Eben Shapiro*

SAMSUNG DOMINATING ELECTRONICS

The fate of one of Asia’s largest economies is closely tied to Samsung—its 2019 revenue was equivalent to some 13% of South Korea’s GDP. Amid a rise in remote work and schooling, its crown jewel, Samsung Electronics, one of the world’s biggest producers of chips and smartphones, was essential. The company’s South Korean-listed shares soared around 50% in 2020. And even as the company faces internal tumult—in January, its de facto leader, Lee Jae-yong, was sent back to prison on charges stemming from a political bribery scandal—it remains the world’s leading TV vendor, with a market share of 31.9%. —*Amy Gunia*

GOOGLE SEARCHING FOR A BETTER WORLD

Google—the world’s most visited website—is a part of modern language: when we want to find something, we Google it, often on a smartphone running the firm’s Android operating system, which controlled 84% of the market in 2020. Over the past year, CEO Sundar Pichai (*below*) put that might to good use—offering ad credits to struggling small businesses and in April announcing funding to vaccinate 250,000 people in low- and middle-income countries. However, Google’s scale may now be part of its problem. In the U.S., the company faces anti-trust lawsuits that, among other claims, allege it is illegally protecting its search monopoly. (Google has denied wrongdoing.) The results of those cases could reshape the way consumers use the Internet. —*Alejandro de la Garza*



BP CHANGING COURSE

A decade after BP’s Deepwater Horizon blowout in the Gulf of Mexico, CEO Bernard Looney is vowing a steep drop in oil and gas drilling and a halt to exploration in new areas, and he wants to zero out the company’s mammoth carbon emissions by 2050. His announcement in February 2020 had other oil majors racing to match those targets. All are mindful that consumers and shareholders, not to mention their own employees, can no longer abide business as usual. And though the pandemic pummeled BP’s revenues and left the oil industry reeling, Looney says he will not back down from his mission. “This direction is unstoppable now,” he says. “Without action it is a rather bleak future for the world.” —*Vivienne Walt*

FEDEX TAKING FLIGHT

Global air travel fell by 60% in 2020, but one of the world’s largest airlines did nothing but grow. FedEx, with close to 700 aircraft, benefited from the lockdown home-delivery bump with record quarterly earnings, partly by picking up slack from canceled flights. About 65% of goods shipped between Europe and the U.S. normally travel in the belly of passenger planes. “That went away,” says Donald Colleran, president and CEO of FedEx Express, which added flights to handle that extra business. “We moved orders of new aircraft as quickly as we could. We brought in planes we had used as spares, planes that we had parked in the desert.” In December, the company also delivered the first COVID-19 vaccine in the U.S. —*Don Steinberg*

TENCENT EVOLVING ITS FOOTPRINT

The conglomerate is Asia's most valuable company—worth some \$750 billion—and best known for China's ubiquitous messaging app, WeChat. Usage soared during the pandemic as more of WeChat's billion-plus users embraced its digital-payment tools; 2020 transactions totaled close to \$250 billion, double those of 2019. In partnership with the Chinese government, Tencent also launched a “vaccine passport” program, enabling WeChat users to share their vaccination status via a QR code. And while WeChat is still grappling with controversy—the U.S. and others have raised concerns about its data privacy—Tencent continues to expand, investing in startups worldwide.

—Charlie Campbell

UNILEVER PARTING WITH PLASTICS

If you've ever stress-eaten ice cream or washed your hands countless times during a pandemic, you've probably used a Unilever product. The consumer-goods giant estimates that 2.5 billion people use its brands—from Dove to Ben & Jerry's—every day. Now Unilever, which admits to having a plastic packaging footprint of 700,000 tons a year, is aiming to undergo what chief supply-chain officer Marc Engel calls “the greatest transformation” in company history: in May, it will bring its climate-transition plan—which includes a goal of net-zero carbon emissions from all Unilever products by 2039—to a vote before shareholders, making it the first FTSE 100 company to do so. —Anna Russell



MICROSOFT

Powering the lockdown

In a year when fellow tech giants were slammed for their role in anti-competitive behavior and spreading disinformation, Microsoft kept its head down and deftly exploited a portfolio of businesses exquisitely tailored to benefit from the global lockdown. The company stock gained nearly 50% over the past year, resulting in a market cap of over \$1.7 trillion—buoyed by the company's Azure cloud-computing business, which helped drive the pivot to working from home, and its recent introduction of Microsoft Mesh, an augmented-reality platform that incorporates holographic experiences into virtual gatherings. Microsoft also doubled down on the turbocharged gaming industry by launching two new Xbox consoles (the Series X and the Series S), and acquiring ZeniMax Media, a leading game developer, for \$7.5 billion. Going forward, Microsoft is investing in its high-growth areas, announcing plans to add cloud-data centers in seven new regions in Asia, Europe and Latin America. “What we have witnessed over the past year is the dawn of a second wave of digital transformation sweeping every company and every industry,” said Microsoft CEO Satya Nadella. —Eben Shapiro

UPS

DELIVERING THE GOODS

Shoppers stuck at home avoiding COVID-19 in 2020 ordered goods like it was Christmas in July, August and the rest of the year. That was good news for the world's largest package-delivery company—UPS—which shipped more than 25 million parcels a day during the final months of 2020. “Even my relatives who are older are shopping online. Before, they would never do that,” said Carol Tomé, the long-time Home Depot chief financial officer who came out of retirement in 2020 to become UPS's first female chief executive, in a call with analysts in February. Along with diversifying modes of transportation—using land and rail when aircraft were grounded—and looking at innovations like drone delivery, she has been overseeing vaccine deliveries in partnership with Operation Warp Speed. —Don Steinberg



FACEBOOK

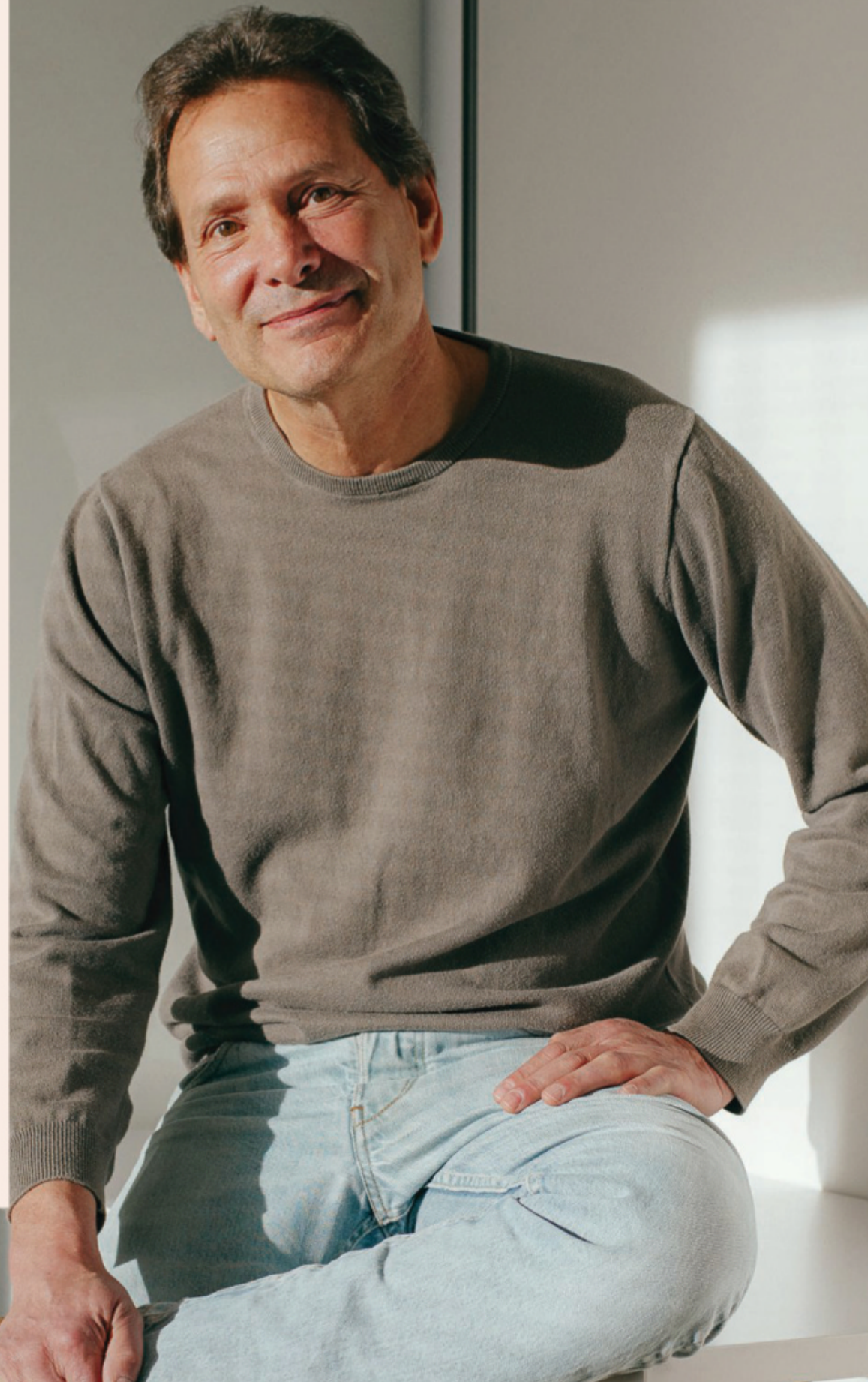
Fighting (and fueling) misinformation

Ahead of the 2020 election, Facebook strengthened its protections against foreign interference to avoid a repeat of 2016, when Moscow conducted a pro-Trump disinformation campaign on the platform. But Trump's presidency and the pandemic presented a tougher foe: homegrown threats to truth and democracy. Despite Facebook's rollout of new labels for election interference and COVID-19 misinformation, unsubstantiated claims continued to spread widely; dissemination of the QAnon conspiracy theory, for example, wasn't banned until a month before the vote, and antivaccine misinformation reached millions of users before it was banned in February 2021, almost a year into the pandemic. Enforcing the bans remains a challenge. Still, under CEO Mark Zuckerberg's leadership, Facebook has seen its market cap surge some 50% since the start of 2020, to \$890 billion, suggesting that the company isn't likely to change its business model anytime soon. —*Billy Perrigo*

PAYPAL

UNTETHERING THE DIGITAL WALLET

Cash is no longer king, and shying away from touching banknotes has benefited PayPal. The fintech giant—which does business in more than 200 countries, and deals in more than 100 currencies—had a record year as the pandemic drove shoppers from stores to buying goods on their phones and computers. In response to demand for germ-free payments, PayPal launched QR codes in 28 global markets; it also helped move digital dinero into the mainstream by adding cryptocurrency services. In total, the firm, led by CEO Dan Schulman (*right*), processed 15.4 billion payments last year, with a value of \$936 billion. —*E.S.*


**TAIWAN
SEMICONDUCTOR
MANUFACTURING
COMPANY**

PRODUCING THE CHIPS THAT CONNECT US

Taiwan Semiconductor Manufacturing Company (TSMC) is the world's leading supplier of custom chips for laptops, smartphones and countless other devices produced by Apple, Huawei, Sony and more. Video gaming, live-streaming and 5G hinge on the connectivity and processing speeds TSMC provides. This year, its services became more essential than ever after the Trump Administration restricted U.S. companies from selling technology to China's biggest chipmaker, inadvertently increasing demand for TSMC. The firm reported net income of \$5.01 billion in the last quarter of 2020, up 23% year on year. —*C.C.*

WALMART

KEEPING AMERICA FED, CLOTHED AND VACCINATED

Walmart, once reviled as a destroyer of small-town Main Streets, played a critical role in keeping the nation fed and clothed during the pandemic, all while generating nearly \$560 billion in revenue last year. It did that, like many retailers, by greatly accelerating its push into e-commerce, with digital sales jumping 69% in the last three months of 2020. Now its thousands of stores, many in rural, underserved areas, are vaccinating customers. It's also taking steps to repair its image as an exploiter of low-wage workers: in February, it announced a broad wage hike. —*E.S.*

PIONTEERS



CHARTING *new paths* FORWARD



Witherspoon has leveraged her star power to fuel a media company that reaches beyond the bounds of Hollywood

HELLO SUNSHINE

Shifting the narrative

By Lucy Feldman

IT'S ABOUT 12 MINUTES INTO THE Q&A WHEN REESE Witherspoon starts to cry. "A long time ago, people drew some lines on this world," she says, reflecting on families separated by immigration policy. "We are just part of a common humanity."

She's talking to Patricia Engel, the author of *Infinite Country*, for a Reese's Book Club event in front of a Zoom audience of publishing professionals, influencers and readers. "I didn't think I was going to get emotional," she tells the far-flung crowd, likewise moved by Engel's story of a family divided between Colombia and the U.S. "You're not the only one who cried, Reese," someone writes in the chat. And later: "This story needs to be made into a movie."

That's the exact sentiment that drives Witherspoon, 45, who has transformed her role in Hollywood from movie star to business leader—and maker of her own fortune. After rising as a child actor, she shot to household-name status for 2001's *Legally Blonde*, going on to win an Oscar in 2006 for *Walk the Line*. But even after those triumphs, for a time she struggled to find satisfying roles in Hollywood, where women's stories have long been sidelined. She discovered a way to change that in a life-long love: books. Celebrating books through her book club—and adapting them for the screen—is now the foundation of Witherspoon's business at Hello Sunshine, the media company she founded in 2016, where she's established a track record for spotting, and making, hits.

