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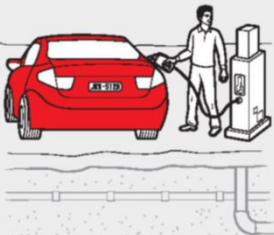
▲ The main living room in Trump's Mar-a-Lago estate in Palm Beach, Fla., on March 4, 2016

Photograph by Eric Thayer—*The New York Times/Redux*

ON THE COVER:
Illustration by Tim O'Brien for TIME

'What the f-ck does she have to do to win Album of the Year?'

ADELE, pop singer, advocating at the Grammys for Beyoncé after her own album, 25, beat Beyoncé's *Lemonade*; during her acceptance speech, Adele broke her trophy in two



550

Weight, in pounds, of an American-made **World War II bomb discovered 16 ft. beneath a gas station** in Thessaloniki, Greece's second largest city, prompting an evacuation of more than 70,000 residents

\$400,000

The opening pretax **price of a flying car** designed by Dutch company PAL-V; preorders began on Feb. 13 for the automobiles, which are said to be delivered by the end of 2018

'Trust between the President and General Flynn had eroded.'

SEAN SPICER, White House press secretary, describing the circumstances around the Feb. 13 resignation of National Security Adviser Michael Flynn, who admitted to speaking with Russia's ambassador to the U.S. in December about sanctions and said he provided the Administration with "incomplete information" about the conversation

'THE GOVERNMENT HAS TAKEN THE POSITION THAT WE MUST NOT REVIEW ITS DECISION AT ALL. WE DISAGREE.'

U.S. COURT OF APPEALS FOR THE NINTH CIRCUIT, in San Francisco, upholding on Feb. 9 a ruling that temporarily blocked parts of President Trump's Executive Order restricting travel to the U.S. from seven predominantly Muslim nations



100

Number of consecutive wins for the University of Connecticut women's basketball team, after its Feb. 13 victory

Logan Everett
American Girl
debuted its first
boy doll

GOOD WEEK
BAD WEEK

Logan Airport
Hundreds of flights
to and from Boston
were canceled
because of a storm

'EVEN A HEART OF ROCK WOULD HAVE MELTED.'

HAJI NAQIBULLAH, nephew of an Afghan woman whose three sons were killed by Taliban militants in an eight-month span; record numbers of men are being killed in the nation's ongoing 15-year war

'No longer can the American taxpayer carry a disproportionate share of the defense of Western values.'

JAMES MATTIS, U.S. Defense Secretary, warning his NATO counterparts that America will "moderate its commitment" to allies who do not meet defense-spending goals of 2% of GDP while describing the organization as a "fundamental bedrock for ... the transatlantic community"

The Brief

'IT WAS A BUSINESS DECISION, NOT A PERSONAL OR POLITICAL ONE.' —NEXT PAGE



ICE handout photo shows one of hundreds of undocumented immigrants arrested during raids in 12 states

NATION

Trump's immigration crackdown seems designed to spread fear

By Maya Rhodan

THE PANIC SET IN BEFORE THE RAIDS began. In Cleveland, undocumented women who worried about getting deported by Donald Trump's Administration began asking local activists if they could fill out paperwork to safeguard their children. In Brownsville, Texas, community health worker Paula Saldana heard tales of neighbors abruptly leaving their homes to return to Mexico. Zuleima Dominguez, a 23-year-old college student, says every knock at the door of her Bronx apartment became an occasion for alarm. "The fear controls my body," says Dominguez, whose parents and brother are undocumented. "I start crying. I start getting anxiety."

That may have been partly the design of the President's recent crackdown on undocumented immigrants.

The raids, carried out by federal officials beginning Feb. 4, netted some 680 people in 12 states. Government agencies say the goal was simply to enforce the laws on the books. About 75% of those apprehended had criminal convictions, according to the Department of Homeland Security, and Trump hailed the arrests as the realization of a campaign promise. "Gang members, drug dealers & others are being removed!" he tweeted Feb. 12.

But not only them. While Trump's predecessors also conducted sweeping roundups in immigrant communities, those raids had narrower targets. President Barack Obama directed officials to prioritize hardened criminals for deportation. In contrast, Trump's Executive Orders instructed law-enforcement agencies to broaden

the range of deportable offenses. Even acts that might warrant future criminal charges could be cause for removal.

Immigration activists estimate that up to 8 million of the roughly 11 million undocumented people living in the U.S. could be at risk under Trump's policy. Immigration and Customs Enforcement (ICE) data shows many of those caught up in the raids didn't have prior criminal convictions. At least one recipient of Obama's Deferred Action for Childhood Arrivals (DACA) program—which protected from deportation some undocumented immigrants who were brought to the U.S. illegally by their parents—was detained. The new Administration has left entire immigrant communities feeling vulnerable. It “pretty much incorporates everyone,” says Andre Segura, an attorney with the American Civil Liberties Union Immigrants' Rights Project.

Trump's raids have roots in the 1950s. In a December 2015 interview, the then candidate explained to *TIME* why he had praised Operation Wetback, a controversial deportation program instituted by President Dwight Eisenhower. Historians estimate that more than 1 million people left the U.S. during the roundups, but the vast majority decamped voluntarily rather than being forcibly removed. Trump cited this as proof of the program's success. “Once they knew the country was getting tough on illegal immigration, they left,” Trump said. “They saw what was going on, and they left.”

While Trump often says the goal of his immigration policy is to expel violent criminals, the effect has been to spread the same sense of fear that drove immigrants out during Eisenhower's operation. Organizations like the National Immigration Law Center, United We Dream and the Coalition for Humane Immigrant Rights of Los Angeles saw their switchboards light up with concerned calls. False reports of raids and checkpoints only added to the confusion. The prospect left students like Dominguez, who was brought to the U.S. as a child and received a DACA waiver, worried that her family could be torn in two.

But in immigrant communities across the U.S., activists are responding to fear with courage. As the raids return, resistance is rising as well. In Phoenix, scores of people gathered Feb. 8 to protest the impending deportation of a local mother of two. Some demonstrators were undocumented immigrants who risked their own futures to be there, and several were arrested for blocking the path of an ICE van. “The path forward is to fight,” says Luba Cortes, an activist with Make the Road New York. “To show them that we're not scared. To show them that we're here, and that we're not going anywhere.” —*With reporting by* CHARLOTTE ALTER/
NEW YORK

TICKER

Kim Jong Un's half brother killed

The older half brother of North Korean dictator Kim Jong Un was killed in Malaysia, South Korea confirmed. Kim Jong Nam, who had lived in exile for over 15 years after falling out of favor with his late father Kim Jong Il, was reportedly attacked with a chemical spray at Kuala Lumpur airport by at least one female assailant.

Jerry Sandusky's son faces charges

An adopted son of Jerry Sandusky, the former Penn State assistant football coach convicted in 2012 of sexually abusing young boys, faces multiple charges of sexual offenses involving children. Jeffrey Sandusky, 41, is being held on \$200,000 bail.

Pollution found miles undersea

Scientists discovered “extraordinary” levels of toxic pollution in the Pacific Ocean's almost seven-mile-deep Mariana Trench, showing that even earth's most remote places are not protected from mankind's impact.

Yale to rename college

Yale University said it would rename Calhoun College, named after a U.S. Vice President who advocated slavery and white supremacy, to honor noted computer scientist Grace Murray Hopper.

FACTS VS. ALTERNATIVE FACTS



Nordstrom-gate

CLAIM:

“This is a direct attack on [President Trump's] policies and her name,” press secretary Sean Spicer said on Feb. 8 after Nordstrom announced it would no longer carry Ivanka Trump products.

REALITY:

The retailer released a statement saying **it was a business decision, not a personal or political one.** “We made this decision based on performance,” Nordstrom said, citing declining sales.



Lincoln said what?

CLAIM:

Abraham Lincoln once said the words “And in the end, it's not the years in your life that count. It's the life in your years,” according to **President Trump's** Instagram on Feb. 12.

REALITY:

According to the website Quote Investigator, there's **no evidence that Lincoln ever said these words.** The earliest match the site found was in a 1947 advertisement for a book about aging by Edward J. Stieglitz.



The magic bus

CLAIM:

“This issue of **busing voters into New Hampshire** is widely known by anyone who's worked in New Hampshire politics. It's very real,” said senior policy adviser Stephen Miller on Feb. 12, after Trump reportedly said he and Republican Kelly Ayotte would have won there if not for voter fraud.

REALITY:

There's no evidence this is true, and prominent state Republicans have pushed back. Democratic secretary of state Bill Gardner said, “We have never gotten any proof about buses showing up at polling places.”





NO RESPIRE Pakistani police officers help the wounded after a suicide bombing ripped through a gathering of chemists and pharmaceutical manufacturers who were protesting drug legislation in Lahore on Feb. 13. At least 13 people were killed and more than 80 injured in the bombing, which was claimed by Jamaat-ul-Ahrar, a Taliban faction. The group also attacked the city in 2016, killing more than 70 on Easter Sunday. *Photograph by Arif Ali—AFP/Getty Images*

WORLD

Somalia on the verge of famine as U.N. pleads for help

THE U.N. IS WARNING THAT SOMALIA, which is struggling with severe drought after two seasons of weak rainfall, could face a return to famine in April without a “massive” increase in global aid:

DEADLY POTENTIAL The looming crisis threatens to be even bigger than a 2011 famine that killed an estimated 260,000 people. Three-quarters of the country’s livestock have already died, numerous open-water sources have dried up, and cereal production has fallen by 75%.

ACTING FAST Mindful that funding from the international community came in 2011 only after 13 famine warnings had been ignored, the U.N. made an urgent call on Feb. 2 for donors to give at least \$300 million to ease the crisis.



^
Mass deaths of livestock in Somalia are a harbinger of looming famine

MAJOR OBSTACLES There are fears that al-Shabab militants will divert or hold up aid and newly elected President Mohamed Abdullahi Mohamed will be unable to ease its passage in a country that lacks a functioning government. The real test, however, is whether fatigued Western nations react fast enough or wait until the numbers of the dead can no longer be ignored.

—TARA JOHN

DATA

WHAT’S YOUR TROLLING SCORE?

A Microsoft survey of people in 14 nations gauged the state of “digital civility” on a 100-point scale. The higher the score, the greater the exposure to 17 online threats such as bullying and personal leaks. Here’s a sampling:



78

South Africa



74

Russia



71

Brazil



67

China



62

Denmark



55

U.S.



TICKER

Etan Patz killer convicted

Pedro Hernandez, 56, was found guilty of kidnapping and killing Etan Patz in 1979. The disappearance of the 6-year-old, one of the first missing children to appear on a milk carton, brought the issue of vanished youths to national prominence in the U.S.

Paris protests turn violent

Protests in France over the alleged assault and rape of a young black man by police officers in the Paris suburb of Aulnay-sous-Bois led to over a week of rioting and vandalism in the city's outer districts. Locals fear the unrest could spark a repeat of 2005's wave of riots.

Nazi-era anthem flub stirs anger

The United States Tennis Association offered its "sincerest apologies" to a German women's tennis team after an outdated Nazi-era stanza in the German national anthem was accidentally sung during the opening ceremony of a tournament in Hawaii.

No sex for half of Japanese couples

As Japan grapples with economic problems caused by its long-term population decline, a new survey found that 47.2% of married men and women in Japan had not had sex for more than a month and did not expect that to change in the future.

THE RISK REPORT

Sorry, Brits: Abe and Trump have the real 'special relationship'

By Ian Bremmer

PRESIDENT TRUMP ROLLED OUT THE RED carpet for Japan's Prime Minister Shinzo Abe on Feb. 10 for three days of lavish praise, elaborate dinners, lots of golf and a ride on Air Force One. More important, the two leaders appeared to make real progress on major economic and security deals. Compare that with what's beginning to look like an awkward Trump relationship with Britain and it's easy to see that the U.S. and Japan have the new "special relationship."

There's a reason Abe was the first foreign leader to fly to meet Trump in November, just days after his victory. As China rises and North Korea flexes, Abe needs a lot from the U.S. President. First is his commitment to sustained engagement in Asia. In particular, Abe wants Trump to continue to honor the 1960 U.S.-Japan Treaty of Mutual Cooperation and Security and reaffirm that it applies to islands in the East China Sea claimed by both Japan and China.

Abe also wants the U.S. to boost Japan's military capabilities. He wants missile-defense protection, all the more important given North Korea's test of a ballistic missile on Feb. 12, and closer links to U.S. early-warning radar and satellite networks. Finally, Abe has long dreamed of acquiring a better offensive strike capability to deter both China and North Korea.

Trump has a wish list too. He wants a free-trade agreement that will open long-restricted sectors of Japan's economy to U.S. companies. To Abe's dismay, Trump killed the Trans-Pacific Partnership, an enormous deal involving the U.S., Japan, and 10 other countries, not including China. A new deal

A new deal with Japan would help Trump prove he cuts better deals than Barack Obama did

with Japan would help Trump prove he cuts better deals than Barack Obama did. Trump will also welcome the U.S.-Japan Growth and Employment Initiative that Abe brought with him. By increasing Japanese investment in U.S. infrastructure and proposing joint work on robotics and artificial

intelligence, Abe pledges to create good jobs for U.S. workers, Trump's top priority.

Trump must be pleased to have the leader of the world's third largest economy, a country he has criticized for years, courting his favor on a global stage. And Abe can afford to indulge Trump because, unlike Britain's Theresa May, he is in firm political control at home. Japan offers Trump another advantage: he'd receive a warm welcome in comparison to the furious protests awaiting him during his planned state visit to the U.K. in the summer.

Yet there's danger for Japan, because its future depends on economic dynamism, not military strength. It must not simply contain but more deeply engage with China. In the long run, good relations with Washington are crucial—but it's China's President whom Abe should really be courting. □

WORLD

Where national breakups are in the cards

The Faroe Islands will hold a referendum in April 2018 on a new constitution, potentially paving the way for a vote on independence from Denmark. It's not the only region considering going it alone. —Tara John

**CATALONIA**

The Spanish region's separatist leader, Carles Puigdemont, recently promised a binding referendum before October.

But the government in Madrid opposes a vote, calling it unconstitutional.

**PUERTO RICO**

The debt-stricken U.S. territory will hold a nonbinding referendum on June 11, its fifth such vote. Voters will choose between statehood (and the federal funds that come with it) and independence.

**SCOTLAND**

Scots narrowly rejected independence from the U.K. in 2014, but the government is mulling another ballot after a majority of Scots voted to remain in the E.U. in June's Brexit vote.

QUICK TALK

The E.U.'s chief executive on Trump, populism and Russia

By Charlotte McDonald-Gibson/Brussels

As president of the European Commission, Jean-Claude Juncker is both head of the European Union's executive branch and its public face. He talks to TIME about the challenges ahead at a time of rising populism and euroskepticism.

President Trump has been openly critical of the E.U. and said in a recent interview that "others will leave" after Britain's vote to quit the bloc.

What was your reaction? We were a little bit disappointed listening to President Trump's first declaration when he was congratulating the British for having taken that decision, and more or less inviting others to do the same. That was highly unfriendly and not helpful at all.

What is the best way for Europe to respond? Do we have to respond? If we invited Ohio to leave the United States, would they respond? I don't think so, so we don't have to respond to that. We have to show the world—as far as the future of the European Union is concerned—that we are united.

How do you argue that to a skeptical U.S. Administration? The unity of Europe is a precondition for a better-organized world, and if the European Union would fail or decompose, or other members left, the U.S. would have a more difficult role to play in the world.

There are elections in France, Germany and the Netherlands this year, and in all three countries populists are making gains. Why are they finding support? I think this is largely due to our faults. I think the European Union gave the impression that we are in command of everything. We were trying to have influence in so many things that are better in the hands of national, local and regional authorities.

Are you concerned about Russian meddling in the upcoming elections? I'm certain that the Russians are trying to have a propaganda

influence on European and international affairs. We have to react to this. Fake news has to be countered by real facts.

How damaging would it be if the U.S. removed its sanctions on Russia now?

There is no other way than having the U.S. and the European Union acting and moving together. That will happen. I don't think there will be a unilateral decision of the U.S. without having consulted the Europeans.

Are there opportunities for the E.U. in the current global uncertainties?

The supposed stepping away by the Trump Administration when it comes to international trade relations, and the fact that the British are leaving the E.U., is opening new avenues [in trade]. We have oceans of opportunities before us. Nobody should believe that we will not use these opportunities. We will use them fiercely.



◀ Juncker has headed the E.U.'s executive arm since 2014

Milestones

DIED

Alwin "Al" Lopez Jarreau, 76, the boundary-pushing vocalist who won Grammy Awards across the jazz, pop and R&B categories. Jarreau quit his job as a rehab counselor for the disabled to pursue a music career in the 1960s. Best known for his theme song to the TV show *Moonlighting*, he won his most recent Grammy in 2007.

► **Raymond Smullyan**, the mathematician, philosopher and expert puzzle writer, at 97. His 1978 book, *What Is the Name of This Book?*, was described by critic Martin Gardner as the "most original, most profound and most humorous" collection of logic problems ever written.

REVISED

Regulations by the U.S. Army that prohibited female personnel from **wearing dreadlocks**. Long twisted locks of uniform shape and size will now be permitted, a move celebrated by black servicewomen.

LAUNCHED

A record **104 satellites** from a single rocket by India's space agency, reaffirming the country's serious position in the Asian space race. The previous record, set by Russia in 2014, was 37 satellites. Prime Minister Narendra Modi called it an "exceptional achievement."

RETURNED

Photos of **naked women** to the pages of *Playboy*, a year after the adult magazine said it would no longer publish nudes. Cooper Hefner, *Playboy*'s chief creative officer and son of founder Hugh Hefner, said removing nudity entirely "was a mistake."



**EMERGENCY
SPILLWAY**

This alternative chute
in the earthen hillside
began to erode almost
immediately after it
was used

SPILLWAY

On Feb. 7, part of
this concrete chute,
designed to control
the lake's water levels,
collapsed following
heavy rainfall

RIVER

Water flowing from the
emergency spillway
sent mud and debris
into the Feather River
below



DAM

At 770 ft., the Oroville Dam is the tallest in North America and holds back Lake Oroville, which provides water for residents and generates electricity

NATION

A dam crisis offers a wake-up call on infrastructure

WE TEND NOT TO THINK MUCH about our roads, dams and bridges until something goes wrong. The latest reminder of that came in the form of massive rains that swelled California's Lake Oroville to record capacity in early February, threatening to breach the 770-ft. walls of the Oroville Dam. Because of damage in the main spillway, officials routed the water through an unpaved emergency chute—the first time it had been used since the dam was completed in 1968. But the backup spillway almost immediately started to erode, risking the collapse of the spillway's concrete wall and leading the state to order the evacuation of almost 200,000 people who live downstream.

While the emergency order was lifted Feb. 14, the lessons of the scare are particularly important as the Trump Administration crafts the President's promised infrastructure package. The majority of America's highways, byways, waterways and subways were built decades ago and are in dire need of upkeep, according to the American Society of Civil Engineers. Yet politicians tend to favor building shiny new projects rather than expending capital on the far less glamorous work of maintaining existing ones. "We continually have these 'local' disasters," says Scott Myers-Lipton, author of *Rebuild America*, "and then little happens." Maybe the Oroville Dam crisis will finally be one we don't forget. —JOSH SANBURN

The Oroville Dam spillway, seen here on Feb. 13 as it released 100,000 cu. ft. of water per second

PHOTOGRAPH BY JOSH EDELSON—AFP/GETTY IMAGES

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I am very Sensitive to Lights and Sounds

Jacob Sanchez
Diagnosed with autism

Sensory sensitivity is a sign of autism.
Learn the others at autismspeaks.org/signs.

The View

'TRUMP'S APPEAL IS LARGELY REMOVED FROM THE WORLD OF LOGIC.' —NEXT PAGE



McCarthy's Spicer, an irate pitchman, praised his Ivanka Trump-brand heels to SNL viewers

ENTERTAINMENT

The uncanny catharsis of *Saturday Night Live*

By Daniel D'Addario

EVEN BEFORE HIS INAUGURATION in January, President Trump faced sustained criticism from predictable quarters, including celebrities like Meryl Streep, commentariat on both the left and the right, groups of protesters around the world and the news media.

Yet in a turn fittingly strange for our times, the most stinging critique of the new Administration has come from NBC's *Saturday Night Live*. The show is in its 42nd season, and its sketch format may as well be prehistoric. But its Trump skewering has been captivating, depicting the President (Alec Baldwin) as a buffoon seeking to litigate his Executive Order on immigration on *The People's Court*, counselor Kellyanne Conway (Kate McKinnon) as a crazed monster

desperate to get on the news and press secretary Sean "Spicey" Spicer (Melissa McCarthy) as thuggishly incompetent. This is vaudeville comedy for a vaudeville presidency.

And it's allowed the show to break through in a way that few other modes of critiquing Trump have. The Feb. 11 episode hosted by Baldwin was *SNL*'s most-watched episode in six years. Among the key demographic of 18-to-49-year-olds, it scored higher ratings than any prime-time programming that week. More than that, it has helped crystallize the public images of various players in Trump's Administration, so much so that begging to appear as a Cabinet member or adviser has become de rigueur for celebrities.

Comedy responds to its time not only in subject matter but in format

too. Barack Obama's low-drama, just-the-facts presidency coincided with the late-night ascendancy of the puffily fun-loving Jimmy Fallon. During the George W. Bush presidency, Jon Stewart's ironic presentation of carefully sourced information on *The Daily Show* countered the Administration's shaky arguments for war. Because Trump's appeal is largely removed from the world of logic and because he's moved so rapidly since Jan. 20, that won't work anymore. *SNL* is compelling right now because it is using the tools the President himself favors: caricature, irreverence, hyperbole.

For those outraged by its spin on Spicer or Conway, *Saturday Night Live* is harder to dismiss than a consistent liberal critic like TBS's Samantha Bee or John Oliver on HBO. *SNL*, like all of us, is trying to keep up with and make sense of the news. The show is about personality, not policy. "The mission of the show is to be funny, relevant, and be a big part of the national conversation. That doesn't mean the show is trying to take down Trump," says James Andrew Miller, co-author of *Live From New York*, an expansive oral history of the series. *SNL* doesn't have a call to action so much as it just wants you to keep watching.

It's sketch comedy, not op-ed. But it strikes close to home, offering viewers catharsis, because it opens up ways to understand figures in the news. The oddity and extremity of *SNL*'s characterizations—when was the last time a White House press secretary was a continued source of mirth?—take their inspiration from how unlike their predecessors Trump and his advisers are. McCarthy's Spicer impression, says Miller, can exist only "because this Administration gave her and the *SNL* writers the runway to do it."

Then there's the President himself, who has long presented himself as an untouchable celebrity in order to bulldoze over critiques of his ideas, outrages and hypocrisies. To criticize his policies is to miss that many Americans voted for him precisely to put a disrupter in the White House. But cutting him down, using the format he pays attention to and cares about most, hurts his legitimacy. His image is his greatest asset, and *SNL* is capable of redefining it weekly.

Saturday Night Live, which has waxed and waned over the decades, may wane again. Its most recent episode introduced a second and third Trump caricature (Leslie Jones and Vanessa Bayer), signaling how far it will have to go to stay relevant. But in this moment, *SNL* combines star power, stagecraft, live-wire spectacle and a willingness to offend. Those are weapons in the President's arsenal too. He's tweeted that the show is "biased," "unwatchable" and "always a complete hit job." In other words, it's a hit.



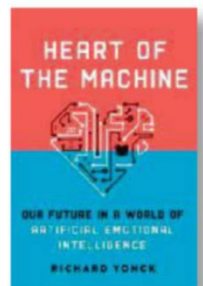
VERBATIM
'It's killing people's minds.'

TIM COOK, Apple CEO, arguing that technology companies have a moral responsibility to create tools that help "diminish the volume of fake news"

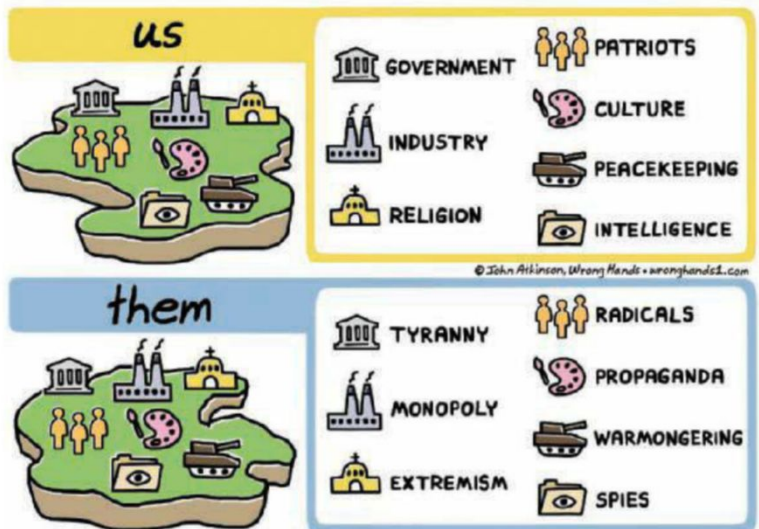
BOOK IN BRIEF

The upside of the AI revolution

AS TECHNOLOGY GROWS MORE SOPHISTICATED, it's getting exponentially better at interpreting, replicating and even influencing human emotions. In his new book, *Heart of the Machine*, futurist Richard Yonck acknowledges this may well lead to mass manipulation—allowing retailers, for example, to goad shoppers into spending more money by analyzing their posture and expression, assessing their mood, digging into their shopping history and projecting images of them wearing items they are predisposed to like. But this new technological norm could be a force for good as well, Yonck writes. Developers are working on AI that could help people with autism make sense of other people's emotions, among other advances. "It's in our best interest to explore the possible futures this technology could bring about," Yonck concludes, "while we still have time to influence how these will ultimately manifest." —SARAH BEGLEY



CHARTOON
Us vs. them



JOHN ATKINSON, WRONG HANDS

STEPHEN LAW—GETTY IMAGES

BIG IDEA

A pizza-making robot

Most pizzas go through quite a journey before arriving at your door—from kitchen oven to warming counter to the backseat of a car—which is why they can be lukewarm or even soggy by the time you take your first bite. Zume Pizza in Mountain View, Calif., is trying to fix that. Its secret weapons: robots, which start preparing the pizzas in a central kitchen, and trucks with ovens, which finish cooking them while they're en route. Thanks to the bot assistance, delivery orders take an average of 20 minutes, and the pizzas are fresh and crispy upon arrival, says Zume co-founder and CEO Julia Collins. For now, Zume operates only in Mountain View, but it plans to expand through the Bay Area in 2018 and to Los Angeles and the rest of the country afterward. The ultimate goal, says Collins, is to become the "Amazon of food delivery." —*Julia Zorthian*



HISTORY

The dark origins of dog breeding

EVEN PEOPLE WHO AREN'T DOG OWNERS probably know that purebreds are considered the best—at least in terms of price, aesthetics and dog-show titles.

But purebreds have a less pure origin story. In fact, when competitive dog shows first emerged in 19th century Britain, they were less about dogs and more about establishing a social hierarchy. Women often weren't allowed to show their dogs with men, and most competitions made working-class pet owners show their dogs after their richer counterparts, "when all the good dogs had gone home," says Michael Worboys, a specialist on the social history of pedigree dog breeding in Victorian Britain.

There was also the issue of breeding itself, which took off after the 1859 publication of

Charles Darwin's treatise *On the Origin of Species*. By allowing only the most aesthetically pleasing animals to mate, breeders believed they could make more-perfect creatures. Those efforts strengthened the idea that all sorts of living things could be improved—evolution with intent—which in part laid the groundwork for eugenics, says Katherine C. Grier, author of *Pets in America*.

These days if Victorian-style dog breeding is controversial, it's mostly because of the canine health problems that can result if it's done sloppily. Still, it remains an essential component of competitive dog shows. The urge to make the perfect pet—even if only for show—is doggedly persistent. —*OLIVIA B. WAXMAN*

Read more like this at time.com/history

DATA THIS JUST IN

A roundup of new and noteworthy insights from the week's most talked-about studies:

1

NAPS MAY HELP PRESCHOOLERS PROCESS LESSONS

A small study in *Child Development* found that 3-year-olds who napped directly after learning new verbs understood the words more fully 24 hours later than those who did not nap afterward.

2

VEGGIES HELP YOU BEEF UP

A study in *The American Journal of Clinical Nutrition* analyzed the health records of nearly 3,000 people and found that plant-based protein benefits musculoskeletal health as equally as animal protein.

3

DOCTORS WHO TRAINED ABROAD MAY BE BETTER AT THEIR JOBS

A study in the *BMJ* found that doctors who trained abroad and were practicing in the U.S. had a patient death rate of 11.2% among a national sample of Medicare beneficiaries from 2011 to 2014, while the rate was 11.6% for patients of U.S. medical-school graduates. —*J.Z.*



The President walks through the Cross Hall of the White House before a meeting with airline executives on Feb. 9

PHOTOGRAPH BY JABIN BOTSFORD



White House

***CHAOS* THEORY**

DONALD TRUMP PLEDGED TO DISRUPT THE
SYSTEM. HE'S KEEPING THAT PROMISE

BY PHILIP ELLIOTT

FOR TWO YEARS, DONALD TRUMP mastered the art of disruption. Name a political precept and he probably broke it during his improbable march to the White House. But disruption in government—the rulemaker breaking the rules—turns out to be more costly. In the first month of his presidency, the New York billionaire has witnessed the lesson of Samson: toppling the temple can be painful if you try it from the inside.

Federal judges in four courts froze a hastily issued Executive Order barring certain immigrants from entering the country. Intelligence officials leaked

descriptions of classified intercepts in a winning attempt to force Trump to fire his National Security Adviser, Michael Flynn, who had misled the nation about his ties with a Russian diplomat. Then more leaks came, from current and former officials to the *New York Times*, asserting that Trump campaign aides and senior Russian intelligence officials had been in contact during the 2016 presidential campaign. And the President of China, Xi Jinping, successfully pushed Trump to retreat from his pledge in December to give more recognition to the government in Taiwan.

Disruption can take many forms. Protesters have filled the streets, blocked airports and interrupted town-hall meetings by lawmakers across the country. Republicans, meanwhile, have been growing increasingly restless, with the House Oversight Committee probing Trump's security protocols for discussing classified information at his weekend retreat in Mar-a-Lago, and Senate majority leader Mitch McConnell suggesting that the Senate investigation of Russian interference in the election would expand. Others in the GOP have raised concerns that their legislative hopes under unified Republican control could fade, given the confusion over Trump's priorities on issues such as tax reform and trade. "There are a lot of questions on the part of the people who took the President home after the dance," explains Republican Senator Pat Roberts of Kansas.

In response, the White House has fallen back on its reality-show ways, distracted by the internecine drama of senior aides who spend their days mixing government business with jockeying for position and favor with the boss. No one has felt the pressure more than White House chief of staff Reince Priebus, who was christened as the man "in charge" by the President mere weeks ago yet has been trailed ever since by snipers regarding his aptitude and longevity for the job. Running the White House in a normal environment can be overwhelming. But the affable 44-year-old routinely finds himself rushing down the hallway from his office to intercept unscheduled visitors to the Oval Office. He had to break up one impromptu meeting of Trump and his Homeland Security adviser after an aide asked the chief if there had been a change to the schedule.

