

The CHRISTIAN SCIENCE MONITOR WEEKLY

*"The object of the Monitor is to injure no man,
but to bless all mankind."*
— MARY BAKER EDDY

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How readers broadened my view of animals

In the tense final days of the 2024 U.S. presidential election, I was spending much of my professional life thinking about a cow.

This may seem odd, even for a writer focused on the environment. After all, there was no shortage of breaking news about the climate, not to mention other big news subjects.

But that cow was haunting me.

Staff photographer Melanie Stetson Freeman had photographed her in a sophisticated methane-measuring chamber, as part of a Science and Nature story (Sept. 2, page 16) about the scientific quest for “climate-friendly” milk. The structure wasn’t tiny – far larger, in fact, than what cows in most dairy barns experience – but it sparked reader questions.

We reassured them that Cornell University, home of the study,

adhered to animal welfare regulations. But there was one query I couldn’t shake. Did I think, this reader asked, that the cow *liked* being in that metal-and-glass contraption?

It made me wonder: Do I know what cows like, let alone think? Does anyone? And, given the human problems in the world, should we care?

Later on that same reporting trip, Melanie and I visited Farm Sanctuary in Watkins Glen, New York. There, a huge steer named Greg pranced up to us, two-stepping in a way that dog owners would recognize as a clear



BY STEPHANIE HANES
ENVIRONMENT
WRITER

“play with me” motion. “He’s super friendly,” said Gene Baur, the sanctuary’s founder, who went on to explain how research shows that bovines form family groups, recognize human faces, and demonstrate emotions like joy and sadness.

This prompted me to learn what else researchers have discovered about other animal species. It turns out, as I write in the cover story this week, that a growing body of scientific research paints an increasingly complex, emotional, and sensory-rich portrait of the world, with animals from goats to octopuses to bumblebees exhibiting different forms of what’s often called consciousness.

This brings up big ethical questions, as well as a challenge: Can we live harmoniously and kindly in a world of other beings who have different experiences from ours, but who also share deep commonalities?

It is a question, of course, that goes well beyond my cow.

Perhaps, at a time of political division and misunderstanding, the inner lives of animals offer clues for how we can live a bit more gently, understand differences better, and see ourselves not as separate and superior but as part of one, sparkling tapestry. ■

WASHINGTON

Donald Trump will be the 47th president of the United States

By Cameron Joseph / Staff writer

Four years after he was rebuked by voters and then fought until the bitter end to try to overturn his loss, former President Donald Trump is on his way back to the White House.

At press time, Mr. Trump was projected the winner in the key swing states of Pennsylvania, Georgia, North Carolina, and Wisconsin and was leading in all other swing states as he expanded his electoral coalition across the United States – a decisive victory.

“America has given us an unprecedented and powerful mandate,” Mr. Trump declared in his victory speech in the early morning of Nov. 6.

It’s hard to overstate the scope of this political comeback – or the likely shift in direction for the U.S. that it signals. Mr. Trump will become just the second president in U.S. history to return to office after losing reelection – and the first since Grover Cleveland in 1892, more than a century ago. He’ll become the oldest president to enter office – he turned 78 in June and will be a few months older than President Joe Biden was when he was inaugurated in 2021.

Mr. Trump is also the first person with a felony conviction to win the presidency, having been found guilty of 34 counts of falsifying business records related to hush money payments to keep adult film star Stormy Daniels’ allegations of an affair under wraps. But that conviction and the three other criminal cases Mr. Trump faced – including two focused on his unsuccessful efforts to reverse his 2020 election loss – are likely to disappear now that he’s won another term.

The big question is what comes next. Mr. Trump has made big pledges on a variety of issues, saying he’d slap a 60% tariff on Chinese imports, and possibly 100% on imports from Mexico. He’s promised to involve the military in the “largest deportation operation in American history,” to arrest and expel the millions of unauthorized immigrants living in the U.S. Internationally, he’s long been a critic of NATO and some U.S. allies, as well as of U.S. support for Ukraine’s fight to push Russia from its territory, and he may pressure Ukraine to accept less-than-favorable terms to end the war there.

He has also long promised to enact vengeance against those he accused of “lawfare” – including his political opponents, and the Democratic lawmakers who twice impeached him during his last term in office, as well as local prosecutors who charged him with crimes.

As this issue goes to press, votes are still being counted, but Mr. Trump may be well positioned to move his legislative agenda; Republicans have already flipped control of the Senate. Control of the House remains unclear and may not be known for some time.

A most unusual election

The race was remade in a chaotic few months over the summer. In late June, President Biden delivered such a remarkably poor debate performance that Democrats began demanding he leave the race as he plummeted in the polls.

A few weeks later, while campaigning in Pennsylvania on the

WHY WE WROTE THIS

U.S. voters delivered a decisive victory to Donald Trump in a presidential election that has been closely watched around the world.

eve of the Republican National Convention, Mr. Trump narrowly survived an assassination attempt, when a gunman's bullet nicked his ear. The subsequent convention had the feel of a race that was all but over, with multiple speakers saying his survival was miraculous and suggesting God had chosen him for the White House.

Just days later, however, Mr. Biden announced that he would drop his reelection bid – and endorsed Vice President Kamala Harris. She quickly made up the ground he'd lost in the polls, and for the last two months of the election, it appeared to be a coin-flip race.

For the third straight election cycle, Mr. Trump outperformed the polls, though their error wasn't as large as in the last two races.

Ms. Harris would have been the first woman, the first person of Indian descent, and just the second Black person to become president. But for the second time in eight years, Mr. Trump and his coalition made sure that the glass ceiling held.

Democracy and economy loomed large

At the macro level, the 2024 election looks a lot like the 2016 election. Mr. Trump appeared on track to win the same states he won that year en route to the presidency. But while the country remains closely divided – and deeply polarized – the coalition Mr. Trump assembled was different from the one that carried him in the lower-turnout 2016 election.

Preliminary exit polls showed that while concerns about democracy were the top issue for a slight plurality of voters, the economy was the second-biggest issue – and two-thirds of voters said it's in "bad shape," following years of high inflation. Mr. Trump's campaign worked hard to tie Ms. Harris to her boss and his handling of the economy, repeatedly slamming the Biden-Harris administration and attacking their economic record. The percentage of people who said they're worse off than four years ago was 42% in exit polling – higher even than during the 2008 election, which happened during the middle of the economic crash known as the Great Recession.

That simple fact seemed to undercut all other issues – and especially hurt Ms. Harris with less affluent voters of all stripes.

Unexpected shifts

The biggest shift of any demographic group appears to be among Hispanic Americans. Exit polls showed Mr. Trump winning 45% of the Hispanic vote nationally, which if accurate would be a high-water mark for any Republican presidential candidate in more than a half-century. The only other Republican who has topped 40% of the Hispanic vote since the TV networks began conducting exit polls in 1972 was George W. Bush in 2004.

It would represent a 13-point jump from Mr. Trump's own 2020 performance, and a full 17-point gain from his 2016 showing. The 2024 exit poll also found him winning an outright majority of the Hispanic male vote nationwide, the first time since the advent of exit polls that a Republican candidate has done so.

This election seems to have continued the growing education gap in voting as well. Mr. Trump reportedly won voters without a college degree by a 10-point margin, taking 54% of those voters, up 4 points from four years ago. Ms. Harris won 57% of voters with a college degree, with Mr. Trump's share of those voters dropping 3 points from exit polls four years ago. More than 60% of U.S. adults do not have a college degree.

Mr. Trump also made clear inroads with Arab Americans and Muslims furious with the Biden administration for backing Israel in its wars in Gaza and Lebanon.

And Mr. Trump made significant gains in many blue states. In states where he keeps homes – blue New York and New Jersey as well as red Florida – he improved on his 2020 numbers significantly. And he gained votes in many diverse cities, including his old hometown of New York City.

Across the country, Mr. Trump performed even better overall in rural counties than his impressive showing in recent years,

while holding his own or even gaining ground in the suburbs that had moved against him and the GOP in 2020 and recent midterm elections.

"We had everybody. And it was beautiful. It was a historic realignment, uniting citizens of all backgrounds around a common core of common sense," Mr. Trump said in his speech. ■

MOSCOW

Putin has ruled Russia for 25 years. How did he last so long?

By Fred Weir / Special correspondent

No one expected Vladimir Putin to last more than a few weeks when he was appointed prime minister a quarter century ago by then-President Boris Yeltsin. At the time, the relatively unknown, seemingly unremarkable ex-KGB agent was simply next in line after a series of failed prime ministers selected by the fading president amid spiraling crises in Russia.

But last Mr. Putin did. An entire generation has grown up knowing no other leader. Today, having been reelected to another six-year Kremlin term in March, he has never looked so firmly in control.

Still, the reasons for Mr. Putin's extraordinary ability to ride the Russian tiger so effectively for so long remain obscure.

His supporters seldom mention any unusual qualities such as charisma, infallibility, or wisdom. They tend to point to the way Russia has transformed over 2 1/2 decades: from a dysfunctional, crime-ridden post-Soviet wreck to an orderly, relatively prosperous society where people can say they feel proud to be Russian. Most of the reforms that have remade Russia were not begun by Mr. Putin, but have reached fruition under his watch.

A good example is private ownership of land, which is now a universal right. Over the past 15 years or so, the right to sell and re-purpose land has produced suburban sprawl around most Russian cities that's reminiscent of North America in the 1950s and, along with other factors, has led to a boom in agriculture. It may not seem impressive to Westerners, but millions of contemporary homeowners are the first Russians in a thousand years – other than a czar – who can point to a piece of land and say, "I own this" with full legal control and freedom.

"We don't ask why Putin is popular. It just doesn't seem like the right question," says Alexei Mukhin, director of the independent Center for Political Information in Moscow. "We concentrate on the life around us. It seems to me that when the state and society have their own separate spheres, and don't interfere too much with each other, life is OK. Putin seems to have found a formula that, at least so far, works."

Mr. Putin has survived a string of harsh challenges, any of which might have wrecked the careers of many politicians. They include a tragic disaster with the sunken submarine Kursk in his first year as president, financial crisis, the seemingly irreparable rupture of relations with the West, and the most intense blizzard of sanctions ever leveled against a country. He has also faced a military mutiny that featured a march on Moscow, and a costly, still-ongoing war

WHY WE WROTE THIS

The Russian public is generally satisfied with how their country has transformed under 25 years of Vladimir Putin's rule.

But that's less because of any special attributes he has, Russian experts say, and more a reflection of history and culture.

in Ukraine that he appears to have started without consulting even many of his closest advisers.

Mr. Putin's public approval rating has seldom dipped below 60% and is currently running around 80%.

"In Russian society, there is a solid base of support for the country's leader, where about two-thirds of people express loyalty regardless of the current policy," says Alexei Levinson, an expert with the Levada Center, an independent polling agency. "The lowest points occurred at times of economic hardship, when the population expressed its discontent," while imperial successes, such as the 2008 war in Georgia and the 2014 annexation of Crimea, tended to boost support by up to 20%.

For older Russians, the '90s as a marker

And while political freedoms have contracted, especially since the war in Ukraine began, the private lives of the conforming majority have remained largely untouched. For Russians over 40 years old, the cataclysmic 1990s appear to be the main reference point.

"Perhaps Putin had a good team, but they were able to overcome the difficult crises of the 1990s, with all that disorder, chaos, and banditry," says Marina, a working Moscow pensioner. "We've had a lot of experience with things going wrong, so obviously we cherish stability and calm. It's hard to imagine anyone but Putin at the top of this country."

Even Russian opposition figures, many of whom are in exile these days, don't seem to agree on the sources of Mr. Putin's resilience. Some point to the aura of state propaganda, in which most independent and opposition voices are banished from the official airwaves. Others say deepening repressions, especially since the Ukraine war began, have created an atmosphere of fear that makes any discussion of genuine popularity impossible. Still others stress traditional Russian political culture, and say Mr. Putin has ensconced himself as a czar who is seen by the population as above any sort of democratic accountability.

Abbas Gallyamov, a former Putin speechwriter-turned-opponent living in exile, says Mr. Putin answered society's need for a strong hand following the devastating decade of the '90s, when society collapsed, the economy imploded, and all efforts to build democracy appeared to fail. "Putin was the one who could satisfy this demand," he says.

A turn toward more nationalism

At first, Mr. Putin recognized the need to integrate Russia into the wider world led by the West, he says. But since then, he's discovered that stoking nationalism and blaming the external enemy for Russia's troubles is a better formula.

"When the external agenda dominates, the authorities look like strong patriots, and the opposition appears to be a bunch of traitors," Mr. Gallyamov says. "When the focus is on internal affairs, people see the authorities as corrupt, looking out only for their own interests. ... The principle that 'Russia is surrounded by enemies' has always worked well in the past."

Everyone agrees that Mr. Putin has changed over the years, reinventing his public image even as the country and its society evolved.

Recently the Minchenko Consulting group in Moscow issued an analysis that attempts to define Mr. Putin's changing role in Russian society. Using a framing largely in line with Russian mainstream thinking, it presents him first as a "warrior" who restored order to a badly fractured country, defeating Chechen separatists and exiling delinquent oligarchs, in the early 2000s.