At Hello Sunshine, Witherspoon picks titles for the book club. Of the 54 selections to date, often titles that hit a sweet spot between commercial and literary, more than 30 have gone on to make the *New York Times* best-seller list, making a tap from Witherspoon one of the most coveted accolades in publishing. And her executives have built a machine around accessing intellectual property and swooping in on screen rights, evaluating more than 1,000 books, articles, original scripts, pitches and life-rights documents each year. The company has produced buzzy series based on books like *Big Little Lies* and *Little*

Fires Everywhere, which was also a Reese's Book Club pick, and has a number of titles on option.

Before Hello Sunshine, Witherspoon ran another company, Pacific Standard, which produced *Gone Girl*, *Wild* and the first season of *Big Little Lies*, all based on books. But Witherspoon had invested her own funds to get that company off the ground, and it wasn't enough, even after those hits. So she began looking beyond Hollywood. "I didn't have money to pay for all the employees, plus benefits, and keeping the lights on in an office," she says. "I started thinking, How could I make this into a bigger, farther-reaching, scalable endeavor?" She looked for partners, finding a backer and eventually her CEO at Otter Media, a joint venture between AT&T and the Chernin Group.

It's a common practice for actors to build production companies around creating work for themselves. And celebrity-led book clubs—from Emma Roberts' Belletrist to Kaia Gerber's Instagram discussions to Oprah's original—abound. What sets Hello Sunshine apart is the power created by combining the two pursuits, and the breadth of its ambition. Witherspoon doesn't want to run a vanity shingle—she wants to build a media empire. What started as a direct response to the dearth of compelling roles has grown into a 70-person, multiplatform company. It has four productions currently shooting: *Truth Be Told*, *From Scratch* and *The Morning Show* in Los Angeles, and *Where the Crawdads Sing* in New Orleans. And Hello Sunshine now also has divisions focused on unscripted TV, kids and animation projects, podcasts, digital series and social media endeavors like an app for the book club. The company expects to be both profitable and cash-flow-positive for the first time this year.

In a crowded content landscape, Hello Sunshine has a clear directive: to create work that centers women, showcasing their agency and offering a glimmer of hope. The challenge is honing that goal, and living up to its full potential, in a world where the standards for equity and diversity continue to evolve. The once revolutionary premise of centering women, which so often means white women, is no longer enough. Achieving true equity means constantly examining biases and pushing to do better. "It's



embedded in our mission," CEO Sarah Harden says. "This isn't about changing the world for white women. It's elevating intersectional voices."

RECENTLY, A FRIEND of Witherspoon's—and the author of a Reese's Book Club pick—texted the actor a photo of a house. She had just become the first homeowner in her family, thanks to her book sales. It was a big moment for Witherspoon, who declares a personal goal: "I want to make a lot of women a lot of money."

That feminist perspective shows up throughout our two-hour Zoom conversation in March, Witherspoon calling in from a vacation with her family in the Caribbean. She's frank about the meaning of money, and the meaning of power, in an industry that has so long denied women both.

Witherspoon, pulled like so many viewers to the narrative of exploitation put forth in the *New York Times Presents* documentary episode "Framing Britney Spears," draws comparisons to her own

story as a young woman in the tabloid spotlight of the early 2000s. She got divorced the same year Spears did; each was raising two kids under the relentless eye of paparazzi, sometimes chased by the same photographers. Witherspoon was followed to church, to school, to soccer practice; there was a period of time when an RV was parked outside her home, cameras pointing into her kitchen window every hour of every day. "My children will

'I want to make a lot of women a lot of money.'

—REESE WITHERSPOON, FOUNDER, HELLO SUNSHINE

tell you stories about being in preschool and people climbing on the roofs of our cars," she says. In 2006, she moved the family home to Nashville.

For all that, Witherspoon considers herself one of the lucky ones. She's clear-eyed about the fact that women like Spears, Paris Hilton and Lindsay Lohan



Witherspoon and Washington served as co-producers on the adaptation of Little Fires Everywhere

women who could relate, and who were driven to make change.

There was the night with Rashida Jones, Kerry Washington and America Ferrera in Eva Longoria's living room, when Witherspoon cried and lamented that they wouldn't be able to force others to act. Ferrera looked at her with intensity and said, "Yes, we are." There was the secret initiative that Witherspoon will speak only vaguely about—"One day I'll tell you what happened"—where she says Shonda Rhimes put her up to calling 30 business leaders in Hollywood who had no women or people of color on their boards. "There was something about Shonda believing that I could," she says. "I was proud of myself." And there's the group text. "Whenever I feel discouraged, I have a group of women. We all text each other, and we're like: *Just keep going.*"

Witherspoon likens Hollywood to a giant cruise ship, which she tries to steer, painstaking degree by painstaking degree, in a better direction. As she says this, she gestures her hands as if she's scooting a toddler toward his first steps, smiling and offering words of encouragement. "Come on, you can do it," she says.

The move is very Elle Woods, that perpetual optimist Witherspoon is still best known for playing. The character, like Witherspoon, will have entered her 40s if and when Hello Sunshine eventually produces a third *Legally Blonde* movie. I ask Witherspoon what Elle is doing now, and she thinks a moment before conjuring the image: "She's hitting barriers and obstacles that she never thought she'd be hitting later in life," she says. "She reminds me of the woman at the Women's March, holding the sign that says, I'M STILL DOING THIS SH-T."

HOW DO WE DO BETTER? That's a question at the heart of Hello Sunshine's work, and one many companies have focused on since George Floyd's murder set off a tidal wave of protests last May. The reckoning with racial injustice has changed the conversation about the distribution of power in institutions across the U.S. The leaders of Hello Sunshine—like the leaders of any

were considered "bad," while women like herself and her friend Jennifer Garner were "good." She recalls all the times she was filmed screaming at the cameras, which never stuck to her reputation as they did to other famous women. "What if the media had decided I was something else? I would be in a totally different position," she says. "I want to say it's my decisions or the career choices I made, but it felt very arbitrary. And kind of sh-tty."

Much more deliberate was the wave of empowerment for women in Hollywood that came with the #MeToo movement in 2017. Witherspoon came forward, sharing that she had been sexually assaulted by a director when she was 16 years old, and that she'd suffered other incidents of abuse as well. The end of 2017, she says, was a difficult time—she hardly slept, struggled with anxiety, contended with memories that she had long closed off. And while she has chosen not to name her abusers, Witherspoon says she has been able to speak with the people who were responsible for her safety yet failed to protect her. The most healing part, she says, was finding herself in rooms with other

KLUTCH SPORTS GROUP

EMPOWERING PLAYERS

In the span of a decade, Klutch Sports Group has grown from a startup with two employees into a disruptive superagency. Klutch now has over 70 clients across the NBA and NFL, including superstars like LeBron James and Anthony Davis, and over \$1.8 billion in contracts under management. Most important, the agency and founder-CEO Rich Paul have helped define an era of heightened player empowerment, in which athletes have moved between teams with greater ease, by striking a series of headline-making deals—as when the agency engineered a trade that joined Davis with James in Los Angeles, delivering the 2020 title to the Lakers. —Sean Gregory

BUMBLE

DESIGNING A SMARTER, SAFER DATING APP

Bumble is an app that prioritizes safety—particularly from harmful language aimed at the millions of women on its platform. "We would have blocked Donald Trump years ago if he used our product," CEO Whitney Wolfe Herd told TIME in March, referencing the platform's unique model, in which users who engage in harassing behavior are immediately blocked and only women can initiate conversations between male and female users. After Wolfe Herd took the company public in February—becoming the youngest woman in the U.S. ever to do so—its stock price soared; the company is now valued at more than \$14 billion. In one of its latest moves, Bumble imposed a ban on unsolicited and derogatory comments about appearance, body shape, size or health. —Sanya Mansoor

organization with a hope of meeting society's demands for change—understand that the work of equity is never finished.

Hello Sunshine's COO Liz Jenkins remembers struggling through the weekend last summer when protests first surged and logging on for work that Monday. In a team meeting, she decided in the moment to be honest about how she was hurting as a Black woman. "I thought to myself, as I took a deep breath, 'No. I'm not going to pretend that everything is O.K.,'" she says.

Harden tears up when she remembers the impact Jenkins had that day, and the letter she wrote to the staff in place of the CEO's typical weekly note. "It helped create the room for others to not be O.K., and to listen and recognize the importance of active allyship," she says. As is the case for so many companies, the dialogue about diversity and inclusion at Hello Sunshine can be tough. "Are there sometimes uncomfortable conversations? Of course," Jenkins says. "But if we don't have those conversations, everybody's going to keep getting canceled, nobody's going to grow, and there's not going to be real change."

That attitude shows up in the work that Hello Sunshine produces. The executives describe a commitment to creating opportunities for people of all backgrounds on their productions, and hold up their 2020 Hulu series, *Little Fires Everywhere*, as the embodiment of the Hello Sunshine ideals: they started with a powerful book about motherhood by Celeste Ng, found a like-minded collaborator in Washington and her production company Simpson Street, and hired writers who could connect with the material in different ways.

Witherspoon and her president of film and television Lauren Neustadter had the idea to cast Washington in the role of Mia, a single mother who is white in the book and spars with Witherspoon's Elena. Washington likens Elena to "the archetypal Karen" and calls her co-star "brave" for embracing the character. "Reese was stepping into the role of this privileged white woman who imagined herself woke but had a lot more work to do," Washington says. "She had to put a very real soul and humanity in that person."

Those choices—and in particular, the decision to cast Washington and run straight at issues of racial tension—reimagined the story "in exactly the way

that I would hope," Ng says. Neustadter is moved to tears as she describes the pride the team felt to have Ng's approval of the final product. "It was so important to us to do right by her," she says.

BUT DOING BETTER also means acknowledging shortcomings, even within the most well-intentioned, values-oriented institutions. While Hello Sunshine's leaders strive to tell inclusive stories, they have only one person of color on their executive team. And when it comes to the authors who have so far benefited the most from Hello Sunshine's work, the majority are white women. Roughly two-thirds of the book-club picks have been by white women (even more by straight women), with a notable focus on Black authors last summer. "I feel like it's a step in a process, and hopefully not the last step," says Ng, who was excited to see Nancy Jooyoun Kim's *The Last Story of Mina Lee* selected last fall.

For productions based on IP by white writers, which represents the majority of Hello Sunshine's slate, Neustadter asserts a "responsibility to expand the scope of the story." She cites the example of the Apple TV+ show *Truth Be Told*, which they adapted from Kathleen Barber's novel *Are You Sleeping* to create a role for Octavia Spencer, who co-produced the show, with Nichelle Tramble Spellman showrunning. "It's a gigantic part of our initiative to have women of color writing, adapting and directing the stories," Witherspoon says. But she adds that she'll often share material to review with other women; Freida Pinto is adapting a former Reese's Book Club pick. "If we don't feel like it's going to be authentically told, we don't know if we're the right company to tell it," Witherspoon says.

As a next step toward amplifying new voices, the company is preparing to launch LitUp, an initiative designed to override some of the systemic inequities in publishing. The program, open to women from a list of underrepresented backgrounds, will aim to foster the careers of 25 new authors over the next five years. For the first round, Hello Sunshine will select five writers who each have a manuscript at the ready but have not secured representation, a crucial step on the path

to publication, and offer them access to a network of more than 50 agents, an all-expenses-paid writers' retreat and a mentor from its pool of former book-club authors. Part of the deal, designed to give new authors a boost in the process of selling their books to publishers, is a marketing commitment from Hello Sunshine.

"I know there are worthy stories sitting out there by underrepresented voices that haven't been able to get through the structural gatekeepers," Harden says. She's expecting thousands of submissions, which will go through multiple rounds of blind reads in an antibias process designed by Hello Sunshine's partner, We Need Diverse Books. Witherspoon will join in the later rounds of reading applications, and the company aims to select its first class of LitUp fellows by the end of the year.

Witherspoon acknowledges the need for her business to evolve on matters

'Once you know better, you do better.'

—REESE WITHERSPOON, FOUNDER, HELLO SUNSHINE

of equity and representation, whether through starting new programs like LitUp or honing existing ones. And her company isn't the only one. During our interview, she begins to describe a demeaning photo-illustration of her that ran in a magazine in 2015, when she launched her fashion company Draper James; it was this magazine, but I'm not sure she would have said so if I hadn't owned it first.

The art depicted her and four other celebrity women who had started businesses holding baked goods, toting cleaning supplies and wearing aprons. The sexism of the image, and its place in TIME, has bothered her for years, and she tells me about the conversations she had then with Gwyneth Paltrow and Jessica Alba, who were also pictured. Together, they decided they would speak about it in the future, when the world was ready to hear it. I offer an apology. We are accountable too.

