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INTERNATIONAL EDITION
FEBRUARY 07, 2020 _ VOL.174 _ NO.03



COURTESY OF FISKER

AFFORDABLE SUSTAINABILITY
The Fisker Ocean is a new all-electric SUV which claims a 300-mile range for each charge and a starting sticker price under $40,000

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BY WILLIAM ARKIN

Newsweek

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ENVELOPE PLEASE
Facts and figures about the Academy Awards past and present to prepare you to watch the Oscars and see who takes home the golden statuettes.

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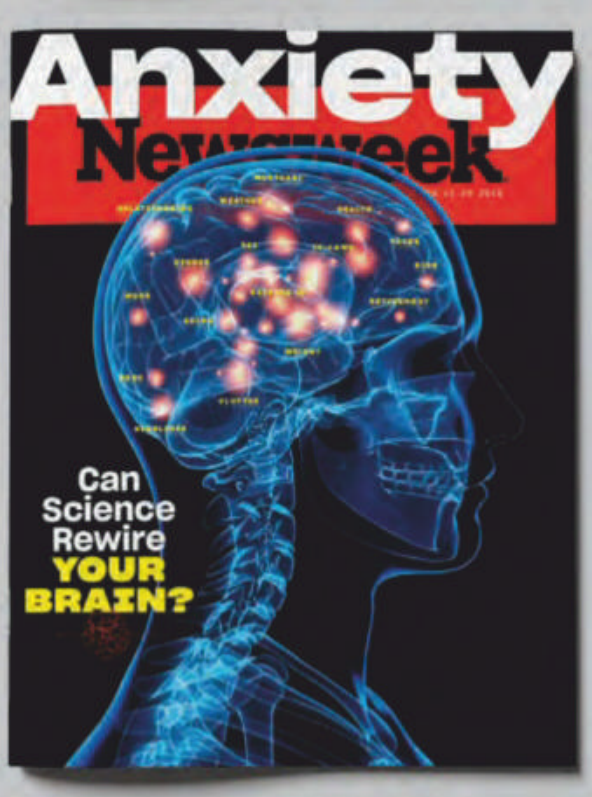
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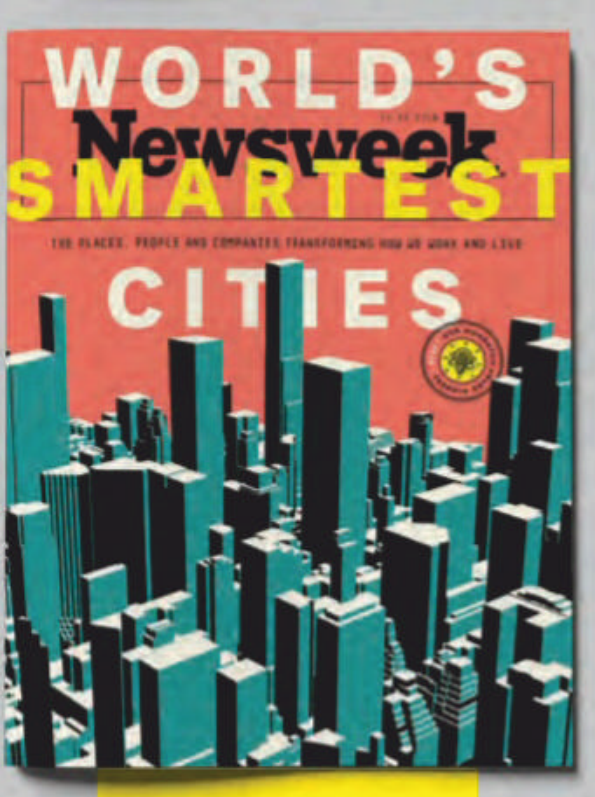
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The Archives

1955 "The public image of Margaret as a gaily mischievous foil to her serious sister is already beginning to change," *Newsweek* wrote of British royal Princess Margaret, then 24, who was perceived as a "spoiled darling of chance" who "enjoys all the pleasures of royalty but bears none of its responsibilities." While Margaret adopted some official duties during her royal tenure, she nevertheless maintained a reputation of unapologetic autonomy within her world of propriety and tradition. Some royals, like fellow second-born Prince Harry today, simply prefer to take the less conventional route.





1981

"The 52 hostages were home at last," *Newsweek* wrote after the 444-day long Iranian hostage crisis. Newly-inaugurated President Reagan warned of "swift and effective retribution" should a similar event reoccur. Even now, President Trump referred to the number of hostages when he threatened to target 52 Iranian sites should Iran strike Americans.



1994

"Science now has—or soon will have—just the doctor prescribed pill for you," *Newsweek* wrote of Prozac, the antidepressant with "the familiarity of Kleenex and the social status of spring water." As drugs enable "made-to-order" personalities, the question becomes "I medicate, therefore who am I?"

CLOCKWISE FROM LEFT: CECIL BEATON; BRUCE HOERTEL; MYKO

Takaya: at the forefront of the cutting edge



"We will continue expanding our internal R&D team to accelerate product development with leading-edge technology"

Ryuji Okamoto, President, Takaya Corporation

Your company was founded in 1894 as a manufacturer of textile products before getting involved in the manufacture of electronics products in 1966. Could you please discuss the key milestones that have shaped your company to become what it is today?

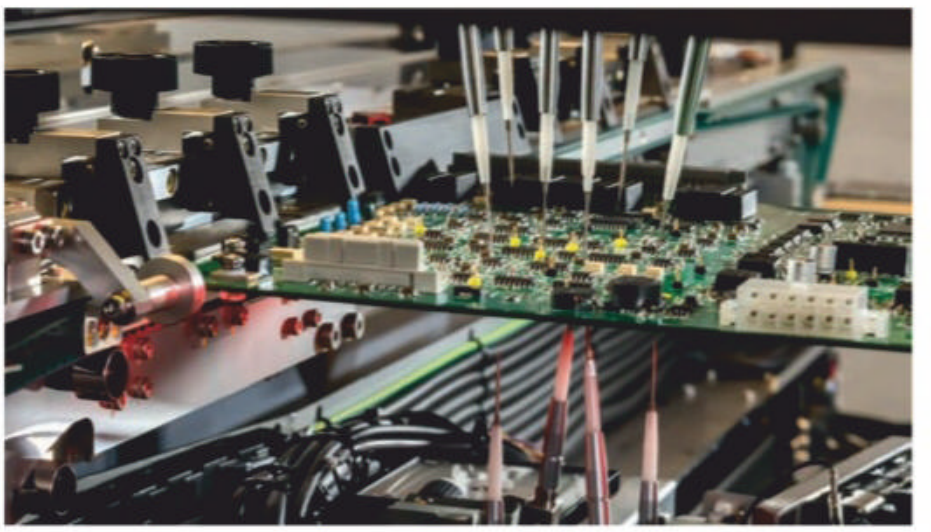
In the 1960s, the textile industry became very challenging. This was also the time when a trade war started with the USA. We had a lot of spare labor back then and we had to come up with a solution to give work to these people without terminating their contracts. This is why we chose to get involved in the manufacture of radio transistors. We started business with Matsushita and manufactured VHS recorders as an outsourced contractor. This was the start of the EMS Division. Next, we will explain the launch of the Industrial Equipment Division. Quality needed to be ensured throughout the production processes, and the best way to do so was to become a tester ourselves. This is why we decided to design and produce in-circuit testers. In the 1980s, we started exporting 'Flying Probe Testers' to Europe and our testers started to be used for industrial equipment. In Europe, there exists a position called 'test engineer', but there is no equivalent position in Japan. For this reason, they do need to have quality test equipment so they can do their job properly. We recently went to Munich to exhibit our products, because Europe and North America is still an important market for us.



Flying Probe Tester 1

Takaya Corporation is involved in the manufacture of a wide range of products including EMS products, in-circuit testers and RFID-related products. Could you give us an overview of your different products?