Then, it says, he morphed into a "caring ruler," presiding over a surge of market-driven growth and the creation of Russia's first-ever working consumer economy. In his latest incarnation, Mr. Putin is presented more as a global "creator," or a leader who drives the establishment of a new world order with an entirely new role for Russia.

The state-funded RT global TV network recently released a tool that divides Mr. Putin's 25 years into three periods, and uses artificial intelligence to convert key speeches from each into clear, spoken English.

"It just remains a mystery, but one that most Russians seem comfortable with," says Mr. Mukhin. "When Putin came to power, things started to work. People are afraid of him, yes, but it's hard to imagine an alternative. He exercises a kind of alchemy, maybe, but very many people see him as a genuine leader." ■

JIUQUAN SATELLITE LAUNCH CENTER, CHINA

Moon base to deep space: How China seeks to close gap with US

By Ann Scott Tyson / Staff writer

With a fiery blaze, a Chinese Long March 2 rocket blasted into a starry night sky from this remote corner of Inner Mongolia early Oct. 30, shooting three Chinese astronauts toward China's space station – and propelling the country's growing space ambitions.

China's goal, revealed in an official blueprint announced in October, is to become the world's leader in key space fields by 2050. Its sweeping plan extends in scope from exploring the moon, Mars, and deep space, and probes topics like the origins of the universe, quantum mechanics, habitable planets, and extraterrestrial life.

"We are extremely confident," says Li Yingliang, chief of general technology of the China Manned Space Agency, speaking with reporters at the Jiuquan Satellite Launch Center in northwestern China on the eve of the launch, China's 14th crewed launch and 33rd overall. "Every aspect of our [space] technology is getting more mature by the day."

China began its crewed space program in the early 1990s, later than the United States and Russia did, and had periods of rocky development. But today, China's is effectively catching up, with key postponed projects now reaching fruition, experts say. Officials predict some of the young astronauts aboard the space flight could work from a future Chinese base on the moon.

"The last few years have gone really, really well for them," says Jonathan McDowell, an astrophysicist at the Harvard-Smithsonian Center for Astrophysics in Cambridge and expert on China's space program. "All this stuff they have had waiting ... now they can actually do it."

A cosmic competitor?

China has entered "the fast lane" of science innovation, Wang Chi, director of the National Space Science Center of the Chinese Academy of Sciences, told a Beijing press conference announcing the country's space plan on Oct. 15. According to the blueprint, China will be able to make important breakthroughs in space science by 2027, "rank among the international forefront ... in 2035, and become a world space science power by 2050," he said.

Indeed, some top U.S. space officials have increasingly cast Beijing as a competitive threat. NASA Administrator Bill Nelson has warned, for example, that China could dominate key terrain and

WHY WE WROTE THIS

The United States still dominates in space, but China's star is rising. As the country's latest crewed launch highlights a rapidly advancing space program, some wonder, Could China surpass the U.S.?

resources on the moon and exclude other countries.

“There is definitely potential for tension there,” although it is not inevitable, says Dr. McDowell. “If one country has an extensive functioning base and the other doesn’t, then ... that country is likely to determine standards.”

Chinese officials downplay such competition. Mr. Nelson’s “worries are unnecessary,” says Mr. Li.

Still, whether in parallel or in competition, China is pushing ahead its near-term plans to put an astronaut on the moon by 2030, which would make it only the second country to do so after the U.S. China also plans to build a moon base in coming years – as does the U.S.

“We want to put a person on the moon as soon as possible,” says Zhang Wei, director of the Utilization Development Department of the Space Applications Technology and Engineering Center at the Chinese Academy of Sciences.

Lunar ambitions

China is already chalking up global firsts in its moon exploration program. In June, a Chinese lunar lander named Chang’e 6 successfully collected rocks and soil from the moon’s far side – something no other country has done – and returned them to earth. In 2020, the Chang’e 5 spacecraft brought back lunar samples from the moon’s near side.

China recently revealed that it is manufacturing “moon bricks” that simulate soil collected from the moon’s surface and could be used as possible building blocks for a future lunar base. The crew of the just-launched Shenzhou-19 mission, which docked safely at China’s space station on Oct. 30, will perform durability tests on some of those bricks.

Such steps are important, experts say, as both China and the U.S. work toward building moon bases in what is considered prime lunar territory such as the moon’s South Pole, where it is believed water is trapped in rocks. “What might matter is if China establishes a base on the south pole before the U.S. and claims the territory,” says Dr. McDowell.

China plans to launch two more Chang’e lunar lander missions to the moon’s south pole in 2026 and 2028 that will carry out resource surveys and create a scientific research station. It is also developing a lunar rover vehicle, and researching ways to safely lengthen its astronaut deployments beyond the current six months. In September, it unveiled the design for its first lunar spacesuit, a lightweight one.

Relay race

A critical element of China’s crewed space program, experts say, is the steady, cumulative experience of its multiple generations of astronauts – a strength in full display in the run-up to the launch.

In the chilly morning darkness on Oct. 30, a cheering crowd of hundreds of Chinese schoolchildren and other well-wishers crowded bleachers as the Shenzhou-19’s three-person crew strode out in spacesuits as a band played a patriotic Chinese song.

“We learn from the astronauts! We salute the astronauts!” read a huge red banner with yellow Chinese characters.

The crew is commanded by veteran astronaut Cai Xuzhe, who took part in an earlier space station mission in 2022. Accompanying him are two younger astronauts from what China calls its “90s” generation, former air force pilot Song Lingdong and senior flight engineer Wang Haoze, who is only the third woman to carry out a crewed space mission in China.

“Manned spaceflight is a relay race,” Commander Cai told a press conference on the eve of the launch. Generations of astronauts and thousands of aerospace workers are taking part toward a single goal, he says: “Glory for the country.”

Yet even as the space race intensifies, Chinese officials acknowledged their many hurdles ahead, and voiced hopes for more international cooperation.

While China’s lunar landing mission is going smoothly now,

“We are soberly aware that the ... technology is complex ... and the challenges are huge,” says Lin Xiqiang, deputy director of the China Manned Space Agency. Ahead of the launch, he also praised NASA’s “high regard for the safety of its astronauts” and extended China’s “best wishes for the safe return” of two U.S. astronauts delayed at the International Space Station.

China and the United States “both want to further humanity through space exploration,” says Mr. Li, the chief of general technology, recalling past extensive dialogues between China’s agency and NASA. “We hope we can carry out more practical cooperation and exchanges with the U.S. and other countries.” ■

NUMBERS IN THE NEWS

390,000

Dollar value of 22 metric tons (24 tons) of rare cheddar cheese that scammers stole from three British dairy farms in October. The scammers, posing as French wholesalers, ordered the cheese but never paid the bill.

38,000

Jobs lost in the seafood industry in the United States from 2022 to 2023. Rising costs and environmental challenges have strained the fishing industry, according to a report by the National Oceanic and Atmospheric Administration, especially in Alaska.

100,034

Refugees resettled in the U.S. from October 2023 to September 2024, the most in 30 years. The number of refugees globally has doubled in that same time period.

85

Percentage of Haiti’s capital under gang control after a surge in violence that has left 1,740 people killed or injured in three months. Over 700,000 Haitians have been left homeless in recent years due to gang violence.

18.4 MILLION

Dollars, total payroll cost of the 26-player Detroit Tigers baseball team, which bucked expectation to place third in the 2024 World Series. To compare: The Philadelphia Phillies have seven players with larger individual salaries than the Tigers’ whole payroll.

160 MILLION

Years old, the age of a just-discovered giant tadpole fossil in Argentina. It’s the oldest and one of the most well preserved of its kind.

— Brooke Holder and Sophie Ungerleider / Staff writers

Sources: The New York Times, Alaska Beacon, Migration Policy Institute, The Associated Press, The Wall Street Journal, The Guardian

How are targeted killings different from assassinations – and are they legal?

After Israel's strike on Hezbollah leader Hassan Nasrallah in September, President Joe Biden and other world leaders called it a measure of justice. But retribution and even justice, some analysts note, are not sufficient grounds for killing under the laws of warfare.

The dozens of targeted strikes by Israel to take out senior operatives within Hezbollah and Hamas since the latter group's brutal Oct. 7 attack on Israeli civilians last year have come with almost dulling frequency.

They are part of a global expansion of what have been called "signature" or "decapitation" killings that go back to the United States' war on terror. In the past decade alone, a dozen countries, including Iraq, Iran, Egypt, and Turkey, have launched programs to carry out such hits on enemies of their own.

These strikes alarm many experts in humanitarian law, who urge proportionality and protection of civilians: Mr. Nasrallah's death involved multiple 2,000-pound bombs and razed several apartment buildings.

In the cold calculus of military advantage, even seasoned strategists who carry out these operations sometimes wonder aloud whether they actually work – or whether they create more terrorists than they kill.

In the case of Hamas leader Yahya Sinwar, architect of the Oct. 7 attack, his death last month – in a routine Israeli military patrol – "is not a deterrent," Iranian Foreign Affairs Minister Abbas Araghchi said, "but a source of inspiration for resistance fighters across the region."

Q: Don't the U.S. and other countries have laws against assassinations?

Take Israel, for example, the country most recently in the news for targeted killings. Israel's Supreme Court in 2006 ruled that targeted killings are a legitimate form of self-defense against terrorists, though it cautioned that these assassinations should be weighed against harm to innocent bystanders. Both Israel and the U.S. designate Hezbollah and Hamas as terrorist organizations.

The U.S. government has since reached a similar conclusion in a legal journey that started in the mid-20th century. In the days when it viewed communism as an existential threat, the U.S. orchestrated coups to overthrow left-leaning governments. This included Guatemala in 1954 after its president was deemed unfriendly to American businesses like the United Fruit Co., which owned 42% of the country's land.

This operation and others came to light during the 1975 U.S. Senate Church Committee hearings. So, too, did the torture and killings committed by these CIA-backed regimes that seized power through military force.

On the heels of these revelations, President Gerald Ford in 1976 signed an order banning anyone working for the U.S. government from carrying out political assassinations. Further orders from Presidents Jimmy Carter and Ronald Reagan removed the word "political" and added that no one working on behalf of the U.S. government could engage in assassinations, either.

The orders didn't define assassination – no federal law does – but it's widely understood to mean murder for political purposes. The word itself implies illegality, notes Tom Porteous, deputy program

director at Human Rights Watch, a New York-based advocacy group.

Up until the 9/11 attacks, U.S. officials steered clear of any intimidation of it. In the 1990 run-up to America's first Gulf War, then-Secretary of Defense Dick Cheney fired the Air Force's top officer for saying that the U.S. planned to target then-Iraqi President Saddam Hussein.

The general's remarks were "potentially a violation of the standing presidential executive order" prohibiting assassination, Mr. Cheney said at the time. It was "inappropriate for U.S. officials to talk about targeting specific foreign individuals."

Q: How did this change?

Just before the 9/11 attacks, the American ambassador to Israel criticized its policy of picking out Palestinian militant leaders to kill. The U.S. "is very clearly on the record as against targeted assassinations," Ambassador Martin Indyk said in July 2001. "They are extrajudicial killings, and we do not support that." Israel defended its policy as "active self-defense" or "interception."

Then came America's global war on terror. Not including the battlefields of Iraq and Afghanistan, President George W. Bush ordered some 55 targeted killings of Al Qaeda leaders in the ungoverned tribal areas of Pakistan. President Barack Obama ordered some 560 of them in Pakistan, Somalia, and Yemen, including of Anwar al-Awlaki, a New Mexico-born Muslim cleric accused of being an Al Qaeda leader. Critics labeled it an extrajudicial killing and a potential assassination.

The essence of the legal arguments that have been made by U.S. officials who green-light targeted killings is that they are acts of self-defense in a war against a terrorist group. This reasoning mirrors Israeli jurisprudence decried by the U.S. prior to 9/11, some analysts note.

But it was the Trump administration's 2020 strike on Maj. Gen. Qassem Soleimani, commander of the elite Quds Force unit of Iran's Revolutionary Guard, that prompted particular alarm among international law experts. General Soleimani was on a state visit to Iraq, whose officials said they'd received no warning and decried the violation of their sovereignty.

General Soleimani's killing "was unlawful," according to a report by the United Nations special rapporteur on extrajudicial, summary, or arbitrary executions, prepared for the U.N. Human Rights Committee. This was in large part because the operation targeted a state official away from a battlefield. In other killings, the U.S. had argued they were part of America's war against Al Qaeda, but this was a tough legal case to make with General Soleimani, given Shiite Iran's historic hostility to Al Qaeda, a Sunni group.

U.S. officials instead argued that it was a "defensive action" against someone "actively developing plans to attack American diplomats and service members in Iraq and throughout the region."

Then-President Donald Trump, for his part, said he was trying "to stop a war." It was reported that although Presidents Bush and Obama had contemplated a strike against General Soleimani, they ultimately decided against it. The concern was that rather than forestalling wider conflict, the strike could accelerate it.

Iran responded with missile strikes on two bases in Iraq, wounding more than 100 U.S. troops, including dozens who were later diagnosed with traumatic brain injuries.