"Culture shifts," Witherspoon says. "Culture changes." She's talking about our mistake, but also so much more. "Once you know better, you do better. We have to make room for that." □



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SAVAGE X FENTY

Embracing every body

Founded in 2018 by pop superstar Rihanna (*right*), fresh off the success of her Fenty Beauty makeup line, Savage X Fenty is a new kind of lingerie company: one with body positivity at its core. Its catalog ranges from XS through 3X and includes everything from classic T-shirt bras and lacy balconettes to a sheer, tiger-striped crotchless catsuit. The online brand's ethos is resonating: its sales grew by more than 200% in 2020 despite the pandemic, and its second fashion show—which debuted on Amazon Prime in October—won raves for featuring an inclusive cast of models, as well as appearances by artists such as Rosalía, Lizzo, Bad Bunny and Travis Scott. A \$115 million investment round, announced in February, will propel Savage X Fenty's expansion into the world of physical retail. As a result, though the timing of the expansion remains TBD, the lingerie brand is now worth \$1 billion. —*Eliza Brooke*





SAVAGE X FENTY: KEVIN MAZUR—GETTY IMAGES FOR SAVAGE X FENTY; OATLY: ILLUSTRATION BY TOMI UM FOR TIME

OATLY

EXPANDING
AN OAT-MILK
EMPIRE

Sweden-based Oatly—the original oat-derived milk substitute, billed as a more sustainable alternative to traditional dairy—first became popular with baristas in the U.S. around 2017, and demand has soared ever since. In the first weeks of the pandemic, sales of the cartons, which have a shelf life of up to one year, surged even more quickly than sales of hand sanitizer. In February, after raising more than \$200 million in venture capital, the company filed for an IPO in the U.S.; the next month, it announced plans to open one of the world’s largest plant-based “dairy” factories in the U.K.

—Alison Van Houten



RAD POWER BIKES

CYCLING FORWARD

The U.S. bike market boomed as Americans sought out well-ventilated transportation last year. Seattle’s Rad Power Bikes, the largest e-bike brand in North America, sold 297% more bikes in April 2020 than in April 2019. Primarily an e-commerce business, Rad Power Bikes offers a quiver of practical, direct-to-consumer options—including bikes with fat tires designed for pillowy terrain, and foldable models created with convenience in mind. On the heels of a \$150 million funding announcement in February, the company will open a fourth brick-and-mortar store, expand its mobile service network to reach 75% of U.S. customers, and double its staff—all in 2021. —A.V.H.

BEYOND MEAT

POPULARIZING PLANT-BASED PROTEIN

Increasing concern over cows and climate change—raising cattle takes lots of energy, and their digestion emits greenhouse gases—has helped make Beyond Meat one of the faster-growing U.S. food companies; its plant-based proteins dot grocery cases and menus at KFC, Dunkin’ and Pizza Hut. Now it’s expanding even more: in February, the 12-year-old company signed a three-year deal to become the preferred provider for the McPlant line at McDonald’s. “The mainstreaming of our products is incredibly important” for the planet, says CEO Ethan Brown. Plant-based steak and bacon are the “holy-grail items,” he says.

—Don Steinberg

STRAVA**HELPING CITIES
SERVE ATHLETES**

More than 73 million people use Strava's fitness-tracking app to log stats while partaking in a wide range of sports, including jogging and cycling. Now, anonymized data from the app, provided free as of 2020, is helping cities develop infrastructure to support those activities. Officials in Portland, Ore., for example, planned cycling paths on Tilikum Crossing, the longest car-free bridge in the U.S., after affirming with Strava data that bikers were avoiding the bridge, a central thoroughfare. As the app's user base grows—in 2020, Strava added about 2 million people per month—so too does the wealth of information available to urban planners and alternative transit.

—Alison Van Houten

TERRACYCLE**RECYCLING AT SCALE**

Recycling is a tricky business. Many everyday objects are composed of more than one material, making them challenging—and expensive—to break down. TerraCycle CEO Tom Szaky's solution is to charge companies for collection and disposal of difficult-to-recycle materials—including coffee pods, pens and PPE—which in turn reduces the companies' environmental footprints. It then converts the waste into raw materials that can be reused to create items from park benches to watering cans. Its sustainable model, buoyed by buy-in from corporations such as Colgate, P&G and Gillette, could be the key to unlocking recycling's full potential at scale. —A.V.H.

**HYBE****Creating a BTS-fueled empire**

South Korea's biggest public listing in three years came in October courtesy of the country's most popular export: K-pop. Founded in 2005, HYBE—formerly known as Big Hit Entertainment—was once an underdog talent agency in South Korea's competitive music industry. But thanks to supergroup BTS—arguably the biggest band in the world—the company is in rarefied air. Like Disney before it, HYBE looks at each of its acts as intellectual property to be developed into a universe of fan-friendly experiences and products. In the case of BTS, that's meant everything from logos on Samsung smartphones to virtual *Fortnite* parties. At the end of January, HYBE and its subsidiary invested over \$60 million in its former rival, K-pop entertainment company YG. And in April, HYBE purchased U.S.-based media group Ithaca Holdings in a \$1 billion deal, adding pop stars like Justin Bieber and Ariana Grande to its roster. —Raisa Bruner

HEADSPACE**PROMOTING
MINDFULNESS**

Over the past year, many of us needed help destressing. Just ask mindfulness startup Headspace, whose app offers soothing sounds, guided meditations and movement exercises to more than 70 million users; downloads of the app doubled by mid-March last year compared with the rate before the company's COVID response.



To reach those who might need it most, Headspace—whose services typically cost \$12.99 a month—offered more than a million free subscriptions to health care workers, educators and unemployed individuals. It has also partnered with companies such as Starbucks, Unilever and Adobe to offer access to employees. And now, Headspace has an animated Netflix series, which guides viewers through techniques to help with stress and sleep. —Sanya Mansoor

ROTHY'S BRINGING FOOTWEAR FULL CIRCLE

Approximately 90% of shoes end up in landfills, but if Rothy's has its way, its designs won't be among them. Already known for having converted almost 100 million water bottles into colorful, fashion-forward shoes, the brand—whose following includes Meghan Markle and Katie Holmes—now pledges to take its commitment to sustainability one step further. This spring, the company, led by CEO Stephen Hawthornthwaite, announced a plan to double down on its trademark use of recycled materials by piloting its first-ever recycling program of its own inventory, with the goal of scaling up to achieve full circular production by 2023. —Jennifer Duggan

FLUTTERWAVE POWERING RETAILERS

The co-founder and CEO of Nigeria's Flutterwave, Olugbenga Agboola, compares the infrastructure of digital transactions across nations and platforms (think credit cards, debit payments and digital wallets) to plumbing: you don't want to think about it, you just want it to work. When pandemic lockdowns hit brick-and-mortar businesses in Africa, the digital-payment service was able to rapidly set up digital storefronts for 20,000 customers, throwing them a lifeline. Agboola called the free campaign "keeping the lights on." Flutterwave hit tech-unicorn status in March when it secured \$170 million in Series C funding from global investors, valuing the company at more than \$1 billion. —Aryn Baker

DARKTRACE STOPPING CYBERCRIMES

The FBI reported a rise of more than 300,000 complaints of phishing, ransomware and other suspected Internet crimes in 2020—many of them targeting major companies and, by extension, their millions of customers. Enter Darktrace, a cybersecurity company helmed by CEO Poppy Gustafsson (*below*). Darktrace protects its more than 4,700 customers—including Pizza Hut and other major corporations—by using AI to spot deviant behavior within networks, buying human analysts time to investigate. Last year, the company detected and contained an attack by the Chinese cyberespionage group APT41, which affected more than 100 companies in the U.S. and abroad. —J.R. Sullivan



ROBLOX BUILDING A METAVERSE

When adults turned to Zoom for pandemic-era happy hours, kids filled the social void with Roblox. In 2020, Roblox Corporation's free-to-play game—which allows users to construct original, three-dimensional online worlds—grew its daily user base 85% to more than 32.6 million. Players can do everything from delivering pizzas to exploring ancient Rome to shelling out real money for virtual Robux to outfit their blocky avatars. (As in many online communities, some have faced harassment.) "Futurists and science-fiction writers have been imagining the Metaverse for decades," says CEO David Baszucki, referring to the concept of a persistent, shared, 3-D virtual space. Roblox is making it a reality. —A.V.H.

TILRAY COMMANDING THE CANNABIS MARKET

Irwin Simon was best known for creating a health-food giant before signing on to head Aphria, a cannabis company based in Canada, where recreational marijuana is legal. Separately, Brendan Kennedy went to Nanaimo, British Columbia, to launch Tilray after co-founding a private-equity firm to buy cannabis startups. Now they're merging the two to form the world's largest cannabis company by annual revenue—more than \$685 million. Still, there's room to grow. The plan going forward involves supporting studies that might widen approved medical targets, like epilepsy, pain and anxiety, and marketing consumer products like THC-infused drinks wherever recreational pot goes legit. —Don Steinberg

INNOVATORS



DEVELOPING *inventive* SOLUTIONS

GRO INTELLIGENCE

Accounting for climate change

By Eben Shapiro

SARA MENKER COMES BY HER NIGHTMARES HONESTLY. She was born in Ethiopia in 1982, shortly before a two-year famine resulted in the death of up to a million of her compatriots. Menker was too young to have firsthand memories, and her family was solidly middle class—her mother was a seamstress for Ethiopian Airlines, and her father worked in IT for the U.N. Economic Commission for Africa. Still, the famine left a searing impression on Ethiopian society and Menker, and the years that followed were marked by shortages and deprivation. Sugar was rationed, as was gasoline. Driving on Sundays was prohibited.

Her childhood imprinted a profound sense of how easily life can be disrupted by catastrophic forces, and the importance of preparing for looming disaster. That worldview and her commodities-trader background inspired Menker in 2014 to found Gro Intelligence, a startup that uses artificial intelligence and machine learning to help confront two of the biggest challenges faced by humanity: food security and climate change. “It’s about getting ready for disaster,” says Menker. “It’s about hedging for the downside risk.” The timing is excellent for a company focused on forecasting and managing climate disaster. In the U.S. alone last year, there were a record 22 climate-related disasters with losses exceeding \$1 billion each. In all, the droughts, cyclones, wildfires and storms combined for a staggering \$95 billion in damage. With such headlines fresh in the minds of investors, in January Gro raised \$85 million. Backers include prominent tech investors Intel Capital and Africa Internet Ventures (a strategic partnership between TPG Growth and EchoVC). Menker is one of the handful of Black female founders who have the potential to achieve unicorn status, the term applied to startups valued at \$1 billion or more.

Gro Intelligence works with thousands of clients, ranging from big food companies like Unilever and Yum! Brands to financial institutions, including BNP Paribas and Wells Fargo, providing them with a host of data and analysis on the global

Sara Menker, founder and CEO of Gro Intelligence, photographed in New York City on April 6

agricultural ecosystem. Gro ingests and analyzes over 650 trillion data points from more than 40,000 sources—crop forecasts, satellite images, topography, reports on precipitation, soil moisture, evapotranspiration—to provide insights and forecasts into 15,000 unique agricultural products. Curious about how the African swine fever impacted the Chinese pork market and its subsequent cascading impact on global commodity prices? Gro has a model. Or how a threatened trucker strike over the cost of diesel fuel could impact sugar prices in Brazil? That too. Gro even created a climate-risk score to assess the future of 300 ski destinations. (Better conditions for southern hemisphere locales such as Patagonia and New Zealand; worse conditions for Japan, interior U.S. and Canada, and parts of the Alps.) The company also works with governments around the world on food-security issues, to help them adequately plan for reserves.

Hedging against the inevitable downside is second nature to Menker. “Basics matter a lot to me because we grew up on restricted basics, the whole country,” she says. That mindset made her well prepared for COVID-19: she opened a closet and discovered that she had “85 rolls of toilet paper.” That impulse instantly kicked in when she was still trading on Wall Street and the stock market crashed in 2008, setting off a global financial crisis. “The first thing I thought of was, I know what the end of the world looks like, and this is not it.” Back then, she called her parents, concerned about their food supply, only to learn that her mother had been quietly buying land in the country and empty shipping containers and keeping them filled with a multiyear supply of grain in case of an emergency.

NOW, AS CORPORATIONS around the world are tripping over one another to make ambitious climate pledges, Menker is spending much of her energy laying the foundation for a new class of financial instruments to help companies hedge against climate risk. Regulators are increasingly calling for the introduction of such products. Both the Federal Reserve and the Treasury Department have recently created new senior-level positions to address the risk of climate change to the stability of financial markets. “Climate change poses a major



threat to U.S. financial stability, and I believe we must move urgently,” Commodity Futures Trading Commission acting chairman Rostin Behnam said in March, calling for new derivatives that would help price climate-related risks. Gro already has an index that measures the severity of drought that could serve as the basis for one such instrument. Despite a huge appetite for such information, there is a dearth of good data to help investors take potential climate shocks into account.

That’s where Gro comes in. Menker “is creating the first real clean global data set on climate,” says Gary Cohn, a former president of Goldman Sachs, who has a deep background in commodities trading. (Cohn, who was named vice chairman of IBM in January, served a stint as a senior economic adviser to President Trump.) “What Bloomberg did for bonds [aggregating all available information in one place], she is trying to do for climate,” says Cohn. Menker, a consummate networker, recently added Cohn to Gro’s board. He and Menker had a series of socially dis-

tant outdoor meetings in New York City during the pandemic. (The company was founded in Nairobi and also has a co-headquarters in New York City.) Cohn says after the two first met, Menker began calling him every other day for advice. “You don’t build a company without being tenacious, without having drive,” he said. “She doesn’t take no for an answer.”

Menker moved to the U.S. to attend Mount Holyoke College in 2000. (She

‘It’s about getting ready for disaster. It’s about hedging for the downside risk.’