Little takes place in the White House these days without a complication or contradiction. Take the dismissal of Flynn. As senior aides prepared to announce his departure as a resignation, counselor Kellyanne Conway, who often boasts of her direct access to Trump, went on television to declare that Flynn had "the full confidence of the President." Then as officials quickly tried to correct that statement,



Priebus received notice on his phone that a release had misspelled the name of Colombia, a South American ally whom Trump had called earlier in the evening. At roughly the same time, others close to Trump were telling Breitbart News, the conservative website once run by Trump strategist Steve Bannon, that aides were drawing up a list of replacements for Priebus. (Bannon denounced the story. "This guy is doing an amazing job," he



tells TIME of Priebus. “I’m proud to call him a partner.”) The next day, Conway was on Twitter fending off reports of her own demise—“Uninformed chatter doesn’t matter”—just hours before the Office of Government Ethics suggested that the White House discipline her for likely breaking government rules when she endorsed Ivanka Trump’s fashion line on live television.

The result of all the melodrama is a

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White House counselor Kellyanne Conway joins a cable-news broadcast from the North Lawn on Feb. 9

sense of constant chaos for a watchful nation and a crippling anxiety for White House officials. Some aides now refuse to communicate by email, given that federal law requires such messages to be archived for historians

and investigators. Many have taken to using encrypted apps to get around the investigations Trump has ordered to clamp down on leaks. Others are skittish about even picking up the phone, assuming someone is always listening or monitoring calls. “It’s dysfunctional, as far as national security is concerned,” says Senator John McCain, an Arizona Republican. “Who’s in charge? Who’s making policy? Who’s making decisions?”

I don't know if anyone outside of the White House that knows."

AT THE CENTER of this tempest of confusion Trump has continued to hold court and set the tone, doing things as he has always done them, in his own way. Without his wife or family in the residence, he calls friends late at night and rings up offices through the White House switchboard early in the morning. He invited his daughter Ivanka, an amorphous adviser without an official title, into sensitive meetings, and cheered his policy aide Stephen Miller when he went on television to peddle baseless conspiracy theories about phantom Massachusetts residents voting illegally in New Hampshire last fall.

Ultimately, Trump is the only person who can calm the storm, fan it further or just let the show go on. Aides say he would like there to be less celebrity-like coverage of every staff skirmish, and he has become increasingly concerned about the leaking, from within both the White House and the intelligence community. But he has so far resisted many binding efforts to create a more conventional order around him, encouraging aides who color outside the lines on television, maintaining walk-in power for each of his senior staff members and starting each morning with a tweetstorm that often upends the news cycle in unexpected ways. Bottle up the disruptive methods and Trump fears he could lose the magic that made him President.

But the clock is ticking. Even popular new Presidents enjoy a limited window of effectiveness, at best six to nine months. Congress needs to pass a spending bill by April 28 and another in September, renew the Federal Aviation Administration and boost the debt limit. That's before lawmakers tackle Trump's nominee for the Supreme Court or his big-ticket items like building a border wall, creating an infrastructure package, repealing Obamacare and replacing or rewriting the tax code. At some point, Trump may have to decide whether to risk his agenda by continuing with his old ways, or ditch what he knows best to get something done.

This dilemma is nothing new. For years he instilled this sense of competition at the Trump Organization



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National Security Adviser Michael Flynn was fired by Trump after misleading Vice President Pence about his contacts with the Russians

to, in his mind, great success. The enemy was both rival developers and down the hall. Once employees proved their loyalty, they took up offices on the 26th floor near Trump and his children. Most stayed over a decade once they got there.

But members of the new Trump team know they don't have years to earn that trust. To expedite their rise, they have become intimate with each other's biggest secrets and will spill them to their own advantage. Trump's first campaign manager and the head of his transition project were each ousted when they questioned the calls

'WHO'S IN CHARGE? WHO'S MAKING POLICY? WHO'S MAKING DECISIONS?'

—SENATOR JOHN MCCAIN

of Trump's son-in-law turned senior adviser, Jared Kushner.

Organizational consultants call it disruption. Trump sometimes hints that it is little more than good fun. He has called the Roosevelt Room, across the hall from his private office, a "boardroom," as though it were just another television set where he could go around the table to tell those who fall on his bad side that they're fired. If Flynn's ouster is a script, we should expect the biggest dismissals to take place face-to-face in the Oval Office.

That constant fear of being fired has been paralyzing the White House, let alone the dozens of agencies and departments that make up the vast federal bureaucracy. Many senior-level aides spend a large amount of time anticipating what Trump might seize on. The President is a transactional leader. He looks for advantage in each situation, and the people in the room invariably change his outlook. Far more than most leaders, with set ideas and ideologies, he is often swayed by the person with whom he speaks last. Face time is power.

WHILE TRUMP IS BUSY disrupting, other factions are trying to restore order. Priebus brought with him large chunks of staff from the Republican National



in mid-February. At this point in their presidencies, Trump's predecessors going back to 1981 enjoyed a honeymoon of being favored by a net 17 to 49 percentage points. Trump has tweeted that the negative numbers are fake.

That instinct to fight might be what sustains Trump and allows him to once again escape his situation. His power is considerable, and his accomplishments in less than a month are significant. He has rebooted oil and gas pipelines, begun chipping away at Obamacare and abandoned a multinational trade deal with Pacific countries. He killed a banking rule that companies despised, reversed new regulations of money managers and promised to scrap two regulations for every new one. The wall on the southern border is being designed, and new immigration raids have fulfilled a campaign promise to crack down on undocumented workers. "We have a President who has done more in three weeks than most Presidents have done in an entire Administration," said Miller, adopting a type of hyperbole long associated with the Trump brand.

Most important, Trump remains fascinated by his ability to shatter norms. He has taken to calling on New York tabloid reporters and those from conservative outlets at his press conferences. He ordered White House press secretary Sean Spicer to conduct his first press briefing as a frothing attack dog. Bannon and Conway, campaign holdovers, often goad Trump to return to what he likes best, the sneering and jeering that draws cheers from his supporters.

If anything is clear, it is that the drama will not soon end. The past few weeks have been remarkable for many reasons, but without a clear change in correction, more tumult awaits. It took a four-star general, speaking to a military conference in Maryland, to put the full stakes in context. "Our government continues to be in unbelievable turmoil. I hope they sort it out soon, because we're a nation at war," said Army General Tony Thomas, who commands U.S. special-operations forces. "As a commander, I'm concerned our government be as stable as possible." —With reporting by SAM FRIZELL and ZEKE J. MILLER/ WASHINGTON

Committee who have sought to install tighter controls on whom Trump sees. The White House recruited Utah Senator Orrin Hatch's chief of staff to monitor the Oval Office paper flow. Priebus recruited an 18-year aide to Speaker Paul Ryan to serve as a conduit for outreach to Capitol Hill. All these forces have made it more difficult for the President to pick up his cell phone from any caller who has the number. Ideally, nothing gets on the President's desk without its being cleared by one of Priebus' deputies.

But still the White House finds there is little it fully controls. Trump knew for 17 days that classified intercepts contradicted Flynn's claim that he had not discussed sanctions with Russia before the first public breakup of the Administration. Aides also knew Flynn had been interviewed by the FBI about the contacts. But Flynn was shown the door only after it leaked to the press. Vice President Mike Pence also had to wait until the leaks to find out that he had misled the nation about the nature of Flynn's call to the Russian diplomat. Aides say Pence is on good terms with Priebus. "He has the full support of the Vice President," says Pence's chief of staff, Josh Pitcock.

And then there are the President's allies to worry about. Trump kvetched about the general state of affairs to his

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White House chief of staff Reince Priebus is battling on multiple fronts, including against his own staff

old friend Christopher Ruddy, the CEO of Newsmax, on a recent weekend in Florida, with the President sipping Diet Coke and Ruddy drinking scotch. The next day, Ruddy went on TV and offered an unprompted attack on Trump's helpers. "I think there's a lot of weakness coming out of the chief of staff," said Ruddy. Within hours, Ruddy received calls from both Priebus and Kushner, urging him to keep an open mind and give the Trump team the benefit of the doubt. Ruddy subsequently said he was only speaking for himself.

That hasn't stopped the leaking from elsewhere. Another Trump ally, who is not serving in the Administration, said Trump got what he wanted in Priebus. "He is the weakest character they can put in there," this official said of Priebus. "They put a bull's-eye on his back."

While support for Trump remains strong among his voters, there has been a clear erosion of his national popularity, which the President has noticed. Disapproval of his job performance, as tracked by Gallup, rose from 45% of the country on Inauguration Day to 53%

THE TROUBLE WITH **RUSSIA**

AS MOSCOW ADVANCES,
U.S. ALLIES LOOK WARILY
TO TRUMP FOR CLARITY

BY MASSIMO CALABRESI/
WASHINGTON AND SIMON
SHUSTER/MONTENEGRO

THE COUP WAS PLANNED FOR election day. Wearing fake police uniforms and armed with assault rifles, more than a dozen Kremlin-linked plotters were allegedly preparing to storm the parliament of the tiny Balkan nation of Montenegro and assassinate its Prime Minister. Their goal, according to the government's investigators, was to stop the country of 620,000 from joining NATO, which would give the U.S.-led alliance control of nearly every northern Mediterranean port from Gibraltar to the Bosphorus. On a tip from an informant, real Montenegrin police rounded up the plotters as polls opened for the vote in October. Two ring-leaders, both suspected agents of the Russian intelligence services, are now back in Russia.

The aborted coup was a reminder that a new battle for Europe has begun. From the Baltics to the Balkans and the Black Sea to Great Britain, Vladimir Putin is seeking to rebuild Russia's empire more than 25 years after the fall of the Soviet Union. From Jan. 29 to Feb. 3, Russian-backed forces launched thousands of strikes in renewed attacks on pro-European government positions deep inside Ukraine. Using propaganda,





Tanks and troops from the U.S. 3rd Armored Brigade deploy to Poland in January to stand watch against Russia

agents provocateurs and overt military threats in Estonia, Serbia, Moldova and other East European countries, Putin is attempting to undermine the democratic governments of former communist countries, threatening the security of millions of people. Farther west, he is pursuing alliances with nationalist, anti-E.U. forces in France, Germany, Hungary and other major democracies.

Perhaps the most important front in this new conflict has been unfolding in the West Wing. Over the course of the past three months, according to senior Trump Administration officials and others who have participated, quiet but consequential talks have taken place there over whether the U.S. should resist Putin in his new campaign or cede to Russia a sphere of influence in Eastern Europe. In return for the latter, the theory goes, Russia would join the U.S. in an alliance against ISIS, work to reduce nuclear-weapon stockpiles and help constrain China.

Donald Trump has publicly annunciated parts of such a grand bargain, as have top advisers Steve Bannon and National Security Adviser Michael Flynn, who was forced to resign on Feb. 13 for his back-channel conversations with a Russian diplomat. The White House officials who have advocated such a deal in whole or part see nationalism as the basis for all-important fights against Islamic extremism and China's rise.

Opposing a Russia deal are such Cabinet secretaries as Defense Secretary James Mattis and Secretary of State Rex Tillerson, who, backed by virtually the entire Washington foreign policy establishment, view multilateral alliances as crucial to maintaining hard-won stability in Europe and beyond.

Flynn's ouster makes it politically more difficult for those who would like to advance a pro-Moscow strategy. They were further set back on Feb. 14, when the *New York Times* reported that Trump's aides had repeated contacts with senior Russian intelligence officials in the year before the U.S. presidential election. As multiple law-enforcement, intelligence and congressional investigations advance, the room for rapprochement with Russia is shrinking, but within the White House, that has not



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A woman walks in front of a Serbian-nationalist mural showing Trump and Putin in Belgrade on Dec. 4, 2016

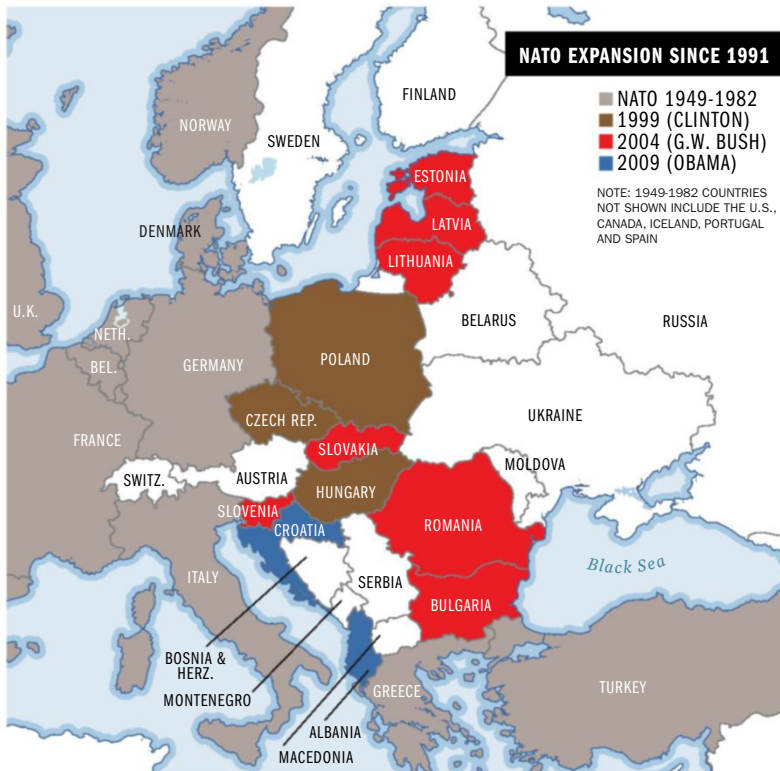
quelled the appetite for a deal.

Those who have spoken with Trump about a grand bargain with Russia say it appeals to the businessman in him. "The President really desires to do deals, and he wants to be seen as someone who's able to change the way the U.S. approaches the world," says Senator Bob Corker of Tennessee, the Republican head of the Senate Foreign Relations Committee, who argued against big deals with Russia in detailed conversations with Trump on Nov. 29 in New York City, when he was being interviewed for Secretary of State. "But doing deals for deals' sake without knowing what direction [they take us], that could be hugely harmful to our nation and to the rest of the Western world," Corker says.

It is unclear if the grand bargain was originally an American notion or one floated by Moscow. Critics wonder what benefit such a trade could have for Washington. Russia, they argue, is

weak. Its economy has been in recession for two years and is smaller than that of Italy. Moscow's only aircraft carrier, a Soviet-era diesel clunker, barely coughed its way back and forth to Syria over the past six months, losing two planes to accidents along the way. Russia has been begging the U.S. to form an anti-ISIS alliance, no strings attached, and Putin has already expressed a desire, in his first post-Inauguration phone call with Trump, to pursue renewed arms-control measures. Ceding Eastern Europe to Moscow—something that has been close to heretical in Western diplomacy since Yalta—in exchange for freebies "would be both stupid and immoral and would reverse every fundamental tenet of American foreign policy since World War II," says Eliot Cohen of Johns Hopkins University, one of America's foremost conservative foreign policy experts.

No decisions on a deal with Russia are imminent, but lingering uncertainty over U.S. commitment to East European democracies is helping to redraw the lines in the meantime. Leaders in Bulgaria and Moldova are listing back toward Moscow. And



imposed against the Soviets during the Cold War, the Russian gunmen continued seizing government buildings around the cities of Donetsk and Luhansk and installing warlords to rule them. The result has been a separatist conflict that has so far killed more than 10,000 people and displaced more than 2 million. Dozens died during the latest flare-up in fighting, which began after Putin and Trump had their first post-Inauguration phone call on Jan. 28.

Putin has tested the West before, in Estonia, one of the five NATO members that directly border Russia. In September 2014, a group of Russian troops allegedly stormed across that border with the help of smoke grenades and radio jammers, kidnapped an Estonian security officer and took him back to Moscow to stand trial for espionage. The raid, which came two days after President Obama visited the country, was intended to show that “Russia does what it wants in this part of the world,” Urmas Reinsalu, an Estonian lawmaker and former Minister of Defense, told the newspaper *Postimees* at the time.

Such provocations, along with persistent Russian cyberattacks and violations of NATO airspace, have forced the alliance to confront its own weakness in dealing with Moscow’s new approach to warfare. Under Article 5 of NATO’s founding treaty, all of its members are obliged to defend one another in case of an attack. But what constitutes an attack is not so clearly defined. Could a cyberattack require a NATO response? And what if the attackers were disguised to look like local paramilitaries?

The U.S. has been pushing back with more traditional measures. A week before Trump’s Inauguration, a rotation of some 4,000 U.S. troops arrived in Poland. But Putin hasn’t limited his efforts to Central and Eastern Europe. The project of European integration is fraying, with Britain’s vote to leave the E.U. and the rise of anti-E.U. parties. Right on cue, Putin has stepped up to offer an alternative: a muscular brand of nationalism that defines itself in opposition to the liberal values of the West. He’s found plenty of admirers. During his first official trip to Europe since Trump took office, Putin chose to

anti-E.U. candidates in France and Germany are finding common cause with Moscow ahead of elections later this year, sowing concern among traditional U.S. allies. “The liberal international order that the United States and its European allies have upheld since the end of World War II is in danger of unraveling,” a recent Carnegie Endowment report on the breakdown in U.S.-Russia relations warns, “and there is mounting concern that the United States may abandon its commitment to preserving this order.”

MONTENEGRO, a nation with fewer inhabitants than San Francisco and a military of only about 2,000 members, has been conquered by one great power after another for most of its history, from ancient Rome to the Third Reich. After 10 years of talks and trial runs, the country is now on the cusp of joining the world’s most powerful military alliance, this time voluntarily. Its leaders signed accession documents with NATO in May, and 24 of the alliance’s 28 members have already ratified its membership. Only Spain, Canada, the Netherlands and the U.S. are left. Trump has

Montenegrins worrying whether they’ll make it. “If Putin asks Trump not to admit Montenegro and really gives him something in return, we don’t know what will happen,” says Nebojsa Medojevic, a Montenegrin lawmaker who backs NATO membership. Trump has yet to say whether he supports the country’s accession to the alliance.

It is Montenegro’s warm, deep-water port in the Mediterranean that makes it especially valuable to Putin, and he is known to push hard when he thinks his strategic interests are at stake. With its assault against Crimea in 2014, the Kremlin undertook the first territorial land grab by a major power in Europe since World War II. Russian special forces disguised as local self-defense units took control of the Crimean parliament in the course of one day that year. They installed a loyal Prime Minister, Sergei Aksyonov, who set the stage for Russia to annex the peninsula outright.

Some of those same commandos, who became known as the “little green men,” then appeared in Ukraine’s eastern regions. As the West moved to isolate Russia with sanctions harsher than those

visit his friend Viktor Orban, the Prime Minister of Hungary, who has pledged to turn his country into an “illiberal democracy” modeled largely on Putin’s Russia. “It’s in the air,” Orban said after a meeting with Putin in Budapest on Feb. 2. “The world is in the process of a substantial realignment.”

Within a week of Trump’s victory, elections in two of Moscow’s former satellite states brought pro-Russian leaders to power. In Bulgaria, a member of NATO and the E.U., a retired air force commander and political novice named Rumen Radev was elected President on a promise to balance out his country’s alliances with the West. Speaking to reporters on election day, Nov. 13, he said he took comfort in Trump’s pledge to “work for a better dialogue” with Russia. “That gives us hope, a big hope,” Radev said. Much the same message came that day from the newly elected President of Moldova, Igor Dodon, whose campaign urged the country to tear up its integration deal with the E.U. “We gained nothing from this agreement,” Dodon told a smiling Putin when they appeared in the Kremlin on Jan. 17.

Western Europe hasn’t been immune to the trend. In France, the leaders of the National Front, a party that wants to see the E.U. break apart, received a €11 million loan from a Kremlin-linked bank in 2014. The party’s leader, Marine Le Pen, pledged in early February that she would pull France out of NATO if she wins the presidential election this spring. She is leading in the polls.

Next door in Germany, the intelligence agencies in Berlin have accused Moscow of orchestrating a “propaganda and disinformation” campaign ahead of Germany’s federal elections in September. Its aim, says Stephan Mayer of the intelligence committee in the German Parliament, is to weaken Chancellor Angela Merkel’s chances of re-election to a fourth term while funneling support to Alternative for Germany, a party of right-wing populists who have called for Berlin to lift its sanctions against Russia. “If you want to have freedom in the Western world, if you want to have freedom and peace in Europe, then you can do it only with Russia,” says Georg Pazderski, the party’s leader in Berlin.

THE QUESTION IS whether Trump will join that parade. At first, all indications pointed in that direction. In July, he suggested that Putin’s annexation of Crimea could have been legitimate and that he would consider lifting sanctions “if Russia would help us get rid of ISIS.” He has said the two sides might work together on nuclear issues. After the election, in January, Trump kept up the talk. The U.S. and Russia “will, perhaps, work together to solve some of the many great and pressing problems and issues of the WORLD!” he tweeted.

Upon taking office, Trump initially continued his soft rhetorical line. In his hour-long phone call with Putin on Jan. 28, they discussed possible areas of cooperation, including the fight against ISIS and other Islamic terrorist organizations, nuclear proliferation and potential economic and energy deals, according to a senior White House official who listened in on the call. Similarly, the White House readout of calls between Trump and Ukrainian President Petro Poroshenko and NATO Secretary-General Jens Stoltenberg referred to fighting along Ukraine’s border; in fact, Russian-backed forces operate deep within Ukraine, and to the eyes of some experts on Russia in the Administration, the language raised flags that the U.S. might accept Russia’s territorial grab.

Trump is open to wide-ranging concessions to Russia in exchange for cooperation in some of these areas, the senior White House official says. Trump is not about to walk away from NATO, the official says, but believes the amounts that countries pay to support the alliance, which are based on decades-old economic percentages, may be outdated. “Let’s renegotiate the deal,” Trump has suggested, the

senior official says. Trump has also told advisers he thinks that “maybe NATO should have a different mission and should focus on radical Islam,” the official says. That alone would be a huge win for Moscow.

Normally, a President might request and receive a full-blown national-security briefing on a question as important as the future of Eastern Europe or a reset with Russia. Several National Security Council meetings on the topic might be needed, and a top-secret intelligence assessment might be produced. But multiple sources tell TIME there is hardly an interagency process in the improvisational Trump White House. And what does exist is disconnected from the power structure around Trump. Bannon is running his own strategic-initiatives group, unconnected to the traditional national-security structures, according to two sources familiar with it, which will generate its own assessment of Russia-policy options. In the meantime, Trump’s thinking remains notional, the senior official says. But others in the Administration and outside analysts say concessions to Russia could include reducing or removing the U.S. anti-ballistic-missile footprint in Central and Eastern Europe, easing sanctions imposed for election meddling or the invasion of Ukraine, or softening language on the Crimean annexation. Trump has not yet considered the specifics of any deal with Russia, the senior official says.

Trump’s inclination to do a big deal with Russia has been informed by Bannon, who has said the biggest strategic threat facing the U.S. and Europe is radical Islamic terrorism. Bannon’s views are not monolithic. He criticized Putin in a widely read 2014 speech but praised his embrace of traditionalism. “Putin and his cronies are really a kleptocracy that are really an imperialist power that want to expand,” Bannon said then. “We the Judeo-Christian West really have to look at what he’s talking about as far as traditionalism goes—particularly the sense of where it supports the underpinnings of nationalism. Strong nationalist movements in countries make strong neighbors, and that is

PERHAPS THE MOST IMPORTANT FRONT IN THIS NEW CONFLICT HAS BEEN UNFOLDING IN THE WEST WING



▲
*Montenegrin men march in
pro-Russia, anti-NATO protests
on March 24, 2016*

really the building blocks that built Western Europe and the United States, and I think it's what can see us forward." A Bannon national-security aide, Sebastian Gorka, has been less subtle in his rejection of Putin. "His nature is nothing more than a bully," Gorka said of Putin in a 2015 speech, and "he should be dealt with as bullies are dealt, and his nose should be smacked quickly and in a harsh fashion, that puts him back in his place."

Opposing a Russia rapprochement, say sources familiar with the debate, are Trump's newly appointed Secretary of Defense and Secretary of State and virtually the entire Republican and Democratic foreign policy establishment on Capitol Hill, in Washington and across Europe. "Tillerson and Mattis embrace the traditional view that we have had toward Russia," Corker says, but "there are other spheres within the White House that may look at things in a very different way."

Trump faces his biggest opposition on Capitol Hill. Senators John McCain and Lindsey Graham have led a vocal and robust challenge to any rapprochement with Putin that would ease sanctions and instead want to

impose even tougher penalties for Russia's election meddling in the U.S. Senate majority leader Mitch McConnell says he opposes lifting sanctions against Putin.

The split among Trump, his Cabinet and much of his party has led to confusion about where the U.S. stands, even within his Administration. After pro-Putin forces in Ukraine launched their attacks in late January and early February, Trump's U.N. ambassador, Nikki Haley, gave a toughly worded statement. "Crimea is a part of Ukraine," Haley said at the U.N. on Feb. 2, and "our Crimea-related sanctions will remain in place until Russia returns control over the peninsula to Ukraine." White House spokesman Sean Spicer reiterated those views in a briefing days later. But several senior Administration officials say that they don't believe Haley was speaking for the President and that Flynn was unhappy with the statement.

Trump's willful effort to ignore Russia's meddling in the U.S. election,

or anywhere else for that matter, only muddies matters further. The senior White House official says Trump's opinion of Putin and the possibility of doing a deal with him are not affected by the fact that the Russian leader interfered in the core exercise of American democracy. "People could say we have meddled with other people's elections too," the official says. Trump is not aware of Putin's other efforts to subvert democracy in much of Europe, the official says.

For the millions of Europeans facing the brunt of Putin's efforts that is more than unsettling—it's terrifying. "It would be absolutely naive to underestimate the attempts of Vladimir Putin and of the Russian government to try to destabilize Western democracies," says Mayer, the German parliamentarian. "That is a clear agenda of the Russian government."

For Montenegrins, their future hangs in the balance. A vote on the country's accession is stalled in the Senate. The White House has no plans to endorse Montenegro's membership in NATO at this time, a senior NSC official says. — *With reporting by ZEKE J. MILLER and PHILIP ELLIOTT/ WASHINGTON*

EMOTIONAL DIVIDE

TRUMP'S PRESIDENCY HAS CHEERED SOME
AND BROUGHT CRIPPLING STRESS TO OTHERS

BY KARL VICK

WHAT YOU'RE EXPERIENCING IS NORMAL. THESE FEELINGS ARE entirely appropriate. Major news events really do press in at every turn, and the pace—yes, absolutely breakneck lately. It is the best of times, you bet. It's also the worst of times, no doubt about that either. Both things can be true—philosophers and scientists agree on this—because reality is subjective. Especially since Election Day.

Among Donald Trump's true believers, it's all good. The candidate said he would shake things up, and as President, he produces temblors more reliably than the San Andreas Fault. "Mentally, it's great," says Mike Meyer, 69, a Trump voter in Saginaw, Mich. "Everything seems upbeat now."

For those who voted for someone else, what the Disrupter in Chief is most disrupting is their ability to sleep soundly and maintain an optimal level of serotonin.

"I would wake up in the morning feeling as though I had a rock in my stomach," says Carol McGuire, 66, of Columbus, Ohio, about the days following the election. "The word *dread* would apply."

In other words, the country is not the only thing that's split. So is its mental health.

Every election produces winners and losers, and the Nov. 8 vote was not America's first presidential contest; it was its 58th. Republicans won the White House, so it's the Democrats' turn to be sad. That's the dynamic that has propelled U.S. politics since the dawn of the two-party system.

But here's something both sides agree on: There's something unusual going on this time. The angle of the sun isn't quite right. Birds fall silent at midday. Trump has engendered a qualitatively different response from the public, as befits a qualitatively different presidency. But the logic of the matter ends there. Emotions, in large sections of the population and in states of all colors, are as febrile as Trump at his most raw.

The anxiety is acute, free-floating and no secret at all. It filled the streets of 600 cities and towns with 3 million to 4 million chanting protesters on Trump's first full day in office, and jammed the lobbies of U.S. airports seven days later, after he signed an Executive Order closing the nation's doors to refugees. The unease haunts the crosstabs of public-opinion surveys: in an American Psychological Association (APA) poll released on Feb. 15, 6 in 10 Americans call the current political environment a source of "significant stress" for them. In the 2016 presidential campaign and its aftermath, the APA poll found the first statistically significant increase in stress levels since it started asking 10 years ago.

More than 10 million Americans don't know what the future of



their health care coverage is going to look like a month from now. Will they continue to receive subsidies to buy health insurance on the public market? Will they be asked to pony up the full cost of a plan on their own? Those who are pregnant, have pre-existing conditions or have young adults relying on their insurance are worried about what comes next—and that goes for Trump voters too.

Meanwhile, Executive Orders



on immigrants and refugees sent a chill through the undocumented. The nomination of Neil Gorsuch as Supreme Court Justice reminded reproductive-rights advocates that *Roe v. Wade* could be up for relitigation. And the threat of rollbacks on non-discrimination protections, which the Administration later backed away from, spread fear among the LGBTQ community.

Indeed, the locus of the discomfort

^
Protesters give voice to their feelings in Washington during the Women's March on Jan. 21

at both ends of the political spectrum is the place where politics and emotion come together.

"FEELINGS ARE STRONG, and it's not in a normal way," says Kimberly Woodrosky, 53, a lifelong Democrat in

Wilkes-Barre, Pa., who voted for Trump.

"People got that butterfly feeling in their belly, like something's about to change, and for some that's hard, it's not good," adds Thomas McTague, 38, a police officer and Trump supporter in nearby Plymouth, where the same general good feeling about Trump's election, he says, is shadowed by a parallel unease.

The strife is difficult to parse. This may be partly because some of it is



Trump supporters from Queens trade insults with protesters outside Trump Tower on Feb. 5

both generated and amplified by the Establishment that Trump identified as the enemy—the “permanent Washington” and a news media his White House angrily and incessantly accuses of lies and distortion. It doesn’t matter to the base. What some people call chaos might also look like a pretty good start to those who think of the Establishment as a problem and elected Trump as its destroyer.

“I am so happy that he is taking this as a job, not like a presidency,” says Sandy Lewis, 56, whose Trump vote helped the candidate carry Pennsylvania. “He’s still getting himself in a little bit of trouble with that attitude, but you know everything’s going to work out.”

Will it, though? If Lewis’ faith could be bottled, it would find a ready market in the Atlanta waiting room of Kathleen Gildea, a psychotherapist whose patients are so agitated by Trump’s presidency that she now removes magazines bearing his image from the reception area in her office. “Is it possible to begin using other things as your magazine cover photos?” she asked a TIME reporter.

“Everyone is expressing, as one client put it, a constant ‘hum’ of anxiety,” says Gildea, 73. Sleeplessness, overeating due to anxiety or depression, short-tempered irritation with co-workers are all common. “What I’m hearing a lot is,

‘I’m afraid of what’s coming next.’”

The rising unease first became apparent to mental-health professionals during the campaign. Reports from the field moved the APA to add questions about electoral stress to its annual nationwide survey. The first poll, released in October, found 52% of Americans identified the election as a significant source of stress. The follow-up, which concluded the day before the Inauguration, found that stress about election results diverges along party lines (72% among Democrats, 26% among Republicans), and 6 in 10 Republicans reported being stressed about the future of the nation.

Neither poll could be compared with results from earlier elections—this was the first time the APA did election-specific stress polling. But APA experts think the January survey captured a sense of dislocation in American voters that went beyond the usual unsteadiness that can follow an election.