Q: So are targeted killings legal or not?

This remains a matter of intense debate.

Arguing self-defense in a preemptive attack away from the battlefield, as the Trump administration did, generally requires that the

WHY WE WROTE THIS

Recent strikes by Israel on Hezbollah and Hamas leaders are part of a global expansion of targeted killings, including by the United States. We examine the legal basis for such operations.

attack be imminent – specifically, a threat that is, as the U.N. report put it, “instant and overwhelming.”

But U.S. officials since the Obama administration have called, as the U.S. counterterrorism adviser did in 2011, for a “more flexible understanding of imminence.” Critics call it an “expansionist” definition, and it includes preemptive strikes against not just confirmed but also “perceived” threats.

There is, too, international law surrounding the death of innocents. In a conflict zone, the legal rule of thumb is that the greater the military advantage conferred by a targeted killing, the greater the permissible civilian harm.

But while military advantage is relevant in determining excessiveness, proportionality still matters. In other words, it’s about more than the least amount of harm that commanders can cause in pursuing their goals.

“Ultimately, there’s still a limit,” says Tom Dannenbaum, associate professor of international law at Tufts University’s Fletcher School of Law and Diplomacy. “It’s a judgment call in each case. But I can’t think of an instance where the elimination of a single individual has been understood to justify the collateral killing or injuring of hundreds of civilians.”

What is particularly troubling about targeted killings is the absence of public discussion about them, the Human Rights Committee report warns, adding that in many cases, nations have simply stopped bothering to make legal justifications at all.

– Anna Mulrine Grobe / Staff writer

EDUCATION CURRENTS

COLUMBUS, OHIO

Intel is coming. Ohio community colleges say the state’s workers will be ready.

By Ira Porter / Staff writer

On a 1,000-acre plot of land in New Albany, Ohio, 15 miles northeast of Columbus, dozens of cranes tower in the sky, their jibs and booms moving while hooks swing back and forth. They are building, and their work will beget more work for many years to come. Intel is coming.

The semiconductor behemoth based in Silicon Valley is building two chip manufacturing plants at a cost of \$20 billion. The company estimates they will bring 3,000 new jobs to this Rust Belt state.

“Ohio is benefiting from reshoring that’s happening in the U.S., and [with] the investment that’s happening at a federal level as well as the state level, there’s no doubt about it,” says Scot McLemore, executive-in-residence at Columbus State Community College.

Like an NFL general manager, Intel has cast a wide net to recruit talent to fuel its workforce. CSCC is one of several community colleges that Intel has partnered with in Ohio to build curriculum. The company donated \$50 million to these schools and other education initiatives across the state.

“We are becoming more focused on that talent demand, and we’re identifying barriers that are preventing us from getting more individuals in our communities into those pathways,” Mr. McLemore adds.

Columbus is the fastest-growing city in the state, and Intel is one of several Fortune 500 companies that have made major investments in the surrounding area. To prepare for its arrival, Intel wants to be sure that it has workers ready to go when the new campus opens in 2027 or 2028. In partnerships like the one with CSCC, the

company has shared information on its chipmaking process with schools and designed curriculum to ready students for entry-level positions that require anything from a certificate of completion to an associate degree or higher.

A boost for middle-skill labor

This is a major step in moving the dial on postsecondary career and technical education, or CTE. It comes during a nationwide push to bolster middle-skill labor, and get Americans to work. It also coincides with companies dropping degree requirements for certain positions, and more Americans being skeptical about the high cost of a college degree.

“They want to revitalize Ohio back to the manufacturing hub that it once was,” says Mark Mahoney, assistant dean of the engineering technologies department at CSCC. Dr. Mahoney says that a big company like Intel coming to the area brings attention, and that attention will bring other companies. That’s already happening in Ohio.

Honda, which has had plants near Columbus going back to the early 1980s, announced a \$700 million investment to retool them for production of electric vehicles. Additionally, the car company announced a \$3.5 billion investment/partnership with LG Energy

Solution to produce the batteries to power them, via a new plant in Fayette County, 40 miles southwest of Columbus. Biotech and pharmaceutical companies also are opening offices in the Columbus area.

To capture the ethos of the area, look no farther than Front Street, near the entrance of the 14-story-tall Ohio Supreme Court building. The marble building has an inscription guarded by two female lions that reads, “The whole fabric of society rests upon labor.”

The state legislature in Ohio has invested millions in postsecondary CTE, such as the program at CSCC. These programs can be in the form of boot camps and one-time certificate-level accreditation for employees to get their foot in the door, or degree programs at community colleges. This helps fulfill the middle-skill jobs that President Joe Biden has repeatedly touted. Bolstering the economy with skilled workers has been a bipartisan theme. This comes as colleges are facing an expected enrollment cliff: Over the next 10 years, 15% fewer college-age students are projected to enroll in universities.

Skylar Eastman and Addison Swartz are among those looking for a different path. When the high schoolers emerge from lockers in the welding lab at the Delaware Area Career Center, they already look like professionals. They wear fire-resistant jackets; helmets with auto darkening to protect against ultraviolet and infrared rays, as well as flying sparks; and welding caps to protect their hair. To add flair, Addison shows off inch-long pink-and-white nails that she designed herself.

The only two girls in the welding program are standouts, chosen as ambassadors for their community college and already capable of crafting metal chairs and barbecue smokers. Both of them want to get straight to work.

“My parents have the money for me to go to college, but one thing that I looked at was if I’m going into welding and I’m guaranteed a job, and I’m guaranteed to be working for the rest of my life,” Skylar says. She will be moving to Nashville, Tennessee, after graduation to work with her aunt and uncle at their welding business.

Addison is also sold on welding.

“I wouldn’t want to spend thousands of dollars and put myself or my family in debt,” she says. Neither of her parents attended college, and she says that they built good lives for themselves. Ad-

WHY WE WROTE THIS

PROSPERITY

A major step in moving the dial on postsecondary career and technical education comes during a nationwide push to bolster middle-skill labor, and get Americans to work.

dison feels as if she got a leg up by learning a trade in high school. She and Skylar are set to graduate with three different welding certificates and one for operating a forklift.

"If you have the opportunity to go to a trade school for high school, it's definitely a lot cheaper for people and it's a way better experience because you're able to go out into the field and make that money back," Addison says.

The Intel model for CSCC came with a \$2.8 million grant to build out curricula for instructors to share with other community colleges. Industry experts from Intel saw what CSCC taught in its engineering technology program and added specifics to introduce students to life at Intel. Intel subject matter experts and faculty created new classes – manufacturing fundamentals, semiconductor fabrication, and vacuum systems technology. Students can get certificates in one year of study or associate degrees in two. They also have the opportunity to scale up later, which can lead to higher earning potential.

"It's just not Intel coming along. Manufacturing is a multifaceted system, so when a big company comes, they are going to have to have support companies. They might not be as popular or well known, but these companies will basically work on the equipment that Intel uses, and that company will have a company that supports them, and it ends up being a domino effect," Dr. Mahoney says.

That domino effect could go on to fill the 7,000 job vacancies in the manufacturing sector in Ohio that were listed as recently as 2020. The money invested is impressive. Under the CHIPS and Science Act, which Congress passed in 2022 to increase domestic production of semiconductor chips, the U.S. Department of Commerce gave \$8.5 billion to Intel in direct funding and another \$11 billion in loans. Ohio is getting its share of the investment, as are plants in Arizona. Other U.S. companies are building plants in Utah and Texas.

Can CTE shake its past stigma?

CTE started off as a vehicle to catapult people into the middle class more than a century ago, when it was still called vocational education. In 1917, Congress passed the Smith-Hughes Act to plug workforce labor gaps and amplify precollege education in agriculture and trades.

In the past, vocational education had a legacy of racism and classism, shuffling students of color and disadvantaged students into low-quality programs with little earning potential. Students who went to trade school had little chance for upward mobility, says Jeff Strohl, director of Georgetown University's Center on Education and the Workforce, citing past research.

Dr. Strohl believes that changing attitudes about the return on investment of four-year colleges could be a moment for CTE to thrive. However, he adds, more money needs to be invested to be competitive with other countries like Germany, whose dual system includes intensive secondary vocational education and apprenticeships. He adds that postsecondary CTE education needs to be trumpeted so job seekers can get some skills and education in degree-based programs, which push earnings higher.

And while plumbing and other trades have led to recent headlines about millionaires wearing tool belts, he says it's dishonest to push the notion that every middle-skill job will pay six figures.

Nor is CTE without criticism, with experts concerned that students could be pigeonholed in one trade, without the ability to pivot if the labor market shifts.

"My basic concern is that CTE might substitute for solid basic skills and might not give students the ability to adapt when the demands of the labor market change," writes Eric Hanushek, an economist and senior fellow at the Hoover Institution at Stanford University who has written extensively about the economics of education, in an email.

Dr. Hanushek says that the lack of adaptability was a key find-

ing in a study he wrote that compared employees who had finished apprenticeship programs in 11 countries. It showed that while they started off with better job prospects than people with general education, over time their pay did not increase as high and they found themselves out of work after skill requirements changed.

"This lack of adaptability was the key finding," Dr. Hanushek adds.

The promise of local jobs to come

A month into fall semester at CSCC, the college held its annual Major Fest, when undeclared students learn about potential programs. The engineering and technology program placed a table in the center of campus, near where students played cornhole and ate snacks.

Christa Wagner stopped by to chat. She took the semiconductor fabrication class last year and is considering taking the other two.

"With the opportunity that Intel presents, I did want to add those courses onto my regular degree so that I will have those skills available," Ms. Wagner says. She enrolled at CSCC after working 20 years in customer service and hopes the new skills she's learned will lead to better-paying work. She is set to graduate before the Intel plants will be complete.

"I want to go out and get some experience in my major now, but when that opportunity becomes available, I would be able to transition into that," Ms. Wagner says hopefully.

That hope is spreading. Since the Intel program revamp, enrollment in the engineering program has risen 20% per semester. Students and administrators at CSCC grew worried that Intel would pull out of the Ohio deal and sell the plants to another company after construction was delayed. But at Chris Dennis' evening semiconductor class on a recent night, everyone was all smiles. He shared a newspaper headline about a multibillion-dollar partnership between Intel and Amazon to design chips for Amazon's central Ohio data center. He also shared an update about Intel internships that caught students' attention.

"Remember those positions that we've been talking about in Arizona?" he asks. "They're ready."

William Muir is interested in Arizona or Ohio, whichever is ready for him first. He's a line cook at a French restaurant in Upper Arlington, his hometown, just outside Columbus. Mr. Muir is back at CSCC after starting 18 years ago and dropping out.

"It feels really good to be back in school and working toward something that has a higher potential, because before I would go to work and be like, 'Why am I doing this if I'm not happy?'" Mr. Muir reflects.

He heard about Intel's move to Ohio during a ride to work.

"My Uber driver and I were talking about how we weren't making that much money," Mr. Muir remembers. "She told me about the plant coming, and that they were investing billions of dollars."

He visited campus a week after that conversation and started the enrollment process. Now he's three semesters in, hoping to finish an associate degree next year. His teachers have told him he could start at close to \$80,000 a year. That's about \$50,000 more than his current salary. He and his girlfriend could marry.

"Ever since I passed the 50% mark in this program, the whole thing seems a lot more doable," he says. "I realize what I'm doing is pretty neat, and not only that, but I'm fully capable of being able to do it."

■ Ira Porter's reporting for this story was supported by the Institute for Citizens & Scholars' Higher Education Media Fellowship.

BECHEVE, NIGERIA

Her Voice Foundation helps ‘money marriage’ wives get a new start

By Ogar Monday / Contributor

A tumoga Rose and three other young women are seated at sewing machines in a mud-walled shop with reams of scrap fabric strewn about the floor. They are working through basic sewing patterns under the watchful eyes of an older woman they call Auntie. As Ms. Rose slides a piece of fabric away from her machine using a pair of scissors, she flaunts her stitchwork to Auntie like a trophy. “I’ll be perfect soon,” she says with pride, while the other young women laugh in solidarity.

Afterward, Ms. Rose recounts her ordeal as a “money marriage” bride. At age 7, she was abandoned by her parents in the compound of an older man from their Becheve tribal community in southeastern Nigeria’s remote Cross River state. From that day, the two were considered married, and their sexual relationship began when Ms. Rose was about 14. She later discovered that when her mother was pregnant with her, her parents had received yams, a goat, and some money from the man.

Holding back tears, she says, “I was the payment.”

Now a widow in her mid-20s, Ms. Rose struggles to meet the basic needs of her two children with her meager income from a small plot of community land. “Every morning, I wake up worried about feeding my children and where to beg for help, but that’s about to change,” she says, her conviction accentuated by the clicking noise of her sewing machine.

Ms. Rose was among the most recent participants in the Empower Project, an initiative of Her Voice Foundation to help women who were wed in the illegal yet long-standing money marriage custom practiced by the Becheve people. Over four months, each cohort of women enrolled in the project learns skills such as tailoring or hairdressing.

“We choose in-demand skills to ensure continuous patronage and self-sufficiency,” explains Abatang Favour, who started the nonprofit foundation.