—SARA MENKER, FOUNDER, GRO INTELLIGENCE

also has an MBA from Columbia.) At first she could not relate to the experiences of African Americans when they talked about racism. Once she’d been in the U.S. a few years, however, her experiences and the double standards she



A worker harvests African palm oil fruit in Guatemala. Gro closely monitors rising vegetable oil prices, a key driver of food inflation

witnessed “beat the Blackness into” her, she says. When she went to Wall Street, after a brief attempt at trying to assimilate left her feeling miserable, “I did not try to fit in: My hair always looked like this. I dressed as I pleased. I brought my culture to work.” Menker is still close to some of her former Morgan Stanley colleagues, and she clearly revels in the bawdy camaraderie of the trading environment. (She recalls the advice a colleague once gave about a trading strategy, “Sell a teeny, lose your weenie.”)

Yet even with her years of training and experience, 2020 was particularly intense for Menker. As a commodities expert, she was early to spot the supply-chain disruption potential of the pandemic, and in February, she again called home, worried about basic provisions. It wasn’t just the pandemic that she was worried about. Ethiopia and other parts of East Africa were under siege from a devastating swarm of locusts, devouring hundreds of thousands of acres of the corn, wheat, sorghum, millet and barley that the region relies on for much of its food. Menker was overcome with painful memories of the impact of the 1980s

famine and beset by vivid nightmares filled with dead animals and locusts.

She sent out an impassioned all-staff email to her fellow “Gronies,” and the company swung into action, building 11 models that estimated the total area affected by the spread of the locusts, and yield models for the five crops most affected. The company set up a #locustmodels Slack channel to sync and share information. The Gro team pored over satellite data to monitor and predict the path of the swarm to help figure out where best to deploy scarce pesticides, and worked with the Ethiopian government, on a pro bono basis, on how to ramp up food reserves ahead of a projected increase in global food prices.

Dorothy Shaver, global marketing sustainability lead for Unilever’s largest food brand, Knorr, says she initially partnered with Menker’s “big brain and big data” in 2018, on Knorr’s ambitious plan to first identify and then help develop a market for Future 50 Foods—foods that are nutritious, affordable, tasty, and that have a lower environmental impact than animal-based foods. Menker was a particular advocate for teff, a prized grain in Ethiopia, and also fonio, a quick-growing white rice substitute that grows in sub-Saharan Africa, requiring little water. Shaver calls fonio “a little miracle grain that never embarrasses the cook or the farmer.” After the 50 were selected, Gro analyzed each crop for a variety of factors, including current levels of production and possible impacts on local communities if Knorr’s interest led to a spike in demand.

Menker’s current big concern—“I have new nightmares now”—is rising food inflation as countries including Russia, Ukraine, Argentina and Indonesia raise taxes or limit exports on products like wheat, palm oil and corn to protect domestic supplies. Still, she is fundamentally hopeful. “If you think about so many of the world’s challenges today, it’s about this tension between ecological preservation and economic growth,” she says. “That tension doesn’t need to be there, and I’m hoping that one of the things that we do is find a way to reconcile that.” □

IKEA

MOVING BEYOND ‘DISPOSABLE’ FURNITURE

For decades, Ikea has been a byword for the kind of functional mass-produced furniture you might buy to deck out your first postcollege apartment. (Nice, but ultimately disposable.) Now the Swedish giant, with 455 stores in 60 markets, is making strides toward a more sustainable future. By retooling its supply chains, the company hopes to become climate-positive—reducing more greenhouse gases than it produces—by 2030. Over the past few years, it has invested in more wind farms and solar parks, tested electric vehicles for home deliveries and opened its first secondhand store. It has also continued to innovate and recently partnered with Alibaba. “The only way we can exist as a business tomorrow,” says Jesper Brodin, CEO of Ingka Group, Ikea, “is by being sustainable.”

—Anna Russell

DUOLINGO

SCHOOLING USERS

Since launching in 2011, Duolingo—the app that teaches users how to speak everything from Swahili to High Valyrian—has been downloaded more than 500 million times. Last year, with so many kids stuck at home, it accelerated the release of an app that gamifies learning to read and write for children ages 3 to 7. It also saw a 2,000% uptick in the use of its online English-proficiency test, allowing more international students to apply to U.S. colleges that have traditionally required an in-person exam.

—Kathy Ehrich Dowd

MODERNA

Making a new kind of vaccine

The Massachusetts-based biotech company led by CEO Stéphane Bancel went from relative obscurity to the Wall Street spotlight when its mRNA-based COVID-19 vaccine, developed with scientists from the U.S. National Institute of Allergy and Infectious Diseases, became the first in the U.S. to start human testing last March. The vaccine's December 2020 greenlight by the U.S. Food and Drug Administration—and its subsequent worldwide distribution—vindicates the company's focus on using mRNA genetic material to teach the human body to fight off COVID-19. Millions have received the shot, and Moderna is ramping up production to meet continued worldwide demand. —*Alice Park*



Above, Moderna CEO Stéphane Bancel



NINTENDO

CREATING
COMMUNITIES

When more people were forced to physically isolate from one another, Nintendo and its Switch console offered an escape within virtual communities. The sequel to *Animal Crossing*—a neighborhood-building game in which users set up homes and trade goods—dominated popular culture, while *Ring Fit Adventure*, featuring at-home exercise routines, became a top-selling title. “I think people want to connect with each other,” says Nintendo of America president Doug Bowser. “When you make that physically difficult, as pandemics do, having alternative ways to stay connected and share experiences is crucial.” It’s a profitable endeavor: year-over-year sales were up 73.3% from May to September 2020. But efforts like the first Super Nintendo World theme park, which opened in March in Osaka, Japan, might face a tougher road until local COVID-19 cases decrease. —Patrick Lucas Austin



MODERNA: BRYAN ANSELM—REDUX; BANCEL: ADAM GLANZMAN—BLOOMBERG/GETTY IMAGES; COURTESY DJI; NINTENDO: ILLUSTRATION BY TOMI UM FOR TIME



DJI

Propelling drones to
new heights

DJI has put high-spec drones within reach of every budding photographer, bored teen and *Top Gun* wannabe; it holds 70% of the global consumer drone market. Founded in 2006 by Hangzhou, China, native Frank Wang, DJI—which stands for Da-Jiang (or “Great Frontier”) Innovations—is built on technology honed in Wang’s college dorm. This year, its buzziest launch was the DJI FPV (\$1,299), which comes with a set of goggles that give users a first-person view of their drone’s flight. Amid U.S. scrutiny of Chinese technology companies, DJI is also working to develop a new model of drone that gives users greater control of their data. —Charlie Campbell

JIO PLATFORMS LTD.

LEADING DIGITAL
TRANSFORMATION IN INDIA

Over the past few years, Reliance Industries, the Mumbai-based conglomerate, has built India’s largest 4G network by charging some of the lowest data rates in the world (less than 5¢ a month for 1 GB). Now leading investors are turning to Jio Platforms—the holding company for Reliance’s digital businesses—to reach its more than 410 million subscribers. Among them: Facebook, to develop a WhatsApp-based e-commerce platform, and Google, with which it is aiming to roll out low-cost 5G smartphones. Last year, Jio raised over \$20 billion in capital, a testament to the value and potential of its rapidly growing user base. —Amy Gunia



TIKTOK

Grabbing the world's attention

Nathan Apodaca never expected to propel Fleetwood Mac's "Dreams" back onto the *Billboard* Hot 100. But that's exactly what happened last September, after the 38-year-old posted a video of himself skateboarding and drinking cran-raspberry juice to the tune of the 1977 hit on TikTok, where it went viral. Such is the power of America's most popular app, where some 50 million U.S. users spend an average of 46 minutes every day.

Its secret: an uncannily effective discovery algorithm that surfaces a never-ending stream of videos. Now TikTok—which infamously drew the ire of former President Trump over questions about user-data storage—is hosting livestream events (like a Justin Bieber concert) and partnering with Shopify to offer more in-app purchases, signs that its ambitions are much grander than helping users waste time.

—Raisa Bruner

NETFLIX

REDEFINING HOLLYWOOD

Watching a movie in an actual movie theater has become an increasingly rare experience. Blame the pandemic, but also blame Netflix. The streamer's success—203 million subscribers and counting—has forced the most powerful studios, from Disney to Warner Bros., to launch their own at-home offerings, accelerating Hollywood's realignment. Netflix spent a reported \$17 billion on content in 2020, compared with Amazon's \$7 billion and Disney+'s \$1.75 billion. Some of the most talented creatives from network TV and the studio system—including Shonda Rhimes and David Fincher—have jumped to the platform, excited by the creative control it offers, resulting in record-setting viewership for Rhimes' period drama *Bridgerton* and 10 Oscar nominations for Fincher's *Mank*. It's unclear as people get vaccinated whether the ease of watching Netflix at home will continue to define the cinematic experience. But one thing is certain: watching movies (and TV series) for the first time on Netflix has become the rule, not the exception.

—Eliana Dockterman

SPOTIFY

Betting big on talk

Spotify's streaming service has transformed how people listen to music; it ended 2020 with 345 million monthly active users and 155 million paying subscribers. It's now undertaking a massive global expansion, reaching more than 170 markets, and has made a nearly \$1 billion investment in podcasting, buying Gimlet. Spotify also spent \$235 million last November on Megaphone, a company that makes it easier to sell audio ads. It's signing up hosts ranging from Meghan Markle to Joe Rogan, and recently unveiled a series of conversations between Bruce Springsteen and Barack Obama. Soon, the company plans to add Spotify HiFi, a premium service for users who want CD-quality audio. —R.B.

YUM CHINA

INVENTING THE FUTURE OF FAST FOOD

It's a little bit ironic that the most American of all industries, fast food, is being revolutionized by a Chinese company. Under the leadership of CEO Joey Wat (*right*), Yum China operates more than 10,000 restaurants in 1,400 cities in China and has revenues of over \$8 billion. As restaurants around the world scrambled to set up contactless payments and home-delivery networks to serve germophobic customers, Yum's previous investments in digital infrastructure paid off: digital orders accounted for 83% of Yum's KFC and Pizza Hut sales in the most recent quarter, a 22% increase. Yum China is also known for setting the pace in new-product innovation: it experiments with hundreds of new food offerings a year, such as salted-egg-yolk rice rolls and sweet pumpkin congee, with best sellers added to menus.—Eben Shapiro



ZOOM

ENABLING VIRTUAL CONNECTION

Zoom, whose share prices have more than doubled from last year after becoming the go-to destination for virtual birthday parties and endless meetings, is now positioning itself for a post-COVID future. Among its new offerings: apps that allow users to chat and share files, and cloud-phone systems and conference software for physical offices—a reflection that a hybrid return to offices is looking more likely. “We recognize this new reality,” CEO Eric Yuan said on a recent investor call.

—Andrew R. Chow

NVIDIA

DEVELOPING CRITICAL CHIPS

A confluence of divergent, powerful trends have combined to make Nvidia the most valuable U.S. semiconductor company. Long a leader in making essential graphics chips for video games, it saw a 61% jump in revenue in its latest quarter, powered by the pandemic-fueled explosion of gaming. The Santa Clara, Calif.-based company also got a boost from surging interest in cryptocurrency as investors bought powerful Nvidia chips to help “mine” digital currencies. Now the company is emerging as a key player in supercomputing and AI, resulting in perhaps the most significant use of the company's chips: in October, Nvidia unveiled a partnership with drug giant GSK to team up on using AI-powered computation to speed the drug and vaccine discovery process. In January, it struck a deal with Chinese EV maker NIO to supply chips to develop autonomous vehicles.—E.S.

ADIDAS**REDUCING WASTE**

Thanks to the synthetic fibers present in 60% of clothes worldwide, every laundry load releases an average of 6 million plastic microfibers into our wastewater. The worst offender is polyester, which accounts for more than half the global market for synthetic fibers. So it was big news when Adidas—one of the world's largest clothing companies, known for its collaborations with designers such as Beyoncé and Kanye West—pledged to stop using virgin polyester in all of its products by 2024. That commitment, aided by the company's development of Primeblue and Primegreen, two new athletic fabrics created with 100% recycled polyester, immediately set an industry standard, putting Adidas ahead of competitors like ASICS, which has pledged to eliminate virgin polyester by 2030. —*Paulina Cachero*

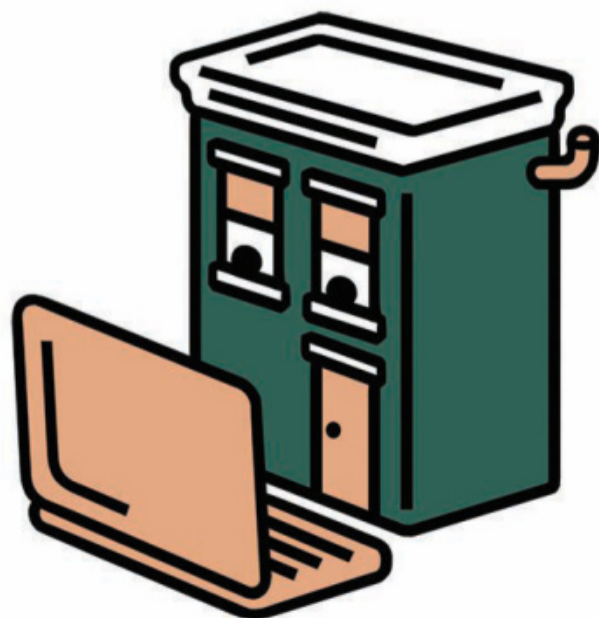
EPIC GAMES**TAKING A STAND**

Epic Games isn't playing around. In August 2020, the company introduced a new payment system within *Fortnite*, its massively popular online game, which sidestepped Apple's and Google's taking a cut of every in-app purchase, a practice that costs developers as much as 30% per purchase. In response, the tech giants pulled the game from their app stores. Epic Games' subsequent antitrust lawsuits against Apple and Google—filed in the U.S. and abroad—could help loosen their grips on the global market for apps. And there's no sign that the *Fortnite* phenomenon is flagging: a record-breaking 15.3 million people played at once during the game's season finale.