“It’s not like it’s a clear divide of ‘My candidate won and I’m not stressed’ and ‘My candidate lost and I’m stressed,’” says Lynn Bufka, as associate executive director of practice research and policy at the APA. “There is a level of stress happening that seems to transcend the political parties. That is a little unusual. It appears, collectively, that there is a level of stress about what’s happening

in the country and what’s going to happen to the future of our nation. It could be that it highlighted differences in ideas about what the future of the nation could be. I don’t know.”

No one else does, either. It may all be too new—and too wrapped up in the psychology of an impetuous, endlessly self-involved President who is only too happy to behave in ways no President has before. His impulses jolt us every morning, thanks to his penchant for middle-of-the-night tweeting. He makes news all day long too. So to those worried about what he’ll do next, the buzz of a news alert on a cell phone can feel like a palpitation. Therapists advise their clients to ration their exposure to news, but many Americans are finding it difficult to look away.

“I just feel like the more I talk about him, the more he becomes part of my life, the more I let him affect me,” says a 17-year-old high school student who asked not to be named because she is undocumented. “But there’s no way around it. He’s everywhere. Literally my entire Facebook.”

Remember when Facebook was about finding old friends? Now, topics once avoided in polite company—politics and religion, but mostly politics—are discussed endlessly, and the immersive nature of digital media and the never-ending social feeds merely add to the sensation of being overwhelmed.

“Everyone is talking about it, and everyone is worked up over it,” says Joanna Ford, 46, a licensed counselor practicing in Denver. “People are saying, ‘I lost some friends because of this.’ Or, ‘My cousin stopped talking to me on Facebook.’ I am seeing that both sides are impacted. Even people who are not interested in politics can’t not be at this point.”

Ford estimates that these days, four out of five clients want to talk politics. “They are bringing it up, if not talking about it the whole time,” she says.

“I do a lot of marriage counseling and job counseling and other issues,” says Gildea, the Atlanta therapist. “This

anxiety is overtaking the reason they initially came in.”

When Gildea checked in with a colleague in Anchorage, mind you, that therapist reported no such preoccupation with Trump among his patients—just some grumping at his favorite bar.

Of course, Alaska, like most non-urban areas, went strongly for Trump, and therapists are concentrated in the urban areas where Hillary Clinton won handily. “People are excited that we elected someone who said they would do something and they are doing it,” says Brandon DeFrain, 34, chairman of the Bay County Republican Party in central Michigan.

THE PACE THAT TRUMP SET in his first weeks has impressed more than his base. His approval ratings remain at record lows for so early in a first term, but a Gallup poll out Feb. 13 found that 6 in 10 Americans call Trump a strong and decisive leader and one who keeps his promises. “He’s, like, wild,” says Marie Rakow, 86, of Richland Center, Wis., another swing state. “I don’t know where he gets his energy.”

When it comes to polls, Gallup reflects the Establishment. It asks about “presidential qualities and

characteristics,” a problematic metric for a President whose appeal to his base is to act otherwise. He was judged less than honest or trustworthy even as a candidate. Another recent Gallup poll says only 29% of Americans think world leaders respect Trump (vs. 67% for Obama at the start of his first term and 49% for George W. Bush). Do none of the usual rules apply to this man?

Clearly not most of them. But it helps to ask around. According to a taxonomy of the U.S. public undertaken by CBS News, Trump enjoys devoted, almost unconditional support from 22% of Americans. He has “conditional” support from another 22%, but stands to lose some or all of it from most of those people (80%) if he fails to fix the economy or if he “acts like a typical politician.” That finding underscores how much of Trump’s appeal is based on his bona fides as an outsider, but it also describes a prison of his own making. He does have to run the U.S. government, the largest enterprise on the planet.

Trump could pick up an additional 21% of the public that the CBS poll labeled as “curious” about him. The biggest pool of Americans—35%—flat out oppose Trump no matter what. They skew liberal and include large shares

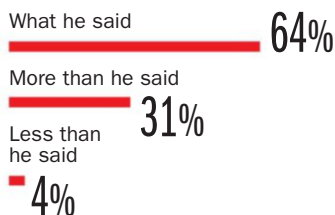
of minorities—the people who in many cases have been given real reason to worry. Trump inveighed against immigrants during the campaign and urged on the ICE raids that panicked Hispanic communities nationwide in early February. It’s unclear whether the raids were, in fact, a sign of more aggressive moves against undocumented workers or more of an opportunity to provoke. Either way, the effect is the same: abject fear.

Randy Mayer, 52, senior minister at Good Shepherd United Church of Christ in Sahuarita, Ariz., happened to be in the apartment of a Honduran family his church helped settle when Trump appeared on TV talking about immigrants. “When the kids came in the living room and saw what was on TV they just started to uncontrollably cry,” Mayer says. “They can’t sleep because they think they are going to be sent back to the violence and terror. Their uncle was killed by the gangs right in front of their house in Honduras as they watched.”

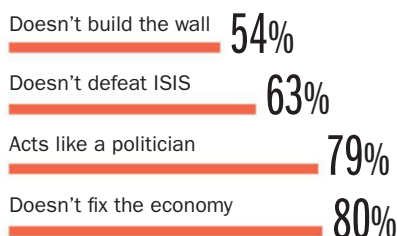
“I try not to think about it 24/7, but it’s very hard not to,” says Claudia, a Uruguayan nanny without papers or a driver’s license, who asked that her full name not be used. “You go out to work and you don’t know if you’ll come back.”

Across the country, coached by

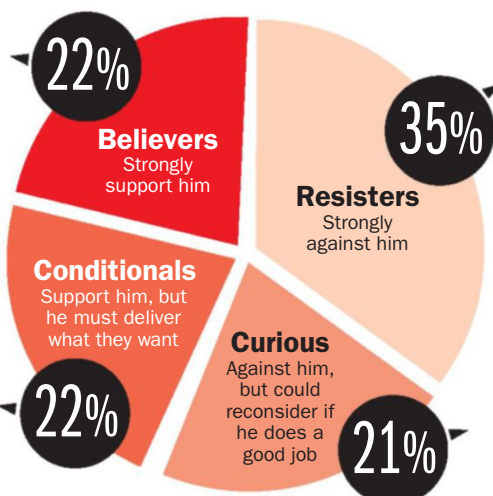
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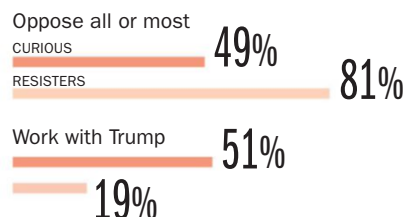
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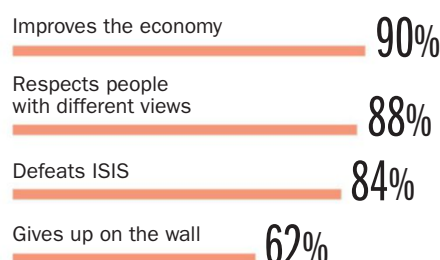
Americans' views of Donald Trump as President fall into four categories



THE DEMOCRATS SHOULD ...



AMONG THE CURIOUS TRUMP WILL GAIN FULL OR SOME SUPPORT IF HE ...





A supporter shows his colors outside Trump Tower on New York City's Fifth Avenue on Feb. 5

advocacy organizations, immigrants are putting in place the kind of provisional plans that New Yorkers and Washingtonians made after the terrorist attacks of Sept. 11: Who will pick up the kids if Mom doesn't come home?

These days are especially difficult for young people from minority populations—from Muslims to LGBT people—that have historically nursed apprehensions but who as individuals came of age under the Obama Administration, when empowerment steadily increased. At age 9, Avery Jackson is one of the most recognizable transgender people in the world, having appeared on the cover of *National Geographic*. After Trump's election, the mood has changed, says her mother. "She crawls into bed next to me and holds my hand," Debi Jackson says. "There's something going on where she needs to be comforted."

For refugees and Muslims, the Executive Order on immigrants presented, despite the ongoing court challenge, a grim reality. In Chicago, a gay Syrian refugee who asked to be identified only by his first name, Mohamad, spends most days indoors, terrified, he says, of being deported to a country where his family has disowned him and

his life would be at risk. Though he has applied for asylum, he talks of suicide.

"I feel fear when I go outside and see a policeman or go through any security," he says. "It's really draining my energy, and I feel that I really want to end this thing. Four years of Donald Trump—I can't live this way." The immediate future offers scant signs of relief.

TRUMP THE DISRUPTER thrives on the uncertainty that therapists call a chronic stressor. "I wish I had a magic answer," says Gildea, the Atlanta

psychotherapist. "Frankly I don't know what's going to happen either."

Some people have found that participating in protests can double as therapy. Others are watchfully waiting as the days—and the news—unfold. As the resignation of Michael Flynn as National Security Adviser indicates, facts have a way of asserting themselves. The Establishment, whatever its sins of omission regarding the working class and rural America, does police itself.

But then so do voters. The governing reality is the one of dollars and cents, still too scarce for many Americans. While the election ranks, the No. 1 source of stress in the U.S. is still money.

"It's tough all over," says Rakow, the Wisconsin Trump voter. "I just hope he gets the health insurance working right." In January her aunt's Medicare supplement rose to \$290 a month, on top of the \$107 premium. "That's almost \$400 right there. It's a lot of money on a fixed income." — *With reporting by* CHARLOTTE ALTER, ALEXANDRA SIFFERLIN *and* JOSH SANBURN/NEW YORK; ELIZABETH DIAS, MAYA RHODAN *and* HALEY SWEETLAND EDWARDS/WASHINGTON; *and* KATY STEINMETZ/BERKELEY

WHILE THE ELECTION RANKS HIGH, THE NO. 1 SOURCE OF STRESS IN THE U.S. IS STILL MONEY



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Winter White House

At Mar-a-Lago, Donald Trump blends pleasure, profit and politics

By Zeke J. Miller / Palm Beach

THE SALADS HAD BEEN SERVED and the steaks were on their way when Donald Trump's aides surrounded the table. It was around 8:30 p.m. on Feb. 11, and the President was eating dinner with Japanese Prime Minister Shinzo Abe on the outdoor terrace of Mar-a-Lago, Trump's private club in Palm Beach, Fla. They had just received confirmation that North Korea had launched a ballistic missile into the Sea of Japan, a violation of multiple U.N. Security Council resolutions and one of the first foreign policy tests of the Trump Administration.

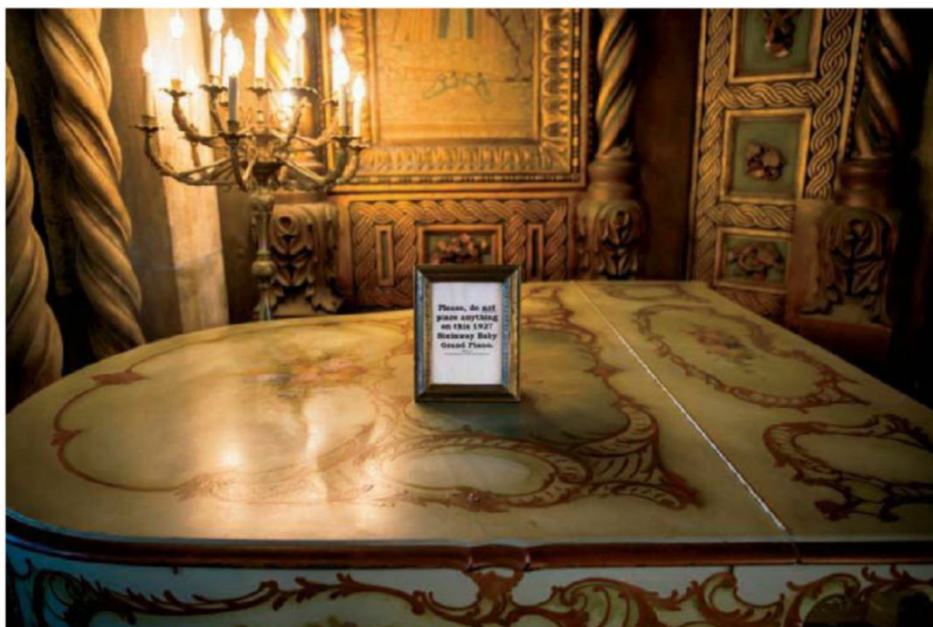
The provocation was a surprise, but the bigger shock was the setting. While the President was briefed on the situation before dinner, according to a White House spokesperson, part of the drama played out in the middle of the Mar-a-Lago patio, more than 800 miles from the White House Situation Room and in full view of hundreds of club members and their guests. As a keyboard player sang classic hits in the background, White House aides relied on cell phones and candlelight to draft remarks and read briefing papers before a hastily prepared press conference starring the two world leaders. Stunned dinner guests posted snapshots on social media. "HOLY MOLY !!!" club member Richard DeAgazio wrote on Facebook, adding a photo of a military aide carrying the nuclear football. "It was fascinating to watch."

The surreal scene foreshadowed the unusually large role that the historic Palm Beach estate will play in its owner's presidency. Every Commander in Chief finds respite from the pressures of the



*Trump bought the historic
Florida estate from the family
of cereal heiress Marjorie
Merriweather Post in 1985*





White House. Barack Obama favored the golf course and Hawaiian vacations. George W. Bush had his ranch in Crawford, Texas, while his father used the family compound in Kennebunkport, Maine. Richard Nixon liked to decamp to his vacation home in Key Biscayne, Fla. And Trump plans to spend a significant portion of his downtime at his private Florida resort.

The lavish oceanfront estate, to which Trump traveled for two of his first four weekends as President, is as much a part of his identity as his golden tower on Fifth Avenue or his star turn on *The Apprentice*. But Mar-a-Lago is not just another asset on his balance sheet. It is a monument to his wealth and status, and a restorative distraction for a restless President. For Trump, who rarely socialized in New York City and is now cocooned inside the White House, the sun-swept grounds are a sanctuary where he can bask in the adulation of paying members, who pepper the President for favors and make policy suggestions to his senior staff.

Such access doesn't come cheap. The initiation fee at Mar-a-Lago, which aides have rechristened the "Winter White House," is \$200,000—double the price before Trump's election in November. That doesn't include the \$14,000 yearly dues, or the annual food and beverage minimum, which have long been a major source of income for the President. In his most recent financial-disclosure statement, Trump reported earning nearly \$30 million from Mar-a-Lago in 2015. Critics say profiting from the private members' club raises ethical

questions for the President. Hosting Abe for a weekend of golf and geopolitics was "a personal gift," according to White House aides, who noted that the Japanese Prime Minister gave Trump a \$3,800 gold-inlaid golf driver during the presidential transition. Allowing Abe to pay for his stay could have exposed Trump to a violation of the Constitution's emoluments clause, which prohibits U.S. officials from accepting benefits from foreign governments.

At the club, Trump lives in a sectioned-off area of the 128-room mansion, but he's easy to spot around the grounds. Most mornings he plays golf at the

armchair, with aides perched on couches, he would interrupt meetings to quiz passing members about possible Cabinet appointments. "I think it's the crown jewel of his properties, and the property he's most proud of," says Newsmax CEO Christopher Ruddy, a longtime Trump friend and Mar-a-Lago member. "He's in his own Shangri-la there."

TURNING THE FLORIDA ESTATE into the Winter White House was the plan long before Trump became President. Mar-a-Lago—the Spanish name means "Sea to Lake"—was built by Marjorie Merriweather Post and opened in 1927.

Membership comes with the chance to ask the President a favor or suggest policy ideas to staff

27-hole Trump International Golf Club nearby. At lunchtime he likes well-done cheeseburgers in the main clubhouse. Mingling at formal dinners in the estate's luxurious ballrooms, the President is part maître d', part celebrity entertainer. He'll pose for selfies with bridesmaids, swap tales of golf escapades with his business buddies and brag about the size of the shrimp at the buffet.

Trump doesn't hobnob out of duty. Aides say it gives him a sounding board outside the Washington bubble. During the presidential transition, Trump set up shop in the formal living room, near a 1927 Steinway baby grand. Sitting in an

When the cereal heiress died in 1973, she willed it to the U.S. government, hoping the beachfront property, which spans the width of Palm Beach Island between the Atlantic Ocean and the Intracoastal Waterway, would become a retreat for Presidents and visiting dignitaries. But Jimmy Carter had little use for it—or the \$1 million in annual upkeep—and it was returned to the Post family for sale. Trump quickly made a bid, offering \$15 million, he wrote in *The Art of the Deal*. But Palm Beach didn't want him. Locals recoiled at having the brash developer as a neighbor, and the Post family foundation hoped to find a more



estimable buyer. The rest of the story has become Trump lore. As other offers fell through, the New Yorker put up successively lower bids. He even bought a nearby plot and threatened to build on it to obstruct the estate's views. Finally, the foundation sold Trump the property for \$8 million. "It may be as close to paradise as I'm going to get," he wrote of the mansion in his book.

The clashes with the community continued. On the verge of personal bankruptcy in the early 1990s, Trump sought to subdivide the 17-acre estate into mini-mansions but was blocked by the town. Unbowed, he set out to undermine Palm Beach's social order. At the time, local country clubs still excluded African-Americans, Jews and other minorities. Trump opened Mar-a-Lago to anyone who could foot the steep membership tab. "Mar-a-Lago is an extremely special place to President Trump," says Michael Cohen, a longtime attorney for the President. "It's an inclusionary place in a place that is exclusionary."

Trump flew in celebrities, hosted concerts that violated local noise ordinances and racked up a six-figure fine for flying an American flag from an oversize pole on the property. He later settled with the town, but he placed a new, shorter pole on a man-made hill to boost its visibility from neighboring lots. As he would later do in politics, Trump relished in shattering venerable traditions. "There's a conformity about this place that affects almost everybody," says Laurence Leamer, a frequent guest at the club and the author of *Madness Under*

the Royal Palms: Love and Death Behind the Gates of Palm Beach. "But not him."

Over the years, Trump has filed three lawsuits against Palm Beach County alleging that air-traffic controllers directed the loudest jets over Mar-a-Lago, a mere 2½ miles from the main West Palm Beach runway. As part of a settlement, he gained the use of a parcel of land just south of the airport, which he turned into Trump International Golf Club. It took winning the presidency for Trump to prevail in his long-running fight with the airport. To protect the President, the Secret Service and the FAA have declared a one-mile buffer zone around the property, finally keeping the din of jet engines from marring his paradise.

TRUMP'S PRESENCE complicates travel to the club for its members. When he is there, their vehicles must endure a security sweep at an adjacent parking lot, and anyone entering the facility must go through magnetometer screening. Coast Guard boats patrol the waterway and the ocean beachfront. Secret Service officers stand at attention, and new cameras ring the grounds. But for some, the sense of exclusivity has only heightened the club's appeal. Membership applications are up sharply, according to a person familiar with the matter. It helps that Trump has been a gracious host. On Feb. 4, during his first visit to the club as Commander in Chief, he and First Lady Melania Trump bucked convention by waiting in line with guests to enter the annual International Red Cross Ball.

Mar-a-Lago doubled its initiation fee, from \$100,000 to \$200,000, after Trump was elected President

Surrounded by tuxedoed Secret Service agents, they swayed to a Bob Seger cover as guests sipped vintages from Trump's Virginia winery. "I don't think I've ever seen the room looking more beautiful," Trump said during brief remarks at the fundraiser. "Perhaps at our wedding."

The blurry lines between business, recreation and governing has made Mar-a-Lago the site of some odd moments. After the North Korea missile test, Abe and Trump left their dinner to deliver brief remarks to reporters in an ornate room decorated for the occasion with the two nations' flags. Trump read a mere 23-word statement of support for Japan, declining to mention the missile launch or answer questions.

The President had other matters on his mind. He headed into Mar-a-Lago's Grand Ballroom, where a wedding reception was under way. As guests shot videos with their smartphones, Trump grabbed a microphone and made an impromptu toast. "I said, 'Come on, Shinzo, let's go over and say hello,'" Trump joked, encircled by guests in formalwear. He kissed the bride on the cheek, shook hands with the groom and wished the couple well. "These are two great families," Trump told the crowd. "They've been members of this club for a long time." Then he paused for a punch line. "They've paid me a fortune." □

The former neo-Nazi helping returning ISIS fighters let go of hate

By Charlotte McDonald-Gibson/Vilvoorde

DECADES BEFORE ISIS EXISTED AND THE TERM *FOREIGN fighters* came to mean Western Muslims traveling to Iraq and Syria, a 15-year-old Italian-American kid from Chicago sat down and wrote a letter. Christian Picciolini had been struggling to fit in after his parents moved to a new neighborhood, and he had been taken under the wing of an older man who spoke about pride, honor, heritage. Now he wanted to show his new friends his commitment to the cause. “I sent an application to the South Africa Afrikaner Resistance Movement because I wanted to go and fight for apartheid,” says Picciolini, now 43, whose arms still bear the tattoos that marked his allegiance to white extremist gangs. He could have been the “original foreign fighter,” he says. “Luckily, they sent me a letter back saying I was too young.”

Now Picciolini, who left the neo-Nazi movement in 1995, is using his experiences to help others who have fallen under the influence of extremism—foreign fighters returning from the ISIS heartlands. “My story is no different from somebody who flew to Syria,” he says. That’s how he came to spend a long night last October pacing the streets of Brussels with a 26-year-old Muslim who traveled to Syria to fight for ISIS. The pair talked for hours, one strand of a pioneering new program to help former fighters return to society and break from their extremist pasts.

NOWHERE IN EUROPE is the issue of returning foreign fighters more urgent than in Belgium. Among E.U. countries, it has the highest per capita number of foreign fighters—around 500 are reported to have left, a rate of 41 fighters per million people. Now the men and women are starting to come back. An April 2016 report by the International Centre for Counter-Terrorism in the Hague estimated that about 30% of the total 4,294 Europeans who had fought with ISIS and other extremist groups had returned. As the international anti-ISIS coalition moves to retake Mosul in Iraq and Raqqa in Syria, that number is expected to rise sharply. And yet there is no E.U.-wide program to tackle the challenges of reintegrating these men and women. In Belgium, all known returning fighters are questioned by the police, with the judicial authorities then deciding whom to prosecute. Some will serve prison sentences, but in cases where there is not enough evidence of a crime, the people will simply be returned to their home in Belgium, under varying degrees of surveillance. Then it is up to the individual municipalities to decide how to reintegrate them. Right now, most are just leaving it to the security services.

Not Vilvoorde; instead, the municipality just outside Brussels is spearheading a new approach to reintegrating people back into the societies they rejected, providing tailored social assistance in everything from education to marriage



▲
Christian Picciolini, pictured here in the early 1990s, is drawing on his past as a white supremacist to help others

counseling. “There are still some colleagues of mine who dream that this is something we can avoid,” says Hans Bonte, the mayor of Vilvoorde. He is determined to tackle the issue in a humane way but concedes that there are many challenges. Do you treat the returning fighters as enemies of the state and potential attackers, or the victims of brainwashing in need of treatment and help? That’s especially pertinent in a country that suffered a terrorist attack on March 22, 2016, when a cell of Belgian Islamists—most of whom had spent time in Syria—detonated bombs at Brussels Airport and on the city’s metro, killing 32 people. “It’s not a popular topic,” says Jessika Soars, who heads the counter-radicalization team in Vilvoorde. “Already within my own family I am having to defend the idea that you are helping terrorists.”

With a hostile reception from their neighbors, and security experts warning that they could pose a threat, the risk is the returnees could become yet more isolated, continuing the cycle of

COURTESY OF CHRISTIAN PICCIOLINI



alienation that sent them overseas in the first place. The authorities have a duty to question and engage with them, says Asim Qureshi, research director at CAGE, a London-based NGO originally set up to assist people detained during the wars in Iraq and Afghanistan. “The question is how do you do that in a way that is sensitive and doesn’t create an environment where that person feels like they are being intimidated or coerced or being intruded on. That’s the hard part because you could end up creating the very thing that you are trying to stop.” The first step, says Qureshi, is trust, and in many places, trust between the Muslim community and the security services has been severely eroded over the years.

This is where people like Picciolini come in—someone from outside the structure of the state who can reach the returnee through shared experience. Richard Barrett, a former British counterterrorism official who is now an associate fellow at the Royal United Services Institute in London, says reformed fighters could be an “enormous asset”

in counter-radicalization. “Returnees know an awful lot about the people who may be radicalized, they come from the same society, they know what buttons are pushed by extremist recruiters,” he says. The problem, however, is where to find former fighters from such a recent conflict willing to take on this mentoring role. The man in Vilvoorde is one of eight people from the municipality to return, and the only one who has served his prison sentence and is now under the guidance of the counter-radicalization team here. They have worked with him for a year, but his experiences are still raw, and he declined to be interviewed for this article, concerned for his and his family’s safety.

PICCIOLINI, HOWEVER, has a wealth of personal experience to share. Like many of the men and women from North America and Europe radicalized by Islamist extremists, the young Picciolini was feeling isolated, marginalized and insecure when he was “recruited,” struggling with his identity as a child of migrants in a predominantly white suburb. His encounter in 1987 with the leader of the Chicago Area Skinheads led to about eight years in the white-supremacist movement, where he climbed the ranks and became a recruiter himself, hanging out at concerts and skate parks looking for disaffected youth—very similar to what ISIS does today, with the added advantage that it can also trawl social media for vulnerable youngsters. “The tactics are nearly identical,” Picciolini says.

He not only has personal experience of the lure of extremist ideals, but also many years working with what he calls “formers” with the NGO he founded, Life After Hate. With backing from the U.S. State Department, he has traveled all over Europe to meet with authorities and discuss the shared strategies in deradicalizing white nationalists and jihadists. When the young man in Vilvoorde heard Picciolini was coming to his city, he requested a meeting, and the pair set off to walk and talk. “Our stories are so similar,” says Picciolini. “He went over and his brother was killed; my brother was also murdered because he was trying to live up to my legacy—it is such a parallel world.”

Bringing someone like Picciolini on board is all part of the tailor-made approach that Soars and her team are pioneering. They devised it by studying other approaches including the Aarhus Model in Denmark, which focuses on finding mentors for returning fighters, and a community-based initiative called Safe Spaces in the U.S. where people can discuss politics and current affairs without fear of being reported to the authorities. Soars deduced that the more successful models responded to the needs of the individual. “It is not like a laundry washer where you can put someone in, and then you press start and the program runs for three months, and then after someone comes out deradicalized.” The program brings together everyone in the community who comes into contact with the returnee—from a job-center employee and the police liaison officer, to the psychologist and social worker—so that if any problem emerges, it can be dealt with quickly. And crucially, the reintegration is led by social actors, not the security services. “If you are not able to come with an integrated approach, these people are left outside in the cold, and that creates new frustrations, new alienation from society, new isolation from individuals, and then you are just turning in circles,” Soars says.

Vilvoorde has so far been able to learn from mistakes of the past and stop the cycle of extremism. Since May 2014, nobody has left the city to join ISIS. Picciolini, however, has new challenges back home in the U.S. His NGO is threatened by President Donald Trump’s recent decision to change the government’s Countering Violent Extremism program, which part-funded Life After Hate, to focus purely on countering Islamic extremism. It’s a move Picciolini believes could empower hatred of a different stripe. “The white supremacists become emboldened when our governments just focus on what they call radicalization in certain communities, and for the Muslim communities, that marginalizes them,” he says. “So I’m afraid that by focusing solely on one ethnic group, we are doing ourselves more damage than good.” It’s not only Europe, in other words, that needs to learn from mistakes of the past. □

Nature



THE FUTURE

PHOTOGRAPHS BY FRANCK BOHBOT FOR TIME

Tigers at the Philadelphia Zoo can satisfy their instinct to patrol their territory in this network of walkways called Big Cat Crossing

E OF ZOOS

New discoveries about the emotional lives of animals are raising difficult questions about keeping wild things in captivity

By Justin Worland



For a mother escorting her kids through the Philadelphia Zoo, it was a close encounter of the ferocious kind. Directly in front of her as she strolled down the zoo's main walkway was a Siberian tiger, a 400-plus-lb. carnivore capable of tearing apart a wild antelope.

But rather than panic, the family laughed. The tiger was out of its lair, but its pathway was at a safe, meshed-in distance from onlookers, and after a few moments of looking around, the tiger moved on.

The tiger's trail, dubbed Big Cat Crossing, is part of a bigger initiative called Zoo360 that has changed the way humans and animals experience the nation's oldest zoo. There's no question the experience is compelling for the humans. On a recent visit, I watched children drop their lunches in awe of white-faced saki monkeys hanging out in the trees. I witnessed one couple stop midconversation

there, but on the other side of the country, a different vision of the future is playing out. At Seattle's Woodland Park Zoo, the elephant exhibit, where countless children have watched pachyderms play, now sits empty. The zoo, long recognized as a world leader in innovative design, built a \$3 million state-of-the-art facility for the species in the 1980s. But in recent years, animal-rights advocates had criticized the exhibit as inhumane for being too small and not reflective of the elephants' natural habitat. Under pressure from activists following the death of an elephant in 2014, and thanks

families can visit and observe animals is being questioned like never before. Across the U.S. and around the world, zoos are finding that balancing the demands of entertainment, education and conservation is increasingly difficult.

Ethical concerns have been coupled with safety fears—both for people and for critters—following an incident in May when officials at the Cincinnati Zoo shot and killed a 17-year-old gorilla named Harambe to protect a child who'd fallen into the exhibit. More broadly, there's a greater sensitivity to the environmental implications of zoos.

Ask a dozen zoo directors why these places should exist today and you'll get a different answer every time. Education, conservation and science all come up. But the most common answer—fostering empathy for animals—is becoming harder to do while providing humane care to these animals.

Study after study has shown that many animal species are far smarter and more feeling than previously understood, giving new insights into how they may suffer from anxiety and depression when

Not every zoo can have an elephant

Many elite zoos in the U.S. have focused on housing fewer animals as new research increasingly shows that animals need space and social interaction to thrive in captivity

SOURCES: SPECIES360 ZIMS DATABASE; ASSOCIATION OF ZOOS AND AQUARIUMS

Number of animals ...
... in this many zoos

Giant panda



15

4

Polar bear



43

24

Tiger



291

100

Gorilla



290

40

Orangutan



184

100

when a gorilla lumbered overhead, and saw more than a few families startled by the appearance of a large cat that seemed eerily close to them. But the bigger impact of Zoo360, says its chief operating officer, Andrew Baker, may be its effort to transform the experience of animals in captivity.

At a time when scientists know more than they ever have before about the inner lives of animals—and when concerns about animal rights loom large—many experts think that zoos need a major overhaul if they're going to last.

To some leaders in the field, the Philadelphia Zoo is the best model out

to new guidelines from the nation's main zoo organization, Woodland Park officials decided to close one of its most popular exhibits and place the elephants elsewhere.

"I am cautiously optimistic we'll be able to overcome this, but I'm not sure," says David Towne, who once oversaw the Woodland Park Zoo. "The animals-rights people have imposed their will on the elephants. I'm not sure that they aren't going to move on to gorillas, then other primates, and then what?"

Nearly two centuries after the first modern zoo opened in London's Regent's Park, the very concept of a place where

they are removed from nature. That has forced a difficult existential question: If we acknowledge that creatures suffer when they're confined, should they be held in captivity? Not even those who have advanced the cause for more-humane exhibits have an answer. "Even the best zoos today are based on captivity and coercion," says Jon Coe, the legendary zoo designer who invented the Zoo360 concept for Philadelphia. "To me, that's the fundamental flaw."