For EMS products, we provide OEM manufacturing services that meet the needs of customers' high-level technical applications with expertise and technical capabilities that we developed over the years, as well as our latest automated management system. We have been developing radio wave store security gates, self-sounding tags, HF bands, UHF bands, LF band RFID reader/writers, and various application system products since 1996. These products have been widely used in different fields, including security, FA and distribution. We contribute to the creation of added value in a variety of business models from OEM/ODM supply to contract development, EMS service, and system solutions as well as our own planned products. The in-circuit tester is an inspection device for printed circuit boards which checks for failures in manufacturing. The Flying Probe Tester, which is a flagship product among our industrial equipment, was created ahead of other countries because we constantly keep an eye on market changes – such as lowering volume production, shortening product cycles, and evolving printed circuit boards. The Flying Probe Tester has extremely high accuracy, incredible test speed and has been constantly improved with leading technology for higher operability and test coverage, enabling us to maintain the world's top market share. TAKAYA Flying Probe Testers have now been used by factories in over 40 countries around the world, including by major global companies and EMS companies. We will continue expanding our internal R&D team to accelerate product development with leading-edge technology.



Flying Probe Tester 2 (Probe) and RF (TR3XM)





Anti-theft system (TSA1)

Last year your company hit turnover of 45 billion Japanese yen ($414m). Could you please tell us more about your mid-term strategy to maintain corporate growth?

As for the Industrial Equipment Division, the top priority is to improve the Flying Probe Tester with more leading-edge technology by expanding our team and increasing development capabilities. The goal of EMS is to eliminate the labor shortage by adopting more IoT technologies. Our company growth has always been in line with the growth of the Japanese industry – our Flying Probe Tester and EMS business were established back when we started assembling B2C products as there was a demand in Japan at that time. As the manager of this company, the most important thing is to always be aware of world trends and keep on developing our business.

Takaya Corporation has expanded its activities beyond the Japanese borders. The company now operates in China, Vietnam and Thailand. Could you tell us more about your international strategy?

Our international strategy is a little bit different than those for companies such as Panasonic, Sony and other large-scale electronics manufacturers. These companies build overseas factories as manufacturing bases. As for us, we go overseas to seek out potential destination markets. We are now searching for partners in our RFID field in which we hold significant market share in Japan. For the Flying Probe Tester, we want to increase our sales not only in the United States and Europe, but also around the rest of the world, including Asia.

TAKAYA CORPORATION

In Focus

THE NEWS IN PICTURES

APU GOMES/AFP/GETTY; KOBE AND GIANNA BRYANT: ALLEN BEREZOVSKY/GETTY

LOS ANGELES

Mourning a Legend

Grieving fans assemble outside the Staples Center in Los Angeles on January 26 after hearing of the death earlier that day of NBA star Kobe Bryant. Bryant and eight other people, including his 13-year-old daughter, were killed in a crash of a private helicopter in foggy weather that morning. Bryant, 41, widely considered one of the greatest basketball players of all time, retired in 2016. He played his entire 20-year professional career with the Lakers, winning 5 NBA championships, earning NBA Finals MVP honors twice and becoming an NBA All Star 18 times.

APU GOMEZ



LAUSANNE, SWITZERLAND

People Power

The Swedish climate evangelist Greta Thunberg calls for a "School Strike for Climate." After the protest, where she joined several thousand in the streets, she headed to Davos to take on the corporate and political elite at the World Economic Forum. In a speech on January 21, she cautioned that "our house is still on fire." Thunberg added, "Your inaction is fueling the flames by the hour. And we are telling you to act as if you love your children above all else."

→ STEFAN WERMUTH

WUHAN, CHINA

The Hot Zone

A man getting his temperature taken by a protective-clothing clad staff member of the Wuhan Red Cross Hospital on January 25. The Chinese army has sent medical specialists to the province, which is at the center of a coronavirus outbreak which has put many parts of China on lockdown during the normally busy Lunar New Year holiday.

→ HECTOR RETAMAL

AVILA, SPAIN

Fiery Fest

On January 16, the village of San Bartolome de Pinares opened the religious festival "Luminarias" in honor of Saint Anthony, the patron saint of animals. The practice—riding animals through bonfires—is, of course, controversial but local officials insist no harm is done. Critics are not convinced. As one told *Newsweek* last year, "In a modern and compassionate society, it is entirely possible to keep traditions alive without subjecting animals to pain and distress."

→ PIERRE-PHILIPPE MARCOU







CLOCKWISE FROM LEFT: STEFAN WERMUTH/AFP/GETTY; HECTOR RETAMAL/AFP/GETTY; PIERRE-PHILIPPE MARCOU/AFP/GETTY



POWER FAILURE
Fried: Trump "is the commander and chief of the Army and Navy. But not of the nation."



BRENDAN SMIALOWSKI/GETTY; TOP RIGHT: UNIVERSAL HISTORY ARCHIVE/UNIVERSAL IMAGES GROUP/GETTY

"Women, like men, don't vote based on their gender alone." »P.16



THE NEWSWEEK INTERVIEW

"Every Day That a Corrupt President Sits, He is Capable of Doing Serious Damage"

Reagan's solicitor general unloads about Trump, Barr and impeachment

CHARLES FRIED WAS A FERVENT, SUPERIOR officer on the frontlines of the Reagan Revolution. As solicitor general of the United States from 1985 to 1989, he urged the U.S. Supreme Court to overturn the reining liberal orthodoxies of his day: abortion, civil rights, executive power and constitutional interpretation.

But the Trump Revolution has proven a bridge too far. As he reveals in a scorching interview with *Newsweek*, Fried has broken ranks. He denounces a president who is "perhaps the most dishonest person to ever sit in the White House." As disgusted as he is by President Donald Trump, Fried is, if possible, even more dismayed by William Barr, Trump's current attorney general, for having stepped up as Trump's chief apologist. Fried says of Barr. "His reputation is gone."

Fried was born in Czechoslovakia in 1935, a country soon overrun by fascists and, later, by communists. His family escaped to England in 1939 and came to the United States in 1941. Fried became a U.S. citizen in 1948, got his B.A. from Princeton in 1956, two jurisprudence degrees from Oxford, and then a law degree from Columbia in 1960. He took a faculty position at Harvard Law School in 1961, and has been affiliated there, on and off, ever since, authoring nine books on law and moral philosophy. He has argued more than two

BY

ROGER PARLOFF

@rparloff

dozen cases in the U.S. Supreme Court, and served as an associate justice of the Massachusetts Supreme Judicial Court from 1995 to 1999.

At the outset of this interview, at his office at Harvard on January 14 (pre-Senate trial), Fried asked if he could make a few observations about the fundamental errors in Trump's understanding of presidential power that have led to his impeachment. He provided *Newsweek* with a copy of the landmark U.S. Supreme Court ruling in the Steel Seizure Case of 1952 (*Youngstown Sheet & Tube Co. v. Sawyer*), which he'd marked up with a yellow highlighter pen.

That case arose during the Korean War, when a labor strike threatened to hobble the nation's production of steel, which was indispensable to the war effort. President Harry Truman, "to avert a national catastrophe" and meet a "grave emergency," his lawyers argued, issued an executive order commanding the secretary of commerce to seize control of the nation's steel production. The steel mills sued, claiming the president had exceeded his powers. Truman's solicitor general argued before the Supreme Court that Article 2 of the Constitution gave him "a grant of all executive powers of which the Government is capable." The Court rejected Truman's arguments, 6–3.

Fried then read excerpts from the celebrated concurring opinion of Justice Robert Jackson. Though the Constitution did make the president the "Commander in Chief of the Army and Navy," Jackson wrote, it didn't make him "Commander in Chief of the country, its industries and its inhabitants." The Q&A then commenced, with Fried completing his introductory remarks about Trump's basic misunderstandings of presidential power. *Edited excerpts:*

CHARLES FRIED: The first thing, which sets the context, is the rhetoric of the President, both when he was running and since. The famous statement that he could shoot somebody on Fifth Avenue and get away with it. The assumption he makes is that by virtue of the November election of 2016, he has a mandate to be the leader of the country. The commander in chief of the country. The German word is *fuhrer*. The Italian word is *duce*.

He talks about loyalty. He asks for loyalty. To what? To him personally. Not to the law, which he is supposed to be faithfully executing. This comes up over and over again. Where an official—for instance, the whistleblower—following the law, performing a legally defined duty, following a chain of command, does something that undermines Trump's personal situation, he defines it as espionage, as sabotage. He looks back to the days when people could get shot for doing that.