—*Patrick Lucas Austin*

**THE LEGO GROUP****Fostering creativity**

During worldwide COVID-19 lockdowns, Lego creations have stacked up in homes with children. The company reported a 21% jump in sales, resulting from the immediate demand for in-home entertainment and the company's pre-pandemic push to boost online sales globally. While its flagship product remains the classic brick, the 88-year-old family-owned company is evolving to recognize the diverse needs of young consumers with new offerings like Lego Braille Bricks and pandemic-inspired online content and hybrid learning resources. As families continue to hunker down, Lego love appears to be growing. "I have never gotten so many letters ... [about] how important Lego play has been," CEO Niels B. Christiansen tells TIME. —*Rebecca Katzman*

**ZILLOW****OPENING HOUSES**

The pandemic has made lusting after real estate, a phenomenon spoofed by *Saturday Night Live* in February, more popular than ever—which was great news for Zillow. America's largest online real estate marketplace logged 9.6 billion visits to its website and app in 2020. Revenue surged, and in March, the company, led by CEO Rich Barton, announced plans to increase its workforce by 40%. Although Zillow has faced some growing pains—a recent lawsuit claims its platform illegally suppresses independent brokers, which the company denies—it continues to expand, including getting into the brokerage game. —*Kathy Ehrich Dowd*

FLUTTER ENTERTAINMENT PLAYING FOR KEEPS

The world's largest online gambling enterprise placed big bets in 2020, working to expand its global footprint—and, in doing so, make recreational gambling part of more people's lives. The Dublin-based company finished merging with Stars Group, owner of industry giant PokerStars, and moved to own almost all of FanDuel, America's top betting app (which has exploded beyond fantasy sports like rival DraftKings), as states such as Michigan and Tennessee legalize sports wagering. "Nowhere has our growth been more evident than in the U.S.," says CEO Peter Jackson. Even with sports schedules curtailed in 2020, Flutter's U.S. revenue rose by 81% to almost \$1 billion, in a market it forecasts reaching \$20 billion by 2025. —Don Steinberg

ORSTED PIVOTING TO WIND

Many energy companies say they plan to transition away from fossil fuels to renewable-energy sources; Orsted is often held up as an example of a company actually doing it. Founded as the Danish Oil and Natural Gas company in 1973, Orsted sold off its oil-and-gas assets in 2017 and reoriented itself around renewable energy—particularly offshore wind. The bet paid off, and today Orsted is the world's leading offshore wind operator. Perhaps more important, says CEO Mads Nipper, its success in the sector helped drive a global move toward a technology that could prove critical in fighting climate change. —Justin Worland

STRIPE CATALYZING DIGITAL PAYMENTS

Tech companies of all stripes shoveled in billions during the pandemic, as work and commerce moved ever more online. But Stripe, an e-commerce start-up that makes software for businesses to accept online payments, saw one of Silicon Valley's most notable COVID-19 bumps. Founded in 2010 by brothers Patrick and John Collison (*below*), the company charges roughly 3%, plus 30¢, for each credit-card transaction processed with its software. In March, the company announced that it had raised \$600 million in additional funding, almost tripling its valuation—making Stripe the highest-valued U.S. startup. —J.R. Sullivan



BYD CO. LTD. SCALING ELECTRIC TRANSPORT

The auto market in China is the world's largest, and the race is on to make inroads with electric vehicles. While Tesla is the market leader globally, Chinese BYD—backed by Warren Buffett—is revving up. Although the company's sales of battery-powered electric passenger cars fell 11% in 2020, demand for its electric luxury sedan, launched in July, is steadily rising. BYD also manufactures electric buses in the U.S. and Europe and has entered into a partnership to help build Japan's first pure electric bus-loop line. Among its other businesses: rail systems, batteries—for consumer goods as well as renewable-energy storage—and components for handheld electronics. The company's Hong Kong-listed shares are up more than 300% over the past 12 months. —Amy Gunia

FARFETCH DIGITIZING FASHION

In 2020, Farfetch, a premier player in online luxury, saw its revenue hit \$1.7 billion, up 64% from 2019. Launched in 2008 by entrepreneur José Neves as an online marketplace for boutiques, Farfetch has steadily been digitizing fashion, acting as a distributor for brands while offering them white-label e-commerce tools. Its tech-first approach extends to brick-and-mortar locations: April saw the opening of a London flagship for the Farfetch-owned boutique Browns, where customers can use augmented-reality tools to try on clothes. Further affirmation of its strategy? A \$1.1 billion investment from Alibaba and Richemont to push into China's luxury market. —Eliza Brooke

LEADERS



MOVING *to meet* THE MOMENT

NBA

Growing a global game

By Sean Gregory

In late March, Adam Silver, commissioner of the NBA, entered a corner conference room overlooking New York City for his first face-to-face interview with a journalist since the pandemic began. After taking over as commissioner in 2014, Silver has presided over an unprecedented expansion of pro basketball's business: annual revenue nearly doubled from the 2013–2014 to the 2018–2019 seasons, to north of \$9 billion. Before the pandemic, the league projected it would hit the \$10 billion mark in 2020. Instead, revenue dropped some 10% during the pandemic-stricken season. Silver received praise for overseeing the completion of the NBA's shortened 2020 season in the Orlando "bubble," showing that businesses with strict testing and safety protocols can operate in the pandemic. He's had a tougher time, however, managing this year's unbubbled campaign, as teams are back to traveling and living in their home cities. The COVID-19 spread has led to myriad game postponements and players missing time. Over more than an hour at the NBA's refurbished headquarters—parts of which some still-remote employees have yet to see—and in a follow-up phone call, Silver discussed with TIME lessons learned from the past year, the thinking behind his game plan and his willingness to adjust it in the seasons ahead.

NBA commissioner Adam Silver, photographed at the league office in New York City on March 23, has overseen a near doubling of league revenues

Since you've become commissioner, has there been a decision you've made that's helped achieve growth?

I often look at things from the vantage point of a wannabe technologist. When new technologies come, and whether that's a smartphone or Facebook or Twitter or Instagram, we've been very quick to embrace those new technologies. And to then work with those companies to see how they can be customized for an NBA experience. That's something we continue to do. And blockchain and NFT just being the latest.

What might the NBA do in the NFT space?

There very well may be a blockchain application for ticketing. But from a fan standpoint, it will have less to do with the technology and more to do with, instead of throwing a ticket stub in your drawer, you pull out your smartphone and say to somebody, Here it is. This was that all-important game I attended. It's going to enable a far richer experience for fans over time. We're truly just scratching the surface.

What have been some of the key losses the NBA has had to weather since the league hit pause because of the pandemic last March?

This season, I said going in that we were projecting our revenues, by virtue of playing games without fans, would be down close to 40%. With the return of at least some fans in most of our arenas, we'll likely be down closer to 30% to 35%. We have not had any sort of large-scale layoffs at the league office, but there have been across-the-board salary reductions for league employees, and I know teams have done similar things. In the broader context, the impact has been as much on people's well-being. I know that stress levels are at an all-time high among players, coaches and administrative staff because the testing protocols are incredibly onerous. I think that everyone has paid an enormous price for that.

During this 2020–2021 season, when so many players have had to sit out due to COVID-19, why fundamentally do you think going forward with this season was worth it?

We thought we could be an exemplar for an organization that found a way to continue to operate through a pandemic. And also I felt a responsibility to the broader NBA community. While there's of course a health crisis in this country, there's an economic one as well. When I step back and think about the over 50,000 jobs that the NBA accounts for when you include the arena workers around the country, the issue then became, Is there a responsible way for us to operate where we begin with health and safety, which can't be compromised? Once we saw we could do that, together with enormous amounts of testing, then we felt we were making the appropriate decision.

One of the game's young stars, Jayson Tatum, has talked about experiencing breathing difficulties and fatigue after contracting COVID-19. Do you worry long-term about the damage this disease can do?

It absolutely worries me. Although I'll say that the vast majority of our players that have been infected with COVID were infected when they were outside our protocols, not inside our protocols. Based on the information we have today, I still believe that what we've done has only allowed them to live safer and healthier lives.

Turning to the intersection of the NBA and broader society: the NBA All-Star Game in Atlanta took place before Georgia passed its restrictive voting-rights bill in late March. MLB moved its 2021 All-Star Game from Atlanta as a result; if the NBA had a summer All-Star Game, would you have done the same?

The answer is, I don't know. I am not privy to all the factors that Major League Baseball considered before making that decision. I know that voting rights are an issue that have been front and center for our players. If we were looking at a



similar situation, I'm sure we would have been very attentive to that law.

NBA ratings did decline while games were taking place in the Orlando bubble. Some critics have argued that the league's embrace of social-justice movements, particularly Black Lives Matter (BLM), contributed to that decline. What's your response to that?

I hear the criticism. I try to remain true to the data. I have no data that suggests that people who were troubled by the NBA's embrace of Black Lives Matter or our players' positions on racial equality had a measurable impact on our ratings. And in fact, I think there may have been a segment of our fan base that became additionally engaged with the league as a result of the positions our players were espousing.

What's the state of the NBA's relationship with China?

We continue to televise our games in China. We have hundreds of millions of fans in China who we continue to

serve. I'll take a step back there and restate the NBA's mission, which is to improve people's lives through the game of basketball. And we think exporting NBA basketball to China and to virtually every country in the world continues to fit within our mission.

But what about basketball will help China change their ways on human rights? Is that too Pollyannaish?

I don't want to overstate it. While I'm a believer in soft power, I'm certainly not sitting here claiming that by virtue of televising NBA games in China, lo and behold, there'll be a reckoning in China as to adopt a Western point of view about human rights. I do think that in order to bring about realistic change that we have to build relationships. At the end of the day, we're all human beings. And while there are many differences between our society and Chinese society, there are enormous commonalities as well. One of them is to love a sport. And basketball happens to be the most popular team sport in China right now. We think that through that common love



The Cleveland Cavaliers celebrate winning a historic Game 7 of the 2016 NBA Finals, the city's first major pro title in 52 years

a bit of a dustup around the All-Star Game this year. [Note: Some players were upset that the NBA went forward with what is ultimately an exhibition game during the pandemic and after an abbreviated offseason. LeBron James called it a “slap in the face.”] I think it worked out very well. I realized in retrospect I didn’t adequately sell it to players, to some individual players. So that would have been one.

There’s recently been some consternation about the aesthetics of NBA basketball—that the game is now too reliant on the three-point shot. Do you worry that people will be turned off by today’s style of play?

I personally think the game is aesthetically amazing right now. If the trend might continue this way in terms of three-point shooting, sure, we would take a look at it. We moved the three-point line before. We once moved it in, as people may recall. And then we moved it back out again.

Some people have proposed banning the corner three-point shot, which is closer to the basket than three-pointers from other areas of the floor. Is it possible we’ll see this happen?

I’ll never say something’s not possible. These to me are fun issues to keep addressing and following. We have a strong competition committee that looks at trend lines in terms of the league. The one thing I’ll say about the NBA, we’re not beholden to pure tradition. We care a lot about it, but I’d say of all the factors I think about when we talk about changing the rules, I’m less concerned with how are you therefore going to compare Steph Curry’s three-pointers to the player yet to come who will be shooting from a different distance? I think we should live in the present, be respectful of those records but also be willing to adjust when it makes sense. □

and appreciation of the game of basketball, that that’s a way to bring people together. It’s as simple as that.

How do you respond to the criticism that the NBA and its players are outspoken about BLM and police violence, but don’t talk about human-rights abuses in China?

My response there is that we and our players speak about issues that are closest to home. Our players have the absolute freedom to speak off the floor about any issue they want. I think it was a unique set of circumstances that led us to talk about Black Lives Matter over the course of last summer.

In managing the NBA through the challenges of the pandemic, is there anything you might have done differently?

There’s so much that I would do differently. I don’t know where to start. This is maybe my own sort of nature that I spend a lot of time second-guessing myself. From a process standpoint, there’s always ways to be even more inclusive. I’d say there was

TELADOC HEALTH UPDATING TELEMEDICINE

Pre-pandemic, remote medical visits were often stymied by insurance companies and state medical boards. But COVID-19 made telemedicine essential. That was a boon for Teladoc Health. Think of the remote medical service like a virtual urgent-care clinic where a doctor is always on call; it provides a variety of nonemergency services, and doctors can write prescriptions. Teladoc’s total visits increased to over 10 million in 2020, up from just over 4 million in 2019. Now, the company is adding the ability to automatically upload data from connected medical devices—all without the waiting rooms and paper gowns.

—Marjorie Korn

JOHNSON & JOHNSON DELIVERING A ONE-DOSE VACCINE

When it comes to vaccinating the world, the simpler the dosing regimen the better. That’s why public-health officials welcomed Johnson & Johnson–Janssen Pharmaceuticals’ one-dose COVID-19 vaccine. The shot is 66% efficacious overall in protecting people from COVID-19 disease, and even more so in preventing the worst outcomes. After concerns were raised over rare blood-clotting side effects, U.S. health officials paused use of the shot in early April but resumed vaccination—with the potential clotting risk listed among the side effects—after determining the benefits outweigh the risks.