A tradition rooted in poverty

The Becheve people reside in 17 villages in the local district of Obanliku in Cross River state. Generations of Becheve girls have been used as collateral for loans or payment for debts in what are known as “money marriages.” Poverty is often cited as the primary driver behind the practice. More than 87 million Nigerians, or about 39% of the country, live below the poverty line.

Nigeria’s federal Child Rights Act of 2003 bans marriages under age 18, but not all states have adopted it or enforce it. While 44% of Nigerian girls are married before age 18, it is unknown exactly how many of them are in money marriages, because such unions don’t involve legal documentation. The prevalence of early marriage in the country overall allows money marriages among the Becheve community, often involving very young girls, to fly under the radar.

Most of the girls don’t attend school and will bear children when they reach their teens. Even those who attend school usually end

their studies early. Nigeria’s government estimates that 10% to 15% of the country’s 10 million out-of-school girls left school because of pregnancy.

Sunday Ichile, a traditional ruler in Becheve, says organizations such as Her Voice Foundation have guided the community to ban the arrangement of new money marriages and to impose punishments on offenders. But he adds that “Traditions take a long time to die.”

Mr. Ichile and other local rulers are revered as custodians of tribal cultures and traditions in Nigeria, and their decisions command respect in the community. Last year, with support from the United Nations Entity for Gender Equality and the Empowerment of Women, Ms. Favour and her team held a town hall meeting with such rulers to raise awareness of the harms of money marriage. Although community leaders have urged the wives to return to their parental homes, most would not be welcome there because they lack resources to contribute to the household. The young women fear starting over with nothing.

“It’s like being lost in the bush,” says Akem Augustina, who trained with the Empower Project to become a hairstylist. “You must learn to do everything yourself.”

“I cannot remarry in the community, and I am seen as the property of my husband’s family,” she adds. After her husband died three years ago, Ms. Augustina became dependent on her brother-in-law for survival.

An activist by chance

In 2020, Ms. Favour was a university undergraduate on a holiday visit to her home district of Obanliku, which includes Becheve. She noticed many teen mothers at the clinic where her aunt, a nurse, worked.

“I asked questions, went to schools in the community, asked what was happening to girls,” Ms. Favour says. She found that not only were many girls dropping out because of pregnancy, but also “There was a poverty cycle that was being perpetrated due to this.”

Back on her university campus, Ms. Favour assembled five volunteers. “I told myself that even if it was just one girl I helped get back on track, that it would mean something,” she says.

The group supported teen mothers with counseling after receiving buy-in from community leaders in Obanliku. The team also spread its campaigns to high schools, educating students about the challenges of teen pregnancy. Ms. Favour leveraged social media to raise support for about 50 teen girls to go back to school.

While talking more with the teen mothers, Ms. Favour discovered that some of the pregnant girls, even those as young as 14 years old, had been sold off to older men for marriage. Ms. Favour’s group again promptly began campaigns within the community, winning the support of traditional rulers.

The team presented arguments for keeping girls in school, highlighting how money marriages hinder community progress. With the rulers’ support secured, the team did interviews with money marriage wives to assess their needs. To date, Her Voice Foundation has trained about 150 women.

The organization also provides crucial psychosocial support. “We understand the discrimination these girls face, and mental strength is essential for their success,” Ms. Favour says. To amplify the young women’s voices, Her Voice Foundation hosts a radio program in which teen mothers share their experiences and challenges.

A sense of achievement

Money marriage “has had a devastating impact on young girls, as many of them are depressed and suffer from low self-esteem,” says Moses Bassey, an official at the Cross River State Ministry of Women Affairs.

But he emphasizes that “The intervention of Her Voice Foundation is changing things.” He says the vocational training it provides can give young women a sense of achievement and allow them to

WHY WE WROTE THIS PROSPERITY

Early marriage can perpetuate a cycle of poverty among Nigerian girls. One nonprofit helps young brides and widows work toward self-sufficiency.

take care of themselves and their children. He adds, “There is the need to remind the traditional leaders that the times are changing and they need to get on board or be left behind.”

Ms. Rose hopes for a fresh start because of her training in sewing. “I never had the opportunity of going to school,” she says. “I am going to learn this skill, make money from it, and send my children to school.” ■

POINTS OF PROGRESS

1. United States

Researchers developed a powder that efficiently absorbs carbon dioxide from the air. Carbon capture is one way to lower CO₂ levels in the atmosphere, but scientists have struggled to find materials that hold up to repeated use.

Chemists at the University of California, Berkeley have discovered a covalent organic framework they named COP-999. The porous, crystalline material captures 100 times its mass in carbon in a year. That’s about the same carbon capture capacity of a tree. When outdoor air was passed through the yellow powder, it removed all the CO₂.

Omar Yaghi, a senior author of the research, is credited with developing the class of materials that includes COP-999. “There’s nothing like it out there in terms of performance,” he said. “It breaks new ground in our efforts to address the climate problem.”

NATURE, GOOD GOOD GOOD

2. The Caribbean

Corals nurtured as cells and then planted on reefs survived a historic heat wave. A record marine heat wave in 2023 caused the worst coral bleaching ever seen in the Caribbean, with reefs turning white and dying across the region. But some corals resisted. Specimens of six species remained 90% healthy, compared with just 24% of wild corals.

These corals were grown using a process called coral seeding, which involves fertilizing coral spawn in labs to produce genetically diverse larvae. Those are then planted in the ocean. This diversity helps corals better adapt to rising ocean temperatures. With outplanting occurring across five countries from 2011 to 2022, only lab-grown corals less than 10 years old withstood bleaching. Researchers caution that restoration alone isn’t enough to save reefs without wider action on climate change.

MONGABAY

3. Moldova

Women are thriving in Moldova’s tech industry. Less than a third of the jobs in the U.S. tech sector are held by women; in the United Kingdom, it’s less than a fifth. But in Moldova, one of the poorest countries in Europe, women are welcome in tech, making up 43% of workers.

A big part of Moldova’s strategy for digital transformation is getting more women into STEM fields. That includes programs such as Tech Women Moldova and GirlsGoIT, which are supported by the United Nations Development Programme and have connected thousands of women to educational opportunities, conferences, and career mentorship.

Cultural norms have had to shift along the way. “Ten years ago, [teachers] actually believed that women shouldn’t be in the tech sector,” said Marina Bzovii, an administrator at a hub for tech companies.

REASONS TO BE CHEERFUL

4. Egypt

Egypt is certified malaria-free, a century after efforts began there to eliminate the disease.

Africa carries most of the global malaria burden, and of the 608,000 malaria deaths in 2022 worldwide, 76% were children under 5 years old. To receive World Health Organization certification, a country must go three consecutive years without malaria and be able to prevent a resurgence.

Egypt joins a list of 44 nations that have been declared free of malaria, including Algeria, Morocco, Mauritius, and Cape Verde in Africa.

BBC, WORLD HEALTH ORGANIZATION

5. Rwanda

Farmers are growing more food by making better use of steep hillsides. Around 70% of the population relies on farming in Rwanda, often called the “land of a thousand hills.” Instead of crops being planted along the contour of a hill, which lets rainwater run downward, “radical terraces” slope backward toward the mountain. Erosion is reduced and helps keep soil fertile.

After 2,300 hectares (5,700 acres) of terraces – the majority radical, some downward-sloping – were built in the northwest, soil erosion fell by almost 90%, and potato yields more than doubled. Radical terraces can be built within days, but the cost can be prohibitive, and poorly designed terraces can trigger landslides. Still, a 2023 national plan to boost agriculture included 142,000 hectares of new radical terraces by the end of 2024.

REASONS TO BE CHEERFUL

– Erika Page / Staff writer

COVER STORY

The inner lives of creatures in our midst

More scientists are asking, “Do animals have conscious experience?”

By Stephanie Hanes / Staff writer

WATKINS GLEN, N.Y.

SASHA PRASAD-SHRECKENGAST is trying to get into the mind of a chicken.

This is not the easiest of feats, even here at Farm Sanctuary in Watkins Glen, a scenic hamlet in the rolling Finger Lakes region of upstate New York. For decades the sanctuary has housed, and observed the behavior of, farm animals – like the laying hens Ms. Prasad-Shreckengast is hoping to tempt into her study.

Chickens, it turns out, have moods. Some might be eager and willing to waddle into a puzzle box to demonstrate innovative problem-solving abilities. But other chickens might just not feel like it.

Ms. Prasad-Shreckengast also knows from her research, published this fall in the *Journal of Applied Animal Welfare Science*, that some chickens are just more optimistic than others – although pessimistic birds seem to become more upbeat the more they learn tasks.

“We just really want to know what chickens are capable of and what chickens are motivated by when they are outside of an industrial setting,” Ms. Prasad-Shreckengast says. “They have a lot

more agency and autonomy. What are they capable of, and what are they interested in?"

In other words, how do chickens really think? And how do they feel? And, to get big picture about it, what does all of that say about chicken consciousness?

In some ways, these are questions that are impossible to answer. There is no way for humans, with their own specific ways of perceiving and being in the world, to fully understand the perspective of a chicken – a dinosaur descendant that can see ultraviolet light and has a 300-degree field of vision.

Yet increasingly, scientists like Ms. Prasad-Shreckengast are trying to find answers. What they are discovering, whether in farm animals, bumblebees, dogs, or octopuses, is a complexity beyond anything acknowledged in the past.

(At least in Western culture, that is. The 17th-century philosopher René Descartes, for example, ushered in an influential idea that understood animals to be mere mechanical "automatons." Ascribing feelings or emotions to animals, he and his many followers believed, was misguided.)

Researchers have found myriads of indications of perception, emotion, and self-awareness in animals. The bumblebee plays. Cuttlefish remember how they experienced past events. Crows can be trained to report what they see.

As a result, a growing number of scientists and philosophers believe there is at least a realistic possibility of "conscious experience" in all vertebrates, including reptiles and fishes, and many invertebrates.

Given these findings, many believe there should be a fundamental shift in the way that humans interact with other species. Rather than people assuming that animals lack consciousness until evidence proves otherwise, isn't it far more ethical to make decisions with the assumption that they are sentient beings with feelings?

Ms. Prasad-Shreckengast's study takes place in the wide hallway of Farm Sanctuary's breezy chicken house. Unlike in pretty much any other chicken facility, the birds here come and go as they please from spacious pens.

Following up on her previous research, she has designed a challenge that she hopes will appeal to most of her moody chickens. It is a ground-level puzzle box, with a push option, a pull option, and a swipe option. Birds are rewarded with a blueberry when they solve a challenge.

There is also a free treat option in the puzzle box, a way for the researchers here to measure something called "contrafreeloading." This term describes a behavior animals demonstrate when they choose to work for a reward rather than just freeloading from readily available food. (Scientists are still debating why most animals contrafreeload. They are also interested in the exception to the rule: the domesticated cat, who appears perfectly happy to take food without expending any effort.)

Team members monitor a series of gates to the puzzle block, opening them when the birds are inclined to enter and letting them out if the chickens have had enough.

The idea of consent – which is a basic, foundational principle in the study of human behavior – is also a hallmark of animal studies here at Farm Sanctuary. To the uninitiated, this might sound absurd, with images of chickens signing above the dotted line.

But it is not actually all that rare. Studies of dogs, dolphins, and primates all depend on the animals agreeing, in their own way, to participate. Behavioral data would be skewed without it. And before she came to Farm Sanctuary, Ms. Prasad-Shreckengast worked in a canine cognition lab. Few people would bring their pet dogs in

for research and then force them to do things they don't want to do, she points out.

So consent matters from both a scientific point of view and an ethical one, she says.

A GROUP OF BIOLOGISTS and philosophers this past April unveiled The New York Declaration on Animal Consciousness at a conference at New York University in Manhattan.

The statement declared that there is "strong scientific support for attributions of conscious experience to other mammals and to birds." It also said that empirical evidence points to "at least a realistic possibility of conscious experience" in all vertebrates and many invertebrates, including crustaceans and insects. Since April, hundreds more scientists and moral thinkers around the world have added their names.

Spearheaded by Kristin Andrews, professor of philosophy and the research chair in animal minds at York University in Canada, the idea emerged from conversations she had with two colleagues, Jonathan Birch, a philosopher at the London School of Economics and Political Science, and Jeff Sebo, director of the Center for Mind, Ethics, and Policy at New York University.

The three were talking about all the new research demonstrating the complexity of animals' inner lives. They wondered if there was a way to highlight how these studies were shifting attitudes.

"People were dimly aware that new studies were identifying new evidence for consciousness – not only in birds, but also reptiles, amphibians, fishes, and then a lot of invertebrates, too," says Dr. Sebo. "But there was no central, authoritative place people could look for evidence that the views of mainstream scientists were shifting."

Discovery after discovery over the past decade has illuminated an increasingly complex, communicative, and feeling world of non-human creatures.

For instance, trees communicate, and fungal networks send messages throughout a forest. Species such as sea turtles and bats use electromagnetic fields, a force we cannot even perceive, to guide their movements and migrations. Snakes see infrared light, birds and reindeer see ultraviolet light, and dolphins use sound waves to navigate underwater.