Now, maybe if you think of a few occasions in our history—for instance, [President Franklin] Roosevelt's landslide in 1936—there would have been some color for this view. Unnecessary, in that instance, because Congress and he were absolutely of one mind. But Trump's opponent got 2.8 million more votes than he did. So there is no remarkable popular mandate to this man. He was constitutionally elected. Fine. What that means is, he has such powers as the Constitution gives him.

"The fact is, all the honorable people in the Cabinet have left. And what you have left is people who are willing to say anything."

And those are the executive powers.

As Justice Jackson said in the Steel Seizure Case, that term is not a "grant in bulk of all conceivable executive power." It is only such executive powers as are specified. The principal one is "to take care that the laws be faithfully executed." The laws made by Congress. And to do so faithfully. Not trickily. Not underhandedly. Not by transferring [money from one budget to another] and calling emergencies—as with the building of the wall.

Now there are a number of other powers. The power of nomination, with advice and consent. The pardon power. And the commander in chief power. Commander in chief means that he is the superior officer of all the officers in the military. But it doesn't mean he can do things which no general or colonel could do. And as Justice Jackson said in the Steel Seizure Case, he is the commander in chief of the Army and Navy. But not of the nation, its industries and its people.

This fantasy, which obsesses this president, completely misunderstands that.

Newsweek: **Attorney General Barr talks about the unitary executive—**

CHARLES FRIED: Yes, that's fine. What that means is very clear. The framers were concerned about the powers of the royal governors. And what the various colonies had done was to have councils which sit with the governor. As to some of the powers of the governor, they had to approve. That was rejected [in the U.S. Constitution]. The idea is that in the federal executive department there is one structure, and the president sits at the top of it. But he sits at the top of it to do that which the Constitution commands him to do: namely, to execute the laws. It doesn't mean that the unitary executive is somehow above the law. He is



CLOCKWISE FROM TOP: DREW ANGERER/GETTY; BETTMANN/GETTY; WIN MCNAMEE/GETTY







GANGSTER REGIME? Justice Jackson (below): The president's role is to execute laws. Barr and Giuliani see things differently.

the unitary executive to execute faithfully the laws as written by Congress.

In Barr's view, since the president heads the Justice Department, certain sorts of obstruction of justice aren't possible. If he's removing [FBI Director James] Comey, even for bad reasons, those actions are beyond scrutiny. They can't be obstruction of justice.

And that's a difficult question. It's obviously not been adjudicated. What is clear is that, whether or not that is *criminal* obstruction of justice—and that's an open question—surely it is an abuse of power such that impeachment would be warranted.

What about the following? Amazon Web Services alleges in a recent lawsuit that it lost a $10 billion defense contract because the president interfered with the impartial bidding process. It alleges he did that to punish Amazon's CEO, Jeff Bezos, who owns *The Washington Post*. The government denies the allegations, but assuming that Trump really did that, would Trump, as the unitary executive, be beyond sanction, because he's the head of the Department of Defense?

There are laws about this. The laws are meant to prevent what happens in Third World countries and in gangster regimes, where contracts are given to your friends and denied to your enemies. That's what competitive bidding is for. Interference with that is unlawful. In any case, to do that for political punishment is, again, corruption and, again, impeachable.

Do you know Bill Barr?

No, I think I met him in the corridor once.

Did you support him for attorney general this time?

No, I did not.

Why?

Because I'd heard things that led me to believe his principal concern is power.

Executive power or personal?

Both. But to read this—[*pointing to the text of the keynote speech Barr gave before the Federalist Society*]—is shocking. Let me just give you a few examples. He says that "immediately after President Trump won election, [opponents] inaugurated what they called 'The Resistance,'" instead of the "loyal opposition, as opposing parties have done in the past." [*Barr said this was "very dangerous—indeed incendiary. ... They essentially see themselves as engaged in a war to cripple, by any means necessary, a duly elected government."]*

He seems to have forgotten that it's [Senate Majority Leader] Mitch McConnell who said [in 2010] "the single most important thing we want to achieve is for President [Barack] Obama to be a one-term President." At another point in this speech he said that, yes, the Senate has the power of advice and consent [on presidential nominees], but they shouldn't be obstructing the process. But look at what McConnell did with [Supreme Court nominee] Merrick Garland.



Barr knows all of this. And he's supposed to be a very moral man, and so on and so forth. But to be the apologist for perhaps the most dishonest person to ever sit in the White House? I mean, dishonest in the sense that he lies the way other people breathe. You would think that the project of protecting presidential powers would provide a worthier subject than that, particularly for a supposedly honorable man. But the fact is, all the honorable people in the Cabinet have left. And what you have left is people who are willing to say anything, as Barr is. And you saw the way he treated the Mueller Report, which he misrepresented, because that is what his boss would have wanted.

You lie down with dogs, you get up with fleas. His reputation is gone.

Barr argued in his Federalist Society speech that courts have been encroaching on executive powers. He asserted that courts should not even be reviewing the president's refusals to comply with Congressional subpoenas. "How is a court supposed to decide," he said, "whether Congress' power to collect information in pursuit of its legislative function overrides the president's power to receive confidential advice in pursuit of his executive function? Nothing in the Constitution provides a manageable standard for resolving such a question."

Does that mean the president is supposed to say what the law is? In *Marbury v. Madison* [in 1803], Chief Justice [John] Marshall said, "It is emphatically the duty of the Judicial Department to say what the law is." This is a rant. This is not a reasoned statement. And Barr knows all this. He's a very intelligent man, who's willing to say anything.

It's been reported that federal prosecutors in New York are criminally investigating Rudolph Giuliani, the president's personal lawyer. Almost any scrutiny of Giuliani will draw into scrutiny of Trump's conduct, too. Are you confident in Barr's willingness to let the prosecutors go where the facts lead them?

I don't think he would dare to interfere. I'm sure he would dearly love to. But I don't think he would dare to. He's a smart man.

Were you at Barr's Federalist Society speech in November?

No, I wasn't.

Are you a member?

I have been a faculty adviser of the Federalist Society at Harvard [*since the Society's formation in the early 1980s*]. It has always been a group of the most admirable students here. At almost all of their presentations, they studiously seek to get people on the other side, to have a fair debate. And they are good people. My tutor in conservatism is the justice for whom I clerked, John Marshall Harlan, who I think is the greatest conservative justice of the latter half of the 20th century. But it's unimaginable to think of him speaking the way that this hoodlum speaks.

Referring to—

Trump. This is not conservatism. And neither is William Barr's speech. That is a rant.

From the reporting, it seems that Barr's speech was very warmly received.

I wasn't there.

You've joined Checks & Balances. *(Co-founded by George Conway, it is a group of conservative attorneys devoted to the rule of law and opposed to Trump.)* Why?

As the hymn goes:

"Once to every man and nation comes the moment to decide,

In the strife of Truth with Falsehood, for the good or evil side."

The man shames the office and the nation: he is a man of low character and repellent personality. I joined as soon as it came into being.

The group now has 21 signatories—all very prominent. But the Federalist Society has close to 70,000 members. Checks is tiny. Have conservative lawyers rallied around Trump the way the rest of the Republican Party has?

I don't know.

Do the Harvard students you see in the Federalist Society

BRENDAN SMIALOWSKI/AFP/GETTY



THE LONG MARCH The House clerk and impeachment managers bring the articles of impeachment of President Donald Trump from the House to the Senate on January 15 in Washington,D.C.

support Trump?
I have no idea, and I wouldn't ask.

I assume you think it was right to impeach Trump.
Indeed.

And that he should be removed?
Indeed.

Some people argue that we're near an election. Maybe we should let voters decide.
First of all, every day that a corrupt president sits, he is capable of doing serious damage. The other thing is: now that the House has issued—to my mind—correctly formulated articles of impeachment, the Senate's duty is to try that. Trial means fair consideration of whether the charges are justified and, if so, so to state. Whether it's January 2020, or November 2020, or, indeed, December 2020.

"The laws are meant to prevent what happens in Third World countries and in gangster regimes, where contracts are given to your friends and denied to your enemies."