—Alice Park

SONY GROUP CORPORATION

CREATING HIGH-DEMAND GAME CONSOLES

Amid a pandemic-driven surge in video-game popularity, Sony, the Tokyo-based entertainment and electronics company, unveiled one of the year's most in-demand gadgets: the PlayStation 5. The console, one of the largest and most powerful ever made, was released in November; by the end of December, Sony had sold 4.5 million units, despite pandemic-related supply-chain issues. Elsewhere in the Sony empire, the company's animated film *Demon Slayer*, released in October in Japan, became the country's highest-grossing movie of all time. It was released in the U.S. in April. —Amy Gunia

NIKE

CHANNELING CHANGE

Nike has a track record of being one step ahead of its competitors in channeling cultural movements. In 2018, the brand made headlines when it released its ad featuring athlete turned activist Colin Kaepernick, resulting in a \$6 billion increase in market value and demonstrating that social equity and brand equity can mix. In 2020, as protests against systemic racism swept the U.S., Nike was not the only brand to release a message advocating for change—nor the only to promise to its employees that it would do better—but it was among the first to announce a nine-figure donation, pledging \$140 million in total funding to social-justice organizations. —Don Steinberg



EQUINOR

Fueling up, more sustainably

To be an oil company in 2021 is to stand at the edge of a precipice you helped build. Plans put in motion by Equinor, a Norwegian leader in petroleum and natural gas, model one possible path forward for energy giants weighing options amid a global push toward clean energy. Equinor is building two of the world's largest offshore wind farms, including the first floating one to power offshore oil and gas platforms. Such investments are fueling a larger transition: the company pledges to achieve carbon-neutral operations by 2030, with a target of net-zero emissions by 2050, including from customers using its products. Executives' bonuses are based in part on reducing CO₂ emissions per unit of energy produced, with a goal of reaching a rate less than half the global average by 2025. Even BP took notice; in September, the oil giant announced it would pay Equinor \$1.1 billion for a 50% stake in two wind developments off the U.S. coast. But Equinor hasn't left fossil fuels behind yet; it continues hydrocarbon exploration, like controversial projects in the Barents Sea, where it recently discovered an estimated 31 million to 50 million barrels worth of recoverable oil. —Alison Van Houten

TWITTER

UPGRADING A PLATFORM

For a social media titan that defines the daily rough and tumble of modern politics, entertainment and culture, Twitter has remained less profitable than its competitors. In February, the company announced plans to double its revenue by 2023 by rolling out ambitious new features. Among them: Twitter Spaces, a Clubhouse-like audio-chat



service; Topics, which allows users to follow subject areas; and soon, Super Follows, a paid tier for creators to monetize relationships with followers. It has also updated its policies to combat the spread of misinformation, and permanently suspended President Trump in January. A crowdsourced approach to misinformation, called Birdwatch, is in the works. Executives hope it will eventually elevate valuable, user-written context around controversial tweets, reducing the need for deplatforming. —Billy Perrigo

NUBANK BANKING THE UNBANKED

Brazil's banking system has long faced criticisms of poor service, long wait times, labyrinthine bureaucracy and high fees. This—along with the prevalence of informal work—helps explain why some 45 million of Brazil's 210 million people don't have a bank account, making it almost impossible for them to access credit or a means of saving. Nubank, Latin America's largest fintech company, is helping millions jump barriers by offering a variety of financial services via its smartphone app. Since the pandemic began, Nubank's customer base in Brazil has more than doubled to 35 million as people avoided travel to crowded banks. —Ciara Nugent

HOME DEPOT IMPROVING HOME IMPROVEMENT

Sales at Home Depot, the Atlanta-based home-improvement giant, grew an astonishing 20% last year, to \$132.1 billion, as consumers hunkered down and spruced up their living areas. Best sellers included appliances, vinyl-plank flooring and vanities. Some lockdown initiatives will continue post-pandemic: in moving its how-to workshops online, Home Depot expanded their reach and number. An average of five in-store workshops a month became 40 livestream workshops a month. In 2021, the retailer plans to continue to invest in its supply chain, with a goal of providing same- or next-day shipping to 90% of the U.S. population. —Eben Shapiro

CVS ADMINISTERING VACCINES

Pre-pandemic, stopping into CVS was often just another errand on a to-do list. But these days, that trip could be the most anticipated event of the year. The pharmacy chain, led by CEO Karen Lynch (below), has become one of the top U.S. COVID-19 vaccine administrators, with more than 10 million doses given as of April 1, topping the total number of vaccines given by all but four states as of April 19. Shots are available in nearly 2,000 CVS locations across the country, and the pharmacy has also brought vaccines into long-term-care facilities nationwide.

—Jamie Ducharme



ENGLISH PREMIER LEAGUE

BROADCASTING WINS

The most popular sports league on the planet, in the world's most popular sport, is the English Premier League (EPL). Led by chief executive Richard Masters, the EPL is projected to amass \$6.2 billion in revenue this season, according to Deloitte, and pre-pandemic revenues were up 16% over two seasons. International TV deals have offered a source of growth: such riches have allowed the EPL, now broadcast in 190 countries, to attract the world's best talent—more than 100 EPL players suited up in the last World Cup. More recently, the EPL helped lead the opposition to the European Super League proposal, which fizzled after six of the league's top teams backed out.

—Sean Gregory

WORLD WIDE TECHNOLOGY

MOVING BUSINESSES TO THE CLOUD

Behind the scenes, World Wide Technology (WWT) helped power the transition to working from home. Teaming up with manufacturers such as Cisco and Dell, the technology-services behemoth helps a broad range of organizations—including major hospitals and the Department of Defense—select and install computer systems and other digital infrastructure. In 2020, to deal with the surge in demand as companies rushed to move to the cloud, WWT hired more than 600 additional employees. Revenues for the company, the largest Black-owned business in the U.S., increased 12.4% to \$13.4 billion last year.

—E.S.

MATTEL

Toying with a media empire

Pandemic boredom has been good for Mattel, the company behind some of the world's most iconic toy brands, including Barbie and Hot Wheels. Its 2020 online sales were up 50%, as dolls, games and puzzles flew off virtual shelves. Even so, CEO Ynon Kreiz no longer sees Mattel as a toy-manufacturing company. Instead, he says, what they do is IP, with dozens of film and TV projects in development and production in partnership with major entertainment companies and big-name actors. (Think a Barbie movie, co-written by Greta Gerwig and Noah Baumbach, and starring Margot Robbie, and Uno and Whac-A-Mole game shows.) "The opportunity for us is to expand beyond the toy aisle," Kreiz tells TIME. —Rebecca Katzman





ANGIE SMITH FOR TIME; DOLLS: © MATTEL

MERCADO LIBRE

LEADING E-COMMERCE IN LATIN AMERICA

Building an e-commerce empire in Latin America—a vast region of some 600 million people, where mountains, rain forests and economic instability often lie in the way of deliveries—takes time. Since its founding in 1999, Mercado Libre, the region's largest platform, has steadily grown its logistics network, shipping business and hugely popular digital-payments arm. When the pandemic hit, confining millions to their homes, sales surged; since October, Mercado Libre has been worth over \$60 billion, making it one of Latin America's most valuable companies. "It's an overnight success story that took over two decades," CEO and founder Marcos Galperin told TIME last year.

—Ciara Nugent

DELTA

THINKING AHEAD

When air travel bounces back, Delta—under the leadership of CEO Ed Bastian—hopes to earn a larger share of the market than it did before the pandemic by investing in its relationship with customers. Despite losing \$12.4 billion in 2020, Delta was the sole major airline to leave middle seats open between all passengers for over a year. The move coincided with more than a 20-point jump in the company's net promoter score—a measure of whether a customer is likely to recommend a brand or service—during the pandemic. The airline, which plans to roll out free in-flight wi-fi, aims to keep that goodwill as it begins seating full rows again in May.

—J.R. Sullivan



APPLE

Doubling down on defining products

During the holiday season, Apple raked in a record-breaking \$111 billion, thanks in part to the uptick in remote work and schooling boosting its Mac and iPad sales. And that's just one way the Tim Cook-led, Cupertino, Calif., company was able to defy gravity in 2020, upsetting both the competition and its apparent partners. Among other moves, it launched a new Mac lineup with a plan to phase out its use of Intel processors for its own Apple-made designs based on its mobile devices. It debuted new iPhone models that caught up to the 5G-enabled competition, and added services like Apple Fitness+ to help keep people moving when they're indoors (and to compete with fitness companies like Peloton). As with Google and Amazon, Apple has faced increased scrutiny for allegedly anticompetitive practices over the past year, but antitrust lawsuits and complaints—in the U.S., the E.U. and elsewhere—haven't dulled the giant's interest in further expansion. The company is rumored to be eyeing new product categories, such as augmented-reality glasses, and speaking with auto manufacturers about a potential Apple-branded self-driving vehicle. —Patrick Lucas Austin

MASTERCARD

MOVING FINANCE FORWARD

Plastic isn't the future for Mastercard. Contactless in-store payments are rising, and "card not present" purchases (online or recurring) leaped to about 45% of the company's transactions in 2020—a bright spot in a year in which Mastercard transactions overall rose little, and its \$15.3 billion in revenue represented a 9% drop. But there's opportunity in Mastercard's push into the \$120 trillion business-to-business payments market, as well as its work on digital and cryptocurrencies—including collaboration with national governments. In February, the Bahamas partnered with the company to launch the world's first prepaid card linked to a national digital currency.

—Don Steinberg



MAERSK

Shipping the world's stuff

Amid 2020's supply-chain disruptions—clogged ports, limited flights, and sick and quarantined workers—this Danish logistics company, which has the greatest sea-cargo capacity in the world, still managed to ship almost 13 million containers filled with PPE, exercise equipment, work-from-home essentials and more. Lined up, the 40-ft. containers would circle the earth nearly four times. Those moves (coupled with average freight rates increasing by 18%) helped Maersk's ocean sector hit record-high gross revenue, raking in \$2.7 billion in the fourth quarter alone. On top of that, the company says it will use its refrigerated fleet to help distribute vaccines globally. —Alison Van Houten

WALGREENS

VACCINATING THE VULNERABLE

At the end of last year, 35,000 long-term-care facilities in the U.S. asked Walgreens for help vaccinating their uniquely vulnerable residents against COVID-19. That task turned out to be just the beginning for the pharmacy chain, which, as of April 16, had administered more than 11.6 million vaccine doses in total, albeit not without some scheduling hiccups; it also partnered with PayPal and Uber to offer funding for free rides to vaccination sites. In March, Walgreens reached a milestone of a different sort, when Rosalind "Roz" Brewer (*right*) assumed the company's top job and became the only Black woman to currently lead a *Fortune* 500 company. —Jamie Ducharme

**VOLKSWAGEN**

RACING TO LEAD EVS

As carmakers from GM to Ford vie to match Tesla's electric-vehicle sales, Volkswagen Group, the world's largest auto manufacturer by revenue (it also makes Audi, Porsche and others), aims to overtake them all by 2025. With the specter of the 2015 emissions scandal still looming, the German corporation has earmarked \$54 billion for electric projects over the next five years, with plans to build six battery factories and 18,000 charging stations throughout Europe. In 2020, it sold 231,600 electric vehicles—more than triple the number it moved the previous year. That was still less than half the EVs Tesla sold last year, but VW thinks it can sell 1 million in 2021. —A.V.H.

PFIZER AND BIONTECH

IMMUNIZING THE WORLD

U.S.-based pharmaceutical giant Pfizer and German biotech company BioNTech were already collaborating to come up with a flu vaccine based on a genetic material called mRNA. When COVID-19 emerged, they quickly agreed to partner to test candidates developed by BioNTech that, just under a year later, led to the first COVID-19 vaccine authorized for emergency use by the U.S. FDA. Pfizer's experience in conducting clinical trials demonstrated, in record time, that the companies' vaccine was 95% efficacious in protecting people from COVID-19—which was confirmed in real-world studies involving millions of vaccinated people—and its scale will help produce an expected 2.5 billion doses in 2021. —Alice Park

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Time Off

TALK THERAPY
Actor Uzo Aduba
opens up about
grief, mental health
and playing a
psychologist



INSIDE

THE MUST-READ BOOKS
ARRIVING IN MAY

JHUMPA LAHIRI'S
WHEREABOUTS

NEW ALBUMS FROM
COUNTRY'S LEADING WOMEN

PHOTOGRAPH BY ERIK CARTER FOR TIME

TimeOff Opener

PROFILE

Uzo Aduba will see you now

By Lucy Feldman

THERE ARE A FEW WORDS, UZO ADUBA points out, that we tend to whisper. *Therapy* is one of them. Saying it out loud is more than part of the job for the actor, who's preparing for the May 23 premiere of her latest show: a new installment of HBO's 2008–2010 hit drama *In Treatment*, in which she stars as the psychologist to a rotating cast of patients. The show is billed as a fourth season of the original, which starred Gabriel Byrne as the therapist and won two Emmys and a Golden Globe. Aduba says her role as Dr. Brooke Taylor is her most personal yet—the only character she's played so far that has followed her home at night. “This was closer to the bone,” she says.

Like her character, Aduba is aware of the value of talking through feelings. And like Brooke, who is mourning her father, Aduba has just lost a parent. Her mother Nonyem Aduba died late last year, and the actor has been working with her own therapist to face the realities of loss and forge a path forward. Opening up in public about her personal life, and about her mental health, isn't exactly comfortable for Aduba, who is more accustomed to putting on a brave face to the outside world than to admitting she's struggling. The actor, who built a career in theater before breaking out in 2013 as Suzanne “Crazy Eyes” Warren on Netflix's hit *Orange Is the New Black*, has long been private. But now, she's ready to talk. “I just hope that in adding my two cents, maybe people out there might feel moved to address things in their own world,” she says. “Privacy is important—but sharing is also necessary.”