"THAT MOMENT AT A ZOO, when a person sees a gorilla look them back in the eye, helps them grasp their role

in a greater natural world,” says Mike Clifford who works with zoos at GLMV Architecture. Clifford’s job title is curator of innovation, but colleagues consider him the firm’s chief philosopher: he’s charged with contemplating the difficult questions about the future of zoos. He thinks the answer lies in fostering human-animal connections—and making sure those experiences also help sell tickets. That’s what GLMV has tried to do in Wichita, Kans., where visitors to the Sedgwick County Zoo can now ride in a boat to see the elephants in a 5-acre exhibit. The boat ride breaks down the barrier between animals and people while giving the elephants room to roam freely.

In Philadelphia, officials hope Zoo360 will provide those moments of connection, but they have also invested in other unusual ways of structuring their exhibits. Pigeons, rats and cockroaches may not qualify as exotic fauna, for instance, but they do occupy prime real estate. While I was there, children gathered around a zookeeper putting a rat through tests designed to show its intelligence.

Zoo designers are also well aware

environment. Finally, for any visitors still not convinced that the zoo has the bears’ best interests at heart, the zoo has a 2,600-sq.-ft. animal-care facility where vets can tend to the bears’ health.

Pressure to develop state-of-the-art exhibits like this one means that most zoos will eventually need to reduce the number of animals they house. The footprint, and the cost, is simply unsustainable, several zoo experts told me.

Consider the growing challenge of providing a home to elephants. Research consensus over the past decade suggests that most current exhibits are woefully inadequate. The most recent study—a comprehensive article published in the journal *PLOS One* in July—shows how elephants thrive best when they have social connections and the challenge of having to gather their own food. When those factors aren’t present, elephants tend to have impaired mental states and do not carry out basic functions like reproduction. The study confirms what zookeepers have known for years. In fact, the Association of Zoos and Aquariums (AZA) approved rules in 2011 requiring any accredited zoo

one of the zoo world’s foremost thinkers for four decades. His Philadelphia Zoo360 project is only the latest brainstorm in a career that has spanned innovative designs at the Bronx Zoo, Chicago’s Lincoln Park Zoo and others. When Coe looks ahead, he sees an even greater divergence between the biggest, best-funded zoos and the rest of the pack.

The top zoos, Coe believes, will evolve into something he calls the “unzoo”—turning upside down the traditional approach of bringing animals to humans for their edification. The unzoo will reverse the setup, giving animals space to roam and bringing the humans into their environment. Think Wichita’s elephant boat ride, but on a grander scale.

The hitch is that many established zoos may not be able to fund a transformation of that scope. More institutions may need to follow the lead of Seattle and others in closing down exhibits that fail to meet new standards and expectations—and the zoos that are most squeezed may be forced to close entirely as requirements from accreditors and patrons grow more taxing.

Giraffe	Southern white rhino	Eastern black rhino	African elephant	Asian elephant	Flamingos	California condor	Black-footed ferret
							
471	142	59	159	138	3,500	106	245
95	42	27	36	33	88	6	17

of the need to address growing public skepticism of animal captivity, which means more zoos are working not only to make their exhibits better suited for the animals—but also to be able to demonstrate that to their visitors.

A good example is the St. Louis Zoo’s new polar bear exhibit, a \$16 million facility tailored to reflect the latest research about the animal’s needs. The 40,000-sq.-ft. exhibit includes areas dedicated to each one of the polar bear’s native environments: sea, coast and tundra. Designers built it to be spacious enough to accommodate up to five bears, allowing them to have a social

with elephants to keep at least three of the species and a full-time elephant scientist on staff, among other things.

But not every zoo has the space or budget to meet those guidelines. Some, such as the zoos in Omaha, San Diego and Houston, have doubled down with better facilities. Others—in San Francisco, Seattle and Chicago, to name a few—have given up on keeping elephants entirely. (Other zoos, known derisively as roadside zoos, might keep elephants but lack certification from the AZA and largely fall outside the scope of this story.)

Coe believes these changes are just a taste of what to expect next. He has been

Coe also thinks zoos could face new competition from virtual-reality technologies, which could provide people an up-close experience without their having to leave home. As the wealth gap grows, the best zoos may become more exclusive, while the rest become more like theme parks. “Most people think of progress as an ascending line on a graph—zoos will just get better,” Coe says. “But evolution is like a tree or a bush branching in all directions.”

WHEN DAVID HANCOCKS assumed the role of director of Woodland Park Zoo in 1975, it looked a lot like any other





major-city zoo. Hancocks, an architect by training, had long been concerned about what he saw as zoos' indifference to animal life. "These people aren't designing for the animals," he recalls thinking. "They create exhibits in which they can put animals on show."

That, of course, was the original idea. In the 16th and 17th centuries, European explorers captured and brought home the exotic animals they encountered, giving their benefactors a glimpse of the far-off lands they had visited. Animals were housed in facilities called menageries and were often placed in the gardens of palaces.

The first true zoo, founded in London's Regent's Park in 1828, did seek to further scientific understanding of animals. Those scientists observed animal behavior behind closed doors at first but eventually decided to open the facility to entertain paying guests. The public loved it, and since then zoos have spread across the globe to practically every major city, from Buenos Aires to Kabul. But for decades, even the most progressive zoos were often centered on cages with bars meant to keep the animals inside—and on display.

Hancocks had something different in mind. Within a year of taking charge in Seattle, he hired Coe to rethink how zoo animals are kept in captivity. Coe had been waiting for such an assignment since graduating from design school. He proposed creating a landscape with gorillas rather than a gorilla exhibit and developed a plan that incorporated natural vegetation, room to roam and abundant light.

Zoo traditionalists greeted the idea with skepticism. Gorillas would tear up the place, they said. But Seattle moved ahead with the concept—and in the span of a few years, Coe's reputation evolved from impractical hippie to zoo visionary. His approach—now known as immersive design—soon became a global standard for major zoos.

The timing was prescient. Within a few years, the animal-rights movement

would see growing mainstream interest. Zookeepers began to understand that animal-rights activists do not like zoos. For some animals, like the polar bear, zoo life means enduring warm temperatures at odds with their evolution. Predators—like the lion—will never hunt, even though that behavior is deeply wired in their DNA.

"There are legitimate arguments for retaining some species of animals in captivity," says Princeton University professor Peter Singer, whose landmark 1975 book *Animal Liberation* helped launch the animal-rights movement. "That doesn't mean that people have to go and look at them."

Research in just about every discipline of science relevant to zoo animals over the past few decades has bolstered the moral arguments against captivity. Neurology research has shown that mammals possess the same brain chemicals that give humans self-awareness. Behavioral studies have demonstrated that some species experience social relations previously not understood. Animal psychologists have concluded that animals experience many of the same mental-health ailments suffered by humans.

Popular culture has helped make the case. The documentary *Blackfish* showed the emotional damage wreaked upon orca whales at SeaWorld. (The company has since announced that it will phase out killer-whale shows.) Last year, social media was suffused with outrage following the May 28 killing of Harambe at the Cincinnati Zoo. Critics asked whether the zoo needed to kill Harambe, a member of an endangered species, to save the child who had fallen into his exhibit.

AFTER DOING SO MUCH to shape the zoos we experience today, Hancocks now spends more time thinking about what he sees as their imminent downfall. Zoos are more interested in the illusion of making visitors think animals are well cared for than in actually helping them, he argues. A modern exhibit may look better than a cage, but an animal may derive little benefit from it. Landscape details are artificial, and fake grass is electrified to keep animals in one place.

"A concrete tree is as useless as a light pole," says Hancocks. "They give an illusion that they're making progress, but

A white-handed gibbon at the Philadelphia Zoo swings through a trail designed to offer an escape from the main exhibit's confines

I think from the animal's point of view, they're really no better off."

Most zoo officials, unsurprisingly, don't agree. Many have dedicated their life to working with animals and have formed deep bonds with the creatures under their care. But these days, even while they push to improve the lives of their charges, they're also fending off protests, lawsuits and publicity stunts by animal-rights groups. Some of the zoo officials I spoke with used words like "extremist" and "zealot" and said they feared the movement would ultimately end the good they believe comes from their zoos.

Conservation—the work of protecting endangered species—is at the top of their list. The AZA strongly encourages zoos to spend at least 3% of their budgets on field conservation efforts. Foremost among those efforts are breeding programs. The AZA creates in-depth survival plans for endangered species and has saved, among others, the red wolf and the California condor. Both have been reintroduced to the wild after living on the brink of extinction.

Other endangered animals bred in captivity—particularly large animals like elephants, lions and bears—could never adapt to the wild and will inevitably live the rest of their lives in zoos. And then there are the big efforts that fail—like the case of Lonesome George, the last remaining Pinta Island giant tortoise when he died in 2012. Researchers in the Galapagos spent years trying to breed him with females of a closely related species (at one point some even considered showing him an X-rated tortoise film), but he had no interest. His species died with him.

Against that backdrop of success and failure, more zoos have broadened their definition of conservation. Instead of saving a species, some argue, they advance conservation work by educating patrons and pushing them to donate to the cause. Other zoos tell their visitors to act on climate change to protect animal habitats across the globe. "If you cannot connect every single exhibit to something in the wild, then you shouldn't build it," says Rick Barongi, a former Houston Zoo director. "You have to be part of the conservation story. You can't just be writing checks."

Imagining the zoos of the future

The cutting-edge zoos that could emerge in years to come look different depending on their location, size and structure. Here's how visionary landscape architect Jon Coe envisions three types—and sizes—of zoo

1

Elite medium-size zoo

Best for:

Smaller mammals or limited numbers of larger animals. These zoos may focus on a single category, like big cats.

1

Animals could explore via pathways in the air and on the ground that link habitat areas



2 Elite mega zoo

Best for:

Any species, really, thanks to large roaming areas. Zoos like this may also become the home of large animals like elephants.

1

Visitors could view the animals in safari-like settings

2

With hundreds of acres, there would be a large space for animals to roam



Not everyone buys the conservation mission. "I think this conservation quilt that zoos are wearing is quite dubious attire," says Hancocks. "I would go so far as to say I think they are doing a disservice to conservation. They tell visitors over and over that zoos are saving wildlife, and visitors think, Oh good, the species are saved."

Zoos are fundamentally conservative institutions. Many of the most re-

spected ones have been around for more than a century and have built their facilities over time and devoted countless resources to breeding. The people who run them are slow to make changes and, when they do, those changes can take years to implement.

Most of the zoo officials I talked to acknowledged some concerns about the future—but many were also reluctant to embrace dramatic shifts like the unzoo.

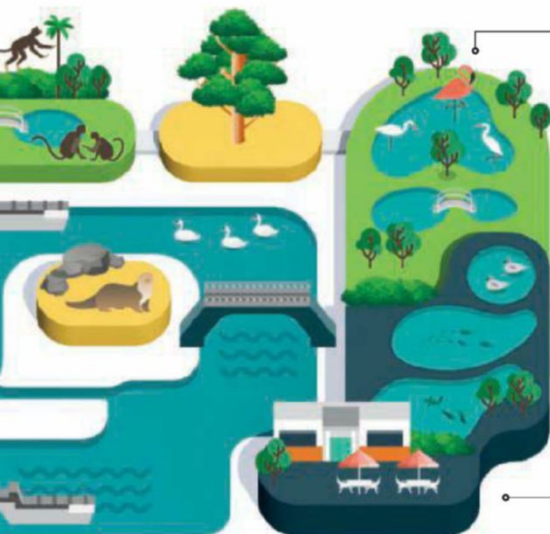


2

These zoos could focus on just a few large animals but provide them with ample space to roam

3

Interactive exhibits could highlight conservation and offer visitors experiences beyond seeing real-life animals



3

Some exhibits would combine species to simulate wild ecosystems

4

Commercial elements like restaurants and hotel space could turn zoos into luxury vacation destinations

3 The high-rise zoo

Best for:

Groups of animals that can be confined to a narrow space. These could include aquatic species along with a slice of the rain forest. Birds could use the space as a habitat while also spreading their wings in the open air.

1

Sea, cliff and forest attractions could be linked by special tubes to give visitors an underwater view of an ecosystem. Canopy walkways and tree houses could also be integrated

2

These zoos could include small and vertically oriented animal communities, such as in a rain forest

4

These zoos could be built into existing high-rise commercial buildings with residential communities. They could include several interconnected towers with themed restaurants, shopping and hotels in addition to the animals

3

Nocturnal species could rotate with diurnal ones, keeping the zoo open 18 hours a day



ILLUSTRATIONS BY JING ZHANG FOR TIME

Indeed, some in the field have already criticized Zoo360 as outlandish, calling it a lot of hype without substantially changing the exhibit. Coe has largely turned his attention to developing international zoos in developing countries like Afghanistan, where he works pro bono and can share his vision of the future of zoos.

On the human side of the equation, one thing remains clear: people still

enjoy a chance to see and get close to animals. More than 170 million people visited zoos in the U.S. in 2015, according to the AZA, up 10 million from 10 years prior. And many zoos have experienced record attendance. “The business continues to change and evolve—like any business,” says David Walsh, who founded Zoo Advisors, a zoo financial consulting firm. But, he adds, “people are still going to zoos. And they’re

going in bigger numbers than they were before.”

Still, those numbers will do little to diminish the growing outrage of animal-rights activists, and if cockroaches replace elephants in the country’s top zoos, strong attendance will undoubtedly decline. “Where are we going?” asks Towne, formerly of Seattle’s Woodland Park Zoo, repeating my question. “I guess I’m worried.” □

Sports

THE JOY OF SHARING

To rule the NBA, James Harden
needed to embrace letting go

By Sean Gregory / Houston

PHOTOGRAPH BY BRENT HUMPHREYS FOR TIME





ON A LATE-JANUARY NIGHT IN PHILADELPHIA, Houston Rockets point guard James Harden dribbles the ball toward the foul line and pauses, weighing one of the countless decisions he'll make over the course of the game. A blink later and he's off, driving to the basket with his left hand. But before Harden can launch a shot, the towering 76ers center Joel Embiid obscures his path. Not so long ago, Harden may have taken his chances and fired one off, the defender's 7-in. height advantage be damned. But that was before one of the league's most prolific shot takers discovered the joy of giving the ball away. And so with Embiid closing in, Harden spots teammate Montrezl Harrell rolling toward the hoop and zips it to him for an easy layup.

The score accounted for two of the 123 points Houston needed to pull out the close road win. Harden's pass marked one of 13 assists, part of a record-setting performance that also included 51 points and 13 rebounds. It was the second time this season he recorded a triple double—double digits in three statistical categories—while scoring 50 points. No other NBA player has ever done that more than once in a season. Such feats are one of the main reasons that, after a dismal 2015–16 season in which the Rockets barely made the playoffs, Houston has a real shot at the title and Harden is a leading contender for league MVP. How did this happen?

There are no shortage of explanations. Dwight Howard, an eight-time All-Star, left Houston in free agency, which some players credit with improving team chemistry. And the Rockets brought in a new coach, Mike D'Antoni, who installed an up-tempo offensive system that relies on the three-point shot. It's been a natural fit: Houston is making 14.5 threes per game, a record clip. But the most important reason for Houston's success may be the one that seemed least likely to work.

When D'Antoni took the reins, he asked Harden to become the team's point guard. Harden had never played the position full time in the NBA, and the move had plenty of skeptics—including Harden. "I thought he was crazy," Harden, 27, recently told TIME over dinner at a Houston steak house. The point guard's job is to facilitate a

team's offense, not necessarily to be the offense. And while Harden has always been a better passer than many realize—he finished sixth in the NBA in assists last season—it's his skill as a scorer that made him famous enough to have his own line of gummy candy. "You are who you are a lot of times," former Houston coach Kevin McHale said before the season started. "Can you change and be a facilitator first? I don't know."

With about two months left in the regular season, the answer seems clear. Harden leads the NBA in assists, averaging 11.3, 51% more than last year's rate, while still scoring 29.1 points per game, good for third in the league. And his team owns a 40-17 record, third best in the NBA as of Feb. 13. Fans, players and media voted Harden to start this year's All-Star Game on Feb. 19, the first time he's received that honor. For all of this to happen, for Harden to become the player few thought he could be, is a story with lessons that apply far beyond the basketball court.

"This is my eighth year in the league already, and it's going by like this," says Harden, snapping a finger. "I had to look in the mirror at myself and say, 'This is what you're doing, and this is what you have to be better at, in order to be one of the best basketball players in the world. You have to change.' I've changed."

AT 6 FT. 5 IN. AND 225 LB., Harden packs power, but he's no freak physical specimen like LeBron James or Kevin Durant. Yet even as a kid in Los Angeles, Harden was certain he would be one of the best basketball players in the world. But he didn't always train like one. "When it was time to run around the gym and do sit-ups," says his mother Monja Willis, "he wasn't trying to do all that." A single

parent who worked in customer service at AT&T for almost 30 years, Willis gave birth to Harden a decade after having her second child, following a series of miscarriages. "We called him lucky," she says, "because he was lucky to be here."

Growing up, Harden was a bit chubby and asthmatic, and launched the ball from his hip. "My shot was quite blockable," Harden says. But he was a natural scorer who loved the game and remained convinced he would play it for a living. "He carried around a basketball as if it was his job," says Harden's older brother, Akili Roberson. "I was like, 'Dude, do you know how many people play in the NBA?'" When Harden was in ninth grade, he left a note for his mother. "Could u leave me a couple of dollars?" Harden wrote. "P.S. Keep this paper. Imma be a star."

At Artesia High School, an L.A.-area basketball powerhouse, coach Scott Pera tried to bring Harden's fitness in line with his talent and ambition. Harden complained about the conditioning regimen to his mom—even today, he recalls it as "the worst time of my life"—and they met with Pera in the coach's office. "She looked at him, looked at me and goes, 'He's the coach, listen to him,'" Pera says. That was enough to bond player and coach, and Harden thrived, earning a spot on the prestigious McDonald's All-American team his senior year.

Harden stayed close to Pera for college, spurning top programs like North Carolina to attend Arizona State, where Pera had become an assistant coach. The season before Harden arrived on campus, in 2007, the Sun Devils finished 8-22. Harden engineered a turnaround in Tempe: Arizona State won at least 20 games in each of Harden's two seasons, and he was named Pac-12 Player of the Year in 2009. That June, the Oklahoma City Thunder selected Harden with the third pick in the NBA draft.

In Oklahoma City, Harden joined the young stars Durant and Russell Westbrook to form the core of a budding dynasty. By his third season, in 2012, the Thunder reached the NBA Finals, where they lost to the James-led Miami Heat. The trio tempered that defeat by winning a gold medal together at that summer's London Olympics. But the Thunder determined that the small-market team couldn't afford three superstars. In

**THE MOVE HAD
PLENTY OF
SKEPTICS—
INCLUDING
HARDEN**



Harden, the face of Houston's franchise, leads the NBA in assists and is third in scoring this season

October 2012, Harden was traded to Houston; he heard about the deal while at an Oklahoma City Cheesecake Factory with his sister and nephews. "I was almost in tears," Harden says.

But the move gave Harden a chance to step into the spotlight. He was supposed to be a franchise player in Houston, and when the Rockets acquired Howard in 2013, expectations soared. The partnership worked briefly, with Houston making a run to the Western Conference finals in 2015. But it soon soured, and by the end of last season, which the Rockets finished 41-41, it was clear that Houston had one too many top dogs in the locker room. "It was confusing," says Rockets guard Patrick Beverley. "I've got Dwight telling me I need it in the post, I got James telling me I need it on the wing." This past summer Howard signed with the Atlanta Hawks, leaving Houston with a single leader and space under the salary cap to make key additions.

Now there was no doubt: the Rockets were Harden's team, and they gave him a nine-figure contract extension to cement it. Harden had extra motivation to prove he was worth the investment. Although he joined James, Michael Jordan and Oscar Robertson as the only NBA players in history to average at least 29 points, seven assists and six rebounds in a single season, he wasn't named to any of the all-NBA teams last season. "I guarantee you any other guy with those numbers would have made it," Harden says,

still smarting over the slight. Bouts of lackluster defense, a sometimes mopey on-court demeanor and the team's disappointing season all likely contributed to the snub. He resolved to leave a different impression this season while keeping up the gaudy stat line. "I'm going to bounce back," Harden says, "and do it again, do it again, do it again."

Harden decided to skip the Rio Olympics to prepare for this season and help the Rockets recruit free agents. But for a player with a me-first reputation, bowing out of a chance to represent your country is not the best PR strategy. "The easiest thing to do, from James' perspective, is to go to the Olympics, get a gold medal and get some of that shine back on your game and that perception of you," says Tad Brown, the Rockets CEO.

Instead, Harden went to work on evolving his game. He spent much of the summer in Arizona, hunkered down with his personal trainer and his strength coach from college. "It was like I was locked way in a cage," he says. The day after D'Antoni told Harden he'd be the point guard, Brown sent Harden a text, telling him that the only player to lead the NBA in scoring and assists was Nate "Tiny" Archibald in 1973. "But he already knew that," says Brown. "He had just looked it up."

TRANSITIONING FROM a production role, in which you are responsible only for your own work, into a leadership position can be difficult in any career. The best salespeople, after all, don't always make the best bosses. "It's like you're letting go of one trapeze and trying to find the other," says Jack Zenger, CEO of Zenger Folkman, a leadership-development company. "Not everyone does that well."

D'Antoni was worried about Harden's ability to make the leap. He knew about his star's shoot-first rap. And after a dozen years as a head coach in a league with its share of outsize egos, he was well-versed in the limits of a coach's influence. "It's hard for superstars to change what they're doing," says D'Antoni. "We're paying them \$20 to \$30 million a year, and it's like, 'Ahhh, wait a minute, I got there because of that. This is better? Seriously?'"

D'Antoni relied partly on logic. If Harden was the team's best player, he reasoned, it was more efficient to give him full control of the ball rather than have him waste energy wrestling to get open. But the coach says his appeal also depended on Harden's willingness to challenge himself, rather than his bosses. Many superstars tell team brass that they need a better supporting cast in order to win. "But James was willing to say, 'No, I need to change first, and we'll see what happens,'" says D'Antoni. "It took guts."

Harden morphed into a student. He watched film of Steve Nash, the former Phoenix Suns point guard who won

back-to-back MVPs in 2005 and 2006 while playing in D'Antoni's system. And he sought out Jason Biles, Houston's director of performance rehabilitation, for a kind of crash course in leadership. Biles and Harden watch videos created by Tim Elmore, an Atlanta-based motivational speaker, exploring "habitudes"—mental habits and attitudes that boost performance.

Sitting in his office at the Toyota Center, Houston's home arena, Biles pulls out his laptop to show me a few examples. In one, Elmore extols the importance of being a thermostat who sets the temperature of the team, rather than a thermometer. Another is about the importance of "the discipline bridge," an idea that Elmore developed from seeing construction workers, after a tornado, build temporary bridges over flooded areas so they could reach houses that needed repairs. "If you're wanting to get somewhere," he says in the video, "my guarantee is that you're going to have to cross a bridge along the way, called discipline." Such talk may call to mind the *Saturday Night Live* self-help guru Stuart Smalley, but Harden credits the videos and sessions with Biles for helping him grow as a leader.

The proof, say Rockets players and staffers, lies in Harden's stronger connection with teammates. Now when they struggle, Harden is better at lifting them up. "That's a totally new thing this year," says Brown, the team CEO. Trevor Ariza, a Rockets forward, appreciates the help. "I can be somewhere else during a game, and he picks up on that vibe," says Ariza. "It's just a simple conversation. 'Hey, yo, we're here with you. We need you, let's go.' He's able to communicate those type of things while not ticking anyone off. It's not easy."

Neither is slowing him down. Harden is a master at pacing the game: he stops and starts on a dime, throwing the defense off his feet. His deceleration allows him to create space for an outside shot, while his slithery agility lets him snake into the lane and find an open look or draw a foul. The latter is a particular skill: Harden leads the NBA in attempted free throws.

His lethal combination is a blend of smarts, long-range shooting touch and that newfound knack for flicking passes to open teammates like a Vegas blackjack

dealer. "It's like a second guy in your head, talking to you every possession," Harden says of his transformation into a point guard. "Here you go, make the right pass, here you go. O.K., he's open, hit him. O.K., now you're open, shoot the ball now."

The scary part for the rest of the NBA is that he's still adjusting to a new position. "He's learning where to put the furniture, where to put things in his new home," says Houston's director of player development John Lucas, a former NBA point guard. "So we haven't seen the best of him yet."

IF HOUSTON'S PLAYERS have warmed to their retooled star, the team's fans are positively gaga. Harden's stellar play may be the reason for much of the love, but don't discount the beard. At a recent home game, a Harden look-alike mascot danced in the aisles, while fans dressed as Superman, Batman and Spider-Man sported paper beards modeled after Harden's bushy mane.

The beard began in college, a bit of unchecked stubble that Harden thought lent an air of maturity. "It felt cool to look older," he says. It has since become part of his persona: independent, creative, a bit eccentric. It even has its own candy. In 2016 Trolli launched Weird Beards, a line of sour gummies shaped in Harden's likeness. And social media is filled with tributes to Harden's signature look. "I'll take 5% credit," Harden says of the rise of hipster beards around the nation. "I don't want too much. Just 5%."

As the beard has grown, so has Harden's celebrity. In 2015 he defected from Nike to sign a 13-year, \$200 million endorsement deal with Adidas, which is betting that Harden can help dent Nike's stronghold on the basketball market. His shoe launched in December, and the com-

pany says it's their fastest-selling signature basketball sneaker in six years.

Less welcome, he says, was his brush with tabloid life during his relationship with Khloé Kardashian. "Everything I did was overthought," says Harden. "It was blown out of proportion." The couple broke up last year, and Harden calls it "a learning experience, for sure."

IT'S A GOOD TIME to be at the top of the NBA heap. Thanks in large part to a rich new TV-rights deal that went into effect this season, revenues for the 2016–17 season are expected to reach a record \$8 billion, a 23% jump year over year. Last year's NBA Finals was the most-viewed championship series since 1998, when Jordan won his final title. And labor peace is at hand. In January the league and its players' union finalized a new collective bargaining agreement ensuring no work stoppages through the 2022–23 season.

Harden has reaped the rewards: in July he signed a \$118 million contract extension with the Rockets. An MVP award would go a long way toward boosting his wattage. But it will take a championship before Harden could be considered among the greats. And the Rockets have a tough road to a title. The Western Conference was already competitive before the Golden State Warriors added the rangy Durant to a team that won a record 73 regular-season games the year before. They have the league's top record again this year, and the next best belongs to another conference foe, the San Antonio Spurs. Meanwhile, the talent-packed Los Angeles Clippers could loom as a spoiler. And should the Rockets manage to make it through that gauntlet, James and the Cleveland Cavaliers could be waiting to defend their title.

Harden knows what his squad is up against. But he doesn't lack for confidence. When asked if he's the best player in the world right now, he doesn't hedge. "For sure," he says. "I feel like I'm solid in everything: IQ, studying the game, I can score the basketball, make my teammates better. There are not a lot of guys that have all those characteristics in one. They might be way more athletic, can shoot the ball way better. But everything solid in one human body?"

Good luck stopping that. □

**IT'S LIKE A SECOND
GUY IN YOUR HEAD,
TALKING TO YOU
EVERY POSSESSION.'**

—HARDEN, ON HIS TRANSFORMATION
INTO A POINT GUARD



When I grow up,
I want
to be a chef!

Last year Sarah was too sick to dream.
She has Primary Immunodeficiency or PI.
Thanks to the Jeffrey Modell Foundation,
she was properly diagnosed and treated...
Now her future is sweet.

jm Jeffrey Modell
Foundation

info4pi.org

More than 25 years of helping children reach for their dreams.

now I have a chance ♡



**YOU
NEED
TO LIE
DOWN**





L O N G E V I T Y

THE SLEEP CURE

The fountain of youth may be closer than you ever thought

BY ALICE PARK

PHOTOGRAPH BY ERIK MADIGAN HECK FOR TIME

sleep research, because evidence linking quality rest to good health and longevity has never been more convincing.

Scientists are learning that short-changing sleep can compromise nearly every major body system, from the brain to the heart to the immune system, making our inability—or unwillingness—to sleep enough one of the unhealthiest things we can do.

Studies of people whose sleep sessions are irregular or short show they are at higher risk of developing diseases that can lead to early death, including heart disease, diabetes, high blood pressure and obesity. Poor sleep may have detrimental effects on the brain as well, increasing the risk of dementia, including Alzheimer's disease, as well as mood disorders like depression, posttraumatic stress disorder (PTSD) and anxiety. And like smoking, a terrible diet and not exercising enough, poor sleep is now linked to an overall increased risk of premature death.

"I used to suggest that sleep is the third pillar of good health, along with diet and exercise," says Matthew Walker, a professor of neuroscience and psychology at the University of California, Berkeley. "But I don't agree with that anymore. Sleep is the single most effective thing you can do to reset your brain and body for health."

Despite the mounting evidence of its benefits, Americans are sleeping about two hours less each night than they did a century ago. Blame the technology-fueled 24/7 workplace, social media or the relentless news cycle, but about one-third of U.S. adults sleep less than the recommended seven hours daily, and 40% report feeling drowsy during the day, according to data from the Centers for Disease Control and Prevention. The problem begins early: only 15% to 30% of U.S. teens get the 8½ hours a night recommended for adolescents.

While life expectancy has been inching upward over the past century thanks to advances in medicine and technology, those gains could start to sag under the weight of our collective sleeplessness. Many people still dismiss sleep as something they can occasionally (or even regularly) skim on, but the

MARK ZIELINSKI KNEW HE WAS ONTO SOMETHING when his mice stopped sleeping. Normally, the animals woke and slept on a 12-hour cycle. When the lights were on in the lab, the mice were active. When it went dark on a timer, down they went. But Zielinski, who teaches psychiatry at Harvard Medical School, had recently tweaked their schedule to keep the mice up past their bedtime.

Zielinski and his colleagues would rustle the bedding in the mice's cages to keep them from dozing off when they started to display the telltale signs of sleepiness—drooping lids, sluggish walk, EEG readings showing their brain activity was waning. But Zielinski noticed that when the mice were left alone to slumber at will after the disruption, they didn't, or perhaps couldn't, fall asleep.

That the sleep-deprived rodents slept less than they normally would didn't really surprise Zielinski. The mice had a genetic mutation that he suspected was linked to sleep problems. More striking were the electrical brain readings showing that even when they did sleep, they weren't getting the deep, restorative kind of rest that doctors say matters most—not just to rodents but also to humans.

In the right conditions, researchers believe, the brain produces a signal that essentially tells the body's major systems—the heart, the lungs, the digestive system, the nervous system, even the muscles—that it's time to call it quits for the day. Zielinski's research has found that, just as with the mice with the mutation, it's likely that in some people with chronic sleep problems, that critical signal isn't firing.

Understanding what's behind some forms of insomnia, an aim of Zielinski's research, is a major step in learning how to fix it. That's a big deal in

'Sleep is the single most effective thing you can do to reset your brain and body for health.'

MATTHEW WALKER, professor of neuroscience and psychology, University of California, Berkeley

SLEEP ADVICE FROM THE PROS

'The biggest thing I do to improve my sleep is to pull the plug. It's not easy. I made the decision that my sleep comes before catching up on my life. So when it's 11 p.m., I turn off my email, phone and computer. Warm baths and warm milk also help.'