Author and journalist Ed Young uses the German term *umwelt* to describe an organism's unique sensory perspectives. His book "An Immense World" details the various ways animals experience their world.

He uses the metaphor of a large house with many windows looking onto a garden. Each animal has its own window. But there are other windows as well, each with a different view of the same place. We humans have our own window, our own particular *umwelt*. Our eyes see only certain wavelengths and frequencies of light. Our ears perceive limited ranges of sound. Our noses have limited ranges of smell.

For generations, the dominant perspective has been that the human perspective is the best view in the house, with the most complex and complete picture of reality.

But there hasn't been a species studied over the past 20 years that hasn't turned out to exhibit pain. There hasn't been a species that hasn't turned out to be more internally complicated than people expected, Dr. Andrews says.

"There hasn't been any animal that we've looked at and asked, 'Do they feel pain with the set of pain markers that are well established?' And we've said, 'Oh, yeah, there's zero evidence,'" she says. "We don't find any of them."

"So my view is that we're going to be finding these kinds of indicators of cognitive behavior, of behaviors indicating animals feel pain or feel pleasure, in probably all animals."

But does that mean consciousness?

"Just that word, 'consciousness,' is the problem," Dr. Andrews

WHY WE WROTE THIS HONESTY

New research shows that many animals exhibit signs of having rich inner lives, perhaps even conscious experience. How should this affect how we see them – and ourselves?

says. “The thing that everybody in the field agrees on is that consciousness refers to feeling – ability to feel things. ... But then if you start asking people to give a real, concrete definition of consciousness, they’re not able to do it.”

THE CONCEPT OF CONSCIOUSNESS has kept a small army of moralists, physicists, and theologians busy for generations. Today there is an entire field called “consciousness science,” in which academics debate the philosophical and physiological meanings of the word.

The concept, after all, can take on different tones. Anesthesiologists have one interpretation of “conscious.” Psychologists have another. Philosophers and religious scholars also have their own varying views.

An increasing number of mainstream scientists and researchers also point to a consciousness that is outside individuals, sometimes called “universal consciousness.”

For the purposes of the declaration, researchers said, they focused on what is called “phenomenal consciousness.” This is the idea that “There is something that it’s like to be a particular organism,” explains Christopher Krupenye, professor of psychological and brain sciences at Johns Hopkins University.

Phenomenal consciousness can be a bit of a hard concept to get one’s head around at first, he says. But it basically means that an animal experiences the world not as a machine, but as a being. Phenomenal consciousness is what you are experiencing right now in your body with the sight of words on a page as you read this article.

There is another type of consciousness often called “metacognition,” in which a being is aware of what’s going on in its own mind. It is recognizing, for instance, that the temperature you feel is unpleasant, and then thinking that perhaps you should turn up the thermostat. It is recognizing that the words on the page are too small and that you should grab your reading glasses.

“Theory of mind” is another connected concept. You recognize that another person reading this article is not you, but that they can have an experience similar to yours.

Current research, including Dr. Krupenye’s, suggests that both dogs and primates display all these forms of consciousness.

In one of his studies, for instance, he was able to track eye movements of chimpanzees, bonobos, and orangutans in order to gauge whether or not they expected an unseen ape to see them through a transparent barrier. He found these primates were able to assume another being was having a similar but different experience from what they were having themselves, given their own perspective on the world.

Other studies show that dogs look to their owners for assistance when they do not understand a command, and that they look for clues and more information when they are having difficulty solving a task. Researchers believe this indicates dogs recognize their own ignorance – a sign of metacognition.

But of course there’s no way to prove, or even fully understand, what dogs or apes are experiencing, Dr. Krupenye says.

“You’re identifying one of the core philosophical challenges in this area of research,” he says. “With the case of phenomenal consciousness, in humans we take it as the case that if they verbally report they feel X or Y, we agree that’s what they are feeling. With animals, we can’t ask directly for them to verbally report.”

So researchers use alternative indicators to gauge how a nonhuman animal is thinking or feeling – such as tracking eye movement. But even this gets tricky. What about an animal whose *umwelt* isn’t visual at all?

“My dog’s experience of the world is much more dominated by smell data and much less by sight data,” says Dr. Sebo. “Different kinds of experiences might cause them different bodily pleasure and pain, but also different emotional pleasure and pain.”

For years, researchers were cautioned not to anthropomorphize their subjects, or bestow human traits upon other animals. Most scientists still agree with many of the tenets of this.

Dogs, for instance, don’t necessarily like what humans like, and most researchers agree that it is ethically important to keep those distinctions in mind. Think here about a dressed-up poodle. Its clothing and accessories are about human preferences. But the poodle might prefer an odor on the neighbor’s lawn. That’s a dog preference. Ethicists say it is important to be aware of this distinction, and not behave as if the poodle actually loves pompoms.

Many animal researchers now say worries about anthropomorphism went too far. The human *umwelt* might be different from those of other animals, they say, but there is still a deeper quality of being-in-the-world that is similar.

Heather Mattila, a biologist at Wellesley College in Massachusetts, generally tries to sidestep the question of consciousness in the bees she studies – even though it’s what most interests her students.

Trying to determine consciousness leads down a complicated philosophical path, she says. It is difficult to prove anything. She is an empirical scientist, which is all about working with solid, replicable studies.

But in her personal opinion, there’s no question: Bees likely have consciousness. She watches bees map locations, share information, and dance in a way that appears excited when they have found a particularly tasty food source. (She has learned to write “vigorous” rather than “excited” in research papers to avoid sparking the critiques of reviewers.)

Other researchers have also detected play behavior in some bees. All in all, the insect’s behavior reminds her of the rescued dog she grew up with – an animal that convinced her that other species had full personalities and cognition. “In a human mind, we would just assume consciousness is involved,” Dr. Mattila says.

BUT ASSUMING CONSCIOUSNESS in other species brings up profound moral quandaries. If it turns out that animals do have feelings, or if they do participate in this big, amorphous concept called consciousness, what would that mean for the way humans interact with the rest of the living world?

The scholars who signed the New York declaration tried to stay ambiguous on that point.

“All of these animals have a realistic chance of being conscious, so we should aspire to treat them compassionately,” says Dr. Sebo at New York University. “But you can accept that much and then disagree about how to flesh that out and how to translate it into policies.”

For Dr. Mattila and others, the possibility of consciousness has meant limiting the extent to which her scientific experiments cause harm.

“I know many strict vegans would not approve of me keeping honeybees on campus, but I feel like I’m supporting them,” Dr. Mattila says. “I specifically try to do experiments that don’t cause them pain or suffering. ... I try to let them have a good life and observe how they operate within that good life.”

But it also has her thinking more broadly about how humans and other animals cross paths and interact with each other. Should the real possibility of complex animal consciousness make a difference in where we build roads? Should it guide how we “consciously” take control of ecosystems? And should it impact how, and what, we eat?

Such ethical considerations could impact an array of human activity. “It’s culturally inconvenient to think that animals are conscious,” Dr. Mattila says.

Especially farm animals. Although research on animal sentience and intelligence has expanded to include a host of different species, there is still a gap when it comes to the animals we kill for food.

The agricultural industry has long focused on animal welfare

within the context of the food system, and there have been industry-wide efforts to slaughter animals in the most humane way possible.

But a group of international researchers in 2019 published a report in the journal *Frontiers in Veterinary Science* that found a decided lack of information on the “physico-cognitive capacities” of farm animal species.

While there has been loads of research on animal husbandry, there has not been all that much investigation into animals’ conscious experiences outside their role as food products for humans.

To Ms. Prasad-Shreckengast and others at Farm Sanctuary, there are clear reasons for this. The first is that we generally want to distance ourselves from those creatures we eat. Multiple studies have shown that meat-eaters engage in something called “cognitive dissociation” to help alleviate the discomfort that comes if one starts to learn about the emotions or physical experiences of a pig or cow or chicken.

But there are also funding issues. Most scientific research on farm animals is funded by agricultural schools focused on industrial practices or is funded by large agribusiness companies themselves. And farm animals generally live in a way that some scientists say is not conducive to understanding individual sentience.

“When you’re thinking of chickens, specifically in a barn with 30,000 chickens, you can’t see an individual,” says Ms. Prasad-Shreckengast. The study she published this October focused on the behavior of Cornish hens – usually slaughtered after they reach 6 weeks of age.

There isn’t a lot of existing information about the Cornish hen’s interior life, she says, because they aren’t usually allowed to live long enough to study as adults.

Farm Sanctuary is explicit in its promotion of a vegan diet – it was founded by a California-born animal activist named Gene Baur, whose work revealing animal cruelty at industrial farms and slaughterhouses helped lead to animal welfare laws.

Because of that, however, critics have called its animal science research biased – a charge researchers here reject.

“There’s no reason to not offer somebody the benefit of the doubt of sentience, the benefit of the doubt of consciousness, and to provide research methods that respect their agency and autonomy,” Ms. Prasad-Shreckengast says. “You can still do really good science with those ethics in place.”

On tours at Farm Sanctuary, guides introduce visitors to goats who make family groups; cows who, when no longer confined to dairy barns, prance and play and take care of their young; and pigs who, given the space, build themselves nests in a barn but go outside to relieve themselves.

It is an explicit effort to introduce humans to the individuals within other species, says Mr. Baur. The purpose is simple: to normalize empathy for fellow creatures.

“What we’re trying to achieve here are relationships of mutuality with us and other animals, where everyone benefits by the interaction, instead of relationships of extraction, where those with power take from those without,” he says.

Promoting a vegan ethic, however, isn’t the only valid way to understand the relationship between humans and farm animals – even for those convinced they have consciousness.

For Dr. Andrews, the key thinker behind the New York declaration, the question of how to live in a world of infinite consciousnesses has more to do with negotiation than with moral absolutes.

She believes it is impossible to completely avoid causing harm. The bacteria on our skin are disrupted when we wash. Animals in the wild eat other animals. When she finds flower-eating aphids in her garden, she kills the insects to save the plants.

“It’s about acknowledging that harms are part of life, and we’re committing some harms, but we’re trying to minimize the harm that we do when we’re making our choices,” Dr. Andrews says.

It’s also recognizing that humans are not separate or unique,

but part of an ecosystem with a dazzling array of individuals and understandings of the world – and a dazzling array of consciousness.

“It’s driving us to see ourselves as part of an integrated system of biology,” she says. “And that is probably better for the planet.” ■

PERSPECTIVES ON THE WORLD

THE MONITOR’S VIEW

The light in Cuba

In Cuba, blackouts may be bringing light. The island’s power grid collapsed at least four times in October. Even under the best conditions, electricity reaches only parts of the population for a few hours at a time.

President Miguel Díaz-Canel declared a state of emergency and blamed the crisis on Washington’s long-standing economic embargo. But even his most senior aides no longer trust that old excuse to placate frustrated citizens. On Oct. 29, the ruling Communist Party fired the vice prime minister in an anti-corruption probe into private business. Several days earlier, Vice President Manuel Marrero Cruz openly contradicted his boss, ascribing the outages – a “complex” situation, he called it – primarily to dilapidated energy infrastructure.

Such rays of transparency may seem at odds with a government hobbled by corruption and criticized for jailing its opponents. Yet that reputation obscures gradual reforms to meet the rising demands of a new and entrepreneurial generation, such as legalization of privately owned businesses.

“With the new circumstances, more honesty has found its way into all areas of the economic debate,” wrote Marcel Kunzmann, a Cuba expert at the University of Buckingham, in a recent paper.

Honesty has lately helped another country confront its energy crisis. Since roughly 2007, South Africans have endured rolling brownouts to cope with rising demand on an aging, publicly owned power grid never designed to meet the needs of the full population. Efforts to overhaul the system were beset for years by deepening corruption. But the formation of a new coalition government following elections in May that ended three decades of one-party rule has already brought change. A new law signed in August maps an end to the state’s monopoly on power generation. Democratizing the grid could boost competition and a shift toward new energy sources.

Oil fuels 80% of Cuba’s energy production. In March, during previous power shortages, only one of the country’s three refineries was functional. Protests broke out in several cities over “freedom, food, and electricity.” Nearly 5% of the population has emigrated since 2021. The government’s attempts “year after year to explain the situation and affirm that ‘they are working to resolve it’ are not well received by a large part of the population, tired and worn out by the difficulty of sustaining life in Cuba with a minimum of well-being,” the news blog *La Joven Cuba* observed. Some officials might now be listening. Their honesty dawns new light. ■

Creativity as a nation's defense

One trend of recent decades has been that of small countries trying to prevent a foreign invasion by making themselves indispensable to big countries around them. Singapore, Taiwan, and the United Arab Emirates, have become global tech hubs or finance centers. A would-be invader might think twice before destroying what it is dependent on.

The secret of this strategy? Build up trust in your economy and bring out the creativity of your people. Rely on qualities more than on armaments.

Now Armenia, population under 3 million, is racing to become the next Silicon Valley – especially after seeing Russia invade Ukraine. In fact, it got a big head start in 2022 when thousands of Russian techies fled their country after the invasion and chose Armenia, a democracy, because of its ecosystem of dynamic tech startups.