ANOTHER WORD WE TEND to whisper is *cancer*, and it takes a moment for Aduba to find the right way into the story about her mother's passing. Eventually, she begins. It was June 29, 2019, in Los Angeles, and Aduba was in a friend's wedding as the maid of honor when she got a text from her sister: Nonyem was in the hospital. Aduba walked out of the venue and went straight to the airport. She and her four siblings heard the diagnosis a few days later: pancreatic cancer.

Anyone who has followed Aduba's career knows how close she was to her mother. Nonyem was by her side, vibrant in blue and beaming with pride, when the actor won her first major award. She was somewhere nearby, off-screen, at the virtual Emmys ceremony in September when Aduba won



Aduba plays therapist Brooke Taylor, who sees a rotating cast of patients on HBO's intimate drama *In Treatment*

for her performance as groundbreaking politician Shirley Chisholm in the FX series *Mrs. America*; Aduba, visibly shocked to hear her name, barely started her acceptance speech before shouting “Mom!” to get her attention. Nonyem is a character in all of Aduba's stories—her daily confidant, her travel companion, her source of wisdom and guidance, her hero who survived polio and war and widowhood, the person she leans on and looks up to most in the world. The prospect of losing her was unthinkable.

Yet life marched on. From the outside, it would be easy to assume Aduba has been on a high, experiencing one triumph after another. There was the big TV role, the Emmy (her third), announcements for new projects, a producing deal with CBS Studios. She filmed two new shows during the pandemic: Amazon's anthology series *Solos*, arriving May 21, and



In Treatment—which marks her first lead role in a television show.

But in her private life, the actor spent a year and a half focused on Nonyem's illness. Aduba was meant to move to Toronto and begin filming *Mrs. America* that July—and with the support of producers Stacey Sher and Coco Francini, she did the latter. But she never moved. Instead, she flew back and forth continually between the set and her mother's side in New Jersey, sometimes round trip in a single day, never settling in Toronto for more than 10 days at a time over three months of filming.

When the pandemic hit, any lingering pressure to balance work with caretaking dissipated. Come last March, she dedicated herself solely to her mother's care, taking only three days in the fall to film her episode of *Solos*. Aduba had a few other projects on the calendar, but delays and cancellations ended up being a blessing. She jokes about the term that

has been thrown around so frequently during the pandemic—the *new normal*—and how for someone whose center of gravity had already shifted so much, her routines were largely unchanged when the world shut down.

Nonyem died in early November, her three daughters by her side. Aduba smiles when she describes how her mother stayed true to her character until the end, offering her children wisdom and counsel. Her death was a moment marked not by sadness, but by pride. “To the end, this woman is who she said she was,” Aduba says. “I’m so proud that that blood runs in my veins.”

ADUBA FLEW FROM NEW YORK to Los Angeles to begin work on *In Treatment* just 10 days after her mother passed, and, naturally, grief traveled with her. Filming scenes where Brooke is grappling with her father's death brought a lot to the surface. “It wasn't hard to find those feelings,” she says. “It was hard to dampen them.”

The role changed Aduba's perspective not on therapy but on therapists, who are asked, hour after hour, to stay open to whatever their patients bring into the room and to hold those feelings alongside them.

In the space of a few episodes, Brooke has to coax out the nuances of a young caretaker's feelings of abandonment, help embrace a teenage girl's Black and queer identity, and navigate a privileged man's dishonesty. The show doesn't shy away from contemporary tensions, pushing into violent racial fantasies and toxic masculinity. Watching Aduba's performance in these scenes, it's easy to feel Brooke's frustration, unease, even danger. “This is a Black, female psychologist treating people through the lens of the world as she sees it,” Aduba says. “There are a lot of unknowns of how that day is going to go, and why people have arrived there.”

They filmed 24 episodes, each in about two breakneck days, under the stress of the pandemic. COVID-19 makes its way into the story of the show in a few ways—one patient has been released from prison because of the

virus, another sees Brooke through a video platform; Brooke is seeing her in-person patients at her home while her office is closed. Aduba adhered to a grueling schedule of drilling lines as she appeared in every scene of every episode, feeling the responsibility to follow the rules and stay healthy to keep the show running. When they wrapped, she felt like she had shed old skin. “Old skin that I've worn from June 29, 2019,” she says. “Old skin in terms of the limits of what I thought I was capable of.”

THE ACTOR was no stranger to therapy when she signed on to star in *In Treatment*. She sought help for a short time, she says, when she first became high-profile. That work helped her reconcile the fact that while she was the same person, suddenly the rest of the world saw her as something else. She started again last February.

It's describing that time that brings Aduba to slow her speech as she pushes through tears. “I knew I needed to talk to somebody about the amount of pain I was feeling,” she says, her voice unsteady. “What it means to grieve.

How does one say goodbye?”

I am supposed to be the one asking the questions, but Aduba just posed the biggest one of them all—the one that everyone lucky enough to have grown up with unconditional love asks themselves. How do you say goodbye, and how do you go on?

“What I didn't realize,” Aduba says, “is I don't have to do life without her.” Nonyem is closer now. She's become a part of Aduba—her voice and perspective and encouragement a constant presence within the woman she poured herself into raising. “I am her.”

Aduba will carry that sense of comfort with her, as well as the lesson that grief, and talking about grief, changes people. And while she doesn't have the perfect language to describe this loss, the sentiment is something she's learning not to whisper but to speak plainly. “It's O.K. to just be trying to figure it out and make it through today,” she says. “I just hope we all learn to talk more about what we're feeling.” □

‘Privacy is important—but sharing is also necessary.’

UZO ADUBA,
on talking about
mental health



LIST

May's best new books

By Annabel Gutterman

The books of May run a gamut as long and welcoming as a bookstore aisle, from fitness obsessions to a fictional religious compound, from NASA to middle-school bullying to Native poetry. They ask questions about place, purpose and paths—particularly ones not taken. Celebrated authors like Rachel Cusk and Alison Bechdel make much-anticipated returns, and Stacey Abrams delivers a buzzy legal thriller. Read on.

The Secret to Superhuman Strength Alison Bechdel

In her graphic memoirs *Fun Home* and *Are You My Mother?*, cartoonist Bechdel crafted wrenching and comic narratives about her relationships with her father and mother. Her latest graphic memoir charts a different relationship: the one she's had with exercise. The book mines the fitness fads she's participated in over the past six decades, including running, cycling classes and "feminist martial arts," as the author explores her fixation on fitness and how it relates to her journey of self-discovery.

Second Place Rachel Cusk

Like her acclaimed *Outline* trilogy, the novelist's latest dissects huge questions about humanity and love through characters leading rather ordinary lives. This time, the narrative is centered on a woman and her guesthouse on the coast, where she's just invited a famous artist to stay. His paintings left a lasting impression on her years before, but his presence in her home proves complicated, upsetting the delicate balance of her household.

Living Nations, Living Words Joy Harjo (editor)

For her signature laureate project, Harjo, the first Native U.S. poet laureate, created an interactive digital map to "introduce the country to the many Native poets who live in these lands." This anthology serves as a companion, featuring the voices of Natalie Diaz, Ray Young Bear and Craig Santos Perez, among others. Their poems explore displacement, persistence and heritage, coalescing into a powerful collection that celebrates the crucial role of Native poets in American literature.

Sorrowland Rivers Solomon

After fleeing her religious compound for the woods, teenager Vern gives birth to twins and hopes to shield them from the rest of the world. But as time passes, her body begins to change in ways that force her to confront her past and the community she left behind. Solomon captures Vern's journey in a gripping narrative that is equal parts speculative fiction and Gothic tale, all while unraveling a fictional world that is not dissimilar to our own, particularly in its depiction of racism and white supremacy.

While Justice Sleeps Stacey Abrams

The Georgia politician and voting-rights activist has written eight romance novels under a pseudonym, but she's publishing her newest book, a thriller, under her own name. This legal suspense novel follows a young law clerk who, much to her surprise, becomes the legal guardian of a Supreme Court Justice after he falls into a coma. As the protagonist finds herself in an unexpected and powerful position, she must navigate the chaos of Washington politics.

The Window Seat Aminatta Forna

In Forna's first book of nonfiction since her 2002 memoir *The Devil That Danced on the Water*, the novelist ruminates on experiences throughout her life to tackle questions surrounding identity and belonging. The pieces in her new collection range in subject and scope, from shadowing the lone veterinarian in Sierra Leone to drawing connections between Barack Obama's life and her father's to describing her experience walking all over the world as a Black woman. The result is a moving examination of places and people, filled with Forna's carefully constructed observations and analysis.

My Remarkable Journey Katherine Johnson

In her posthumously published memoir, the mathematician, who died in 2020, details her life and all that she endured, from growing up as a child prodigy in the segregated schools of West Virginia to her rise at NASA, where her research helped land a man on the moon. Though *My Remarkable Journey* focuses on the life of Johnson, who was also a subject of Margot Lee Shetterly's *Hidden Figures*, it also pays tribute to the educators who supported her in following her dreams.

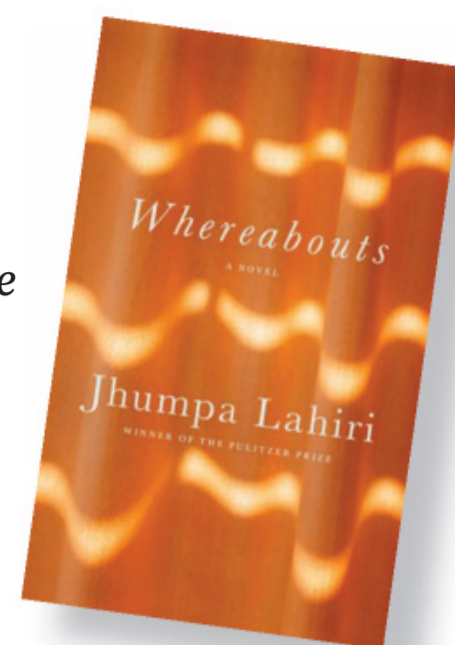
Heaven Mieko Kawakami

The protagonist of Kawakami's newly translated novel is shoved into lockers and mocked at school for his lazy eye. His only respite is an unexpected friendship with another student who is also a victim of bullying. But how can a relationship really last when its foundation is built on shared experiences of humiliation? The author moves toward an answer in this quietly devastating tale of middle-school drama.

QUICK TALK

Jhumpa Lahiri

The Pulitzer Prize–winning author is the director of the creative-writing program at Princeton University. In 2012, she moved to Italy with her family, where they lived for several years. Lahiri wrote her new novel, *Whereabouts*, which follows a woman as she wanders around her unnamed city, in Italian before translating it into English.



^
Lahiri began writing *Whereabouts* in 2015 while she was living in Rome

How much does where you are in the world matter in terms of writing in Italian or English?

It used to matter a lot. The Italian version of *Whereabouts* was written pretty much entirely on Italian soil. I would go back, and the language became the center of gravity. Now things have shifted a bit, and I feel it's less impossible to work and think in Italian here [in the U.S.], which has come from the many years I've been working in Italian.

What were the challenges of translating your own work?

It was very strange to go back to something I had already written and think about it so intensely. It becomes an interior dialogue between you and another part of yourself.

The isolation the narrator in *Whereabouts* experiences feels lifted from a pandemic diary. How do you view this character's thoughts in the context of this moment?

I translated the book before the pandemic, but then I went over it during. It occurred to me that now the book might resonate in a different way because so many of us have been moving in solitude. This idea of what being inside means as opposed to being outside is so charged right now.

How has your relationship to place changed during the pandemic?

I spent most of it in Princeton. I was able to go back to Italy over the summer, but I'd never spent so much time in my house. I've inhabited the campus in a different way. It was quite abandoned in the fall, and it's still not at full capacity. I've been inhabiting this alternate reality even though it's all the same place.

You've been teaching virtually since March 2020. What are you most looking forward to when you get back into the classroom with your students?

Being able to sit, put my things down on the table, and look at them all and share that space. It just feels precious now. —A.G.



Country music, reimagined

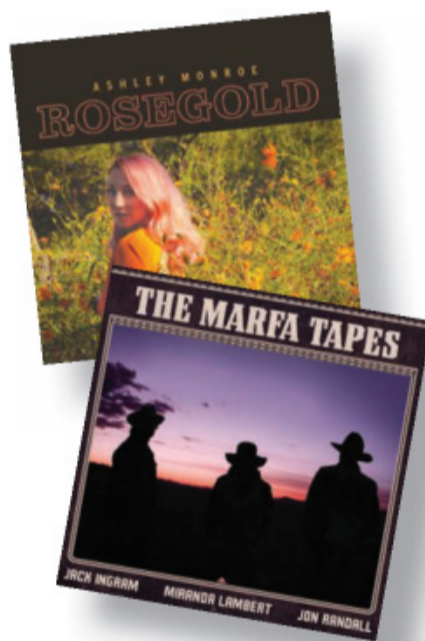
By Andrew R. Chow

A LOT HAS CHANGED IN COUNTRY MUSIC IN THE decade since the Pistol Annie, a country supergroup consisting of Miranda Lambert, Ashley Monroe and Angaleena Presley, released their first album in 2011. Bro-country swept the airwaves, followed by country gentlemen; traditionalists brought back fiddles and lap steel guitars; innovators fused the genre with pop, R&B, EDM and rap.