ROBERT STICKGOLD,
associate professor
of psychiatry, Harvard
Medical School

biological facts are clear: it is neither safe nor wise to take sleep lightly.

"To me, sleep is like the canary in the coal mine," says David Schnyer, a professor of psychology and neuroscience at the University of Texas, Austin. "Changes in sleep can create systemwide changes in the organism, and all of the stages of sleep affect the entire body and brain."

That's why sleep deprivation is so strongly linked to disease and premature death. One recent study even showed that sleep deprivation in mice can cause death faster than starvation can. And yet doctors—those who talk to their patients about sleep in the first place, anyway—report that many people still aren't convinced that their nightly rest is a critical piece of the long-life puzzle. Health obsessives who would never touch a cigarette and pride themselves on avoiding junk food may also boast about how much they get done, and how little they sleep at night.

"Because we're asleep, we don't see the benefits of it," says Robert Stickgold, a well-known sleep researcher and an associate professor of psychiatry at Harvard Medical School. "That's

the disaster and tragedy of our current world."

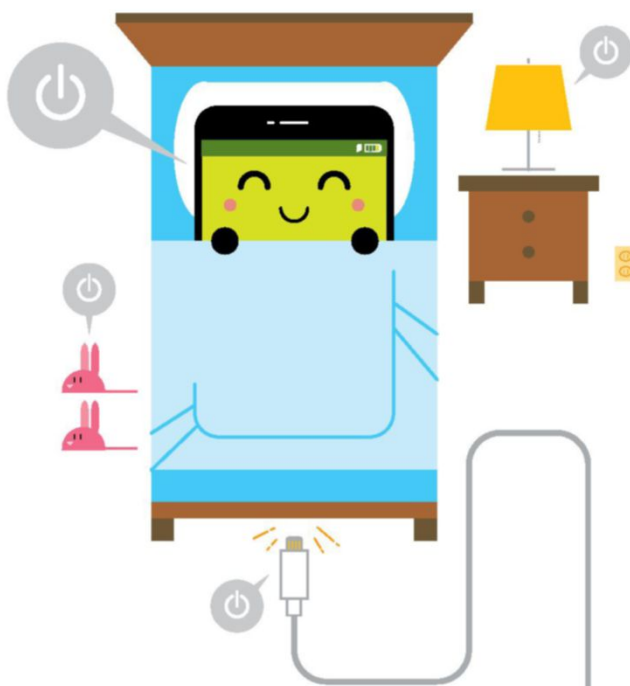
It's been that way for a long time. Benjamin Franklin famously quipped that "there will be sleeping enough in the grave," and today, sleep is still misperceived as one of the most duty-driven and unproductive parts of the day—the habit that gets in the way of life as opposed to the one most likely to extend it.

Perhaps that's because until very recently, scientists couldn't even agree on the evolutionary reason why animals need to sleep in the first place. But now they know that what happens during sleep, particularly in the brain, is critical to human well-being—not to mention a long life. That's why they also know that the cost of ignoring the latest science on sleep can be dear.

SPENDING A GOOD THIRD of the day oblivious to the world around you and, by extension, incapable of protecting yourself doesn't seem like a smart way for a species to stay alive. And yet every animal does it, leading scientists to accept that sleep must be nonnegotiable for some reason—and that we must need a certain amount of it to survive.

Following a rigorous, milestone study in 2002 of more than 1 million healthy men and women by the American Cancer Society, experts suggested that the magic amount of sleep for longevity was seven hours a night. People who slept that amount were most likely to still be alive at the end of the study's six years, compared with people who got either six hours or less, or eight hours or more, of sleep each night. To this day, that's typically the amount that doctors and public-health groups recommend for the average adult, though older people can probably get away with a little less sleep than that, and younger people need more.

Another even longer study, which followed more than 21,000 twins in Finland, found that people who were regularly sleeping less than seven hours daily were 21% to 26% more likely to die of any cause during the study's 22-year period than those



DREAMY SLEEP GADGETS



SENSE \$149, HELLO.IS

This voice-activated alarm clock wants to be your better-sleep concierge. To help you engineer the perfect sleep environment, its internal sensors can assess the temperature, humidity, light and even air quality in your bedroom, alerting you to any problems that may impede quality rest. The alarm clock, which you can program with simple voice commands, can also monitor your sleep cycles to wake you with glowing light and soft music when you're least likely to be in deep sleep and therefore groggy. Sense comes with a Sleep Pill—a sensor you clip onto your pillow that lets you keep track of your sleep length and quality, thanks to an accompanying app.



SMARTSHAKER 2 \$30, ILUV.COM

For all its upsides, sharing your bed with another person presents challenges, especially in the morning. This alarm tries to fix that by shaking you awake with a vibration, programmed from your smartphone, that only you can feel. Simply slip the vibrating disc under your pillow and choose to be roused at one of three levels: normal, strong or, if you need a vigorous shake, earthquake.



AROMATHERAPY DIFFUSER \$50, BELLASESENTIALS.COM

Devotees of aromatherapy have long known what some studies are now bearing out: scents can be used therapeutically to trigger beneficial mood changes. A few studies show that lavender, for instance—which you can dilute and then diffuse into the air using this device—can help you get better, deeper sleep.



ZEEQ PILLOW \$299, REM-FIT.COM

It feels like a normal memory-foam pillow, but this one is stuffed with sensors, vibrating panels and tiny speakers all designed to improve your rest. When you snore, it gently buzzes to nudge you into a new position, and it wakes you to music only you can hear. Come morning, the app spits out a rundown of your night's activities: how much sleep you got, how much (and how loudly) you snored and more.



ATHLETE RECOVERY SLEEPWEAR \$80+, UA.COM

Some evidence suggests that far-infrared energy can ease pain and stiffness, and that's the principle behind Under Armour's new line of pajamas. They're lined with a material that the company says absorbs body heat and reflects back far-infrared energy. The idea: less pain, which leads to better sleep—and a better performance.



who slept more than eight hours.

So clearly sleep has some real biological benefit. Could it just be that the brain and body need downtime to recuperate after the activity of the day? That was the most popular explanation for decades, until an inquisitive neuroscientist at the University of Rochester decided to look for the answer inside the brain itself. When she did, Dr. Maiken Nedergaard uncovered what many scientists now agree is sleep's primary evolutionary function: to clean out the brain, quite literally, of accumulating debris.

In 2014, Nedergaard first revealed that while the body appears to rest during sleep, a whole lot is happening inside the brain. Neurons pulse with electrical signals that wash over the brain in a rhythmic flow. The brain runs checks on itself to ensure that the balance of hormones, enzymes and proteins isn't too far off-kilter. All the while, brain cells contract, opening up the spaces between them so that fluid can wash out the toxic detritus that can cause all kinds of problems if it builds up.

"It's like a dishwasher that keeps flushing through to wash the dirt away," Nedergaard says.

Without that nightly wash cycle, dangerous toxins can damage healthy cells and interfere with their ability to communicate with one another. In the short term, that can impede memory formation and the ability to coherently compose our thoughts and regulate our emotions. Over time, the consequences can be more dire. Lack of sleep can lead to faster aging of brain cells, contributing to diseases like Alzheimer's, which is now the cause of death for 1 in 3 seniors.

Nedergaard's research, which was done in mice, prompted a crucial rethinking of not only the benefits of sleep but also its biological function. It turns out the brain and body are extremely active when we sleep—we're just not aware of most of what occurs while we do it.

"Sleep is not just a passive state but a fairly active state on the molecular level," says Dr. Allan Pack, director of the Center for Sleep and Circadian Neurobiology at the University of

Pennsylvania. "During the day, the brain is using energy resources to fire neurons. At night, a switch turns on so the sleeping brain can take advantage of the metabolic downtime to do some cleaning up."

THE IDEA that sleep is a time of important biological activity, rather than a period when the body checks out, is transforming how doctors think about another important factor in longevity: mental health.

Scientists have long known that sleep is important for memory. But it turns out that during sleep, especially the cycles of deep dream sleep, the brain doesn't just revisit the events of a day in a more organized way. It also works on processing the emotions attached to these recollections. When a memory is filed away during sleep, it's also stripped of some of the powerful feelings—like fear, grief, anger or joy—that might have clouded the experiences in the heat of the moment.

It wouldn't be healthy, or efficient, to remember every event or experience in its full factual and emotional context. But separating the emotional aspects of a memory—the anger over an argument with your spouse, the frustration at the guy who cut you off in traffic, the dejection you felt after getting a curt email reply from your boss—from its objective parts allows you to recall the experience without reliving it. "We sleep to remember and we sleep to forget," says Walker, the UC Berkeley sleep scientist, of this coping mechanism. "I call it overnight therapy."

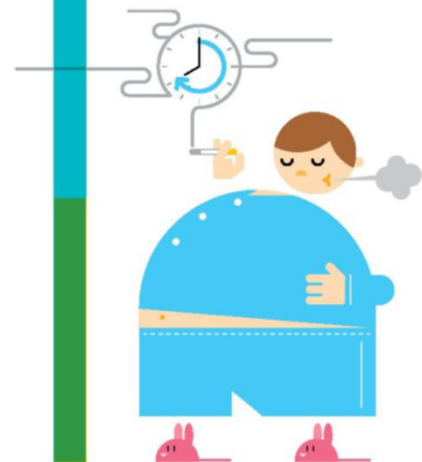
This type of processing takes time. It likely happens only during deep, quality sleep, and only over consistent nights of such sleep. That may explain why people who cut their sleep short or experience interrupted sleep may not fully disentangle the emotional baggage from their memories.

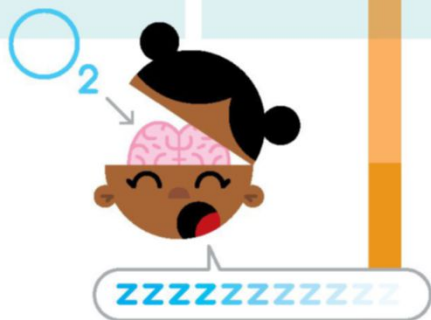
In those cases the memory, in its emotionally taxing entirety, continues to resurface every time the brain tries to sleep, in a vain effort to be properly processed. The brain tries to store the memory in a neutral way, but without deep sleep, there just isn't enough time for that triage.

Walker believes these aborted efforts

'I think there are three ways you can mess yourself up. The first is by smoking cigarettes, the second is by becoming obese, and the third is really shortchanging yourself on sleep. I try to get eight hours each night.'

LEONARD GUARENTE, co-founder of Elysium Health and director of MIT's Paul F. Glenn Center for Science of Aging Research





'I was a chronic snorer, depriving my brain of a certain amount of oxygen. Now I sleep much more restfully using a sleep-apnea machine. I also believe in getting mental exercise, so I do daily cognitive tests. If I've had a short night of sleep, I consistently score much lower.'

J. CRAIG VENTER,
scientist and CEO of
Human Longevity Inc.

may drive conditions like PTSD, which is well understood to be common among combat veterans but which may be more common among the general population than therapists and researchers previously thought.

"The more nights you sleep, the more soothing the influence of sleep on that memory," he says. "Sleep continues to work on those emotional memories and flatten them out after about a week. Now there's great evidence that PTSD is a disorder in which that process fails."

Walker saw this effect firsthand when he showed a group of people a frightening video. He kept some of the people awake after the viewing and allowed the rest to sleep normally. Those who were not allowed to sleep properly were more likely to remember the negative aspects of the video than those who got enough sleep.

There's also strong support for the idea that insufficient sleep may be a trigger for, and not just a symptom of, a number of mental illnesses, including depression, bipolar disorder and even schizophrenia. Depriving people with bipolar disorder of sleep, for example, can launch a manic episode, while some people with depression report worsening symptoms when they aren't sleeping well.

Fully understanding the role sleep plays in mental illness is a rich area of future research. Already many doctors think consistent, high-quality sleep can have a direct bearing on the health of those with mental illness. "Anyone who suffers from moderate or significant mental-health concerns needs to be aware that sleep may be one of the most important things they can do," says Walker.

Stress, scientists also know, is one of the more potent accelerators of aging, and a body that's not sleeping enough looks similar to one that's stressed out—it's highly reactive to perceived threats, even when those threats don't pose any real risk. Biologically speaking, there's virtually no difference in the way a body reacts to a startling noise in the middle of the night, a rabid raccoon or a stressful work deadline: in all cases, fight-or-flight mode is triggered, blood pressure spikes, breathing gets shallow, and the heart starts to race. That's what

happens to a body on no sleep too.

Those stress reactions can be useful, of course: they help you respond more readily to an actual physical threat. But that's not usually what's going on. And staying in an alert mode can trigger a number of unhealthy conditions, the most damaging of which is inflammation.

Inflammation is the body's natural defense system against injury or invading microbes like bacteria and viruses. It's why your toe turns red and throbs when you stub it or when it's infected: white blood cells rush to the area in order to protect it for the short time it's needed to help you get better. But inflammation can also become chronic, and that's when the real trouble starts.

Chronic inflammation, doctors now know, is a leading driver of many diseases, including some cancers, cognitive decline, heart disease, Type 2 diabetes—even chronic pain. And one of the main drivers of chronic inflammation is, of course, not sleeping enough.

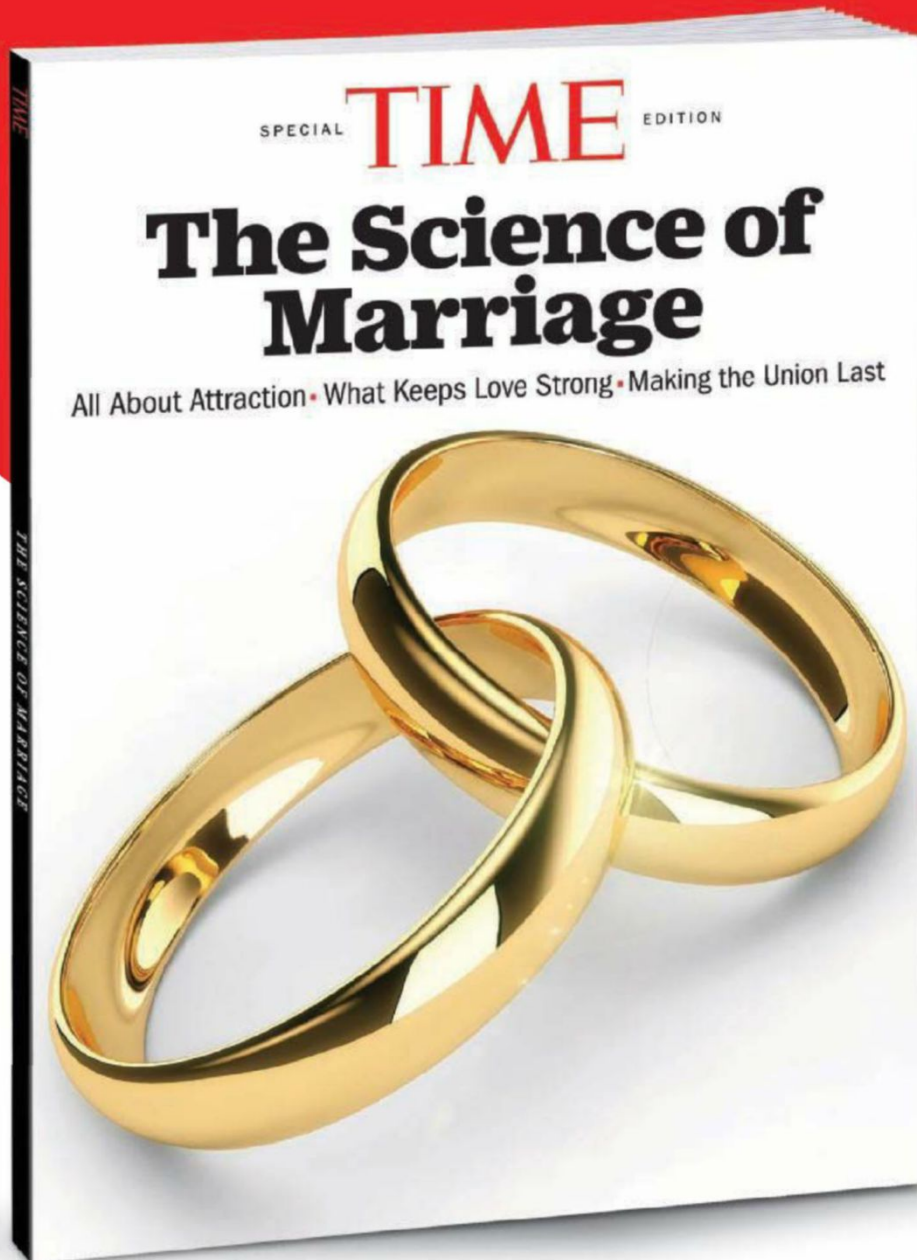
GETTING A DECENT NIGHT'S SLEEP, then, is good advice for all of us. Americans spent an estimated \$41 billion on sleeping pills and other sleep aids in 2015; no matter how much we may boast about our stamina, we know intuitively that we need sleep, even if we don't always know why.

But scientists do. That's why experts are insisting, with increasing frequency and noise, that sleep be a priority—as important or more than what you eat and how much you exercise. We wouldn't dream of skipping meals on a regular basis, so why skimp on sleep?

There's still much about sleep that mystifies scientists—particularly about what goes wrong for so many of us, night after night. But as they chip away at the underlying causes of sleeplessness, they get ever closer to a cure. Harvard's Zielinski, for one, is hopeful that they will eventually find a way to help more people sleep better every night.

When he gave his sleepless mice a drug to fix the mutation that was interfering with their sleep in the first place, they began to slumber anew. □

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[♥] *Learn the secrets to finding the right partner
and staying happy long term*

**How Silicon Valley
is trying to hack its
way to a much (much,
much) longer life**

DEATH, DISRUPTED

BY ALEXANDRA SIFFERLIN

THE TITANS OF THE TECH INDUSTRY ARE KNOWN for their confidence that they can solve any problem—even, as it turns out, the one that's defeated every other attempt so far. That's why the most far-out strategies to cheat death are being tested in America's playground for the young, deep-pocketed and brilliant: Silicon Valley.

Larry Ellison, the co-founder of Oracle, has given more than \$330 million to research about aging and age-related diseases. Alphabet CEO and co-founder Larry Page launched Calico, a research company that targets ways to improve the human lifespan. Peter Thiel, co-founder of PayPal, has also invested millions in the cause, including over \$7 million to the Methuselah Foundation, a non-profit focused on life-extension therapies.

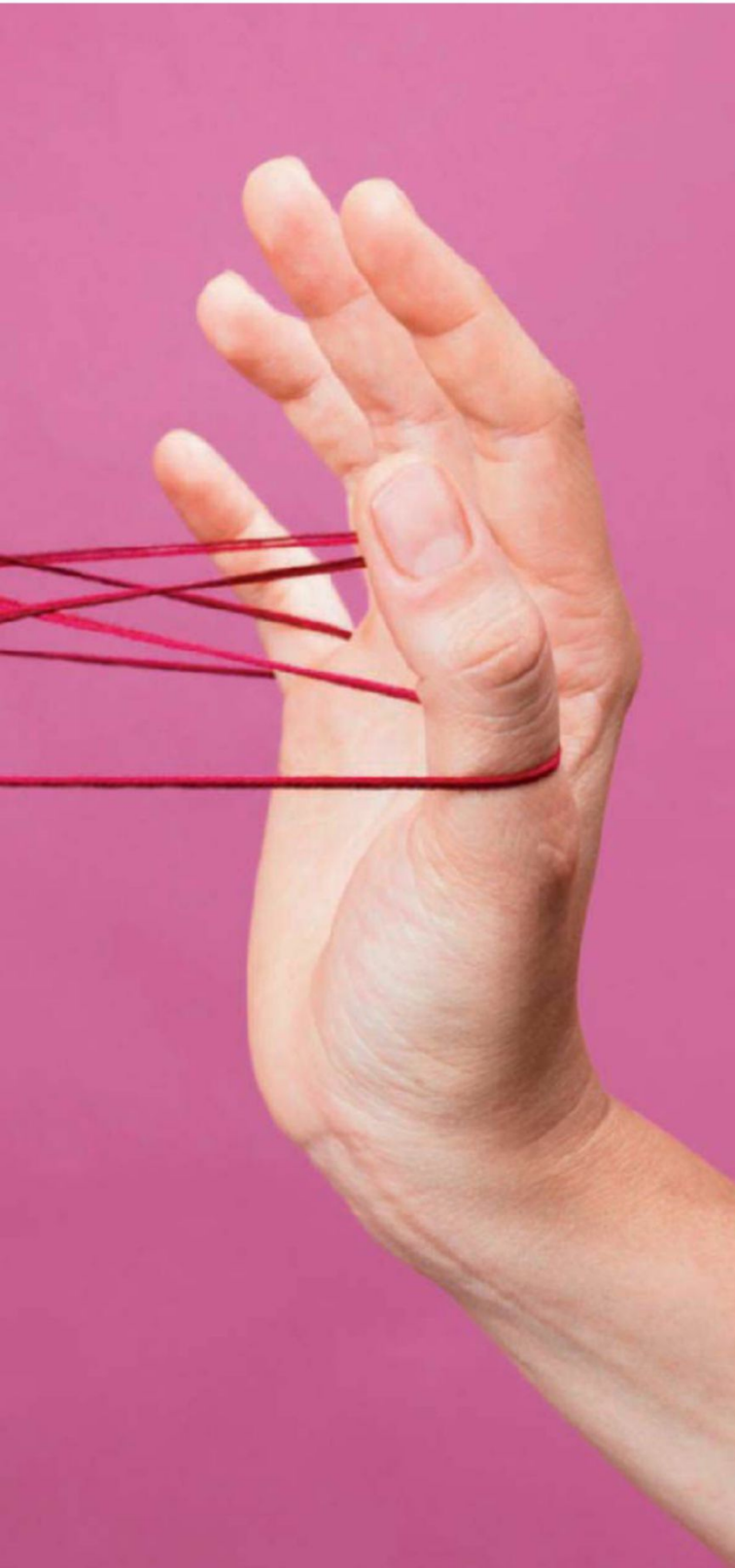
Rather than wait years for treatments to be approved by federal officials, many of them are testing ways to modify human biology that fall somewhere on the spectrum between science and entrepreneurialism. It's called biohacking, and it's one of the biggest things happening in the Bay Area.

"My goal is to live beyond 180 years," says Dave Asprey, CEO of the supplement company Bulletproof, most famous for its popularization of coffee with organic butter mixed in. "I am doing every single thing I can to make it happen for myself."

For some, that means daily pill regimens and fasting once a week. For others, it means having the blood of a young person pumped into their veins. "I see biohacking as a populist movement within health care," says Geoffrey Woo, the CEO of a company called Nootrobox that sells supplements that promise to enhance brain function.

Many scientists are skeptical. Here's what's known—and what isn't—about the latest front of humanity's fight against the inevitable.





YOUNG-BLOOD TRANSFUSIONS

THE HACK: It may sound vampiresque, but 50 people in the U.S. have paid \$8,000 for a transfusion of plasma from someone between the ages of 16 to 25. The study is run by Ambrosia, a company based in Monterey, Calif.

THE HYPE: The transfusions are based on the idea that two-liter injections of blood from the young may confer longevity benefits. Now, in the first known human clinical trial of its kind, Ambrosia is enlisting people willing to pay the hefty price to give it a shot.

Ambrosia's founder, Jesse Karmazin, who has a medical degree but is not a licensed physician, says that after the transfusions, his team looks for changes in the recipient's blood, including markers of inflammation, cholesterol and neuron growth. "When we are young, we produce a lot of factors that are important for cellular health," he says. "As we get older, we don't produce enough of these factors. Young blood gives your body a break to repair and regenerate itself."

THE DEBATE: Scientists are roundly critical of this study, in large part because of the way it has been designed: there's no control group, it's costly to participate in, and the people enrolled don't share key characteristics that make them appropriate candidates to be looked at side by side.

"What Ambrosia is doing

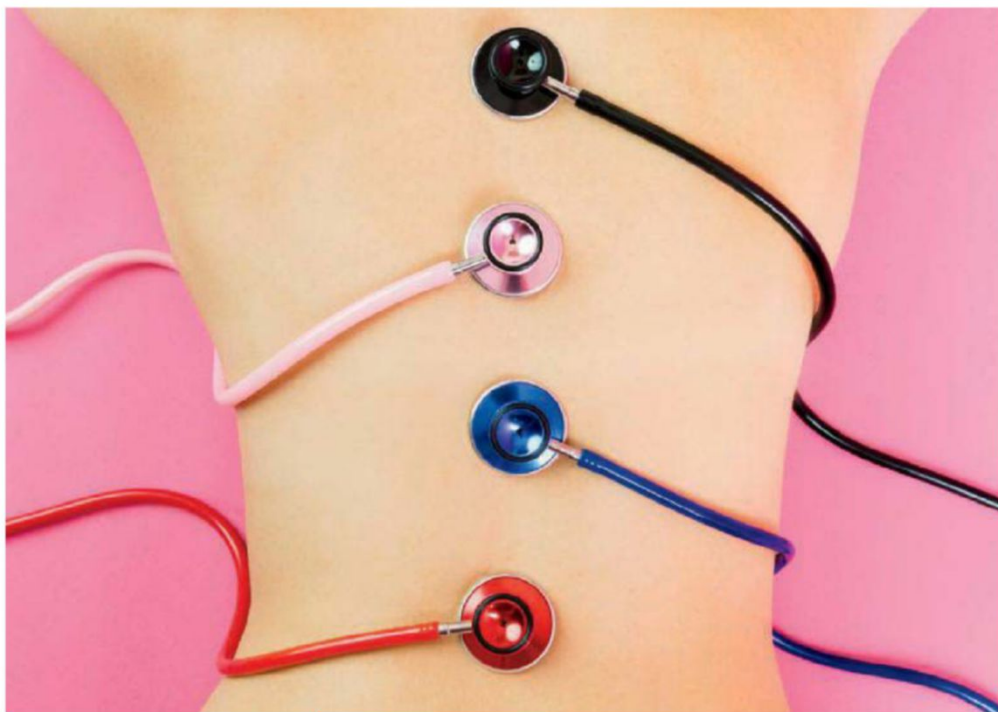
is not useful and could be harmful," says Irina Conboy, an associate professor of bioengineering at the University of California, Berkeley, who is also studying blood as a potential target for aging.

The concept stems from mouse research by Conboy and others. In 2005, she and her research partner and husband Michael Conboy showed that when older mice were surgically sutured to younger mice, their tissues got healthier. The takeaway was not that young blood is a cure-all, but some entrepreneurs ran with the idea. "The story has switched into a highly exaggerated search of young blood as a silver bullet to combat aging," Irina says.

In a recent follow-up study, the Conboys developed a way to exchange the blood of young and old mice without surgically joining them. They found that old mice had some improvements but that young mice experienced rapid declines.

"The big result is that a single exchange hurts the young partner more than it helps the old partner," says Michael. Ambrosia says plasma transfusions are safe and, if proven effective, should be made available.

THE BOTTOM LINE: Blood-based therapies for longevity could still be in our future, but the science isn't there yet. "Donor blood can save lives, but using it to rejuvenate oneself is counter-productive," says Irina.



DATA-MINING YOUR OWN DNA

THE HACK: If you could learn your risks for the most-feared diseases years before you'd actually get sick, would you? For the curious (and the brave), there's Health Nucleus, an eight-hour, \$25,000 head-to-toe, inside-and-out physical exam that includes whole-genome sequencing, high-tech scanning and early diagnostics. The goal is to paint a granular picture of an individual's health and disease risk, which could then inform lifestyle and medical choices that keep you healthier, longer.

THE HYPE: Health Nucleus bills the elite program as "a genomic-powered clinical research project that has the potential to transform health care." It was founded in 2015 by J. Craig Venter, the scientist widely credited with being one of the first to sequence the human genome, and it doesn't come cheap. The Health Nucleus price tag is for a single session, during which patients get a sequencing of their genome and microbiome, a full-body MRI and an array of blood tests. When the results come in, doctors translate the findings into measurements that patients can understand—and advice they can act upon.

The Health Nucleus team believes this deluge of information can help doctors flag problems that could lead to premature death for their patients down the line. "Right now medicine is a reaction-

ary system where if you get pain or other symptoms, then you go see your doctor and they see if they can fix it," says Venter. "It's totally different from trying to predict your risk or identifying problems early, before they cause fatal disease. If you have the right knowledge, you can save your life."

THE DEBATE: Genome sequencing can indeed pinpoint genetic risk for some cancers and other diseases. And microbiome profiles—which look at the makeup of bacteria in the gut—can provide clues about the presence of some chronic diseases. Changes in cholesterol and blood sugar can also signal illness, though that kind of blood work is routinely tested by primary-care physicians.

About 400 people ages 30 to 95 have had the physical so far, and the test has

identified significant medical problems in 40% of them, according to Venter, who says they've found cancer, aneurysms and heart disease in several people without symptoms.

Still, it raises questions among its skeptics about whether or not patients can actually use most (or any) of the data they receive. It also highlights some doctors' concerns about the negative consequences of over-screening, where there is always a risk for false positive results. "When healthy people undergo scanning, it can backfire," says Dr. Eric Topol, director of the Scripps Translational Science Institute, who has studied data-driven medicine. "It can find abnormalities and lead to more tests and procedures, many of them unnecessary. It can cause harm, not to mention anxiety and expense."

This isn't news to Venter. "The criticism people throw out is 'How dare you screen healthy people?'" he says. "My response is, 'How do you know they're healthy?' We are finding pretty good evidence that many are not."

Topol says a rigorous study of the program by independent researchers could help settle the score. "If validated for benefit in this way," Topol says, "my outlook would be more positive."

THE BOTTOM LINE: Venter acknowledges that while costs may come down, the battery of tests is so far too expensive to be realistic for most. Whether it adds years to a person's life is also an open question. For now, looking into the crystal ball requires a whole lot of money—and a comfort with uncertainty.

ANTIAGING SUPERPILLS

THE HACK: Biohackers in Silicon Valley and beyond have long experimented with the idea that a fistful of supplements, taken in just the right combination, may be the antidote to aging. Now, scientists and businesspeople are experimenting with the idea that just one or two pills, taken daily, may also get the job done.

THE HYPE: Many companies sell supplements with suspected longevity benefits, but one of the more talked-about new businesses is Elysium Health, co-founded by entrepreneurs and an MIT antiaging researcher named Leonard Guarente. Elysium has created a daily supplement, called Basis, that is “designed to support long-term well-being at the cellular level.” The pill isn’t marketed as a cure for aging, but Elysium Health cites evidence that the ingredients in the pill increase a compound called NAD+ that the company says is “essential to hundreds of biological processes that sustain human life.” Basis costs \$50 for a monthly supply, and the company, which doesn’t release official sales numbers, says it has tens of thousands of customers so far.

THE DEBATE: Basis contains two main ingredients: nicotinamide riboside (NR) and pterostilbene, both of which have been shown in animal

studies to fight aging at the cellular level. NR creates NAD+, which is believed to spur cell rejuvenation but which declines naturally in animals as they age. In a trial of 120 healthy people from ages 60 to 80, Guarente found that people taking Basis increased their NAD+ levels by 40%. “We are trying to be rigorously based on science,” he says.