Armenia faces a foe different from Russia, with which it has recently had mixed relations. Last year, neighboring Azerbaijan invaded a disputed region called Nagorno-Karabakh, forcing more than 100,000 ethnic Armenians to flee the enclave. The countries are currently negotiating a peace deal, but Azerbaijan still has eyes on a vital transit route that also interests Iran and Turkey.

For Armenia, “Leveraging science and technology is not only about economic growth but also national security, resilience, and sustainability,” Alen Simonyan, speaker of Parliament, said at a conference in October. Last year, Armenia doubled the number of tech workers from the year before. Several American tech giants have opened offices or research centers in the country. In early October, the country hosted the World Congress on Innovation and Technology.

“Armenia’s survival, which now faces existential threats, is of great importance,” Valery Safarian, head of the Belgian-Armenian Chamber of Commerce, told Armenpress Armenian News Agency. “It’s important to underscore that Armenia has strategic assets, particularly in the sector of semiconductors and electronic chips.”

But it is the country’s fearless drive to innovate that may be its first defense. “When creating startups people think ‘what if we aren’t good enough?’” Tigran Petrosyan, a co-founder of the Startup Armenia Foundation, told Armenpress last year. “I’d advise everyone to make the steps forward and understand the reality while doing so. There’s only one way here, keep moving forward regardless of anything.” ■

READERS WRITE

Thoreau said it first

The Aug. 26 cover story, “Back to school – in a phone-free classroom?” was a valuable look at an imposing social problem. There are isolating effects associated with the chronic use of “social” media.

It’s been noticed before. Henry David Thoreau, for instance, wrote in 1854 in “Walden”: “With a hundred ‘modern improvements’: there is an illusion about them; there is not always a positive advance. The devil goes on exacting compound interest to the last for his early share and numerous succeeding investments in them. Our inventions are wont to be pretty toys, which distract our attention from serious things.”

We have an obligation to put boundaries on dangerous elements around us: speed limits on vehicles, areas with secondhand tobacco smoke, the size of firearm magazines, and so on. It is certainly worth

pondering how dangerously distracting social media products can be.

Thank you for a thoughtful, in-depth article on an issue that calls for more attention. It’s not just the Amish who should be checking out the impact of technology on our society.

GEORGE CARTTER
Vacaville, California

Everyone at the table

I enjoyed the Aug. 12 cover story on ecological forestry, “As messy as we can make it.” You should be aware that the United States Forest Service has been practicing these concepts for over 50 years.

Those of us working with the Forest Service called it “multiple use management,” but the concepts are pretty much the same. All resources were given pretty much equal footing in decision-making, and the forestry or silvicultural tools could be used to emphasize different resource objectives. Wildlife, watershed, recreation, range, and timber were all given seats at the decision-making table. With climate change, watershed issues often become the driving factor.

Timber harvests were generally planned by interdisciplinary teams representing the different resources – foresters, wildlife biologists, hydrologists, and other specialists working out “ecological harvest plans.” I am glad the private sector is following in our footsteps.

FRED BELL
Penn Valley, California

GLOBAL NEWSSTAND

LIBERIAN OBSERVER / PAYNESVILLE, LIBERIA

Democracy is not a spectator sport

“For far too long, the Liberian electorate has embraced a passive, ‘set it and forget it’ approach to governance, assuming that their responsibility ends at the ballot box,” states an editorial. “This mentality has fostered an environment where lawmakers can operate with little oversight. ... This complacency is not unique to Liberia, but its impact is acutely felt in our fledgling democracy. ... Liberians, however, are not powerless. ... Citizens must organize and demand better representation. ... The goal must be to create a culture of accountability that permeates every level of government. ... Democracy is not a spectator sport. It requires constant vigilance, participation, and, above all, action.”

THE SYDNEY MORNING HERALD / SYDNEY

Lobbyists have stolen our narrative. We must reclaim it.

“Australians sense the gravity of the climate emergency, and they want action,” writes author Tim Winton. “... They’re crying for change but see only political gridlock and pig-headed time-wasting. ... It set me to thinking about the liberating power of stories. ... But our chief storytellers are not novelists. They’re PR hacks and lobbyists. ... Their darkest success has been the obstruction of positive action on climate and environmental law. ... We need a new story to live in, a narrative that’s honest about the fragility of our biosphere and how we depend on its flourishing to live decently and justly. Our fresh story should valorise empathy and solidarity over individualism and rent-seeking ruthlessness. ... Despair is simply not an option – it’s just another form of submission to a rotten story.”

Young people have hope, but they need opportunity

"In the Middle East, home to a large and youthful population, the idea that people can improve their lives is vital for the region's future," states an editorial. "... Last year's annual Arab Youth Survey ... named the [United Arab Emirates] as the most desirable country to live in for a 12th consecutive year. ... Young people have hope. What they need now are the opportunities to make their dreams a reality. This can be done by ... providing basic stability but also [encouraging] ... a robust legal and governance system that promotes, not stifles, entrepreneurship. ... With the right structures in place, a large youth population is an asset, not a problem to be managed."

THE NASSAU GUARDIAN / NASSAU, BAHAMAS

The UK must look back to move forward

"Despite the urgency voiced by Caribbean leaders like our own Prime Minister Philip Davis [during an international meeting about reparations], the United Kingdom's Prime Minister Keir Starmer remained reticent on the issue," states an editorial. "... The British Empire's history is riddled with exploitation, ... with a substantial portion of its 'wealth' built on the backs of enslaved people and nations it pillaged. ... Davis correctly noted that reparations are not just about financial compensation; they are about truth, acknowledgment, and justice. ... Britain and its former colonies [must] come to terms with the past. This would involve ... forging a future founded on equity. ... Starmer's preference to ... focus on future issues without discussing reparations ignores the vital truth that a forward-looking approach cannot succeed without confronting the structural remnants of the past."

THE SCOTSMAN / EDINBURGH, SCOTLAND

The argument for reparations does not hold water

"That British traders were actively involved in the slave trade for a century and a half before [its abolition in 1807] must always be to our national shame," writes Murdo Fraser, a conservative member of the Scottish Parliament. "... But from the early 19th century onwards, substantial steps were taken as a country to disrupt the transatlantic slave trade, with the Royal Navy being deployed, at considerable expense, to prevent the export of slaves. ... The demands from African and Caribbean countries are understandable given the economic pressures they face, but in reality there is no case. ... A more fitting tribute ... would be to recommit ourselves to ensuring that slavery ... must be brought to an end for good."

– Compiled by Nate Iglehart and Jacob Posner / Staff writers

The 'swirling ghosts' of my childhood

Re-creating my mother's ramen lets me soak in warm memories of my past.

When I was little, I didn't understand why my mom loved ramen so much.

She would buy packs of ramen – the ones with dry noodles and just-add-water broth granules in a silver packet – at the Japanese grocery store and ask Obaachan, my grandmother, to make it for her with additional toppings like a runny egg, pork or steak, and some vegetables.

I liked ramen, but my mom could sometimes eat it two or three days in a row; I joked that ramen broth ran through her veins. I preferred other Japanese foods over ramen, mainly sushi, but I also enjoyed foods like shrimp tempura; *guratan*, a type of Japanese macaroni gratin; and *goma*, or sesame pudding made with heavy cream.

After I moved out of my childhood home, and Obaachan returned to Japan after 23 years of living in the United States, I stopped eating most of the Japanese foods I grew up with. I had decided to adopt a plant-based diet to reduce my carbon footprint. I was cooking for myself and my then-boyfriend (now-husband), and most vegan recipes I found online were dupes for typical American dishes: pastas, salads, wraps, chilis, and burger patties.

Thanks to my newfound interest in a plant-based diet, I had unintentionally placed most of the cultural foods I had grown up with on the hardest-to-reach shelves in my pantry, effectively leaving my kitchen devoid of warmth. No matter how good the food was, I felt disconnected from the recipes I found online. They lacked the familiar flavors and memories of cooking and feasting alongside loved ones who created a little Japan for us in the confines of my childhood kitchen.

On my highest shelves sat unused bottles of rice vinegar and packs of soba, collecting dust. They were little pieces of what I associated with my cultural identity: the handed-down flavors and nostalgic tastes of favorite meals, cooked by a loved one who speaks the ancestral language better than I do.

After about three years of eating a plant-based diet, I learned about *shojin ryori*, a type of Buddhist cuisine that focuses on seasonal vegetables and omits the use of animal products. As I leafed through the colorful pages of a *shojin ryori* cookbook that I requested for Christmas one year, I knew that I had found culinary paradise. It straddled the limbo between my childhood and cultural roots, and my adulthood decision to adopt a plant-based diet. I didn't have to pick one – *shojin ryori* embraced all of me.

Taking inspiration from the cookbook, I began to revisit the Japanese foods from my childhood through this lens. I searched for specific recipes like vegan ramen, vegan sushi, even vegan *takoyaki*, grilled dumplings stuffed with octopus. Although I did not cook everything I searched for, I would examine the ingredients and learn new ways to substitute certain foods. I used *yuba*, or dried tofu skin, to mimic the chicken cutlets I had growing up; I substituted shiitake mushrooms for octopus in *takoyaki*; and I even found a Japanese company that makes a vegetable broth that gave my dishes a more Japanese flavor than the vegetable bouillon from the grocery store down the street.

I started incorporating and consuming more vegetables found

in Japanese cuisine, like lotus root; kabocha squash; *kabu*, or Japanese turnips; and various types of mushrooms, from enoki to *kikurage*, or wood ear mushroom. Ironically, some of these were staples in my childhood kitchen.

In the midst of all my experimentation, I had a full-circle realization. I finally understood why my mom loved ramen so much. There is something comforting about drinking a flavorful, hot liquid that fills the stomach while warming the body, reaching the heart and unlocking memories. Like my mother, I've found my comfort food is now a bowl of noodles in hot soup, especially ramen.

The process itself is restorative. As I prepare the broth in one pot and boil the noodles in another, the rigid noodles slowly relax to fit the perimeter of my stainless steel pot. Steam rises from the water, even after I take out the noodles, and I can see the swirling ghosts dancing above the water, white from the starches released into it, like the bathtub in which Obaachan used to bathe my sister and me, the water foamy with soap bubbles.

It reminds me of when Obaachan, my aunt, my mom, my sister, and I went to an *onsen*, or Japanese hot spring, in Hakone, a mountainous town west of Tokyo. I was between 7 and 10 years old, and had never been to an *onsen* before. Stripping down and bathing nude in public bathhouses and *onsen* is a normal thing in Japan. Despite being raised by a Japanese grandma, I felt embarrassed as I tried to cover my body after we placed our clothes in cubbies on the women's side of the *onsen*.

Still, I tried my best to not be embarrassed, to relax into the *onsen* culture. After a while, as we bobbed in the water, the embarrassment melted away. Like the noodles I cook in my kitchen, I went from rigid to relaxed in the mineral bath, steam emanating from the water, my body soaking up all the goodness.

I finally felt at home.

— Elica Sue

A CHRISTIAN SCIENCE PERSPECTIVE

The healing power of divine harmony

Imagine two intergalactic travelers not from Earth talking about life on this planet. One says, "Ah, yes, Earth. That's where everyone believes in the reality of discord as inescapable."

Though inharmony does seem pretty common and unavoidable, happily there's another way we can think about this. For example, traffic fatalities are often accepted as an inevitable byproduct of transportation. But a number of places are significantly preventing such incidents through an approach called Vision Zero.

There's a spiritual basis for challenging the inevitability of discord in any area of life. Christian Science teaches the universality of *harmony* – everyone created and governed by the all-good, omnipotent God. Thus, rather than discord being a natural part of life, it's actually a misperception, unreality (not created by God) with no actual substance.

But the practical implication of that metaphysical insight isn't ignoring or downplaying illness, suffering, conflict, or loss. It's a call for their elimination as needless impositions on human thought and life, unacceptable because not countenanced by the all-loving God.

While undoubtedly discord can seem real to the human mind,

the spiritual fact that it doesn't exist in and is unknown to God, the divine Mind, gives us an effective way to deal with it. The Bible says that God, who is pure goodness, sees His entire creation as "very good" (Genesis 1:31). In healing sickness, reforming sinners, and even raising himself and others from death, Christ Jesus proved the actuality of immortal harmony.

Beyond the limitations of the physical senses, we can rely on a *spiritual*, intuitive way of seeing that appreciates the sheer rightness of harmony and the wrongness of discord. As we trust what this spiritual sense – which is inherent in all of us as God's children – is telling us, we can break free of the discord of the physical senses. As we come to realize that harmony is the law of the universe, always in operation, then it's increasingly brought to the human situation.

When a child, I regularly had mouth cankers, in spite of the kind efforts of our family doctor. They seemed inevitable. However, when I learned of Christian Science, I understood that I could pray to be free of them.

I found that when I felt a canker or felt one coming on, it was helpful to let harmonious thoughts from God fill my consciousness. Over time I leaned more consistently on these divine assurances of God's goodness as the reality. Praying in this way healed me permanently.

The founder of this publication, Mary Baker Eddy, wrote, "Let discord of every name and nature be heard no more, and let the harmonious and true sense of Life and being take possession of human consciousness" ("Science and Health with Key to the Scriptures," p. 355).