But one thing hasn't changed: women are still barely played on country radio. In 2015, radio consultant Keith Hill called women the "tomatoes" sprinkled into the male "lettuce" of country radio's salad. A 2020 study showed that 1 in 10 songs on *Billboard's* 2019 Year-End Airplay Chart was by a woman. While the Pistol Annie have put out three stellar albums, none of their songs has climbed higher than No. 40 on the *Billboard* Country Airplay charts. Lambert, on her own, has churned out hit after hit, but she's a rare outlier in the genre.

Maybe it's unsurprising, then, that the women of country would find more success elsewhere, particularly on streaming platforms. This spring, two-thirds of the Pistol Annie return with albums that seem barely in conversation with mainstream country radio at all. Lambert's *The Marfa Tapes* (May 7) is an acoustic trio record with the veteran songwriters Jon Randall and Jack Ingram that sounds like it was recorded through a tin can. Monroe's *Rosegold* (April 30) has a lot more in common with the reverb-drenched indie pop of the moment. But the two records are thrilling precisely because of their nonconformity: they showcase artists who have long reveled in their rebel status chasing creativity on their own terms.

THE MARFA TAPES is the stronger and more startling of the pair. Since 2005, Lambert has cheerfully embraced the slick richness of Nashville's sound while also pushing the bounds of its lyrical chasteness. For this album, in the midst of quarantine, she abandoned the studio for a house in the Texas desert. You can hear planes hum overhead and cans crack open as the trio's haggard setup lays bare their emotional bond and musical mind meld. The melodies are so evocative, you might mistake them for long-lost campfire classics; they practically beg to be covered, whether by buskers or bedroom artists on TikTok. Given Lambert's stature, the album feels potentially transformative: a cultural reset on the level of acoustic masterpieces like Willie Nelson's *Red Headed Stranger* or



▲
New albums from Ashley Monroe, top left, and Miranda Lambert challenge the uniformity of country radio

Bruce Springsteen's *Nebraska*.

Monroe runs in the opposite direction. The Tennessean has garnered critical acclaim for her disarmingly personal storytelling and exquisite production, and *Rosegold* takes her exploratory impulses even further. There are plenty of touch points here: "Siren" spills out with the clipped cadences and guitar overdrive of a Perfume Genius song, while "Gold" has the bleached strings and California worship of Lana Del Rey. Monroe has laced references to downers into her lyricism—including her classic Pistol Annie line "I picked a good day for a recreational Percocet"—and this project operates under a blissful psychedelic haze.

While *Rosegold* is an unlikely project to come out of Nashville, it extends a broader recent trend of prominent female country musicians, from Kacey Musgraves to Maren Morris, exploring their artistry across genres. Of course, the center of country music remains robust, with the radio dominated by affable men singing odes to heartbreak, beer and small towns. But in this new streaming era, country artists are less beholden to the Nashville establishment than a group like the Chicks (née Dixie) nearly 20 years ago. Lambert's and Monroe's vastly different new projects, as well as those of their younger peers, reveal how the spirit of the Pistol Annie—of raw honesty, creative independence and solidarity—continues to disrupt country's uniformity, and lead to vital, groundbreaking work. □

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8 Questions

Caster Semenya The South African runner on life under a microscope, fellow women athletes and her court fight to defend her 800-m title in Tokyo

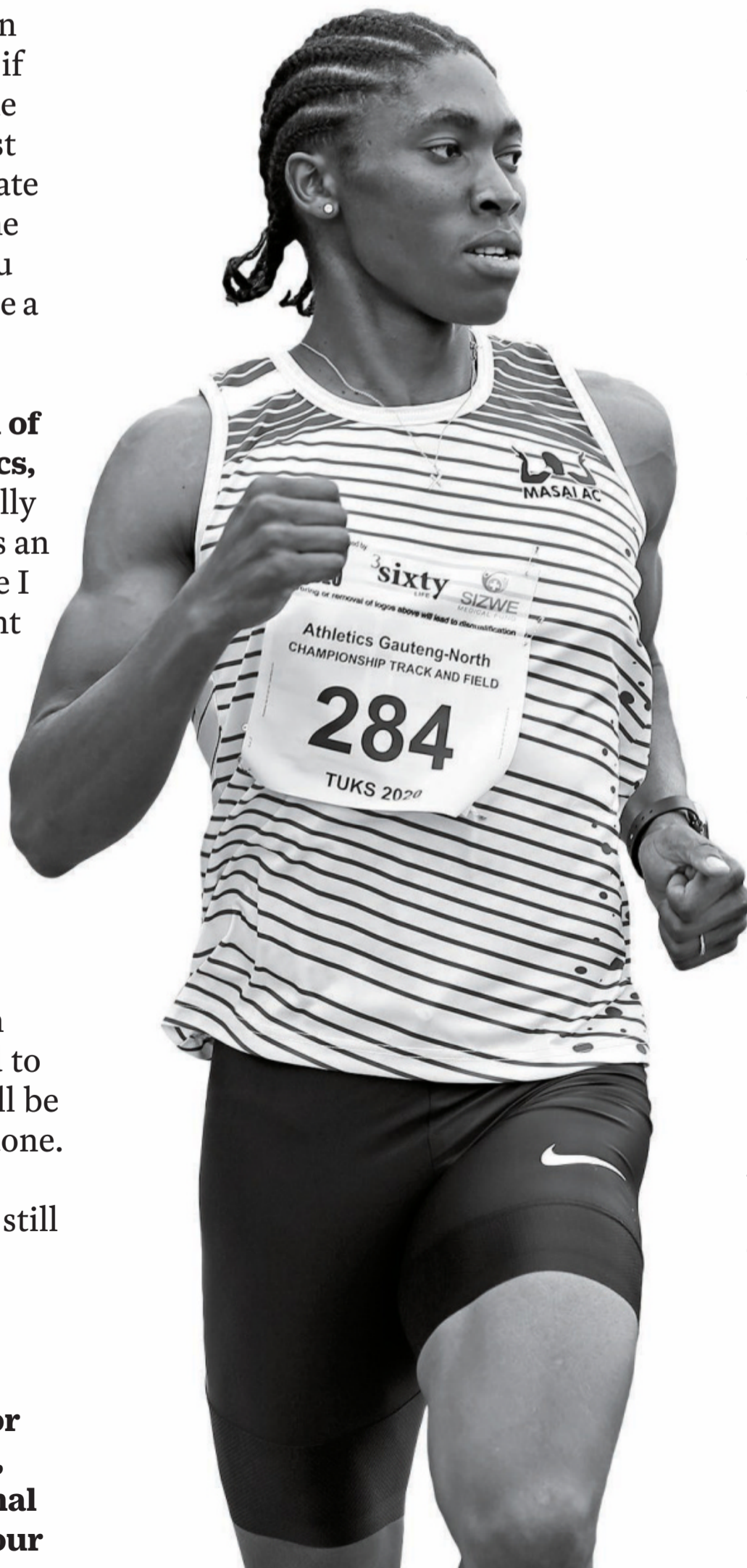
The Court of Arbitration for Sport upheld a World Athletics ruling prohibiting female athletes with differences of sex development (DSD) from running in races from 400 m to the mile without medical intervention to reduce natural testosterone levels. Switzerland's supreme court dismissed your appeal. What's your level of hope that this new appeal, to the European Court of Human Rights, will work? I'm a believer. I do not doubt my instincts. This is all about going in there and showing these people that if you are a leader, you need to act in the best interest of the athletes. You must not go out there and try to discriminate or categorize people. At the end of the day, when we enter into an event, you say, I see a woman. You don't say, I see a woman with high testosterone.

What do you see as the likelihood of a ruling before the Tokyo Olympics, which begin on July 23? I don't really know. But what I know is that this is an urgent matter. I need to know where I stand. My title shot is very important to me. I have lost my title, and I'm not really happy about it.

Why is it so important to you? You could walk away having accomplished so much in your sport. Because I feel like I've been banned from my greatness. When you're an athlete, you have a target. My target was maybe to win certain medals. And then someone decided to stop me because that person sees I'll be the greatest. I feel like I'm not yet done. I still feel fresh. I still feel young. I cannot walk away if I feel like I can still do this thing.

While you await the legal verdict on your appeal to run the 800 m, you've decided to try to qualify for Tokyo in the 5,000 m. On April 15, you won the South African national championship in that race, but your

“YOU WANT TO STOP ME FROM BEING ME. YOU WANT TO CHANGE ME. IT'S WRONG.”



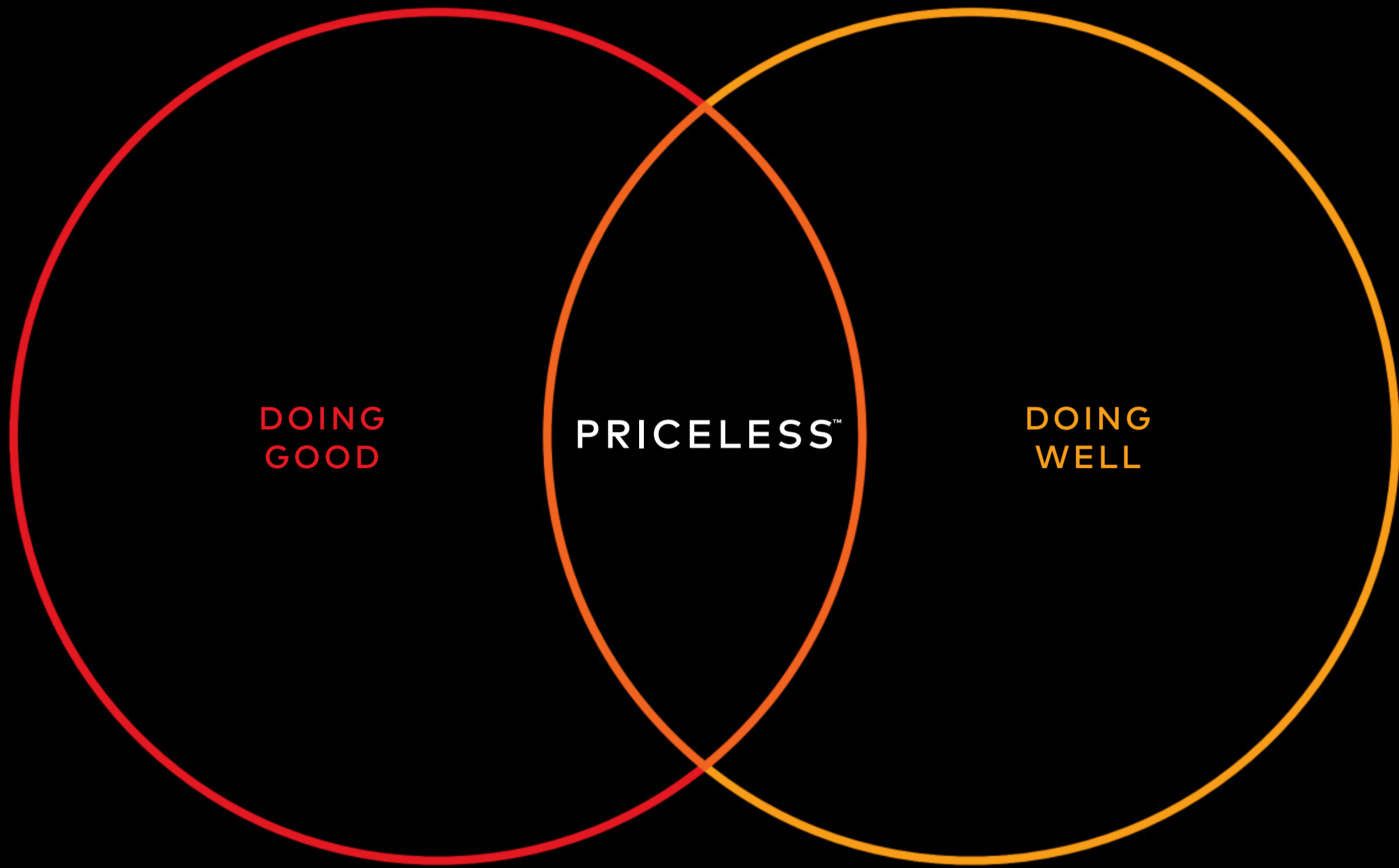
time was more than 40 seconds slower than the minimum Olympic standard. Can you shave off 40 seconds in time for Tokyo? In distance, 40 seconds is nothing. For a particular day, you can produce a magical performance. In 12 laps, I can rectify mistakes in every race. It's not really a big deal.

About two years ago, you called out the lack of support you've received from female runners. As you've continued to fight, has that changed at all? A lot has changed, because people begin to see things in a different way. At first, you probably see me as your enemy. Then you tend to see people start reaching out. As women, we need to support each other, no matter what.

World Athletics has said the DSD regulations have “never been about one athlete,” but about preserving fairness for female competitors. What's your response to that? That's not fairness. That's bullsh-t. What athlete in the world ran the 400 m to a mile and excelled in this era? And then you're going to tell me you want to make it about fairness for everyone?

You've been under such intense scrutiny for over a decade. Does it get tiring? What's it like in your shoes? It's great to be me, man. I'm a happy soul. It's good to be an activist. It's good to fight for people. If you look into athletics, there are a lot of girls that are like me, facing the same problem. The goal is to make sure they don't face what I faced.

Why is your case a human-rights case? I'm a woman; you're telling me that I'm not a woman. You want to stop me from being me. You want to change me. It's wrong. I was born the way I am. I cannot change. It just must get into their head that I'm never going to change for them. —SEAN GREGORY



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