Studies have shown that supplementing with the compound extends life in mice, but whether it increases human longevity is

unknown. To find out if it does—and to request FDA approval for the pill’s clearance as a drug—long, rigorous clinical trials would need to be done. Instead, Elysium Health has released Basis as a supplement. That prevents the company from making specific medical claims about the pills—something that’s prohibited by law in the marketing of supplements.

“I think the pathway Guarente is targeting is interesting”—meaning the idea that increasing NAD+ may also slow aging—“but clinical evidence is crucial,” says Dr. Nir Barzilai, a researcher at Albert Einstein College of Medicine, who also studies drugs for aging.

Other scientists question the supplement approach altogether. “There is no

evidence whatsoever that [Basis] produces health benefits in humans,” says Dr. Jeffrey Flier, former dean of Harvard Medical School. “Many molecules that have some apparent benefits in mice or other organisms have no benefit when studied in humans.”

The company has seven Nobel Prize-winning scientists on its advisory board, a fact that has also raised some eyebrows. Flier cautions that the company’s association with lauded researchers cannot replace the science required to prove that the supplements combat aging and are safe to use.

THE BOTTOM LINE: It’s too early to tell whether supplements can have any life-extending effects in humans.



BRAIN DRUGS

THE HACK: These supplements, called nootropics or sometimes “smart drugs,” promise to sharpen your thinking and enhance mental abilities. Many common nootropic ingredients—including the sleep-enhancing hormone melatonin, energy-boosting B vitamins as well as caffeine—are already present in the foods and pills that people consume on a daily basis.

THE HYPE: Nootrobox, one company that makes nootropics, combines ingredients like B vitamins and caffeine with a bouquet of other ingredients to create capsules with different purposes. “Rise” pills claim to enhance memory and stamina, “Sprint” pills promise an immediate boost of clarity and energy, “Kado-3” pills offer “daily protection of brain and body,” and “Yawn” pills offer what you’d expect. A combo pack of 190 capsules retails for about \$135.

Nootrobox is one of the more popular nootropic startups, with more than \$2 million in funding from private investors like Yahoo CEO Marissa Mayer and the venture-capital firm Andreessen Horowitz. “I think nootropics will become things we consume on a daily basis,” says the company’s CEO, Geoffrey Woo.

THE DEBATE: The ingredients in nootropic supplements have a “generally recognized

as safe,” or GRAS, designation from the FDA, and some of them have been studied for their cognitive-enhancing effects. But the unique combinations in the pills themselves haven’t been proven to heighten people’s mental capacity. Nootrobox says it is currently conducting clinical trials of its products.

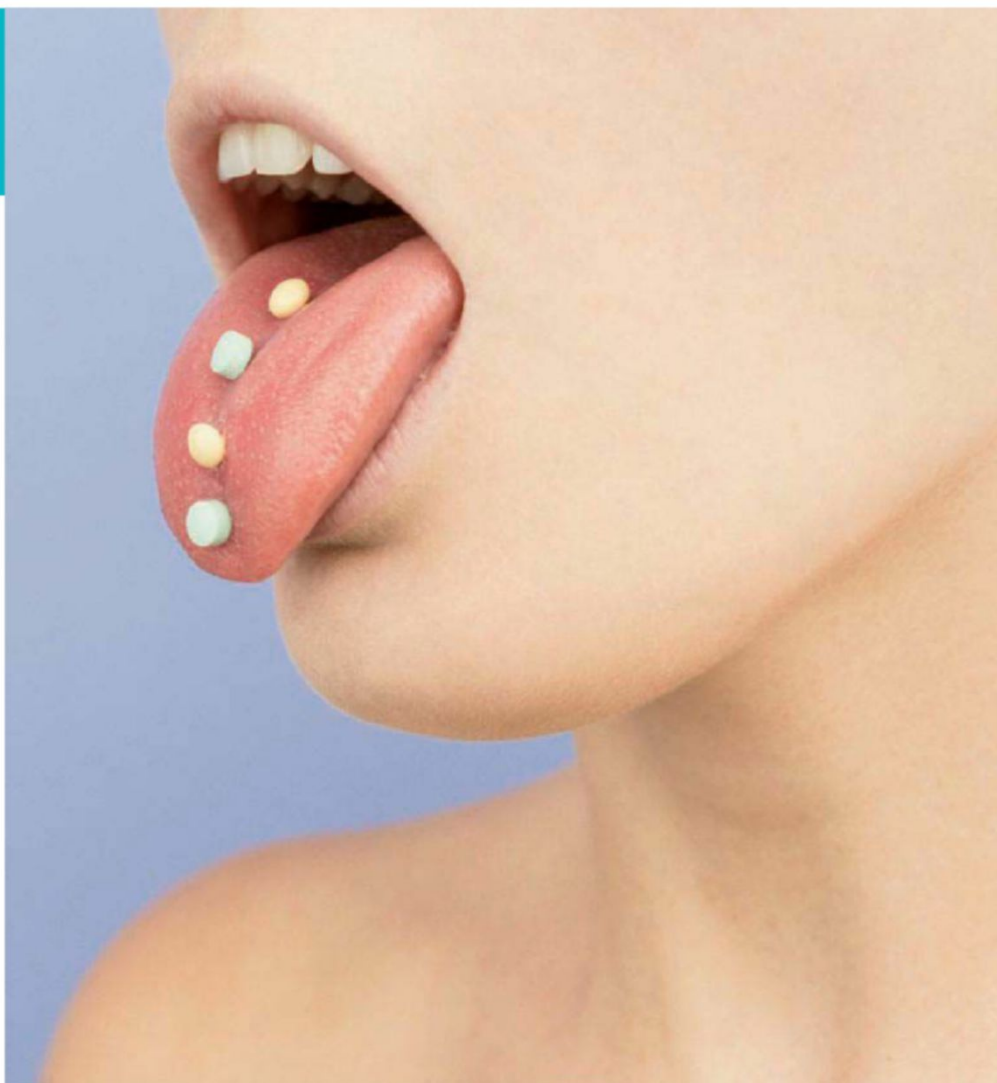
The FDA is notoriously hands-off when it comes to the regulation of dietary supplements. In the U.S., vitamins are not required to

undergo rigorous testing for effectiveness or safety before they’re sold.

Many doctors are also skeptical that they make a difference in mental performance. “There’s probably a lot of placebo effect,” says Kimberly Urban, a post-doctoral research fellow at the Children’s Hospital of Philadelphia who has studied the effects of nootropics on the brain. “I think people should use some caution, especially young people.” She adds that

while these supplements may in fact be safe, there’s no scientific research to prove it.

THE BOTTOM LINE: Many nootropics on the market are probably less sugary and lower in caffeine than most energy drinks, which often contain similar ingredients to those in the pills. Still, the notion that they make people sharper is largely unproven. So until independent clinical trials prove otherwise, it’s buyer beware.





HIGH-TECH FASTING DIETS

THE HACK: Calorie restriction—the practice of consuming nothing but water for a day at a time or drastically slashing calories a few days per week—has been popular for decades among eternal-youth seekers and health nuts alike. Now some companies are taking the guesswork out of it with fasting-diet meal-delivery kits.

THE HYPE: Not eating on a regular basis certainly sounds unpleasant, but proponents say that doing so

comes with the benefits of better health, a stronger immune system and possibly even a longer life.

To help people get closer to this goal, L-Nutra, a Los Angeles-based company, offers a five-day, ultra-low-calorie meal kit called Pro-Lon, which is designed to mimic fasting and promote health and longevity.

The meal kit includes energy bars, plant-based snacks, vegetable soups and algal-oil supplements that add up to a total of 770 to 1,100 calories a day. A five-day kit that must be ordered by a doctor costs \$299.

THE DEBATE: Studies do show that calorie-restricted diets are linked to longer life expectancy. It's not clear why, exactly, but some scientists suspect that stressing the

body kicks it into a temporary mode that leads to the creation of healthy new cells. Other research suggests that a very-low-calorie diet may make the body more responsive to cancer treatment and can slow the progression of multiple sclerosis.

A recent two-year study found that people who cut their calorie intake by 25% lost an average of 10% of their body weight, slept better and were even cheerier compared with those who

didn't diet.

"Doctors can offer patients this as an alternative to drugs," says Valter Longo, director of the University of Southern California Longevity Institute and founder of L-Nutra. (Longo says he doesn't receive a salary from his work with L-Nutra.)

Still, not everyone agrees that the evidence is strong enough to support the price tag—or the effort required. "I certainly wouldn't do it," says Rozalyn Anderson, a researcher at the University of Wisconsin–Madison, who studies calorie restriction in monkeys. "Life is too short, even if calorie restriction extends it."

The real promise of this kind of research is identifying cell pathways that are involved in aging and activated during fasting, she says. Ultimately this could lead to the development of a drug that could trigger those same pathways without requiring people to eat less.

THE BOTTOM LINE: Occasional calorie restriction does appear to have health benefits, but how much comes from weight loss and how much comes from healthy cell changes needs to be further explored. Widely agreed upon is that any version of a fasting diet should be done under a physician's supervision.

'Life is too short, even if calorie restriction extends it.'

ROZALYN ANDERSON, calorie-restriction researcher at the University of Wisconsin–Madison

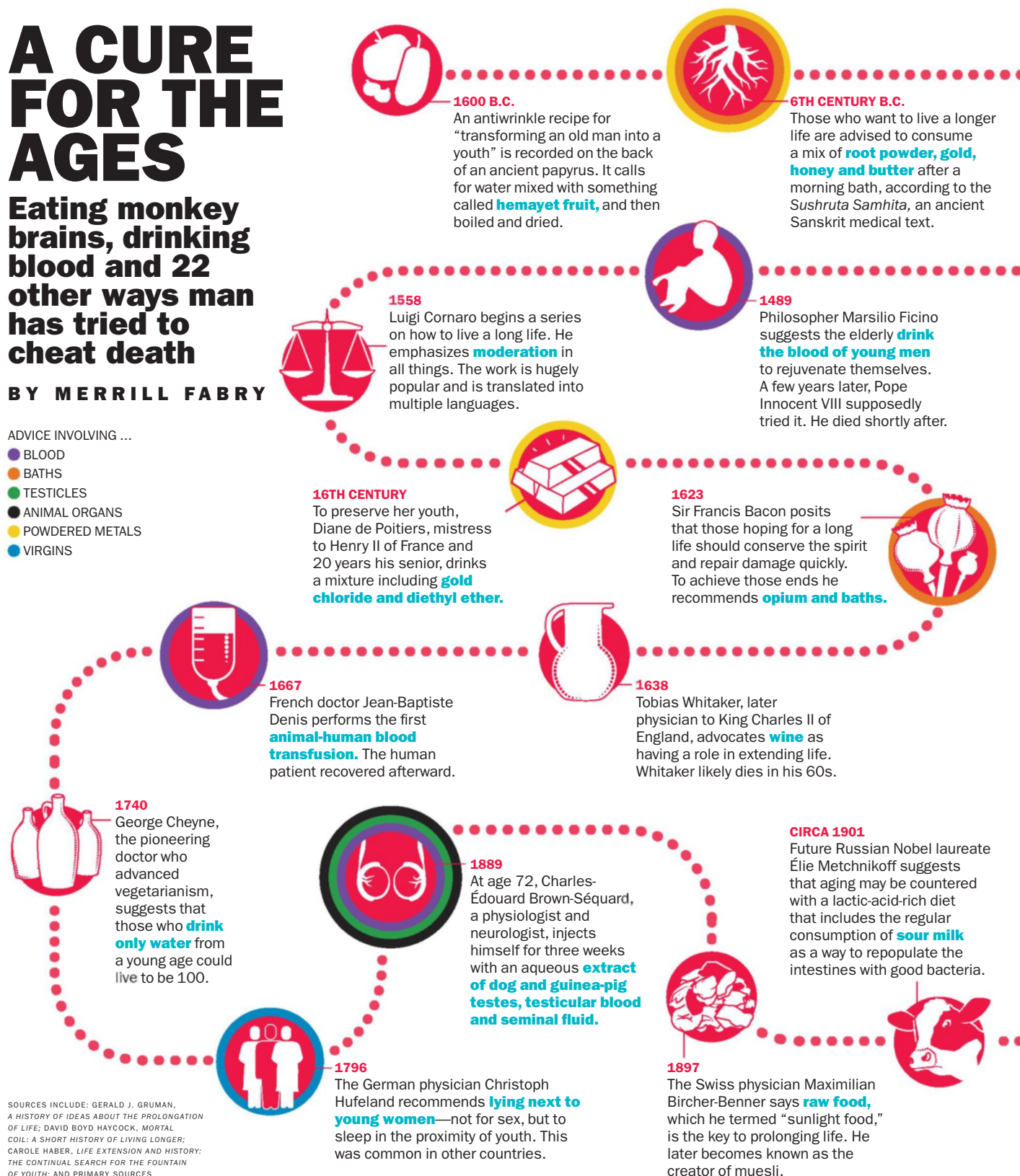
A CURE FOR THE AGES

Eating monkey brains, drinking blood and 22 other ways man has tried to cheat death

BY MERRILL FABRY

ADVICE INVOLVING ...

-  BLOOD
-  BATHS
-  TESTICLES
-  ANIMAL ORGANS
-  POWDERED METALS
-  VIRGINS



SOURCES INCLUDE: GERALD J. GRUMAN, *A HISTORY OF IDEAS ABOUT THE PROLONGATION OF LIFE*; DAVID BOYD HAYCOCK, *MORTAL COIL: A SHORT HISTORY OF LIVING LONGER*; CAROLE HABER, *LIFE EXTENSION AND HISTORY: THE CONTINUAL SEARCH FOR THE FOUNTAIN OF YOUTH*; AND PRIMARY SOURCES



133 B.C.

Alchemist Li Shao Chun advises the Han Emperor to **eat with utensils made of gold** transmuted from cinnabar, a potentially toxic substance known today as mercury sulfide.



1ST CENTURY B.C.

Cleopatra supposedly **bathes in donkey's milk** to preserve her youthful beauty. It was mainly a skin treatment.



1ST CENTURY

Pliny the Elder reports of Romans with epilepsy rushing to **drink blood from gladiators** to cure their ailment and gain strength and vigor. (Pliny did not think this was a good idea.)



13TH CENTURY

In *The Cure of Old Age*, the monk and philosopher Roger Bacon recommends drinking wine and **powders made of gold, pearl, coral and bone from a stag's heart**. He also advised eating vipers.



CIRCA 300

For ancient Taoists, the ideal diet for longevity includes spices, vegetables, **turtles, crane eggs and other food from long-living creatures**. Doing breath exercises and abstaining from orgasm are also advised.



4TH CENTURY

The alchemist Ge Hong describes a medicine made from the **brains of a particular kind of monkey** that, mixed with herbs, would lengthen life up to 500 years.



1930

British newspapers report that a man named Giocondo Protti successfully rejuvenated the elderly by performing **blood transfusions from young donors**.



1920

Serge Voronoff, a Russian émigré to France, popularizes the idea of **transplanting testicular glands from chimpanzees and monkeys into men** as a way to restore youthful vigor. By the end of 1926, Voronoff would claim a thousand grafts.



1921

Dr. Charles G. Davis writes about **radium** as a wonder drug that "vivifies the living cell" and can alleviate ailments of old age.



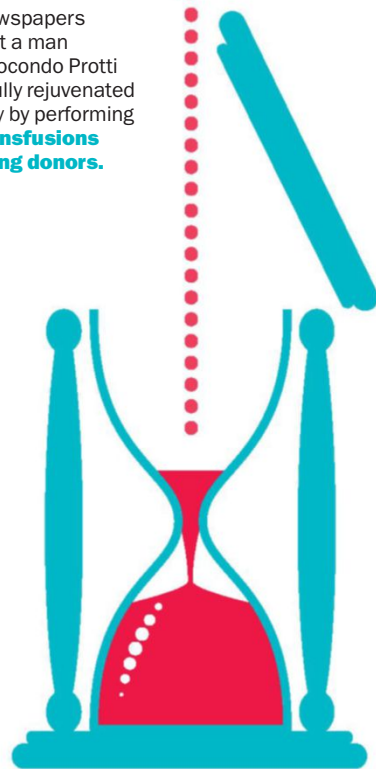
1920

Eugen Steinach experiments with a popular procedure that involves a **partial vasectomy**. Among his patients were W.B. Yeats and Sigmund Freud. The latter hoped it might slow his jaw cancer. It didn't.



1920S

John Brinkley, a radio evangelist and quack in Kansas, transplants **testicular glands from goats** into humans. His radio and medical licenses were revoked in 1930.



BURNING QUESTIONS

WHY DO PEOPLE WANT TO LIVE SO LONG, ANYWAY?

DR. EZEKIEL EMANUEL IS FAMOUS for a lot of reasons. He's an acclaimed bioethicist and oncologist who advised President Obama on health care and has two very well known brothers, but another thing people always seem to remember about him is that article he wrote in 2014: "Why I Hope to Die at 75."

More than 1,000 people have sent him letters and emails—some saying he's insane and ungrateful, others thanking him for voicing the same thoughts for which they'd been ridiculed. One 75-year-old man who died in upstate New York requested that his mourners, instead of making a donation, sit down and read the piece.

Emanuel's embrace of an early end—one that's only a few years shy of the U.S. life expectancy of 78.8—is the exact opposite of how most people in America feel about dying. In a survey from the Pew Research Center, nearly 70% of American adults said they wanted to live to be up to 100 years old. But why?

"The quest to live forever, or to live for great expanses of time, has always been part of the human spirit," says Paul Root Wolpe, director of the Emory Center for Ethics. People now seem to have particular reason to be optimistic: in the past century, science and medicine have extended life expectancy, and longevity researchers (not to mention Silicon Valley types) are pushing for a life that lasts at least a couple decades more.

Of course, people want to juice their life spans for reasons beyond their pioneering spirits. "The thing that is most

difficult and inscrutable to us as mortal beings is the fact of our own death," Wolpe says. "We don't understand it, we don't get it, and as meaning-laden beings, we can't fathom what it means to not exist." In other words, thinking about the infinite desert of death can trigger the worst kind of FOMO.

At the same time, the odds of living a long life that's also a good, healthy one are slim. Almost all people complete their most meaningful years before age 75, Emanuel writes in his essay, so living past that age is rarely as good as it may sound. Physical function crumbles for about half of Americans at around age 80, and aging makes all of us mentally slower and less creative. We may die later, but we don't age slower.

Older folks understand this better than younger people. "What you see when you actually look at people at the end of life, to a large degree, is a sense of a life well lived and a time for that life to transition itself," says Wolpe. "Younger people have a harder time with that, but older people don't."

When people are asked how long they hope to live, however, attitude

seems to make a greater difference than how old they are. A study of young and middle-aged people ages 18 to 64 found that 1 in 6 preferred to die before age 80. Those who did tended to hold more negative beliefs about what old age would be like. Still, the vast majority of people surveyed wanted to live a good long life and had sunnier expectations for their own old age.

That's why Emanuel isn't trying to persuade many people to drop the quest for a longer life: evidence, he knows, is no match for the human ego. "One of the things I don't understand is why the Silicon Valley types want to live forever," Emanuel says. "Obviously they believe the world can't possibly survive without their existence, and so they think their immortality is so critical to the survival of the world."

There is, however, an ethical way to chase life extension in a way that benefits everyone. "The proportion of the population that dies before 75, that's the number we ought to be looking at and tracking," Emanuel says. "We want to get everyone to 75." —MANDY OAKLANDER





IS THERE ANYTHING THAT CAN HELP MY DOG LIVE LONGER TOO?

TO HERB KROHN, A RAILROAD WORKER in Seattle, no living creatures are more precious than his four dogs. “From the day you get your dog, you worry about the day you’re going to have to say goodbye,” he says.

So three years ago, when he saw an article about a new study called the Dog Aging Project—a trial designed to test a drug that might help dogs live longer—he volunteered his four-legged friends.

One of his pups, Lola, made the cut. Three times a week for 10 weeks, Krohn fed his puffy chow chow a pill covered in peanut butter. He didn’t know whether the pills were the real deal or a placebo—that’s the way good studies are designed, after all—but he monitored her closely, keen to see what, if anything, would happen. “If any creature deserves to have immortality, it’s dogs,” he says. Currently, the average life span of a domestic dog is about 12 years.

The drug being tested is called rapamycin. It’s an immunosuppressant that has already shown incredible

promise in lab animals. At low doses, it’s shown to increase the life spans of mice by 25% while conferring on them a sprightliness that belies their age.

Unfortunately, rapamycin does not yet appear to perform such magic in humans. For now, the drug is used mainly on organ-transplant recipients and people with certain kinds of cancer, because of the serious side effects it can trigger in humans. But it doesn’t cause serious side effects in lab animals, and thanks to the Dog Aging Project, scientists will soon know if that’s true of dogs too.

If the drug works, it could mean that veterinarians may one day prescribe rapamycin to healthy older dogs, increasing not just the length of their life but also the quality, says Matt Kaeberlein, a co-director of the study and professor of pathology at the University of Washington. “What we’re really talking about is keeping the dog healthier longer so that they don’t have these chronic diseases and disabilities to go along with aging,” he says. “If we can do this, it will have a significant impact on the quality of life for people who love their dogs.”

In mouse studies, 10 weeks on the drug was all it took to make an old mouse’s heart function like that of a much younger mouse. And according to early results from the Dog Aging Project,

soon to be published, the same may be true for canines. About 70% of dogs that took the highest dose of the drug were also noticeably more active.

“It’s really encouraging,” Kaeberlein says. “It doesn’t mean those dogs are going to live longer, but it certainly is suggestive that some of the effects of rapamycin on age-related function are shared between dogs and mice.”

Before the drug is available to all of Krohn’s dogs (and yours), more research is needed. In the trial’s next phase, which begins in March, the team will study 50 more dogs and follow them for a full year, adding in other metrics. Mouse research shows that rapamycin can improve age-related cognitive decline, for instance, and Kaeberlein wants to know whether it can help keep dogs sharp too.

These studies are part of a small but growing movement to expand scientific knowledge about the lives—and deaths—of dogs. The Golden Retriever Lifetime study, for example, which began in 2015, is following 3,000 dogs throughout their lives in search of genetic and lifestyle links to cancer, which kills more than half of all golden retrievers. Kaeberlein’s team plans to do something similar: a 10-year study following 10,000 dogs to understand why some live a long time while others get sick and die young.

Humans have something to learn from the data too. “A lot of the aging process in dogs is also shared with people,” Kaeberlein says. “It’s hard to imagine an animal that shares your environment to a greater extent than your dog.”

As for Lola, the lioness chow chow, things are looking up. It turned out she was on rapamycin, not the control, and Krohn says she seemed to become a lot more affectionate. They’ll have to wait until Phase 2 to see why a dog’s eagerness to cuddle would be affected, but Kaeberlein suspects it may be a sign of better brain function.

Now Krohn is trying to enroll Lola in the next round of Dog Aging Project studies. “I want to make sure she stays on it,” he says. “It’s worth it to try to help man’s best friend be their best friend a little longer.” —M.O.

DO CRANKY PEOPLE REALLY DIE YOUNGER THAN POLLYANNAS?

JUDGING FROM POP CULTURE, OLD AGE turns even the most charming socialites into lovable but grumpy misanthropes. The elderly often appear in films as lonely neighbors, grumpy grandpas and cranky cabdrivers.

But if you look at the scientific data, it turns out that most older people are not actually crankier than younger people—it's just that they don't play by the same social rules. When you're younger, being nice and presenting yourself positively can gain people's good favor down the line, says Derek Isaacowitz, a psychology professor at Northeastern University, but that ceases to be a major motivator as you age. That's why social scientists like to point out that outward expressions of grumpiness may just be a sign that someone is unconcerned with social niceties—as opposed to being hardened and unhappy.

In fact, study after study has shown that despite appearances, people tend to grow happier with age, particularly after age 80. One reason: older adults tend to ignore negative information, focusing instead on the things they prefer to focus on. That's particularly helpful when you consider that, by and large, elderly people have more experience facing upsetting losses than younger folks, simply because they've been around longer. "You start getting the experience that this is life, and you get used to moving on with it," says Nir Barzilai, who runs a center on aging at the Albert Einstein College of Medicine in New York City. "It has to do with life experience. It has to do with psychology."

Less clear is whether happiness contributes to longevity in any meaningful way. There's plenty of research on both sides, but according to the most comprehensive research to date—a study published in the *British Medical*



Journal—the connection between outlook and longevity appears to be stronger than previously thought. In the study, involving over 10,000 people, those who reported more enjoyment during middle age were 24% less likely to have died of any cause during the study period than their counterparts who said they did not enjoy themselves.

"The longer people are in a positive state, the better it probably is as far as their health is concerned," says Andrew Steptoe of the University College of London, lead author of the study. "This adds weight to the evidence that outlook might be relevant to health."

Still, many questions remain about the exact nature of the link. Other recent data shows a positive correlation for those over 80 between upbeat mood and good health. However, researchers like to point out that it's a classic example of the correlation-vs.-causation conundrum: Do cranky adults have poor moods because they're sick, or are they in poor health because of their bad mood? After all, not even the

most resilient older adults can avoid a declining mood when faced with serious health problems. A 2012 study in the journal *Neurology* even found that in adults over 65, cognitive decline doubled after a hospital stay.

"As long as they're healthy, they're in a good mood," says Barzilai of older people. "As long as they have pains and bad quality of life, their mood decreases."

Absent stronger evidence that a positive outlook or disposition can contribute to longevity, many experts agree that it can't hurt to try, at least sometimes, to look on the sunny side. If that feels like a stretch, focus on the things that make you happy and have also been linked to a longer life, such as keeping up your friendships and maintaining strong social ties. "It's crucial," Steptoe says. "When things are going well, you don't make so much of an effort to maintain friendships. But in many ways it's an investment in the future." —JUSTIN WORLAND, with reporting by ALICE PARK

WHAT 3 THINGS CAN I DO TO EXTEND THE LENGTH OF MY LIFE?

SOMEWHERE OUT THERE IS A BUNCH of people who are going to live to be 100. In the U.S. alone, there were more than 77,000 centenarians in 2014. Still, that number is very small: centenarians represent less than a quarter of 1% of the entire U.S. population.

So how do you get to be one of them? You could invent a time machine, start your life over and do everything they did, or try to find a way to borrow their genes. Failing that, here are three things that longevity researchers recommend you start—and keep—doing.

STAY CURIOUS. Once you've got a few years on you, it's easy to think you've heard it all. But the idea that the world has nothing to teach you makes you stop asking questions—and that has consequences. "There is evidence that curiosity has longevity benefits," says Laura L. Carstensen, a professor of psychology and public policy at Stanford University and the director of the Stanford Longevity Center. "Asking questions and discovering new things keeps you engaged with the world and with other people."

Learning something new can be a form of problem solving: digging into an article about something unusual or asking a family member about her obscure doctoral thesis (and actually listening to the answer) requires you to exercise cognitive muscles that may have gone slack.

EAT WAY MORE PLANTS THAN YOU THINK YOU NEED TO. The link between diet and well-being is something we learn early in life—and then forget over and over again until we die. That may be why so many people have diet-related diseases. In the U.S., nearly 28 million people have Type 2 diabetes, 86 million adults are prediabetic, roughly 1 in 3 adults suffers from high blood pressure, and a

stunning 69% of adults are overweight.

So if there's one thing worth drilling into your mind, it's this: the healthiest diet is the one in which you eat a lot of plants. The celebrated Mediterranean diet is celebrated for a reason, with study after study showing that its focus on fruits, vegetables, nuts and olive oil is linked to a longer life.

A 2015 study of 450,000 European adults found those who ate a diet that was 70% plant-based—fruits, vegetables, nuts, whole grains and beans—had a 20% lower risk of dying of cardiovascular disease than other people. A Harvard University study found that people who ate eight or more servings of fruits and vegetables a day were 30% less likely to have a heart attack or stroke than people who ate less from the plant group.

Multiple studies on both laboratory animals and humans have shown that caloric restriction—following a diet whose calories are roughly 25% below the recommended adult daily calorie intake—can have life-extending benefits. That's not the way most people would want to live, but replacing meats with fruits and vegetables can go a long way toward slashing calories in a more satisfying way.

RETHINK WHAT IT MEANS TO BE OLD.

It's hard to feel positive about a stage of life when you spend every year leading up to it assuming that it's going to be grim.

That, of course, is a great way to ensure that grim is precisely what it becomes—but the inverse is also true. "Our research has shown that when more-positive beliefs about older individuals are held earlier in life, they can lead to health advantages," says Becca Levy, an associate professor of epidemiology and psychology at the Yale School of Public Health. That, in turn, can mean a remarkable 7.5-year boost in life span compared with people who have negative beliefs about age.

That means remaining mindful of the contributions that older people make to others—and making those contributions yourself. There's no reason to accept that seniors are all addled and frail just because so many TV shows depict them that way.

Mortality is nonnegotiable, which is probably what makes it seem so terrible. But the number of years you get—not to mention the way you spend them—can in many ways be up to you.

—JEFFREY KLUGER





KIDS CAN BE STRESSFUL. DO THE CHILD-FREE LIVE LONGER?

IF YOU'RE OF CHILDBEARING AGE, you're surely used to the refrain that one of the most sublime joys of life is parenthood. A baby means bliss, love and the proxy immortality that comes from passing your genes down to the next generation. You're also probably used to the other refrain, about how the very act of being a parent might be killing you.

It's not just the physical toll that childbearing takes on the body of the mother but also the price both parents pay in the sleepless nights, the constant worry and the long hours spent on the job to pay for it all. Cortisol, a stress hormone, is present in much higher levels in the blood of overworked, overanxious people—parents among them. And together they can weaken the immune system, raise blood pressure and otherwise tax health.

That, however, is not all there is to it, and when it comes to the impact that

raising children has on parental life expectancy, the science is not unanimous.

If parenthood contributes in any way to aging, it's probably the evolutionary phenomenon known as the “disposable soma” that makes it so. *Soma* refers to the body—in this case a parent's—and *disposable* means, of course, something that is made to be thrown away. Every ounce of energy that goes into rearing children is an ounce of energy that could otherwise be used to maintain or repair the health of the larger organism. In this deal, it is the moms who suffer worse than the dads.

A 2006 study published in the *American Journal of Human Biology* tracked 116 years of births—from 1886 to 2002—in four regions of Poland and found that women lost an astonishing 95 weeks of life for each child they carried. Hypertension, pregnancy-related diabetes and other ills are among the reasons for shortened life spans, as are the nutritional demands of pregnancy and breast-feeding. You need a lot of calories to make and feed a baby, and even in the modern world, some mothers never catch up.

But other findings—indeed, the majority of them—reach very different

conclusions. In a study published in 2016, University of California San Diego scientists found that women who had children later in life were 11% likelier to live into their 90s than women who had children earlier. What's more, women who had two to four children were likelier to live longer than women with one, though that appeared to be true only among white women.

The findings are good news for mothers, but the cause and effect are not clear. Women who postpone childbearing tend to be more educated and wealthier, and both factors are linked to better health. And women capable of having two to four full-term pregnancies may simply be stronger and healthier to begin with.

More compelling are studies of a hormone central to child rearing: oxytocin. Known as the cuddle chemical, it is what makes what ought to be the biologically pointless experience of snuggling with a partner or cooing to a baby so rewarding. Oxytocin levels soar in women when they're pregnant and breast-feeding, and fathers get a boost too—sometimes one as great as the mothers'—just by being present.

The oxytocin high isn't permanent, of course, but every bedtime tuck-in or post-soccer-game hug—not to mention intimacy between parents—can provide an oxytocin booster shot, and those maintenance doses add up.