Some argue that the current impeachment articles against Trump are insufficient because they don't specifically allege a crime...
The [Constitutional] text is too general and the precedents too few to permit a confident answer. I don't believe the Constitution requires the charge of a specified federal crime, of which, at the time of the framing there were very few. What Trump is charged with is analogous to bribery—extortion, if not technically so. Here again is Jackson in the Steel Seizure Case: "Just what our forefathers did envision, or would have envisioned had they foreseen modern conditions, must be divined from materials almost as enigmatic as the dreams Joseph was called upon to interpret for Pharaoh. A century and a half of partisan debate and scholarly speculation yields no net result, but only supplies more or less apt quotations from respected sources on each side of any question. They largely cancel each other."

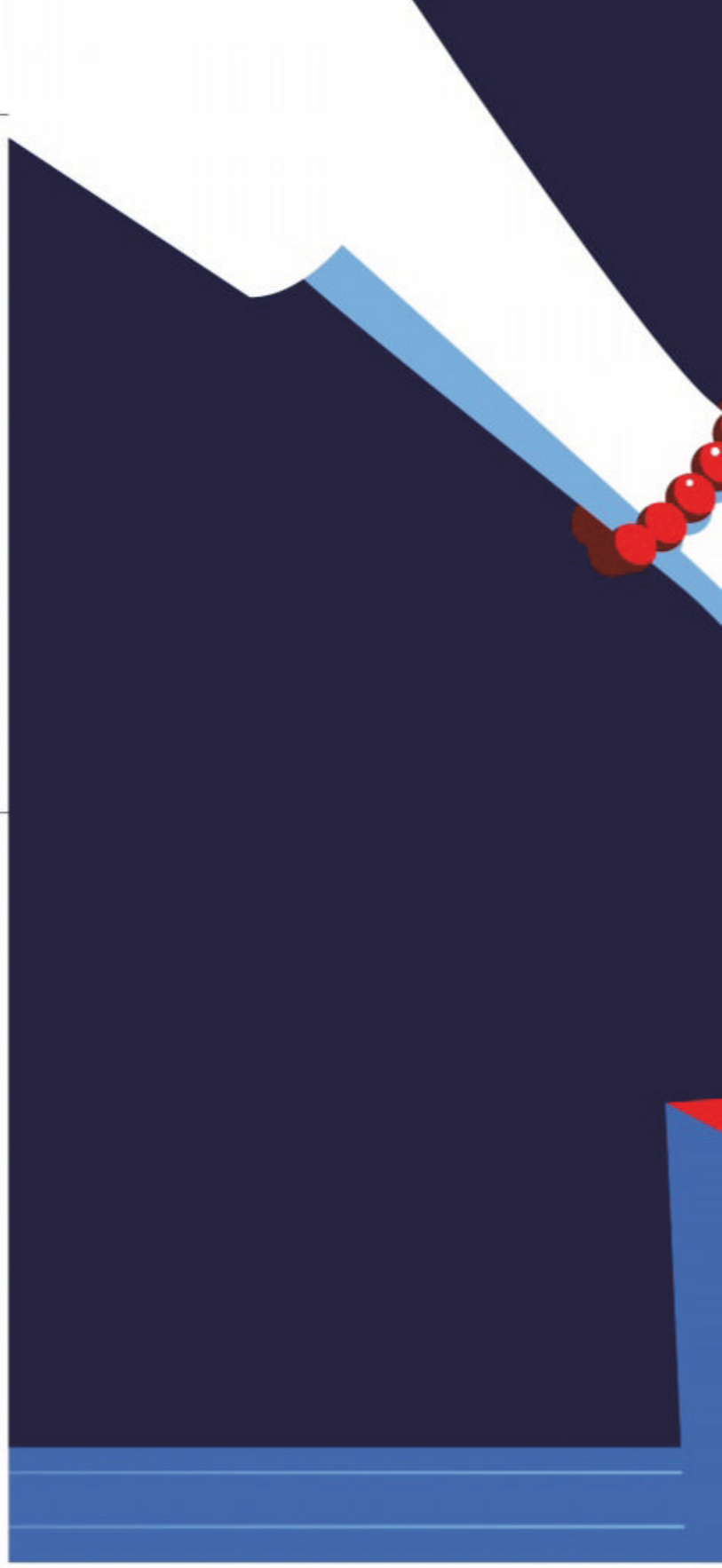
Some argue the impeachment allegations don't "rise to the level" of an impeachable offense. You?
I don't agree. They argue a serious, concerted and corrupt use of presidential power for personal political gain.

Some argue the allegations haven't been adequately proven.
I don't understand how much more proof you want. But, in any event, additional proof is available. It's just that the president will not supply it. That is an additional grounds for impeachment. He has issued blanket orders not to cooperate in any respect by anyone. Now there are all kinds of valid privileges. And those could be invoked. But a blanket privilege because this is an "illegitimate process"? Well, he doesn't get to say that. That blanket order is itself an impeachable abuse of power.

POLITICS

What Will Women Voters Do?

100 years after the passage of the 19th Amendment, look farther than just gender to predict voting patterns, and take the conventional wisdom with a grain of salt



HEADING INTO THE 2020 presidential election, campaign strategists would do almost anything for a crystal ball to predict voting patterns and give them the key to lock up a large voting bloc. Securing the "women's vote" would be a major coup, yet in this adaptation from their recently published book, A Century of Votes for Women, *political science professors Christina Wolbrecht and J. Kevin Corder explain why this is easier said than done.*

BY

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J. KEVIN CORDER

What will women voters do? Since the 19th Amendment prohibited the denial of voting rights on the basis of sex a century ago, the press, the public and especially politicians have sought to answer this question. Yet expectations for women voters are often more grounded in assumptions and stereotypes than in evidence, and predicting how women will vote requires looking beyond gender alone.

In the years immediately following suffrage, the conventional wisdom was that women didn't really want to vote at all. Headlines declared women's suffrage a "failure." In the words of one writer, "The American woman ...won the suffrage in 1920. She seemed, it is true, to be very little interested in it once she had it."

In fact, women's turnout varied considerably in the years after suffrage, but that was due in large part to external factors rather than gender. For example, in states where competition was high and barriers (like poll taxes and literacy tests) low, more than half of newly-eligible women turned out to vote. Where the opposite was true, very few women exercised their new right. The conditions in which women got the right to vote explained as much, or more, than the fact that they were women. But assuming women weren't interested fit better with the "politics is a man's game" conventional wisdom.

In the decades that followed, stereotypes continued to shape characterizations of women voters. According to both the press and scholars, women in the 1940s and 1950s voted as their husbands instructed: "Men discuss politics with their wives—that is, they *tell* them—but they do not particularly respect them. On the side of the wives, there is trust; on the side of the husbands, apparently, there is the need to reply or to guide."

Did women take direction from their husbands? Maybe. Surveys didn't ask about the direction of political influence so we can't offer a definitive answer, despite many confident claims. A female writer proposed a different hypothesis in 1956: "If married couples tend to vote the same way—and they do—it is because their environment gives them the same orientation, rather than because the woman rubber-stamps the man's choice."

By 1980, women were more likely to exercise their right to vote than were men, and more likely to vote for Democratic candidates. Why? In that election year, the Republican Party first took clear positions against—and the Democratic Party clear positions

MERIEL JANE WAISSMAN/GETTY



for—the Equal Rights Amendment and abortion rights. Observers at the time (and since) assumed that women prioritized their own equality and rights, and "women's issues" were given the lion's share of blame, or credit, for this new partisan divide.

But are women's issues the root cause of the gender gap? Women and men don't actually report very different positions on issues like abortion. Even when they do disagree—such as on sexual harassment and equal pay—other issues usually have a bigger impact on women's vote. Moreover, women can be found on all sides of these divides—pro-choice and pro-life, #MeToo and #NotAllMen. As a result, women's issues can and do push women in both liberal and conservative directions.

"Women can be found on both sides of these divides—pro-choice and pro-life, #MeToo and #NotAllMen."

What, then, explains the emergence of the gender gap? One answer: Men. While observers tend to react to any male-female differences by asking what women did differently, a closer look suggests that in fact, it was mostly men who shifted parties, at least initially. In 1964, men and women were equally likely to identify with the Democratic Party. Across the next two decades, both men and women became less likely to identify as Democrats, but it was men who defected at a far greater rate than women.

Why did (some) men abandon the Democratic Party? Why did (more) women stay? The answers are complex, and require careful attention to race, geography and education. A big part of the answer appears to be differences over social welfare policies. Unlike attitudes on women's issues, women and men consistently differ in their support for government programs for children, the poor, infirm and elderly, with men more likely to express conservative positions, which helped push them toward the GOP.