The truth that harmony is the reality gives us an expectation of good that's founded on the divine, all-harmonious Principle, God – and therefore goes beyond human optimism. For God's glory, we can apply this Principle systematically to the healing needed in any situation.

— Lyle Young

ARTS AND CULTURE

CONCORD, MASS.

Good is 'the strongest gravity,' says 'Wicked' author Maguire

By Stephen Humphries / Staff writer

"Wicked," the retelling of "The Wizard of Oz," features familiar elements. There's a yellow brick road, an Emerald City, and even a cameo by Dorothy and Toto. Plus show tunes.

The imminent big-screen musical expands the fantasy world of L. Frank Baum's original books and the classic 1939 MGM movie adaptation starring Judy Garland. It also subverts them. "Wicked," based on a 1995 novel, challenges our conceived notions of Baum's characters. It explores the nature of evil through the complex friendship between Glinda, the Good Witch, and Elphaba, the Wicked Witch.

"Are people born wicked?" asks Glinda during the opening musical number. "Or do they have wickedness thrust upon them?"

Confronting those questions may be more terrifying than encountering Oz's flying monkeys.

Gregory Maguire, the author of "Wicked: The Life and Times of the Wicked Witch of the West," describes the story as "almost like a morality play." The author, who invited the Monitor to visit his

home, is sitting near a bookshelf that includes many of his works. To date, he's published 38 titles. Some are children's fantasy books. Others are adult reinterpretations of fairy tales such as "Cinderella" ("Confessions of an Ugly Stepsister") and "Snow White" ("Mirror, Mirror"). His blockbuster "Wicked" was adapted as a Tony-winning musical in 2003. It's been defying gravity ever since.

A global phenomenon, "Wicked" ranks as Broadway's second-highest grossing production after "The Lion King." The first installment of the movie adaptation, which has been split into two parts, arrives in cinemas Nov. 22. Meanwhile, Mr. Maguire is readying a spring release for his latest book, "Elphie: A Wicked Childhood."

In common, these various iterations endure, Mr. Maguire says, because they speak to the innate instinct within each of us to be good.

"The play manages to make wanting to be good, wanting to do good, into a theatrical gesture that everybody in the audience can recognize and can remember," says Mr. Maguire, his face aglow from a standing lamp in his wood-paneled living room. But, he adds, Western culture has become slightly embarrassed by this essential truth. "It goes along at the same rate with the secularization of [the United States] ... and the decline of church attendance. Anybody who talks about being good is 'naïf' and is 'simpleminded.'"

From a classic film, a morality play

When Mr. Maguire was a child, his four siblings called him "a moral savant." In part, he attributes that to his Catholicism. He was taught that good is "the strongest gravity in the forward progress of time." Mr. Maguire was raised in a strict, lower-middle-class household in Albany, New York. Reading was encouraged. Television was rationed. Every year, Mr. Maguire was allowed to watch "The Wizard of Oz." Such was its powerful hold on his imagination that he dragged his brothers and sisters into playing the Tin Man, Lion, Scarecrow, and Dorothy. But the boy's reenactments didn't always stick closely to the movie storyline, a precursor to the path he'd take as an adult. By the time Mr. Maguire began writing "Wicked," he was an established children's book author.

"I began to feel that some of the themes I wanted to explore were more complex," says Mr. Maguire, who raised three adopted children with his husband. "It was a very easy jump for me to think, 'If I want to write about the nature of evil, I'll take an evil character in a children's book, and begin to unpack her and see what it was that, even as a child, I could determine were deeper constructs of passion and conflict within that character than we generally pay attention to.'"

Mr. Maguire's literary reimagining is for mature readers. Its depiction of debauchery in Oz isn't prurient, but readers expecting something akin to Baum's children's books will quickly realize, "We're not in Kansas anymore."

The musical and movie versions of "Wicked" are more family-friendly. Yet they retain the thematic core of the novel. Last year, Mr. Maguire visited London's Elstree Studios to observe filming of a key scene in the movie.

The two witches meet at university. Popular girl Galinda (Ariana Grande) is saddled with an unwanted roommate, Elphaba (Cynthia Erivo). The latter is a social outcast born with green skin and razor teeth. She also has an aversion to water. Galinda (later known as Glinda) hazes Elphaba. It's "Mean Girls: Oz Edition." But when Galinda sees the hurt behind her roommate's stoic eyes, it arouses empathy within her.

"At least three times I had tears in my eyes," says Mr. Maguire,

who spent three days watching the actors. "The scenes where they were vulnerable, they had tears in their eyes."

A fuller picture of a complicated witch

"Wicked" portrays Elphaba as a rounded human being. Her later deeds are the consequence of multiple factors and experiences rather than of one simple, reductive reason. (The upcoming "Elphie: A Wicked Childhood," based on chapters jettisoned from the first draft of "Wicked," delves deeper into the witch's troubled upbringing.) The novel's nuanced complexity avoids didacticism. The world is dominated by binary thinking, says Mr. Maguire. Everything is black or white. There's no space in the middle.

"That's definitely how a lot of us kind of get through the world as kids. It's like, 'OK, this is bad; this is good; this is right; this is wrong,'" says Emily Kay Shrader, co-host of "Down the Yellow Brick Pod," a podcast about the world of Oz, including Mr. Maguire's "genius" novels. "The most challenging thing about growing up is acknowledging that it's such a spectrum. That whether it's someone you meet on the street or it's yourself, there's really not a box that you can put anyone into."

Ms. Shrader adds that it's a good reminder to check herself whenever she meets someone who has a different political background from her.

"We have gotten more and more used to thinking we can't tolerate something that doesn't line up with our string of ones or a string of zeros," agrees Mr. Maguire. "It's true about how culture talks [about] itself to us."

However, the novelist isn't a moral relativist. After all, Elphaba becomes a terrorist to combat the nefarious wizard who rules Oz. "She is not the evil witch from MGM or L. Frank Baum," he says. "But she's not a saint either. She makes lots of mistakes, and she's morally confused. She's willing to cause harm to people if she can, and if she can do it in order to further what she considers as a good cause."

Discerning the dividing line between good and evil isn't always easy, the author says before he ushers his visitors on a tour of his "Wicked" memorabilia, ranging from figurines to umbrellas.

"It is a conundrum with which we have to live," says Mr. Maguire. But, he adds, we can't stop asking ourselves that question. Avoiding doing so risks "taking the easy way out and taking early retirement from our job of being moral agents in the universe." ■

WHY WE WROTE THIS

BALANCE

Fairy tales often present characters as either good or bad. "Wicked" author Gregory Maguire asks readers to let go of binary thinking as they consider morality.

PARIS

The French love to hate 'Emily in Paris.' But they won't let her leave.

The hit show features cultural foibles and stereotypes. The French cannot get enough of it.

By Colette Davidson / Special correspondent

I'd never seen so many red berets in my life. But there they were: five young tourists, all wearing the iconic French hat on a blustery October day. Cellphone cameras at the ready, they stood, one by one, not at the Eiffel Tower or the Pantheon a few steps away, but in front of a basic brown door at 1 Place de l'Estrapade.

But this isn't just any door. This is where "Emily in Paris" lives.

Now in its fourth season, the hit Netflix show features Emily Cooper (played by Lily Collins), an overly enthusiastic, workaholic Chicago native who lands her dream job at a Paris-based market-

ing firm.

Through her epic cultural fails, viewers get a dose not only of the myriad ways in which American tourists offend Parisians, but also of every antiquated stereotype about the French that producer Darren Star (of “Sex and the City” fame) could dredge up: All the men cheat on their partners, the boss smokes in her office, and everyone gorges themselves on croissants and still manages to stay bone-thin.

The French can’t get enough of it.

“I’ve watched the entire series even if it’s not highbrow,” says Agathe, a Parisian who works at Universal Music next door to the restaurant where many of the “Emily in Paris” scenes are filmed. (Like others interviewed, Agathe asked to be identified by her first name only.) “It’s a guilty pleasure.”

Agathe is not alone. After five episodes of its latest season, “Emily in Paris” became the most-watched show in France. Even French President Emmanuel Macron is a fan, after his wife, Brigitte, made a cameo appearance in Episode 7.

But now, there’s a chance that Emily will say “arrivederci” to Paris, after her marketing firm decided at the end of the fourth season to open a branch in Rome. That has French fans of the love-to-hate series, and even Mr. Macron himself, up in arms.

“We will fight hard. And we will ask them to remain in Paris!” Mr. Macron told Variety magazine in a recent interview. “‘Emily in Paris’ in Rome doesn’t make sense.”

Indeed, it is largely thanks to Americans’ deeply rooted vision of France that “Emily in Paris” has been such a success.

Even if they fantasize about Italy – think Julia Roberts languishing over a plate of pasta in “Eat Pray Love” – they fantasize about France more. The country has been the world’s top tourist destination for three decades, and France’s capital is the key to its soft power.

“France’s cultural power is ingrained in the French from an early age,” says Fabrice Raffin, a socioanthropologist who studies culture at the University of Picardie. “Our gastronomy, luxury, fashion, and history are pillars of French identity. There’s definitely something elitist about it.”

So while the French may be screaming at their television screens as they watch Emily attend yet another glamorous cocktail party without ever stepping foot in a smelly metro car, they can’t help but admit to getting sucked into Emily’s idealistic view of the city.

“Paris is amazing, and the show highlights the best parts of it,” says Elsa, joining Agathe outside their office. “On Sundays, I like to go around the city, visit the Eiffel Tower, and be a tourist.”

Plus, many French viewers say that, even if the stereotypes about them in “Emily in Paris” seem to date back to the Middle Ages, they’re still hilariously true.

“It’s obviously an exaggeration, but yes, the French love to complain, and we pretend to be anti-American like [Emily’s boss] Sylvie,” says Anis, taking a (stereotypically French) cigarette break with co-workers Agathe and Elsa. “The stereotypes are funny.”

As much as Emily makes us cringe, from her outrageous, wannabe-chic outfits to her obsession with getting Instagram likes, here’s hoping she decides to stay in the land of cheese and subpar coffee (Emily’s French co-worker said it, not me). The mayor of Rome, Roberto Gualtieri, told Mr. Macron over the social platform X to “relax” and focus on “more pressing issues.” Even some Italians are not convinced by her potential move.

“No, no, it has to stay here,” says Matilde Mudadu, a tourist from the north of Italy, who came with her parents to take a photo in front of Emily’s famous door. “I love Rome, but ‘Emily in Paris’ was born here and it has to stay here.”

The French might be sad if Emily leaves, but Americans in Paris wouldn’t shed any tears; many of them have had enough of the Chicago native’s absent-minded cultural blunders.

“French people assume you came here for the fantasy or the croissants, and it’s refreshing to them when they hear otherwise,” says Emily Omier, an American tech consultant who moved to Paris

in May 2023. “I don’t know if the jokes will stop if Emily leaves Paris. Now, every conversation is the same: ‘Oh, your name is Emily? Like ‘Emily in Paris’!’ I just say, ‘Yeah, it’s me.’” ■

BOOKS FOR GLOBAL READERS

John Lewis: ‘The conscience of the Congress’

The civil rights activist carried his dignity, and the scars from his beatings, with him into politics.

By Barbara Spindel / Contributor

John Lewis’ heroism is the stuff of legend. In 1965, leading 600 peaceful protesters across the Edmund Pettus Bridge in Selma, Alabama, at a march for voting rights, the civil rights activist was seriously injured when state troopers attacked the procession. A photograph of him being viciously beaten by an officer shocked the United States. A week after what became known as Bloody Sunday, President Lyndon B. Johnson introduced the landmark Voting Rights Act to Congress in a televised address.

David Greenberg’s rich, illuminating biography, “John Lewis: A Life,” situates its subject’s best-known act of bravery within a lifelong commitment to nonviolent protest. The author describes how Lewis, who went on to serve in Congress for more than 30 years, immersed himself in passive resistance while a student at the American Baptist Theological Seminary in Nashville, Tennessee.

His path was a difficult one. Lewis was born to sharecroppers in rural Pike County, Alabama, in 1940. His father saved up to buy his own farmland when Lewis was a child; the household, which included 10 children, had no electricity or running water. But the devout Lewis, who famously preached to the chickens on his family’s land, was hungry to become educated and to involve himself in the civil rights struggle. Lewis, who also studied religion and philosophy at Fisk University, was the first person in his family to earn a college degree.

In Nashville, Lewis was trained in passive resistance by the Rev. James Lawson, a significant mentor. Lewis helped organize sit-ins to desegregate the city’s lunch counters in 1960. He was among the original Freedom Riders, the interracial group of activists that rode buses throughout the Jim Crow South in 1961 to challenge segregated interstate travel.

Greenberg, a professor of history and journalism at Rutgers University, crafts a vivid portrayal of his subject, featuring his “steely determination ... mixed with an unmistakable gentleness.” Jesus, Gandhi, and Martin Luther King Jr. were among Lewis’ influences. His profound commitment to nonviolence never wavered. “You have to love that person who’s hitting you,” he said.