A 2012 study of 21,000 childless couples undergoing fertility treatment found that over a nine-year period, the ones who eventually had a child—biologically or through adoption—had a risk of death from any cause one-fourth that of those who remained childless. Another study tracked life spans in the Amish-American community from 1749 to 1912 and found that parental longevity increased in lockstep with the number of children.

No matter the century, parenting is not an easy job. And some of the most treasured hours parents can have are ones spent away from the kids. But the lives they go back to—the ones inhabited by their offspring—are often immeasurably enriched by their children. And rich lives often end up being longer ones. —JEFFREY KLUGER

WHERE WILL ALL THE OLD FOLKS LIVE?

IF YOU'VE EVER BEEN A CAREGIVER to aging parents, you've likely been through the battle over when to move them out of the home they love and into something more suitable to their changing needs. That's only going to get more common as the U.S. population ages. Demographic experts say the population over age 65 will swell from 50 million to nearly 80 million in the next two decades. And all those people will need a place to live. If history is a good indicator, that place is unlikely to be their current home—though that appears to be changing.

Even when everything goes right, moving can be a financial, logistical and emotional nightmare. (There's a reason it nears the top of the list of the most stressful life events.) At the same time, older adults have more options, imperfect though they may be, for where to spend their golden years. Today just 3% of older adults live in nursing homes, a figure that has declined over the past 20 years even as the elderly population has grown. This represents a larger shift away from 24/7 care in favor of living with varying degrees of independence for as long as possible.

"The reality is that many older adults are going to need some sort of different housing," says Janet Viveiros, a researcher at the National Housing Conference think tank that works on housing policy, "whether it's a home that doesn't have stairs, nursing-home-level care or something else entirely."

Research shows that older adults benefit from remaining for as long as possible in the community where they've spent their adult years. One reason: it's familiar and encourages social interaction, which is important at any stage of life but especially as you get older. The research is unequivocal that those with strong friendships and family ties age better and live longer than those who feel isolated.

At the same time, more people are choosing to age in place simply because



it can be the most affordable way to retire. For some, the financial calculus to stay at home has gotten easier in recent years because of provisions in the Affordable Care Act that allow the federal government to fund a wide range of accessibility renovations in single-family homes. The ACA also allows the government to pay for some medical services that historically were available only in nursing homes.

Of course, even if more older folks will be staying put as they age, experts agree that that's no excuse to put off decisionmaking. They recommend that Americans begin thinking as soon as possible about how to adapt their home over time to make it more livable as their physical needs change. When homeowners remodel a bathroom, for instance, they should use the opportunity to strengthen the wall to accommodate railing and other features that may be needed down the line.

Many able-bodied and healthy older adults are also choosing to move into new apartment complexes tailored to the needs of older adults. They may have wide hallways, ramps and accessible showers, for instance, as well as social activities and even a cafeteria or restaurant on-site. These options meet the basic needs of many elderly people but also cost far less than

nursing homes—making them easier to plan for—and afford older folks more of their prized independence.

"There's a growing spectrum of possibilities," says Jennifer Molinsky, a researcher at Harvard University's Joint Center for Housing Studies, "from staying in your exact house to living in an apartment that is made for aging adults to much more assisted living."

But that doesn't mean there's enough of everything to go around. Experts say that as baby boomers get older, for instance, the demand for older-adult-friendly apartments will outstrip the supply. Developers have already struggled to build such apartment complexes in many communities where they run up against tight zoning restrictions. And while many housing advocates have called for local communities to change those limitations, coordinating efforts in thousands of municipalities across the country has proved difficult.

The local challenges—as well as bigger questions about the future of federal policy—leave much of the question about how to house an aging population up in the air. "We need a better national conversation around housing policy and around health services," says Viveiros. "There really just isn't adequate housing for older adults." —JUSTIN WORLAND

LOOKING FORWARD

HOW CAN I AFFORD TO LIVE TO 100?

(Because getting there is more likely than you think)

WHEN JOE ROSEMAN, A RETIREMENT-PLANNING EXPERT IN Charlotte, N.C., meets with a new client, there's one bit of information he wants to know first. It's not how much they have saved, and it's not when they want to retire. It's how long their parents and grandparents lived.

That's not because it's necessarily the best predictor of longevity (though it's a decent place to start). Rather, it gives Roseman a baseline of his client's expectations. He'll then remind his clients that thanks to advances in medicine, they're likely to live even longer, which means their investments need to last longer too. "I tell people that you need to plan to live longer than you think you're going to live," he says.

Life expectancy in the U.S. has been steadily increasing over the past two decades (although 2015 saw a slight but troubling drop). And while that's good news overall, it also means that many of the assumptions Americans made about their own retirements are out of date.

Here are some pieces of advice from retirement planners and others about how to make ends meet in the new age of much older age.

—RYAN TEAGUE BECKWITH



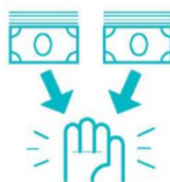
PLAN TO HAVE MORE THAN ONE RETIREMENT

The idea of working your entire career at one company and then retiring at age 65 is not realistic—and it's not sustainable for most workers. Instead, plan to downshift into part-time or less demanding work, postponing the years when you'll have to live entirely off your savings. That might mean getting a late-in-life teaching gig, consulting for a company in your industry or working for a local nonprofit. Carl Seidman, a strategic business adviser, recommends taking "mini-retirements" to switch careers, travel or build new job skills. "I intend to retire throughout my life several times," he says.



START A HEALTH SAVINGS ACCOUNT

A health savings account (HSA) is sort of like a 401(k) for your medical expenses. You put in pretax money—up to \$3,400 in 2017 for one person—let it grow and take chunks out when you have big health-care-related expenses down the road. Jeff Vollmer, managing partner at Hyde Park Wealth Management in Cincinnati, says few of his clients even know it's an option—which he blames on some of his fellow retirement planners. "Most financial advisers stand to make nothing on an HSA," he says, "so it's generally not something that goes into their financial-plan recommendations."



CONSIDER INVESTING IN AN ANNUITY

One problem with 401(k)s, which are one of the most common retirement-saving strategies, is that you have a set amount of money but you don't know how many years you'll need to live off it. One way to protect yourself from outliving your savings is to also purchase an annuity—essentially a pension plan that you pay for yourself. Matt Sadowsky, director of retirement at TD Ameritrade in Jersey City, N.J., says putting even a small amount into an annuity is a way to balance out your retirement savings. "You want to hedge against the outlier event that you live a very long time," he says.



MOVE TO A PLACE WHERE IT'S CHEAPER TO LIVE

It's a truism of accounting: if you can't increase your income, you need to cut your expenses. One way to do that is to move somewhere with a lower cost of living and lower tax rates. Financial advisers say to keep in mind state income-tax rates, local property taxes and sales taxes when contemplating a big move. Roseman recommends considering a move to the South, where those things tend to be cheaper. And some research suggests cities are better for older Americans than rural or suburban areas, because they have denser, more affordable housing and free social services geared toward seniors.



USE TECH TO STAY INDEPENDENT LONGER

Your nest egg shrinks much more quickly once you need around-the-clock care. But new technological solutions could make it possible to live independently longer. For instance, IBM has partnered with Avamere senior living facilities to test home systems with sensors that alert caregivers when seniors are not following their daily routines—an early sign of possible trouble that could permit them to intervene before a serious problem develops. "This would allow someone to stay where they live as long as possible," says Susann Keohane, aging-research leader for IBM.

Time Off

'STEER TOWARD THE FUN—THAT WHICH YOU CAN DO EASILY AND WITH RELISH AND JOY' —NEXT PAGE

BOOKS

In George Saunders' debut novel, moving tales from the crypt

By Sarah Begley

Saunders, one of America's foremost short-story writers, publishes his first full-length novel

GEORGE SAUNDERS MAY BE THE MOST CELEBRATED DEBUT NOVELIST OF THE 21st century. Saunders, 58, won decades of acclaim for his short-story collections (1996's *CivilWarLand in Bad Decline*, 2013's *Tenth of December*) that amplify the intricacies of American culture via the surreal and fantastical. *Lincoln in the Bardo*, his remarkable first full-length novel, continues apace, taking for its starting point a historical anecdote about Abraham Lincoln visiting the tomb of his recently deceased son, killed by typhoid fever in 1862. In the novel, dozens of ghosts linger over the 11-year-old's grave, observing a President and father in grief. They are also Saunders' narrators, a chorus reflecting on parenthood, patriotism, race and death.

TIME: Thousands of books have been written about Abraham Lincoln.

Why write another?

Saunders: I really didn't want to write about Lincoln but was so captivated by this story I'd heard years ago about him entering his son's crypt. I thought of the book as a way of trying to instill the same reaction I'd had all those years ago. But then writing about Lincoln became sort of a necessary thing, not a necessary "evil," but a bit of a burden. Which I then worked with by telling myself that I wasn't writing some big comprehensive book about Lincoln but was just providing little snapshots of him, as needed, at very particular moments, on this one night. It became, "What state of mind would a man be in at 12:45 a.m., on a cold February night, five minutes after he's seen and held his dead son's body?" That felt more workable to me, originating, as it did, with that great fiction writer's friend, specificity.

The book is written entirely in block quotes. Why?

A gifted former student of mine, Adam Levin, emailed me that he thought that if I ever wrote a novel, it would be in the form of a series of monologues. And my reaction was something like, "Ooh, fun." And at the same time, I was trying to avoid some obvious pitfalls/buzzkills. For example, I didn't have any desire to write a 300-page Lincoln monologue and found myself resisting a straightforward narrative approach, à la: "On a dark night, Abraham Lincoln, President of the United States, entered the dark graveyard furtively." Ugh.

A lot of writing is just intuitively lurching away from that which bores you, or that which feels like it might, uh, suck. One good compositional approach is to steer toward the fun—that which you can do easily and with relish and joy.

One "Aha!" moment came when I realized that if I set up the ghost parts and the historical stuff identically, I could move between them with less fanfare.

What in your research surprised you most about Lincoln?

The incredible, exponential growth he accomplished in those five years—spiritual, moral. In many ways we still haven't caught up. Also I was surprised to learn about his incredible unpopularity in those early years of his presidency and the way he was able to keep growing and striving in the face of this.

'A lot of writing is just intuitively lurching away from that which bores you, or that which feels like it might, uh, suck.'

GEORGE SAUNDERS

You wrote about Donald Trump's rallies long before he won. Did you predict the results?

No. But in retrospect I should have been able to, based on the size and energy of the rallies and the fact that the people I met were very nice, mainstream people—not the fringe types I'd been led to expect. I disagreed vehemently with their views, and especially with the way the movement was willing to throw whole groups of hardworking people under the bus. But they were affable and happy to talk with me and not rabid or particularly angry. That should have been a preindicator that the Trump thing was (sadly, to me) more mainstream than I'd been able to imagine.

What do you make of the country's anger toward the elites?

I think I'd advocate for retiring *elite* as a pejorative. That's a term the right-wing media has appropriated. We should all, in our own field, strive to be elite, i.e. really good at what we do. There are elite cross-country truckers and elite cooks at Denny's, and when I go in for a root canal, I am praying that my dentist be elite, and not some affable dude who does dentistry on the side since he flunked out of dental school.

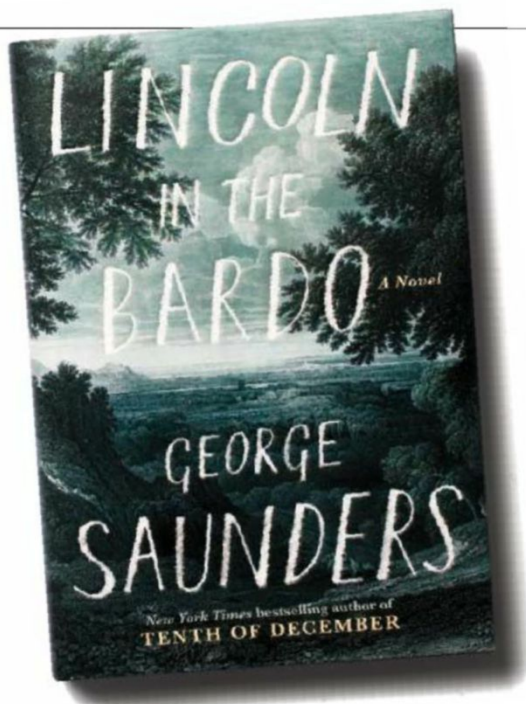
I think what's happened in our country is pretty simple: The money went up, up, up. The middle class got decimated. Slight animosities got exaggerated.

Why do you think people like reading about political dealmaking and compromising in Lincoln's era but dislike hearing about them today?

Our idea that compromise and conversation and uncertainty are signs of weakness is a real problem. A really powerful person like Lincoln, for example, could be very quiet for a long time and have a lot of insults thrown at him, have a lot of bad ideas heaped on him, have a lot of people calling him names, and just quietly abide with his own cognitive processes until an answer presented itself to him. That's a strength that is very unusual.

You've been called a "slipstream" writer, incorporating sci-fi or fantastic elements into otherwise realist fiction. Has reality caught up with this kind of wacky realism?

I use those elements as a way of honing in on the emotional truth of a situation. When I look at what my life has actually been, to just represent what literally happened is to shortchange the emotional range that I've experienced. In other words, just a straightforward "realist" representation of life seems to leave a lot of stuff on the table in terms of the real confusions and emotional complexities and beauties and terrors that are experienced even in a relatively bourgeois life like mine. I really consider myself, ultimately, a Gogolian, trying to get at what life feels like, but knowing that, to do that, we might have to swing a little wildly. Because life itself is so beautiful and insane.



REVIEW

Limbo of the patriarch

GEORGE SAUNDERS, THE COMIC empath, introduces President Abraham Lincoln as he unwittingly enters a bardo—a Buddhist limbo, here populated by ghosts he cannot sense. These specters travel around the cemetery where Lincoln’s son Willie has been interred. They believe they are not dead and hope to return to life as they knew it. Yet if they succumb to temptation or resignation, they know they will experience the “matterlightblooming phenomenon” and disappear to the afterlife in an indescribable flash and crack. “And for what?” one reasons. “You do not know. A most unintelligent wager.”

In the bardo, Willie’s ghost has befriended a trio: the naked, excessively endowed printer Hans Vollman, who just wants a conjugal reunion with his wife; the many-eyed, -nosed and -handed Roger Bevens III, who swears he “changed [his] mind” about his suicide over his gay lover; and the fright-faced Rev. Everly Thomas, unable to determine his life’s great sin. Each encourages Willie to move along to the true afterlife, because the bardo is dangerous for children. That is, until they witness a marvel: a living loved one who does not abandon the deceased.

In the night, Lincoln has come to the crypt to cradle Willie’s corpse (a “worm,” to his son’s spirit). Lincoln says, and the disembodied 11-year-old hears, that he will come back again. This inspires the boy to linger. But watching Willie become

consumed by demons, Vollman, Bevens, Thomas and their compatriots attempt to compel the President to return. To do this, they must form a union to free the boy from bondage. All rush into Lincoln’s soul. Rapists and victims. Good mothers and bad ones. Slaves and free men. They (possibly) enlighten Lincoln with their own experiences, and in return can hear his thoughts—enabling Saunders to mine the mentality of a President whose “magnanimity” William Seward once called “almost super-human” as he confronts an increasingly bloody civil war.

Along with the wonderfully bizarre, empathy abounds in *Lincoln*, for not just the mourning living but also the dead. Optimists will find renewed faith in the potential we carry within or the beauty of the world’s every detail. The book was clearly written by an author possessing otherworldly love. But in war, empathy for the enemy doubles the burden. Lincoln once wrote of his opponents, “If slavery did not now exist amongst them, they would not introduce it.” We see how the book’s President comes to rationalize killing by believing in God (“a great beast”) and the human spirit.

The final 50 or so pages of *Lincoln in the Bardo* are themselves a matterlight-blooming phenomenon. Loud and big. Exploding with grief and, more so, hope. And better left undescribed until you yourself reach the end. —NATE HOPPER

LOST BOY

Mary Todd Lincoln once described her son Willie as “a very beautiful boy, with a most spiritual expression of face”

House of bards

Saunders is not the first to draw inspiration for a novel from the residents of 1600 Penn. Here are four more:



AMERICAN WIFE BY CURTIS SITTENFELD

The 2008 novel about a small-town girl who marries into a prominent Republican family was inspired by Laura Bush.



LINCOLN BY GORE VIDAL

This 1984 volume from Vidal’s *Narratives of Empire* series provides a fictional account of the 16th President at war.



WATERGATE BY THOMAS MALLON

In 2012, the novelist framed Richard Nixon’s downfall through the experiences of the people surrounding him.



ELEANOR VS. IKE BY ROBIN GERBER

This 2008 book imagined Adlai Stevenson dying in the 1952 election—with Eleanor Roosevelt taking his place on the ticket. —S.B.



Fargo creator Hawley again relies on surrealism in *Legion*, a superhero show unlike any other

PROFILE

When writers rule, TV gets wonderfully weird

By Eliana Dockterman

AS A SUPERHERO, *LEGION* IS NOT STRONGER OR quippier or darker than his contemporaries. He is, however, mentally ill. At the beginning of FX's new show based on the Marvel character, David Haller (*Downton Abbey*'s Dan Stevens) has been diagnosed with schizophrenia and locked away in Clockworks Psychiatric Hospital. There, a fellow patient helps him discover he has special abilities: telepathy and telekinesis. Are his delusions—a yellow-eyed devil, cutlery leaping from drawers and swirling around him—a manifestation of his illness or his powers? David doesn't know, and neither do viewers.

Legion is a fringe comic-book character with a story seemingly impossible to translate to the

screen, which is why show creator Noah Hawley chose to tackle it. Hawley, 50, has made a career of adapting the unadaptable. In 2014, he transformed the classic, some might say perfect, Coen brothers film *Fargo* into an FX television series that embraced the idiosyncrasies of the movie—the Minnesotan accents, the bumbling carnage—but with a fresh set of characters. Its first season was nominated for 18 Emmys and won Best Miniseries.

With *Legion*, Hawley says he wanted to eschew the typical “running and kicking” of other superhero series like Netflix's *Daredevil* or the CW's *Supergirl*. *Legion* doesn't wear a cape or a uniform. Hawley's is a superhero show of the mind. “My hope,” he says, “is that when you watch the first hour, it may not always be clear what every image means, but those answers are coming.”

Hawley is one of a handful of writers—including Shonda Rhimes (*Grey's Anatomy*, *Scandal*) and Ryan Murphy (*American Horror Story*, *Feud*)—who enjoy unprecedented creative freedom. Their slate of shows diverge in subject but share an aesthetic vocabulary. Hawley posted the word **UNCANNY** all over the *Legion* art department to encourage surreal flourishes like those on *Fargo* (fish fall from the sky, an alien spaceship shows up just because).

When he wrote for network television a decade ago, Hawley recalls, executives often demanded that writers “clarify” events—explain things ad nauseam rather than allow the audience to reach its own conclusion. Hawley's work at FX, which beyond *Legion* and *Fargo* will extend to an adaptation of Kurt Vonnegut's acerbic classic *Cat's Cradle*, defies this advice.

That's not to say that *Legion* is just a puzzle: Hawley's work tends to be more tone poem than mystery. Guessing the twists, in other words, won't ruin things. “I could tell you what happens in *Fargo*, but you still wouldn't really know because that show is so much about how it happens or who it happens to.” In *Legion*, certain portions of the audience will guess what's going on before others, Hawley says. “But what I love about the genre is the awe and whimsy. This isn't an earnest, good-vs.-evil story. It's an exercise in creativity.”



BEYOND TV

Hawley is adapting his best-selling mystery novel from last summer, *Before the Fall*, into a film



Heigl, left, and Cox stride, with disarming confidence, through the halls of justice

REVIEW

Heigl's star quality comes through in the courtroom

KATHERINE HEIGL WAS BORN TO BE A DEFENSE attorney. Even on *Grey's Anatomy* a decade ago, Heigl could put a backspin of righteous emotion on the most unfathomable dialogue. Now she's been tasked with pleading an unpopular case: that of her own presence on TV in 2017. After all, this is an actor to whom various small scandals, most notably her perception that her movie *Knocked Up* was "a little sexist," have stuck for years. Heigl's treatment has mostly been unfair.

But that has given her tendency to play the crusader fresh resonance. In *Doubt*, a new CBS legal drama, she shines. She plays Sadie Ellis, a lawyer covering up inner strife with work and courtroom antics. Alternately quavering or rageful, Heigl does indignation as well as ever. *Doubt*'s cast includes Elliott Gould, as an avuncular mentor, and *Orange Is the New Black*'s Laverne Cox, whose character matter-of-factly processes her career through her understanding of the world as a trans woman seeking compassion.

Doubt finds its energy in soapy extremes, amping up interpersonal drama among those who thrive on fighting the status quo. The premise lends itself, easily, to unburdening heart-to-hearts and endless objections. The team, like the best defenders, may just persuade you to grant *Doubt*—and especially Heigl—a reprieve. —DANIEL D'ADDARIO

DOUBT airs Wednesdays at 10 p.m. E.T. on CBS

'To be a black transgender woman in that position on CBS feels really special.'

LAVERNE COX, whose role on *Doubt* marks a milestone—the first trans character to be a series regular on network TV

REVIEW

A young comic's hope-filled crash

PETE (PETE HOLMES) HAS IT all figured out, for now. He's striving, with endless optimism, to succeed in comedy by taking open-mike gigs in Manhattan, commuting from the upstate home he shares with his wife (Lauren Lapkus). But his assurance soon runs up against the hard fact of his wife's infidelity and the even harder fact, after he decides to leave her, of New York City real estate.

Crashing is yet another arch autobiographical show about life throwing obstacles in a comic's path. But unlike its forerunners *Curb Your Enthusiasm* and *Louie*, it never represents its protagonist as savvy. Pete is a charming naïf, undaunted by failure and excited by strokes of good fortune (a chance to hand out flyers outside a comedy club, a gig doing warm-up comedy for celebrity chef Rachael Ray) that other pros would mock. His journey toward security moves slowly—one night at a time. But Holmes, a human Beanie Baby incapable of more than a moment's doubt, delights at every turn. —D.D.

CRASHING airs Sundays at 10:30 p.m. E.T. on HBO

✓ TRAGEDY + TIME = COMEDY

Holmes, also a prolific podcaster, went through a divorce early in his comedy career





Sonya Cassidy, Colin Morgan and Ivanno Jeremiah face down their human creators

TELEVISION

When the most human human isn't actually human

HOW DOES ONE EMPATHIZE WITH robots? Sure, they can engender affection (*The Jetsons'* Rosie and *Star Wars'* C-3PO came preprogrammed with a sense of humor) or lust (Jude Law in *A.I.* and Alicia Vikander in *Ex Machina* were designed to please). But what about higher-order emotions like love and compassion? In the near future, what exactly would humans owe androids incapable of feelings but programmed to simulate them nonetheless?

This is the question that haunts *Humans*. The AMC drama, now in its second season, depicts a society close to our own, except in its addiction to "synths." These humanoid household bots do the chores, tend to the children and—if their owners enter in special coding—accommodate adults' prurient needs too.

Humans lacks the sophistication of *Westworld* on HBO. But both shows depict artificial intelligence becoming sentient, leading to human-vs.-robot revolution. Though it is more averse to shock and awe, *Humans* doesn't shy away from the ethically challenging possibilities of its premise or from presenting them in a context—like day-to-day family life—that is closer to home than *Westworld's* depraved theme park.

Midway through the first season, for example, synth Mia (Gemma Chan) is effectively forced into sex by her male owner. He and his wife later find themselves in therapy conducted by another synth programmed to mediate family disputes. These are characters using technology to try to solve a problem enabled by technology. Even if advanced artificial intelligence is still a fiction, this may resonate with viewers who, say, use meditation apps on their iPhones to attempt to disconnect.

Darker yet is the second-season story of Hester (Sonya Cassidy), a poorly treated android factory worker. When she develops consciousness, she becomes a robot supremacist, with her vehemence growing throughout the season. "Human lives have no inherent value," she eventually declares. "It just felt that way to you because there was no competing intelligence to offer an alternative view."

She looks and expresses herself like a human and yet was treated as an object and a servant. Maybe it should be no surprise she became a radical. —DANIEL D'ADDARIO

HUMANS airs Mondays at 10 p.m. E.T. on AMC

QUANDARY IS IT ETHICAL TO HAVE SEX WITH A ROBOT?

TV these days is preoccupied with the near-future dilemmas of human-android coitus (see: *Westworld*, *Black Mirror*, *Humans*). Two experts weigh in. —Eliana Dockterman

Yes! They could offer relationships to the lonely

There were times certain sexual practices between humans were illegal. The general view now is "anything goes" between consenting adults, so I see nothing wrong from an ethical point of view with having sexual relationships with robots. One has to consider it as similar to a [sex toy], for example. Clearly there's nothing wrong in using electronic devices to create sexual satisfaction. Why should there be moral problems with hiring or buying a sex robot?

DAVID LEVY,
author of *Love and Sex With Robots*

No! It perpetuates a culture that objectifies women

Sex is already thought of as instrumental, and women in particular are already treated like objects. When you look at the trinity of prostitution, pornography and child abuse, you see a culture where men relate to women not as people but as their breasts, their mouths ... Automizing people's experiences of sex with robots contributes to that disconnect between sex and humanity, and exacerbates the trend of objectification and abuse.

KATHLEEN RICHARDSON,
fellow in ethics of robotics at De Montfort University in the U.K. and founder of the Campaign Against Sex Robots

TIME
PICKS



MUSIC

Country that melds tried-and-true with utterly new

THE VOCAL QUARTET LITTLE BIG TOWN HAS BEEN releasing country-chart-topping albums for 15 years now. But recently its members have been pushing their ambition even further. In 2015, the bruised, sparse single “Girl Crush,” which showcased vocalist Karen Fairchild’s slow-burn envy, soared to No. 1 on the country charts despite (or maybe because of) quick-to-take-offense listeners’ interpreting the lyrics to be about lesbianism. Then last year the group surprise-released *Wanderlust*, a loose collection of lightly funky songs executive-produced by pop guru Pharrell Williams.

The group’s eighth studio album, *The Breaker*, splits the difference between country-tinged pop and pop-leaning country, with rich harmonies serving as the constant. The first half of the album soars when it’s at its most restrained. The dreamy “Free” looks back on the simpler, more pleasant days of street hockey and televisions with two channels, while the languorous “Lost in California” is a starlit drive through romantic longing, its gentle guitars soaring in tandem with the group’s coos and oohs.

Bridging the album’s gap is another artist who has used Nashville as a jumping-off point into the wider world of pop: Taylor Swift, who wrote the wounded breakup ballad “Better Man.” The melodies on the chart-topping track’s verses—simple yet infectious—bring to mind earlier Swift compositions, although Fairchild’s husky voice and her bandmates’ harmonies lend the song added gravitas. From there, the group leans into and slightly updates tried-and-true country-music ideals, and that works too. Taken as a whole, it’s the sound of musicians gently testing the boundaries of their genre while remaining true to their roots. —MAURA JOHNSTON



‘We didn’t want you to have any subtext there other than to hear the song.’

KAREN FAIRCHILD, on why the band initially didn’t publicly reveal that “Better Man” was written by Swift

VIDEO GAMES

Studios 343 Industries (*Halo*) and Creative Assembly (*Total War*) team up to release the long-awaited ***Halo Wars 2***, a sequel to the 2009 original, (Feb. 21), which lets you save humanity on Xbox One.



MUSIC

Oddisee, a Brooklyn-based Muslim rapper with a Sudanese immigrant father, dives deep, rapping blistering topical verses over a live band on the album ***The Iceberg*** (Feb. 24).

BOOKS

Nobel Prize winner J.M. Coetzee’s sequel to 2013’s *The Childhood of Jesus* is ***The Schooldays of Jesus***, an allegory about a motherless boy who takes up dancing, with the author providing philosophical asides.

TELEVISION

CBS’s spin-off of *The Good Wife*, ***The Good Fight*** (Feb. 19), stars *Wife* regular Christine Baranski as Diane Lockhart, with the story picking up one year after the end of Julianna Margulies’ final broadcast.



PROFILE

Jordan Peele made us seriously laugh. Now he's going to scare us silly

By Eliza Berman

FOR JORDAN PEELE, COMEDY WAS a 15-year detour. Five seasons on *MADtv*. The award-winning Comedy Central sketch show *Key & Peele*. And *Keanu*, his movie with comedy partner Keegan-Michael Key about a kitten catnapped by gangsters. All pit stops on the way to his ultimate goal: horror director. Peele's directorial debut, *Get Out*, which hits theaters on Feb. 24, is the realization of a dream that he says has been "on the back burner all along."

In a midtown Manhattan hotel some 12 blocks from where he grew up, Peele, 37, explains why he and the genre

got off to a rocky start. "I was deathly afraid of horror movies until about 11 or 12, and then I began to respect something that could affect me so deeply." But the bar he set for himself was high. "I felt like I could never make a movie as good as my favorites," he says. So when he discovered a knack for comedy in college, he pursued it. "If I do my job right," he says he thought, "maybe I'll get to a point where I can shift gears."

He finally has. In *Get Out*, Rose (Allison Williams), who is white, brings her boyfriend Chris (Daniel Kaluuya), who is black, to meet her

parents (Catherine Keener and Bradley Whitford) in a tony Connecticut hamlet. When he asks if she has told them that he's black, she reassures him that her dad isn't racist: "He would have voted for Obama a third time, if he could have!" They arrive, and a warm welcome gives way to ominous hints that something is seriously awry. Ultimately, Chris' life depends on heeding the film's title.

Sharp and sardonic, *Get Out* is a spooky social thriller in the mold of *Rosemary's Baby*. As a fan of that film, Peele says he could relate to the experience of female oppression through Mia Farrow's performance. When he sat down to write *Get Out*, he began to think the same should be done for race.

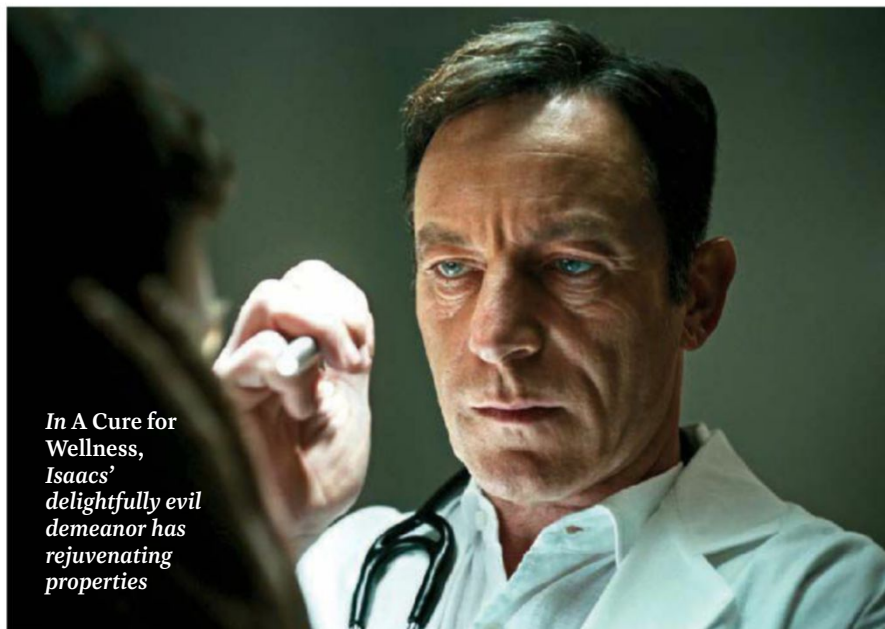
The result is an examination of racism—not of the cross-burning, violent kind, but of the insidious variety that persists in liberal, upper-class circles. "When Obama was elected, for eight years, we lived in this postracial lie," Peele says. He kept noticing "subtle, seemingly harmless interactions"—like dialed-up zeal for Obama—that served as a reminder that racism still thrives. "If we were in a postracial society," he says, "I would not feel like a token black guy in a room full of white people trying to connect with me about basketball."