Furthermore, social welfare preferences work in concert with other attitudes. Since the 1960s, press coverage and opinions about social welfare have been intertwined with racial attitudes—conservatives on racial issues tend to be conservatives on social welfare, and vice versa. Women are more likely to express egalitarian values, and those views also help explain why more women stuck with the Democratic Party.

Indeed, race—both attitudes and identity—is crucial to any understanding of women voters. Two things are true at the same time: One, women today are more likely to vote Democratic than are men—the gender gap. We observe this pattern both in the electorate overall and within each racial and ethnic group.

Two, in most elections, a majority of white women vote Republican, and a large majority of black women vote Democratic. In other words, while more white women vote for Democrats than do white men, *most* white women vote for Republicans in most elections. And while a large majority of black men vote for Democrats, the percentage of black women who vote Democratic is even greater. While each group has unique dynamics, we observe similar patterns among other racial and ethnic groups. When we focus on the gender gap only, we tend to mistakenly view women as a cohesive, Democratic-leaning group. When we are attentive to race as well, our understanding of women voters becomes more nuanced and much more accurate.

Expectations were high for a historic gender gap in the 2016 U.S. Presidential election. Yet what was most surprising about 2016 was how normal the patterns were. In a contest featuring the first female major party nominee and an opponent who used sexist language and behavior, many predicted that women would flee the Republican party and cast their ballots for a woman for president. However, while the gender gap in 2016 was big, it wasn't beyond what we've seen in previous elections. It turns out that women, like men, don't vote based on their gender alone. Instead the 2016 election demonstrated the extraordinarily potent power of party identity in politics today: Almost 90% of women who identified as Republicans voted for Trump, the same rate as Republican men. Gender matters, but other interests often matter more.

"What, then, explains the emergence of the gender gap? One answer: Men."

That doesn't mean that sexist rhetoric and actions don't affect elections—we just shouldn't assume they only affect women, and in only one way. Some men *and women* report sexist beliefs, such as that women only want special treatment or that women complain too much about discrimination. Men *and women* with those opinions were more likely to vote for Donald Trump in 2016.

Another presidential election year is upon us. Women have been voters for nearly a century, and still the question remains: What will women voters do? The experience of the past 10 decades tells us we should check our biases, and base our expectations on actual evidence instead of gender stereotypes: Women will almost certainly vote more Democratic than men, but probably not for the reasons people assume. The gender gap will be driven in part by the voting behavior of men, not just women. Differences between groups of women—especially in terms of race and education—will likely be larger than differences between women and men. Of course, in close elections, even small differences can be consequential.

What do women voters want? The most obvious answers may not always be the right ones. N

→ *Adapted from* A CENTURY OF VOTES FOR WOMEN *by* **Christina Wolbrecht** *and* **J. Kevin Corder**, *published by Cambridge University Press.*



SUFFRAGETTE WHITE Suffragettes marching for the right to vote in 1913. White became the color of the cause, which eventually opened the door to electoral participation for generations of women.

CLOCKWISE FROM LEFT: HULTON ARCHIVE/GETTY; MATT CASHORE; SUSAN HOFFMANN




BOOKS

Q&A: Christina Wolbrecht and J. Kevin Corder

BY MEREDITH WOLF SCHIZER

Why this book?
CW & KC: Politicians and the press have been speculating about the "women's vote" for more than 100 years. Observers confidently report the conventional wisdom of the time without much attention to what the evidence actually says. We wanted to tell the story of the first century of women voters in the U.S.: How the press covered them, how politicians reached out to them and what we actually know about how women used their ballots in American presidential elections since suffrage.

"The Squad" is a vocal group of progressive female congresswomen. Does their style or self-proclaimed nomenclature have any impact on female voters, voting patterns or perceptions by voters?
CW & KC: If there is an impact, it is much more likely to be tied to someone's partisanship and not their gender. Republican-leaning voters—women and men—see the four as a threat to core American values rooted in capitalism and Christianity. Democrat-leaning voters—also of both genders—see them as part of a diverse, progressive future that includes an important voice for women.

Is the key to reaching women voters focusing on social issues?
CW & KC: Again and again, observers expect women to vote based on women's issues such as equal pay, abortion and sexual harassment. Again and again, political scientists fail to find any evidence that this is the case. Other issues—in particular, the economy and government's role in providing for the welfare of its citizens—tend to play a much bigger part in determining the voting choices of women and men.

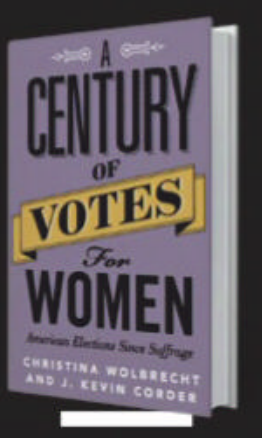
What differences between groups of women voters are important to understand?
CW & KC: A woman's educational attainment, marital status, age and especially race and ethnicity tells us more about whether or for whom she will vote than her gender per se. At the same time, women in nearly all groups are around 8 to 10 points more likely to vote Democratic than are men.

Are female voters as a bloc going to have an impact on the 2020 primaries? On the presidential election itself?
CW & KC: One thing we know for sure is that women voters are not a bloc. Based on recent elections, we'd expect that a super-majority of single women will vote for the Democratic candidate and a bare majority of married women will vote for the Republican. About half of white women will vote for the Republican candidate, while the vast majority of black women will support the Democratic nominee.

The primaries are harder to predict, but we should not expect even Democratic women to act as a bloc within their party. Other factors—especially race, education and age—will be key for understanding the primary election vote of any woman or man.

Do women voters view or react to female presidential candidates differently than male candidates? Is it different than how male voters view them? Do female voters hold female candidates to different standards?
CW & KC: What evidence we do have suggests that it might be men, not women, who react differently to female presidential candidates. In 2016, women were 12 points more likely to vote for Clinton than for Trump. That's pretty much the same advantage that Obama enjoyed in 2008 (13 points) and 2012 (11 points)—which suggests it's that the candidate is a Democrat, not a woman per se, that explains women's vote.

For men, the advantage was the opposite: Men were 12 points more likely to vote for Trump than Clinton. But, in 2012 and 2008, when there wasn't a woman in the race, Republican candidates Romney (7 points) and McCain (1 point) had much smaller advantages among men. This may be part of a trend of men increasingly preferring Republican candidates, or it could be a response to Donald Trump and against Hillary Clinton in particular.



A CENTURY OF VOTES FOR WOMEN *(January) details women's voting patterns since the 19th Amendment was ratified.*

Do you think women will vote in larger proportions for a female presidential candidate than a male with similar policies?
CW & KC: In the general election, probably not. Both women and men are overwhelmingly likely to vote for their party's nominee, regardless of gender. What little evidence we have doesn't suggest women particularly favor women candidates even when all the candidates are of the same party.

This does not mean that women candidates don't have an impact. The presence of women candidates, at any level, can encourage greater interest, engagement (such as discussion) and activism (such as campaign donations) among women—and especially among young women.

Do you have any habits around voting? Do you prefer the old-fashioned lever booths or the newer, digital ones?
KC: I like the mail-in absentee ballot, now an option for anyone in Michigan, since I can take my time with ballot questions and learn about candidates for non-partisan offices.
CW: For me, it's got to be the first Tuesday after the first Monday in November. Drive to the polling station, thank the poll workers and cast my ballot in person. Among other things, voting is a ritual in which we reaffirm our commitment to a democratic form of government and I value all the pomp and circumstance.

Do you predict that we'll have a female 2020 Democratic presidential nominee?
CW & KC: We would be surprised if there is not a woman on the ticket as the nominee or the vice-president. That said, polls, nationally and in early primary and caucus states, don't seem to indicate that being a woman is a particular advantage.

SCI-FI ON WHEELS
With a design inspired by several creatures from the movie *Avatar*, the high concept Mercedes-Benz Vision AVTR was one of thousands of futuristic products on display at CES 2020, the tech industry's annual extravaganza. Like the car, though, many of them are years away from actual production or may never see the light of day.