Indeed, he had been hit – and kicked, cursed at, and spat upon – long before Selma. During the Freedom Rides, he was badly injured by a group of young men when he walked into a whites-only waiting room in a South Carolina bus station, and he was later beaten in Montgomery by a mob. Lewis was arrested dozens of times and spent weeks in jail. He spent one birthday and one Christmas behind bars; he missed his graduation from the seminary, opting to remain jailed rather than post bail.

A founding member of the Student Nonviolent Coordinating Committee, Lewis became the civil rights organization’s chair in 1963. He was one of six organizers of the 1963 March on Washington for Jobs and Freedom, along with King, with whom he had an affectionate relationship. Both men encountered resistance from

a more militant faction of the movement, which began to question the efficacy of nonviolence. Additionally, within SNCC, Lewis was seen as too cozy with the establishment. “Every time LBJ called, he’d rush his clothes to the cleaners and be on the next plane to Washington,” one member griped. In 1966, Lewis was ousted as chair and replaced by the more radical Stokely Carmichael, who popularized the term Black Power. A believer in an interracial “be-loved community,” Lewis was heartbroken when SNCC later voted to eject whites from the organization.

The biography is divided into two sections: “Protest” is devoted to Lewis’ participation in the Civil Rights Movement, while “Politics” covers his more than three decades representing Georgia in the U.S. House of Representatives. It’s perhaps unavoidable that the second half of the book is somewhat less gripping than the first.

Greenberg’s admiration for his subject runs deep, but he makes clear that Lewis was not a saint (despite being designated one of the “Saints Among Us” in a 1975 Time magazine article). His 1986 campaign for Congress pitted him against his dear friend Julian Bond, a fellow activist then serving in the Georgia state senate. During a debate, Lewis alluded to Bond’s rumored cocaine use. Lewis won the seat, but his friendship with Bond never recovered.

Lewis’ long congressional career was not notable for legislative achievements. Instead, his “sharpest weapon,” the author observes, “was his moral authority.” He became known as “the conscience of the Congress.” Speaker of the House Newt Gingrich grumbled that “He needs to realize that he’s now a congressman, not a protester,” but Lewis relished being both. In 1988, he was arrested for demonstrating against apartheid outside the South African embassy; in 2016, he staged a sit-in on the House floor demanding action on gun control legislation.

Lewis died in July 2020, not long after protests erupted across the nation in the wake of the killing of George Floyd. Weeks before his death, he addressed the demonstrators in a statement that captured his life’s work: “History has proven time and again that nonviolent, peaceful protest is the way to achieve the justice and equality that we all deserve.” ■

10 best books of November

What Monitor reviewers like best this month.

1 Time of the Child

by Niall Williams

Niall Williams’ novel returns to the Irish village of Faha during Christmas 1962. When an abandoned infant is brought to the local doctor on a cold, wet night, it leads to a situation that proves transformative for the widower and his solitary eldest daughter.

2 Lazarus Man

by Richard Price

Richard Price plumbs the aftermath of an apartment building collapse in East Harlem in 2008. As the paths of neighbors cross and collide, the tale takes on the ideas of truth and renewal.

3 Munichs

by David Peace

David Peace’s exploration of the Manchester United football team’s 1958 plane crash in Munich cuts among players and their families, coaches, owners, and fans. The novel – at times a hard read – tracks the drive to rebuild a team and the lives that support it. It’s a come-back, however imperfect, for the ages.

4 Ghosts of Waikiki

by Jennifer K. Morita

Journalist Maya Wong begins ghostwriting the biography of a wealthy, controversial landowner in Hawaii. When he dies under mysterious circumstances, Maya investigates, to the chagrin of her detective ex-boyfriend.

5 Running Out of Air

by Lilli Sutton

Lilli Sutton’s debut novel about professional mountaineering sisters struggling with betrayal is a thrilling adventure story. A perilous snowstorm tests the sisters’ capacity for forgiveness.

6 Water, Water

by Billy Collins

In “Water, Water,” Billy Collins includes a poem about teaching others his craft. He starts “by telling them about the miniature orange tree / with its miniature oranges / in a terra cotta pot by the pool.” These poems offer variations on the theme of finding magic in everyday things. They shimmer with wry revelation, a bright tonic in a fading year.

7 The Serviceberry

by Robin Wall Kimmerer

Robin Wall Kimmerer is best known for “Braiding Sweetgrass,” her 2013 bestseller exploring how Indigenous wisdom about plant life might inform modern views of stewardship. In “The Serviceberry,” she considers what the serviceberry, which feeds creatures who in turn ensure its survival, might teach humans.

8 Woodrow Wilson

by Christopher Cox

Former Rep. Christopher Cox has written a powerful reappraisal of the 28th U.S. president that reaches devastating conclusions. While acknowledging Woodrow Wilson’s achievements in domestic and foreign policy, Cox focuses on his white-supremacist beliefs and his abiding opposition to suffrage for women.

9 Carson the Magnificent

by Bill Zehme with Mike Thomas

A lifelong Johnny Carson fan, Bill Zehme had written most of this compelling biography before his own death in 2023. Journalist Mike Thomas has completed the book, which offers insights into the “Tonight Show” host.

10 Ingenious

by Richard Munson

Benjamin Franklin isn’t simply a skilled political thinker, diplomat, and satirist in Richard Munson’s biography. Here, the Founding Father is a veritable poster child for irrepressible curiosity and joyful problem-solving. It’s inspiring stuff. Thanks to Franklin’s experiments with electricity, “he converted a mystery into a wonder.”

In the hot Sahara, a blueprint for cool

Story by **Saskia Houttuin** / Contributor

AGADEZ, NIGER

Can a 500-year-old mosque, made almost entirely of mud bricks, offer a way to deal with climate change? In Agadez, a city in the heart of Niger that is often called the gateway to the Sahara Desert, Amma Attouboul certainly thinks so.

Better known by the title Sarkin Magina (“King of the Builders”), Mr. Attouboul was appointed by the region’s sultanate to take care of the mosque, which consists of an 89-foot-tall minaret surrounded by several prayer chambers. Every two years or so, the entire structure is caked with a fresh layer of *banco*: a muddy mixture of water, soil, and straw that dries in open air. “These walls are exceptionally heavy,” Mr. Attouboul says as his wrinkled hands gently tap the thickset walls. “Because of this, sunlight struggles to penetrate. And inside the mosque, the chambers stay cool and comfortable.”

In the Sahel region, a semiarid belt of land stretching from the Atlantic Ocean to the Red Sea, temperatures are expected to rise 1 1/2 times faster than the global average, according to the United Nations Intergovernmental Panel on Climate Change. Cool nights are becoming increasingly rare, and blazing-hot days are lasting longer. A revival of traditional mud-brick houses could help protect Agadez and its people, resident Abdourahman Ibrahim notes.

On the outskirts of town, Mr. Ibrahim is overseeing the construction of a residential compound entirely built out of mud bricks. “This is a modern site,” he says while laying row after row of the bricks, all freshly baked under the desert sun. “There’s electricity and a water connection. I think we should keep building our houses like this, for our culture and for the climate. ... We are still living here like our ancestors did. And hopefully, our children will do the same.” ■

Sudoku difficulty: ★☆☆☆

2					6		8	4
8					4	9	3	
	4	9					5	
5		1			7	3		8
		4	8		9	7		
7	6			2	1		4	
				9		2		
	5		1				6	
				3	5	4		1

How to do Sudoku

Fill in the grid so the numbers 1 through 9 appear just once in each column, row, and three-by-three block.

Crossword and Sudoku solutions

ACROSS

1	2	3	4	5	6	7	8	9
10	11	12	13	14	15	16	17	18
19	20	21	22	23	24	25	26	27
28	29	30	31	32	33	34	35	36
37	38	39	40	41	42	43	44	45
46	47	48	49	50	51	52	53	54
55	56	57	58	59	60	61	62	63
64	65	66	67	68	69	70	71	72
73	74	75	76	77	78	79	80	81

DOWN

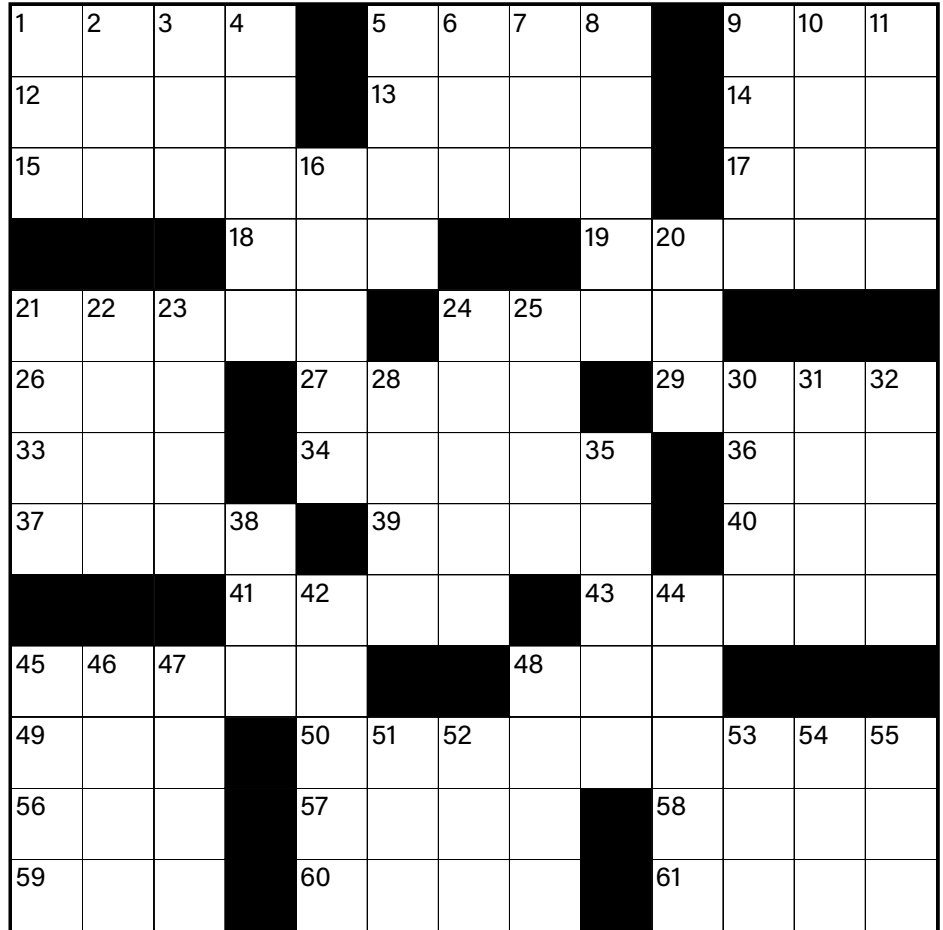
1	2	3	4	5	6	7	8	9
10	11	12	13	14	15	16	17	18
19	20	21	22	23	24	25	26	27
28	29	30	31	32	33	34	35	36
37	38	39	40	41	42	43	44	45
46	47	48	49	50	51	52	53	54
55	56	57	58	59	60	61	62	63
64	65	66	67	68	69	70	71	72
73	74	75	76	77	78	79	80	81

1	2	3	4	5	6	7	8	9
10	11	12	13	14	15	16	17	18
19	20	21	22	23	24	25	26	27
28	29	30	31	32	33	34	35	36
37	38	39	40	41	42	43	44	45
46	47	48	49	50	51	52	53	54
55	56	57	58	59	60	61	62	63
64	65	66	67	68	69	70	71	72
73	74	75	76	77	78	79	80	81

Crossword

Across

1. Seeks alms
5. Barbara of "I Dream of Jeannie"
9. Bylaw, briefly
12. Confess
13. Expressway
14. Campus climber
15. Formulates over
17. Pro-___
18. Certain e-mail attachment
19. New drivers, typically
21. Italian waterway
24. Like Asia's reaches
26. Lyric tribute
27. Easy snapper
29. City shortage in bad weather
33. Grazing venue
34. Psyched
36. Brief life story
37. Lassies' playmates
39. Border-crossing paper
40. Chocolate dog
41. Sole support
43. Plait
45. Disciple of Christ
48. Corporate exec
49. French assent
50. Superlatively lofty
56. Capacious coffeepot
57. Ring loudly
58. Dock of the bay
59. It might get stubbed
60. Dark and handsome companion?
61. Delight, as a comedy club crowd



© Lovatts Puzzles

Down

1. Fort Knox item
2. The night before
3. In ___ we trust
4. Neighbor of a Finn
5. Classic saga
6. Commotion
7. Squeeze out
8. Hatcheries on high
9. Ceremonial event
10. Break-___ point
11. Pumping places
16. Area of expertise
20. Useful Latin abbr.
21. Bridge charge
22. Mental glimmering
23. Abacus counter
24. Watch
25. Forever and a day
28. Gestured greeting
30. Practiced
31. Bent
32. Weepy gasps
35. Appraiser
38. Seashell seller?
42. Blow one's top
44. Madcap capers
45. Passive-aggressive expression
46. Mark replacement
47. There's a point to it
48. Phone type
51. Lentil's relative
52. Good buddy
53. Well-supplied resource?
54. Raft
55. Exert effort