Fans of *Key & Peele* will find familiar themes. The film's opening scene recalls a 2013 sketch in which white people nervously summon their children inside as Peele, in a hoodie, walks past their homes. "The conventional dynamic people understand is white fear of the black neighborhood," says Peele. "In recent times, we've been dealing with the fact that black people have a lot to fear in a white neighborhood. This movie explores why black people are afraid of white people."

Get Out represents eight years of Peele's thinking and writing on race. There's more, he promises, where the film came from. Never one to self-censor, he recently addressed critics who suggest that comedians refrain from taking on politics. "BE CAREFUL WHAT Y'ALL WISH FOR," he tweeted. What did he mean exactly? He scratches his stubble and smiles. "Be more scared of our art than our tweets," he says. "You don't want comedians against you." Or horror directors. □

Peele's directorial debut addresses familiar themes in a new genre





In A Cure for Wellness, Isaacs' delightfully evil demeanor has rejuvenating properties

REVIEW

Chills, pills and spills on Verbinski's magic mountain

GORE VERBINSKI'S PSYCHOLOGICAL horror chiller *A Cure for Wellness* is so gorgeous to look at, and so effective at layering diaphanous tones of queasiness and anxiety, that you sometimes forget to think about what you're watching, which, in this case, is a good thing. Dane DeHaan plays Lockhart, a young corporate go-getter who's dispatched to track down his company's missing-in-action CEO. The guy appears to have flipped his wig while taking the waters at a wellness spa in the Swiss Alps. Our hero is greeted there by the purring, eminently reasonable Dr. Volmer (Jason Isaacs, delightful in his slitheriness)—though not before he breaks his leg in a tragic “accident.”

Being stranded at a spa shouldn't be such a bad thing, but Lockhart begins to notice that some of his fellow wellness seekers seem spookily vacant. Also, they're kind of old—except for a mysterious, lonely girl, Hannah, who drifts about the grounds like a zonked-out

wraith. (The actor who plays her, Mia Goth, is wide-eyed and virtually translucent. She looks like a cross between Sissy Spacek and Shelley Duvall.)

The spa mystery involves dental X-rays, predatory Anguilliformes and restorative vitamin drops, and much of it is genuinely creepy. That's largely thanks to the work of cinematographer Bojan Bazelli, who balances health-restoring sunlight colors with velvety green-gray dungeon hues of dread. Maybe even more surprisingly, about 70% of the crazily imaginative plot hangs together. But the other 30%, sloppily thought out and superfluous, drags the movie down. Certain

story elements, like one involving giant, liquid-filled vitrines, exist only because of how cool they look. Verbinski—whose very name makes him sound like a guy given to using too many words—just doesn't know when to stop. Sometimes, less is so much more.

—STEPHANIE ZACHAREK

I've sort of set out to analyze the moviegoer. I wanted to diagnose the audience a bit and then offer a cure.'

GORE VERBINSKI, in Empire Online

REVIEW

More notes of a native son

IN AN ERA WHEN CIVILIZED discourse has gone the way of the flip phone, novelist, essayist and playwright James Baldwin—as heard and seen in Raoul Peck's documentary *I Am Not Your Negro*—is an ambassador from a lost time. The movie imagines an ambitious book Baldwin never completed, a work tracing the lives and legacies of his closest friends, Medgar Evers, Malcolm X and Martin Luther King Jr. Peck obtained the manuscript notes from Baldwin's estate and wove them into a compelling minihistory of black identity in America.

I Am Not Your Negro captures all that was galvanizing and forceful about Baldwin. The language in the film is his own—Samuel L. Jackson reads the manuscript excerpts—and it resonates, sometimes painfully, today. “I'm terrified at the moral apathy, the death of the heart, which is happening in my country,” Baldwin said in a 1963 TV appearance. The words *my country* are the clincher. Even if the place you will always call home doesn't have the power to break you, there's no guarantee it will never break your heart. —S.Z.



ANIMATION

Oscar nominee *My Life as a Zucchini* is a stop-motion marvel

ORPHANS, AS CHARLES DICKENS KNEW, are great subjects. If there's anything right with this world, Claude Barras' stop-motion animated marvel *My Life as a Zucchini*—also known as *My Life as a Courgette*—will be remembered as a great entry in the orphan canon.

Not all the characters are orphans, strictly speaking. The hero, Zucchini, is a neglected boy who's sent to a group home after the death of his mother (his father has long ago disappeared). A shy, quiet kid with deep blue hollows around his eyes, he's a symbol for all the shadowy, nameless anxieties children harbor, feelings that grownups often think they understand but have banished to the margins of consciousness.

Zucchini is at first bullied by the unruly mischief maker Simon, a wiry rascal with a swirly red pompadour. But once Simon lets his guard down, Zucchini sees, as we do, that his aggressive posturing is just a defense mechanism. Zucchini begins to find his place at the home, which is run by kindly, conscientious teachers and caretakers—no ladlesful of lumpy

gruel here. Raymond, the police officer who first escorted Zucchini there, keeps tabs on him. (A dubbed version of this French-Swiss co-production will be shown in U.S. theaters. In the English-language version, the voice of Raymond is provided by deadpan virtuoso Nick Offerman.)

Zucchini updates Raymond with hilarious crayon illustrations of his day-to-day life, including facts he has learned about our cavemen forebears: "They lived when soap didn't exist." That's just one example of the lightness of touch Barras brings to this story. Even in the midst of tragedy—and what could be more tragic than kids who have no family?—joy has a way of sneaking in.

The animation is captivating and vibrant. A scene in which the teachers hold a punk-disco party for the kids is particularly disarming—they twist and shuffle and hop with that peculiarly childlike mix of audaciousness and reserve. *My Life as a Zucchini* is so warm, so alive, that we forget we're watching cartoon figures. And when they belong to us, they're no longer orphans. —s.z.



FROM BOOK TO FILM TO AWARDS SEASON
My Life as a Zucchini, an Academy Award nominee, was adapted from Gilles Paris' 2002 novel *Autobiographie d'une Courgette*



Wood and Lynskey find home in a weird, hostile world

MOVIES

I Don't Feel at Home in This World Anymore aims for the heart

DIRECTORS WHO FEEL TRUE tenderness for misfits and oddballs will always be in short supply. That's just one reason to take note of *I Don't Feel at Home in This World Anymore*, the feature debut of writer-director Macon Blair (also an actor, as seen in *Blue Ruin*). Melanie Lynskey stars as Ruth, a depressed nurse's assistant whose mood sinks further when a thief breaks into her home and makes off with, among other things, her grandmother's silver. The cops are no help, and Ruth sets out to find the culprits, enlisting the aid of local weirdo Tony (Elijah Wood), a high-strung amateur martial-arts expert.

What follows is a lively, waggish and sometimes perversely violent caper, reminiscent of *Something Wild*—era Jonathan Demme. Blair has a gift for the absurd, but his true secret weapon is the wondrous Lynskey. Even Ruth's neuroses have a pixie-dust lightness, like a thing you could catch in a butterfly net. Once you can laugh at the worst that can happen, you're on your way to coping with it. —s.z.



DOCUMENTARY

Planet Earth as spectacle—and cautionary tale

By Justin Worland

A LIFE-OR-DEATH CHASE UNFOLDS in the first episode of *Planet Earth II*: A young Galapagos iguana runs, jumps and climbs to avoid the jaws of snakes hunting their next meal. After a few close calls, the would-be prey finally returns to the company of much larger iguanas that provide protection.

Predators are often cast as the antagonists in nature documentaries. But over the course of these six hour-long episodes, humans emerge as the real villains. A den of snakes may threaten the life of an individual iguana, but global warming, land use and pollution threaten the survival of entire species. *Planet Earth II*, a sequel to the 2006 megahit BBC documentary narrated by English naturalist David Attenborough, is not a traditional climate-change documentary—there are no charts, no explanations of the greenhouse effect. Instead, it follows the familiar nature-film structure, devoting each episode to one of several different habitats, such as islands, deserts and grassland.

But this is why the series succeeds where recent environmental documentaries have faltered. Take *Before the Flood*, the 2016 film produced by and starring Leonardo DiCaprio, which followed the actor as he interviewed leading activists, scientists and politicians like Barack Obama. Although it covered important ground, it ultimately focused on telling viewers about the ravages of climate change rather than showing them. Much has changed in the 11 years since Al Gore made *An Inconvenient Truth*, when just clearly explaining the phenomenon was novel. (A follow-up, *An Inconvenient Sequel*, is set for release in July.)

Planet Earth proves more effective at giving weight to the impact of human activity on the natural world precisely because it is about nature, not people. Every episode provides perspective on the challenges faced by a particular



Planet Earth II travels around the globe—this time with a more urgent environmental message



location, such as encroaching land use in jungles, or rising temperatures in mountain regions. “If the approach is too didactic, you only get half the story. We tell a more engaging story,” says Mike Gunton, the show’s executive producer. “It’s very difficult to get people to protect things if they’re not engaged.”

The numbers in the U.K., where the show aired last fall, suggest that viewers were drawn in. *Planet Earth II* ranked as one of the most-watched television programs in the country last

year and was, according to the BBC, especially popular with young people.

More than the politics around global warming has changed since the first film. Technology allowed the producers to capture images unthinkable even a decade ago, including one unforgettable shot of hundreds of thousands of penguins camped out together, in an image stretching to the horizon. And, of course, the environment itself became more imperiled: entire habitats like those of the Arctic have come to be on the brink of disappearing, and species like the African elephant have been decimated. Even if political progress has slowed, at least filmmakers haven’t.

PLANET EARTH II will air on BBC America beginning on Feb. 18

Gore’s Truth sequel will show how much has changed—for the worse—in the past decade



AWARDS

The definitive guide to random Oscar facts

Eighty-nine years of trivia to get you ready for the Feb. 26 show on ABC By Eliza Berman

MOST AWARDS When a single movie dominated Hollywood's biggest night	1959 / 1988 / 1997 <u>GIGI / THE LAST EMPEROR / THE ENGLISH PATIENT</u> The musical, biopic and romantic drama, respectively, each won 10 Oscars .	1960 <u>BEN-HUR</u> The most expensive movie of its time also broke awards records with 11 Oscars , losing only in the category for Adapted Screenplay.	1962 <u>WEST SIDE STORY</u> The adaptation of the 1957 Broadway show won 10 Oscars , still the most ever for a movie musical.
	1932 <u>NORMAN TAUROG</u> The prolific filmmaker won his first and only Oscar for Best Director when he was 32 , for the comedy <i>Skippy</i> .	1973 <u>TATUM O'NEAL</u> The child actor was 10 years old when she won Best Supporting Actress for her role as a young con artist in <i>Paper Moon</i> .	1981 <u>TIMOTHY HUTTON</u> Hutton was 20 when he became the youngest male to win Best Supporting Actor, for the drama <i>Ordinary People</i> .
YOUNGEST WINNERS Talent—and recognition for it— isn't always contingent on years of experience	1932 <u>HELEN HAYES</u> The legendary performer and triple-crown-acting winner scored for her first talking picture , <i>The Sin of Madelon Claudet</i> . EGOT: 1977	1946 <u>RICHARD RODGERS</u> The decorated composer won his first of 15 Oscars with lyricist Oscar Hammerstein II for a wistful song from the musical <i>State Fair</i> . EGOT: 1962	1962 <u>RITA MORENO</u> The triple-threat singer, actor and dancer won for her role as Anita in the film adaptation of <i>West Side Story</i> . EGOT: 1977
	1942 <u>JOAN FONTAINE, OLIVIA DE HAVILLAND</u> The only siblings to win lead acting awards, the younger Fontaine won first , in 1942, and de Havilland would go on to win twice.	1949 <u>THE HUSTONS</u> John Huston won two Oscars in 1949 and directed both his father and daughter , Walter in 1949 and Anjelica in 1986, to Oscars.	1972 <u>THE FONDAS</u> Daughter Jane won first for <i>Klute</i> in 1972 and <i>Coming Home</i> in 1979, with father Henry winning in 1982 for <i>On Golden Pond</i> .
EGOT WINNERS Only 12 people have ever won an Emmy, Grammy, Oscar and Tony	1942 <u>JOAN FONTAINE, OLIVIA DE HAVILLAND</u> The only siblings to win lead acting awards, the younger Fontaine won first , in 1942, and de Havilland would go on to win twice.	1949 <u>THE HUSTONS</u> John Huston won two Oscars in 1949 and directed both his father and daughter , Walter in 1949 and Anjelica in 1986, to Oscars.	1972 <u>THE FONDAS</u> Daughter Jane won first for <i>Klute</i> in 1972 and <i>Coming Home</i> in 1979, with father Henry winning in 1982 for <i>On Golden Pond</i> .
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FAMILY OSCARS When Oscar success appears to be genetic	1942 <u>JOAN FONTAINE, OLIVIA DE HAVILLAND</u> The only siblings to win lead acting awards, the younger Fontaine won first , in 1942, and de Havilland would go on to win twice.	1949 <u>THE HUSTONS</u> John Huston won two Oscars in 1949 and directed both his father and daughter , Walter in 1949 and Anjelica in 1986, to Oscars.	1972 <u>THE FONDAS</u> Daughter Jane won first for <i>Klute</i> in 1972 and <i>Coming Home</i> in 1979, with father Henry winning in 1982 for <i>On Golden Pond</i> .
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POSTHUMOUS AWARDS Only a few winners didn't live long enough to accept their honors	1960 <u>WILLIAM A. HORNING, SAM ZIMBALIST</u> Ben-Hur's art director and producer both died before they could collect their Oscars.	1969 <u>WALT DISNEY</u> The legendary animator died at 65, two years before winning his 22nd Oscar , for short film <i>Winnie the Pooh and the Blustery Day</i> .	1977 <u>PETER FINCH</u> Two months after dying of a heart attack, the <i>Network</i> actor became the first person to win a posthumous acting award .
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BEST-PICTURE UPSETS When the long-shot contender ousted the favored	1942 <u>HOW GREEN WAS MY VALLEY</u> The drama about a Welsh family is more of a retrospective upset, with many modern critics finding <i>Citizen Kane</i> more deserving.	1977 <u>ROCKY</u> Like its titular character, the crowd-pleasing boxing movie was an underdog in a field that included <i>Network</i>, <i>Taxi Driver</i> and <i>All the President's Men</i> .	1990 <u>DRIVING MISS DAISY</u> Voters chose palatable over challenging (<i>Born on the Fourth of July</i>), not to mention the Academy's overlooking Spike Lee's <i>Do the Right Thing</i> , now a classic.
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COMEBACKS Sometimes an Oscar is the ultimate (career) redemption	1954 <u>FRANK SINATRA</u> The crooner bounced back from a stalled career in the early 1950s with a Best Supporting Actor win in <i>From Here to Eternity</i> .	1968 <u>KATHARINE HEPBURN</u> A string of flops in the '30s earned her the label "box-office poison." Decades later, she would win her second of four Oscars—a record for acting awards that still stands.	1973 <u>MARLON BRANDO</u> With his Best Actor trophy for <i>The Godfather</i> , he returned from a series of poorly received films and a reputation as being difficult to work with on set .
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1998 TITANIC The epic romance won 11 Oscars and, with <i>All About Eve</i>, held the record for most nominations (14)—now joined by <i>La La Land</i>.	2004 THE LORD OF THE RINGS: THE RETURN OF THE KING Winning all 11 Oscars for which it was nominated, the fantasy film had the largest sweep in Oscar history.	LA LA LAND The musical must win 12 of its 14 nominations to break the record. Because it's nominated twice in one category, the most wins it can nab is 13.
1987 MARLEE MATLIN The 21-year-old won Best Actress for <i>Children of a Lesser God</i>, becoming the only deaf actor ever to win an Oscar.	2003 ADRIEN BRODY Brody was 29 when he won Best Actor for his role as the Polish composer Wladyslaw Szpilman in the World War II drama <i>The Pianist</i>.	LUCAS HEDGES, 20, could tie for youngest Best Supporting Actor, in <i>Manchester by the Sea</i>. DAMIEN CHAZELLE, 32, could tie for youngest Best Director, for <i>La La Land</i>.
1969 MEL BROOKS The funnyman won an Oscar for Best Screenplay for his satirical directorial debut, <i>The Producers</i>. EGOT: 2001	1991 WHOOPI GOLDBERG The actor-comedian took home Best Supporting Actress for playing a medium in the romantic drama <i>Ghost</i>. EGOT: 2002	LIN-MANUEL MIRANDA The <i>Hamilton</i> mastermind will earn an EGOT this year if he wins Best Song for <i>Moana</i>'s "How Far I'll Go."
1979 JON VOIGHT, ANGELINA JOLIE Father Jon won in 1979 for <i>Coming Home</i>, and daughter Angelina won in 2000 for <i>Girl, Interrupted</i>.	1971 THE COPPOLAS Francis began the family's winning streak with a screenwriting Oscar, followed by awards for father Carmine (score), daughter Sofia (screenplay) and nephew Nicolas Cage (acting).	THE AFFLECKS Older brother Ben has one win each for writing and producing; this year, Casey Affleck is a favorite to win Best Actor, in <i>Manchester by the Sea</i>.
1992 HOWARD ASHMAN The Disney composer won Best Song for <i>Beauty and the Beast</i>'s theme and received subsequent posthumous nominations for <i>Aladdin</i>.	2009 HEATH LEDGER The 28-year-old died exactly one month before being named Best Supporting Actor for his role as the Joker in <i>The Dark Knight</i>.	AUGUST WILSON The Pulitzer Prize-winning playwright died in 2005 at age 60. Winning Best Adapted Screenplay for <i>Fences</i> would make him the 16th posthumous Academy Award winner.
1999 SHAKESPEARE IN LOVE After heavy lobbying by Harvey Weinstein, the 16th century romance beat front runner <i>Saving Private Ryan</i>.	2005 CRASH Many viewed <i>Brokeback Mountain</i> as the better film and its loss as evidence of anti-gay sentiment in the Academy. Even <i>Crash</i> director Paul Haggis later called his film's win undeserved.	ANYTHING BUT LA LA LAND The musical is heavily favored, though <i>Moonlight</i> is best positioned to edge it out.
2013 BEN AFFLECK The years between his writing Oscar for <i>Good Will Hunting</i> and Best Picture for <i>Argo</i> saw several misfires—<i>Jersey Girl</i>, <i>Gigli</i>—and negative tabloid press.	2014 MATTHEW MCCONAUGHEY A promising debut gave way to a decade of frivolous rom-coms before the McConaissance was cemented with a Best Actor win for <i>Dallas Buyers Club</i>.	MEL GIBSON The <i>Hacksaw Ridge</i> director is up for Best Director a decade after disastrous publicity for domestic violence and anti-Semitic remarks.

2017 OSCAR FIRSTS?

BARRY JENKINS, *Moonlight*
Could be the first black director to win the award

MOONLIGHT
Could be the first LGBT-themed film to win Best Picture

AVA DUVERNAY, 13th
Could be the first black woman to win Best Documentary

MERYL STREEP, *Florence Foster Jenkins*
A fourth Oscar would tie her for most acting awards overall

DENZEL WASHINGTON, *Fences*
A Best Actor win would break his own record for most awards by a black actor

Time Off Spring Travel



Family: Philadelphia

WHEN: Beginning in late April

WHY NOW: The City of Brotherly Love's museum collection (don't miss the Franklin Institute or the Barnes) will add the Museum of the American Revolution. The grand opening (April 19) will feature, no surprise, a parade of military reenactors.

TIP: For cheesesteaks, per Philly.com, skip the usual options and head instead to John's Roast Pork, Joe's Steaks or Philip's Steaks.

START HERE: visitphilly.com



Culture: Havana

WHEN: Now through the end of May

WHY NOW: Recently eased travel restrictions, new airline routes and the spread of services like Airbnb are making it easier to experience Old Havana.

TIP: To save money and get a more authentic experience, travel blogger Matthew Karsten recommends foregoing hotels in favor of *casa particulares*, Cuba's take on homestays.

START HERE: cu.usembassy.gov



Road Trip: Death Valley National Park, California

WHEN: From early April to early May

WHY NOW: Visit when temperatures are warm but not yet unbearable. The park's picturesque Badwater Road offers a front seat to Death Valley's glorious spring wildflower show.

TIP: Dante's View and Zabriskie Point, according to park staff, are best bets for watching a magnificent sunset.

START HERE: nps.gov/deva



Nature: Costa Rica

WHEN: Now through the end of March

WHY NOW: Costa Rica is for (nature) lovers, whether you want to explore the rain forests of Corcovado National Park, walk under the canopy at Monteverde Cloud Forest Biological Reserve or snorkel the reefs of Cahuita National Park.

TIP: Travel writer Camille Willemain recommends picking one beach to serve as home base, then planning hikes and other excursions nearby.

START HERE: travelandleisure.com/travel-guide/costa-rica

VOYAGES 8 travel ideas for the winter-weary

IT'S NOT TOO LATE TO COMBAT the seasonal sads with a spring vacation. Here are newly interesting destinations to consider depending on how—and with whom—you like to travel.

—ALEX FITZPATRICK



Skiing: Banff National Park, Canada

WHEN: Now through the end of March

WHY NOW: A favorable exchange rate and free admission throughout 2017 (in honor of Canada's 150th birthday) make this an ideal time to enjoy some of the best skiing and lodge lounging in the world.

TIP: Be sure to catch a lift on the Banff Gondola, an eight-minute vista-rich ride.

START HERE: banfflakelouise.com



Art: Honolulu

WHEN: March through May

WHY NOW: The perennial sun-fun destination is adding even more justifications to visit: this year marks the first Honolulu Biennial, a citywide celebration of visual creativity from across Hawaii and other Pacific cultures.

TIP: *Travel + Leisure* recommends staying at the artsy new Surfrack Hotel & Swim Club, which was decorated in partnership with a variety of local creators.

START HERE: gohawaii.com



Exotic: Rainbow Mountains, Peru

WHEN: April through May

WHY NOW: Peru is becoming easier than ever to access thanks to new developments like an airport in the coastal town of Pisco. Head there for an aerial tour of Peru's mysterious Nazca Lines and a taste of the town's namesake brandy, then trek back to Cusco before tackling the majestic (and highly Instagrammable) Rainbow Mountains.

TIP: The heartiest adventurers will want to consider a six-day trek through the Vilcanota mountain range.

START HERE: peru.travel/en-us



Sunshine: U.S. Virgin Islands

WHEN: March through April

WHY NOW: This year marks the 100th anniversary of Transfer Day, when Denmark sold the islands to the U.S. for \$25 million. In celebration, the Department of Tourism is giving travelers who spend at least three nights there a \$300 voucher for tours and other activities.

TIP: Three islands, three distinct experiences: consider St. Thomas for a bustling resort scene, St. John for outdoor adventures and St. Croix for cuisine.

START HERE: visitusvi.com

Getting over my divorce? Studying the numbers helped

By Chris Wilson

WHEN YOUR MARRIAGE BREAKS APART, A LONG TRAIN OF loved ones assure you that time will heal your grief. They are not wrong. But as a data journalist, I misunderstood them to mean the arc of that recovery would be linear.

In reality, I found, divorce is like penicillin: the bulk of the anguish passes through your system fairly quickly, but the dregs stick around much longer. Well after the heartbreak had abated, I was still afraid that I had missed my opportunity at a happy, lasting partnership.

I got married on an autumn Sunday, five months after turning 30. Things abruptly fell apart a week after I turned 32. We finalized the divorce on a Thursday a year later, when I was 33.

I do not normally meter my past by my age. But when it comes to milestones like getting married, there will always be a clock assembled gear by gear from the pace at which we see our peers progressing. One day, on a whim, I did something I do every day at work, where I regularly analyze large data sets to learn how people change over time, but with a personal spin: I ran the numbers to see how people in the same circumstances turn out.

To get started, I downloaded four years of data from the U.S. Census Bureau's annual survey of 1% of Americans, which is sampled to represent the entire country's population. The survey asks a wide variety of questions, including how many times each respondent has been married (from zero to "three or more"), whether he or she is currently married, and his or her age at the time of the most recent nuptials. This gave me everything I needed to put myself in perspective.

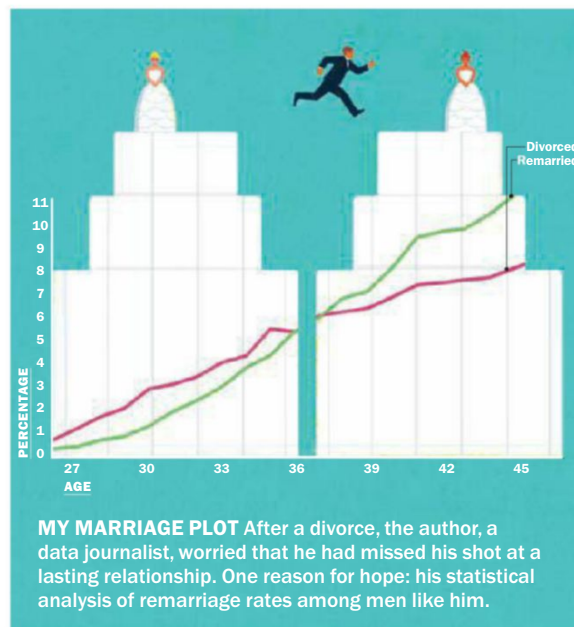
AFTER LOOKING at how the age and duration of marriages vary across demographics, I focused on college-educated men ages 25 to 45 who live in or near an urban area, since education and metropolitan status are two factors that correlate significantly with one's age of marriage. This turned up a huge pool of people to analyze.

The first thing I discovered is that 30 is just below the average age for a first marriage in this demographic. This means plenty of people get married for the first time when they are older than I was, or even older than I am now.

In fact, across the board, people get married later than we might think, if we were to judge, say, by the number of save-the-dates we get in the mail. Women tend to get married just a year or two sooner, but when you take everyone into account, half the population is still unmarried at age 29.

Next, I ran the numbers on how many people like me get divorced. By age 33, that figure is close to 7%. I'm glad it's not higher, but it's useful to know I'm not a rare specimen.

That was a good start, but what I really needed to know was how likely people are to get remarried when they are divorced at an early age. This is slightly trickier to measure since the census doesn't track the same individuals from year to year.



Fortunately, it doesn't need to. All I wanted was to peek ahead a few years and see what the picture looked like. So I pulled the numbers on how many people in my demographic were divorced (just once) or remarried (just on their second marriage overall). I found the chart above, and it put my heart at ease. Right at around age 36, the percentage of people who are remarried surpasses the percentage who are divorced.

There are no sure bets in demographics, but these are numbers I can understand. The magenta line goes up as more people get divorced at each age, minus those who leave the ranks of singledom to get married again (the green line).

It's not quite possible to distill these figures into an exact percentage chance that I'll make it to Round 2, but it's safe to say the odds are well north of 50%. With a little more effort, I could tease out these figures by whether those who get remarried have children from their first marriage—which I do not—or see whether things like income or occupation play a role.

I DON'T FEEL the need to. Just seeing the big picture is enough to remind me that it is foolish to wind our social clocks by our personal sample size of one. Or by the highly skewed sample of what we see on Facebook, which some research suggests contributes to unhappiness for this very reason.

If you need a peer group for a benchmark, the nation as a whole offers a much more comforting one. I have spent years crunching numbers like these ones to learn more about who we are as a country. It wasn't until recently that I realized they can also teach you something about yourself.

Yuval Noah Harari The Israeli historian and internationally best-selling author of *Sapiens* discusses his new book, *Homo Deus*, a vision of humankind's future

Your book imagines a future in which humans live in such an optimized world, they become useless and their lives lose all meaning. How do you enjoy a cup of coffee with such a cloud hanging over your head?

In every generation, humans have lived under one cloud or the other. One cloud goes away, and another takes its place. Yes, artificial intelligence is definitely going to change society in a fundamental way, and there are possible dangers. But this is not a prophecy. If I thought that there is nothing we can do, why just make people upset?

You present the possibility that select people will become superhuman, *Homo deus*. What would a super-human do all day? We don't have any idea. The notion of superhumans is using bioengineering and artificial intelligence to upgrade human abilities. If they use the power to change themselves, to change their own minds, their own desires, then we have no idea what they will want to do. Or, what happens if using, let's say, brain-computer interfaces we can connect two brains together so that I can access your memories and remember your childhood, what will that do to human identity? Or gender identity—today I can play a two-dimensional computer game as a woman ... What if we could do that in a three-dimensional virtual reality that encompasses not just our vision and audio but our entire body? The very notion of an identity, a fixed story, may become obsolete.

You write that humanity, after eradicating war, plague and famine, will use technology to seek bliss, immortality and divinity. What goal would you add to that list? I would add truth, and in particular understanding ourselves, our minds. For thousands of years, we have gained the power to control the world outside us but not to control the world inside. You could stop a river from flowing, but you could not stop your body from becoming old. You could kill mosquitoes, but you could not

kill annoying thoughts buzzing inside your head. In the 21st century, we are going to gain the power to control the world inside us, to kill the thoughts and not just the mosquitoes. The danger is that we will misuse this power and end up with an internal ecological disaster—a complete mental breakdown.

So ignorance isn't bliss? Ignorance by itself is not too dangerous. If you combine it with power, this is a toxic mix.

If you avoid technology, you risk being left behind quickly, and if you use it, you risk wiping out humanity.

Which path have you chosen? I try to find a middle path. On a personal level, I try to still be able to disconnect. I start and finish my workday with one hour of meditation. Every year, I go for a long meditation retreat of between 30 and 60 days. I actually heard about the election of Donald Trump only on the 20th of December because I was on a 45-day silent-meditation retreat.

How was that? It saved me a month of worrying about it.

Is it safe to assume you are skeptical of handing over data about yourself? There is a saying that if you get something for free, you should know that you're the product. It was never more true than in the case of Facebook and Gmail and YouTube. You get free social-media services, and you get free funny cat videos. In exchange, you give up the most valuable asset you have, which is your personal data.

What would persuade you to buy an Amazon Echo? I won't be left with any choice. I won't be able to buy food, to get health care, if I don't have an Echo. What I try to focus on is not to try to stop the march of technological progress. Instead, I try to run faster. If Amazon knows you better than you know yourself, then the game is up.

—NATE HOPPER

'Ignorance by itself is not too dangerous. If you combine it with power, this is a toxic mix.'



DE FONTENAY—SIPA/AP



© Bryce Groark for Mission Blue



"Fifty years ago, we could not see limits to what we could put into the ocean, or what we could take out. Fifty years into the future, it will be too late to do what is possible right now. We are in a "sweet spot" in time when the decisions we make in the next ten years will determine the direction of the next 10,000."

Oceanographer Dr. Sylvia Earle, TIME Magazine Hero for the Planet

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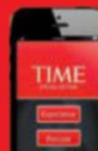
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