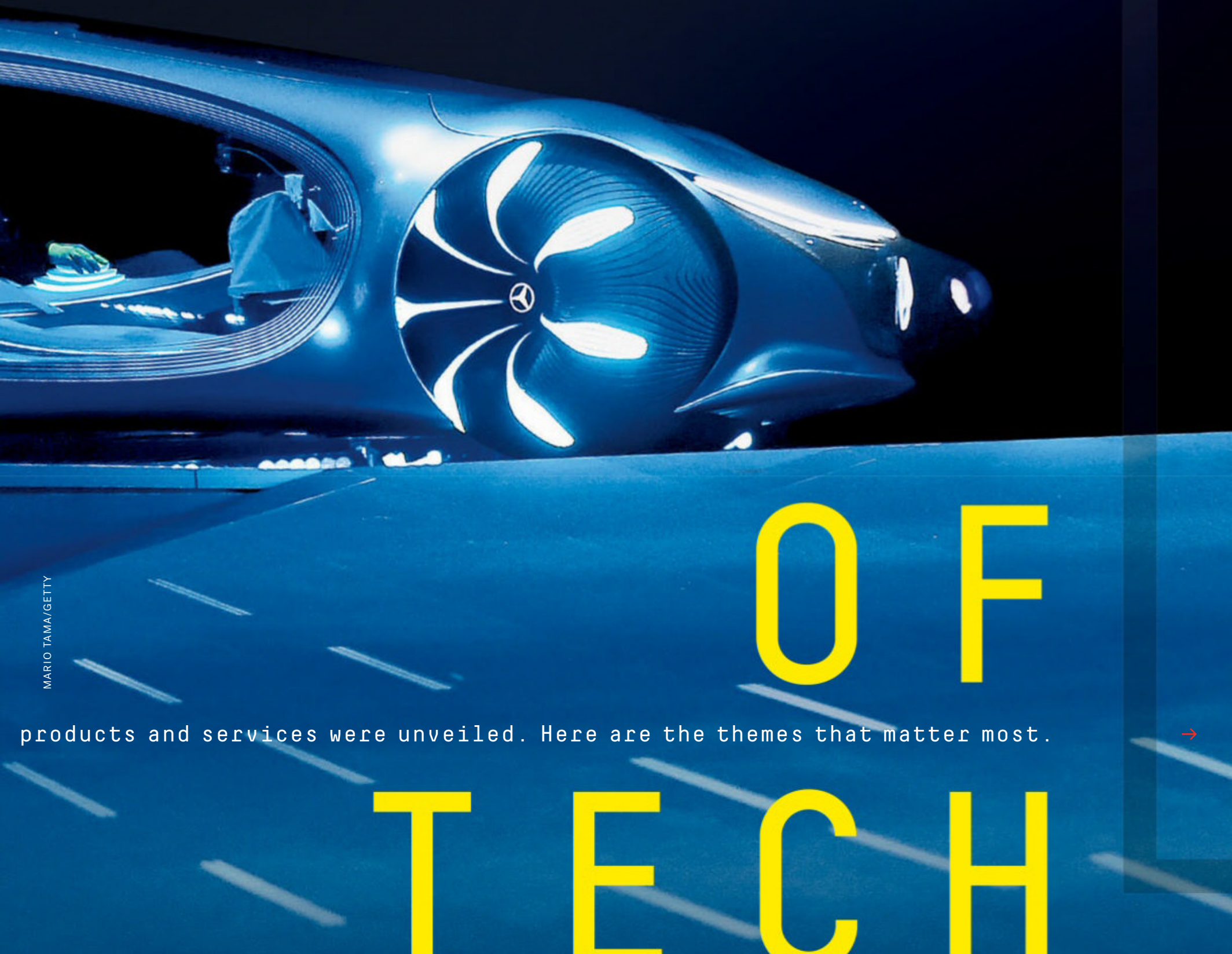


At **CES 2020,** the tech industry's biggest event of the year, thousands of cutting-edge

THE FUTURE OF TECH

BY Tom Samiljan

FIVE TRENDS THAT COULD CHANGE YOUR LIFE



MARIO TAMA/GETTY

products and services were unveiled. Here are the themes that matter most. →

CES, WHICH TOOK PLACE IN LAS VEGAS IN EARLY JANUARY, is the world's biggest and noisiest tech convention. It was a dazzling display of futurism: More than 4,400 exhibitors unveiled some 20,000 new products to 170,000 attendees across 2.9 million net square feet of exhibition space.

The show is the first stop every year for anyone wanting to see the latest and greatest gadgets and gizmos they'll be able to buy or sell in the coming 12 months (see top picks, page 26). But four days of looking at the thousands of current, upcoming and prototype products on display—not to mention more than 300 conference panels and keynotes on everything from smart homes and privacy to autonomous cars and wearables—also offer a window into the future of technology, its potential successes and failures and, ultimately, what will make the biggest difference in the lives of consumers.

As always, there was plenty of unrealized promise. Despite all the ads from wireless carriers, 5G hasn't really arrived since, as yet, there's isn't a critical mass of usable products or consistent and broad network reach. Robots are thriving in commercial and industrial sectors, but the illusive robo-butler is years away. And artificial intelligence (AI) is still just a buzzy term for narrow machine learning-based functions that do specific things really well—say, identify passengers before they board planes or respond in increasingly nuanced ways to voice queries—but we're still decades or more away from anything resembling *Her* or HAL 9000. Still, the number and usefulness of those specific machine-learned functions in everything from TVs and toothbrushes to washing machines and vibrators was impressive, and suggests that AI is already making our lives easier and better and, while still evolving, is here to stay.

All in all, CES 2020, as maddeningly massive as ever, provided an exciting overview of the state-of-the-art right now, as well as a glimpse at the technology trends that will shape how we work, play, and live in the five to 10 years. Here are five of the most important ones.

Take "Filmmaker Mode," a new picture setting that will be available on TVs by LG, Vizio, Samsung and others this year. Supported by film studios and directors like Martin Scorsese, James Cameron and Ava DuVernay, who are concerned that their movies don't get proper showings as more people skip theaters in favor of watching at home, Filmmaker Mode preserves a cinematic display of images in terms of color, contrast and aspect ratio, instead of showing movies on TVs set to automatically smooth out motion and boost colors, creating what's called a "soap opera effect."

But it isn't just TVs that are getting the Hollywood treatment. As more and more people watch YouTube, Snapchat and Instagram Stories, consuming content in snippets and on the go via laptops, tablets, and smartphones, creators are looking to improve these viewing experiences with new devices and programming. The central challenge: adapting to a different orientation since video in mobile platforms is generally shot in vertical "portrait mode" video, versus the "landscape mode" of cinema and television.

Possible solutions emerged at CES this year. On the hardware front, there was the 43-inch QLED Samsung Sero TV (see page 29), which automatically rotates between landscape and portrait modes in sync with a paired Android smartphone. On the software and services front, there is Quibi, a new streaming service

We believe that in this new decade, food tech will go _ MAINSTREAM.

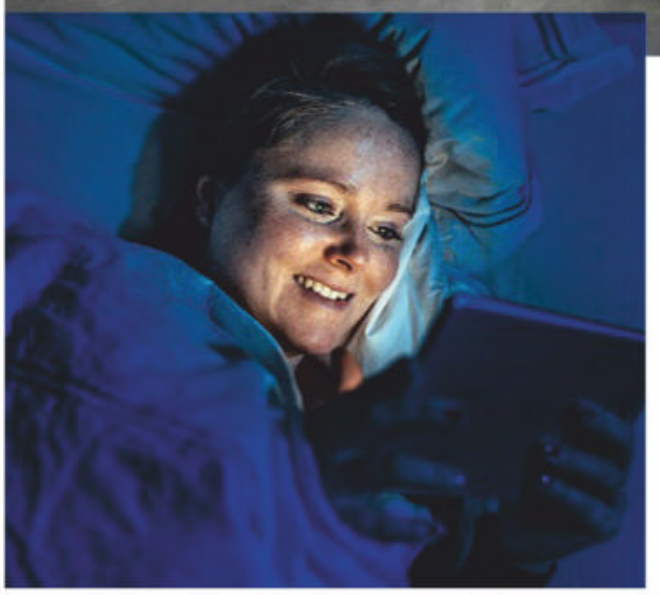
Hollywood and High Tech Are Now Partners

SURE, CES HAD ITS USUAL PARADE OF ULTRA-HIGH-definition TVs sporting cutting-edge features like 8K resolution and AI-optimized viewing modes. But with equally stunning price tags estimated to be as much as $60,000 for flagship big-screen models, these aren't exactly innovations that the general viewing public will be able to afford anytime soon.

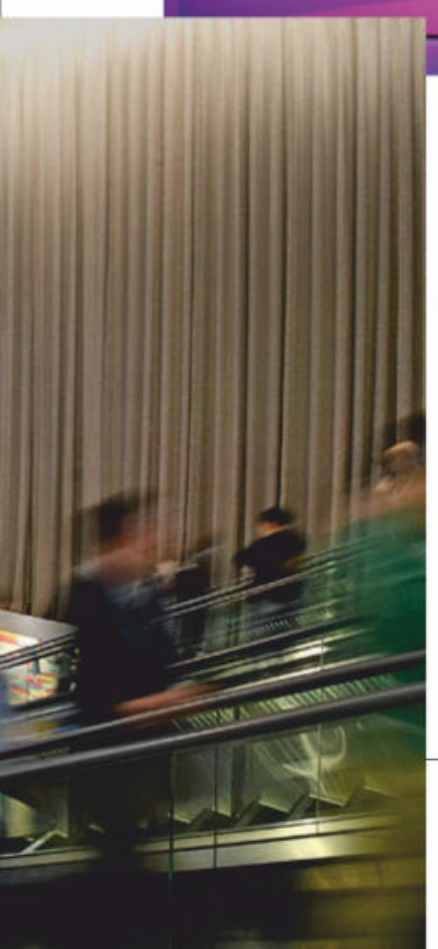
A development with more immediate impact: new products and services, borne of a budding partnership between the entertainment and tech industries, that enhance how you see content, driven by changes in the ways people consume media.











FROM TOP: MARIO TAMA/GETTY; GUIDO MIETH/GETTY; DENISE TRUSCELLO/GETTY; WU XIAOLING/XINHUA/GETTY

TOMORROWLAND
Where and how we consume digital media is changing. (Below left) crowds at CES in Las Vegas; (above) an attendee views home devices from Google; a woman watches a movie on a tablet at night; Quibi founder Jeffrey Katzenberg talks about the new streaming service.

that will provide original content optimized for mobile phones when it launches in April. Its signature technology feature is "Turnstyle," which automatically switches from full-screen portrait to full-screen landscape, eliminating those annoying black bars on either side or on the top or the bottom of the screen.

Led by Dreamworks co-founder Jeffrey Katzenberg and former HP and eBay CEO Meg Whitman, the company is working with Steven Spielberg, Guillermo del Toro, Catherine Hardwicke, Kevin Hart, Chrissy Teigen and Bill Murray, among others, to develop content for these "quibis." Recent mobile-only efforts such as Verizon's Go90, despite debuting Oscar-winning original content, did not last long, and it remains to be seen just how ubiquitous a new video format on which the content creation is being commissioned and distributed by just one company can be. But the alignment of Silicon Valley technology and Hollywood entertainment to develop a completely new format is noteworthy.

"We started out thinking that if we could take everything that the mobile phone has to offer and create an entirely new technology platform that made content look great on it, then there was an opportunity to bring Hollywood caliber storytelling to the mobile phone," says Whitman. "Many companies have been content companies that tried to become tech companies or tech companies that try to become content companies. We're trying to do a tech media company from day one."

Alexa Will Help You With Everything

FIVE YEARS AGO, MOST PEOPLE HAD NEVER HEARD of Alexa, which in early 2015 wasn't available yet for retail purchase. Now the voice assistant appears in more than 100,000 smart home products from 9,500 different brands (vs. 30,000 from 3,500 brands for rival Google Assistant). Not surprisingly, Alexa compatibility was ubiquitous at CES 2020, integrated into everything from lightbulbs and security systems to smart grills and cars.

As befits a capability that's increasingly mainstream, the majority of the new devices shown at the giant expo were for relatively mundane, everyday uses. Take Kohler's Moxie AI speaker. The showerhead speaker has been around since 2015, but the addition of Alexa this year transforms the product into a super-usable must-have for anyone who likes to listen to news or take calls while performing their morning ablutions. No more fumbling with a cell phone with wet hands to change what's playing or adjust the volume.

Even more significant were advancements around Alexa integration into cars. Without a mobile operating system like iOS and Android, Alexa's in-car capabilities so far have been fairly informational and basic, such as setting reminders, playing music and launching navigation apps. While Android Auto and Apple CarPlay, which are fairly standard in cars these days, allow you to bypass a car's factory-installed infotainment system and use your phone for navigation, music and news from the dashboard, neither offering lets you control your car's AC or heat, lighting or sound settings without toggling out of the system—a clunky experience for drivers.

Soon, however, you'll be able to use Alexa to control your car's factory-installed infotainment, temperature, lighting and other controls, too, as demonstrated by the "Alexa Built-In" integrations on display in upcoming cars from Lamborghini, GM and Rivian. What's more, the integration is voice-first, which means you don't have to press a button and wait for the beep before you can ask for something. Just say, "Alexa, set the temperature to 70 degrees," and the car's climate will be adjusted, allowing you to keep your eyes on the road and your hands on the steering wheel. And unlike the car's built-in systems, Alexa in your car will also give you all the other skills and capabilities of Amazon's voice assistant, such as playing music or turning on the light outside your garage door.

Still, despite Alexa's bigger showing at CES, don't count out Google Assistant yet; after all, it's technically available on more than 1 billion devices, most of them Android phones, according to Google. Like Amazon, Google is also working on a more integrated car system, the new Android Automotive OS, which will be available on the upcoming Volvo XC40 Recharge EV and in GM's 2021 vehicles. Plus, Google announced new features for its Assistant, such as voice-activated sticky notes on smart displays, quicker access to privacy controls and easier set-up.

Safety and Sustainability Are the New Car Cool

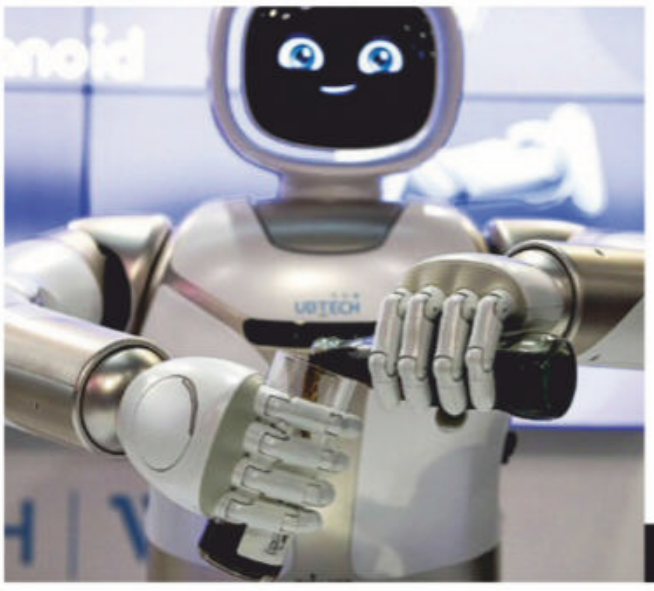
SOME OF THE BIGGEST HYPE AT CES IS USUALLY around cars, especially pie-in-the-sky prototypes and concept vehicles that will never see the light of day. This year was no exception, with cars on display like the Sony Vision S, a slick grey sedan with a massive LCD screen across the dashboard and speakers built into the headrests to showcase the company's audio-video prowess; and the eerily captivating Mercedes Vision AVTR, an organic reptilian-looking luxury car inspired by the film *Avatar*, with futuristic features like scale-shaped solar panel "bionic flaps" and biometric optimization.

Pomp and prototypes aside, though, the biggest trends in car tech at CES this year were sustainability and safety. Better yet, many of the vehicles on display will be hitting the roads soon.

A slew of electric vehicles led the parade, such as the luxury EV SUV Fisker Ocean, a zero emissions vehicle that sports a "vegan interior" and recycled materials throughout and is being billed as the world's greenest car (for more, see page 28). The new Nissan Ariya Concept, which made its U.S. debut at CES and will start showing up in U.S. showrooms at the end of 2021, is an electric SUV that's purported to go from zero to 60 in 5.1 seconds and 300 miles on a single charge. And one of the biggest and oldest off-road and SUV brands, Jeep, announced that all of its cars will be electrified by 2022, with its first plug-in hybrid, a 2021 Wrangler, available this year.

Health and safety features also figured prominently at the show. For instance, the BMW ZeroG Lounger sported a passenger seat that reclines into a 40- or 60-degree position to reduce stress on pressure points and a seat belt that automatically adjusts to the new position. The seat is slated for future BMW X7 models "in the next few years," according to BMW. The German automaker is also collaborating with Samsung's Harman division on the world's first 5G telematics system, which will launch in the 2021 BMW iNEXT, making it one of the few real-world 5G products at the show. The faster and more powerful 5G network capability will enable everything from quicker traffic and map downloads to better real-time road condition and blind spot warnings, since more information from more sources can come in less time with greater reliability—wherever there are 5G networks, of course, which is not a lot of places in the U.S. yet.





RAZZLE DAZZLE
Among the 20,000-plus products at CES 2020: (above) Sony's Vision-S, an all-electric concept vehicle; a UBTech robot named Walker, here pouring soda; (below right) a display of Samsung Galaxy Book S laptops; a Charmin Rollbot delivering toilet paper.

There was an opportunity to bring Hollywood-c

FROM TOP: DAVID BECKER/GETTY; BRIDGET BENNETT/BLOOMBERG/GETTY; ROBYN BECK/AFP/GETTY; MARIO TAMA/GETTY

Start-Ups Will Save the World

EUREKA PARK, A SECTION DEVOTED TO STARTUPS launched just eight years ago, is now one of the most popular parts of CES, with more than 1,200 companies from over 46 countries. "There's just such a critical mass of media, capital, companies and customers here," says Prince Constantijn van Oranje, special envoy to Techleap.nl, an Amsterdam-based accelerator that brought 50 Dutch startups to Eureka Park.

Many of the Dutch startups are focused on sustainability and smart cities. Nowi, for example, has developed a chip that can harvest energy for smartwatches, sensors and other Internet of Things (IoT) devices from the air, light, radio waves and heat, thus reducing or eliminating the need for battery-dependent power. Aiming to reduce methane emissions and mistreatment of animals, Meatable has a technology that can grow pork from early-stage stem cells, without killing any livestock. This year, the startup will be releasing its first lab-grown pork product. "We believe that in this new decade, food tech will go mainstream," says Meatable cofounder Krijn de Nood.

Exposure at CES yields tangible results for many. Hydraloop (see page 31), which makes a device that recycles water for use in toilets, laundry and other home applications, was a surprise hit. "Since the show, we've had hundreds of orders, 111 companies wanting to be our distributor, and four people who said 'may I invest in you,'" says Hydraloop co-founder Sabine Stuivers. "It's amazing."

Health Tech Gets Really Personal

THANKS TO A CLEARER AND MORE STREAMLINED FDA APPROVAL PROCESS, over-the-counter medical devices—everything from wearable blood pressure monitors to medical-grade hearing aid earbuds—are proliferating, as was clear from the many new products on display at CES. As a group, they were notable for their good looks (more like a lifestyle accesory than medical equipment), expanded functionality and, increasingly, adaptability to a user's individualized data and needs.

Applications run the gamut, with devices to help you sleep better, improve oral hygiene, address heart health, deal with various medical conditions and even have a more satisfying sex life. There was the Withings ScanWatch (see page 29), which helps you detect everything from atrial fibrillation to sleep apnea; the Alexa-powered Oral-B Drive smart speaker-cum-toothbrush, which provides feedback on how well you're brushing and where to focus your efforts; and the Lioness AI-powered vibrator, which suggests how to have better orgasms based on detailed data collection, including private tracking of the user's sessions (you can't get more personal than that). Also on hand: sleep tech from soundwave-feeding headsets to individualized temperature-changing mattresses and a slew of Peloton-inspired smart machines for rowing and running.

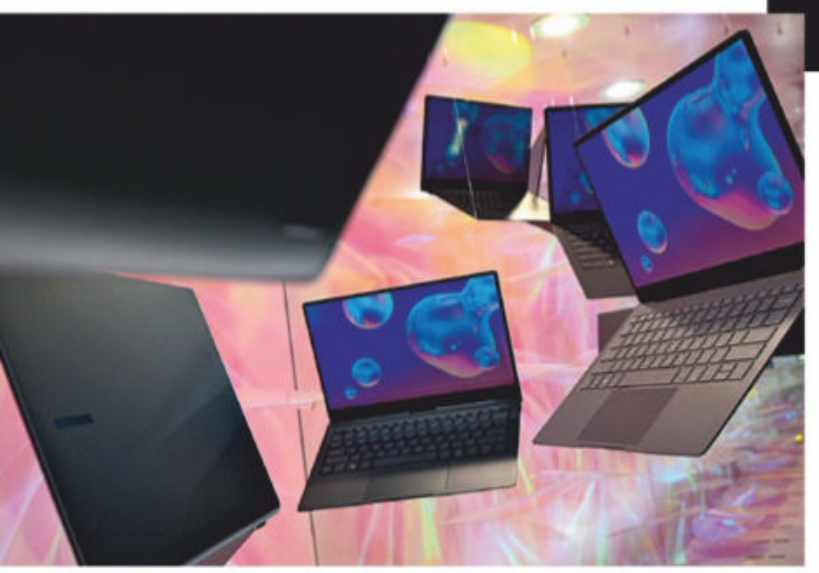
Also getting a DIY, consumer-friendly makeover: the way you interact with health care providers. Telemedicine is not new but there's only so much an online doctor can assess from a video call. Enter Medwand, a mouse-like device to be used at home by patients during virtual exams. It contains 10 diagnostic tools, including a stethoscope and otoscope for ear exams, which can transmit real-time findings to a doctor during a remote consultation.

"Health care is becoming more consumer-centric," says Katie Couric, who moderated two panels at the CES Digital Health Summit—including one on navigating health care choices with the COO of Rally Health, an online service that works with employers to provide digital guidance to employees about their health benefits. Says Couric, "I'm interested in technology that empowers patients to understand their options, and to appreciate not only what they can do if something happens to them but how they can prevent things from happening."

In other words, all that health data we're capturing is only as good as our ability to understand and act on it. It sounds like just the sort of problem and tech solution we'll be seeing at many future CES shows.

→ **Tom Samiljan** *has attended CES without a break since the turn of the millennium. He covers technology and culture, having written about both for everyone from* Rolling Stone *and* Men's Journal *to* Travel + Leisure *and* The Wall Street Journal.

aliber storytelling to the _ MOBILE PHONE.





The Top Tech Products You Can Actually Buy This Year

BY TOM SAMILJAN

LAST MONTH AT CES, THE BIGGEST EVENT OF THE YEAR IN CONSUMER TECHNOLOGY, SOME 20,000 new products were unveiled across a broad array of tech and tech-infused categories. There were TVs, audio gadgets, smartphones, smart homes, cars, computers, wearables, health and wellness devices, kitchen appliances, drones—and that's just the hardware. Next-gen services and software powered by AI, AR, 5G and other acronymed technologies also figured prominently. Dazzling future-forward displays of products that are more conceptual and tech-aspirational than realistic typically garnered the most attention. What matters most to consumers, though, is the stuff they'll actually be able to buy soon—the innovative products, equally cool, that can make your life better in the months to come. Now that the show is over, the verdict about the very best of these products is in. Here are 12 standouts from CES 2020 that you'll be able to buy this year, plus a bonus pick that can be experienced this summer.



Phonak Virto Black

A HEARING AID THAT'S ALSO AS AN EARBUD

● More than 40 percent of people who need hearing aids don't wear them—there's still a stigma—but the increased popularity of Airpods and earbuds, along with advances in small processors and microphones, have created appealing new options for those with hearing loss. Case in point: Phonak's Virto Black, which looks like a pair of earbuds but is actually a pair of medical-grade, high-performance hearing aids that adjust to different environments automatically and can be synched up to smartphones and other Bluetooth devices. Besides the ability to take calls and listen to music, the Virto Black is compatible with Phonak's Marvel technology, connecting to remote mics that can be placed strategically in noisy environments, enabling users to hear what someone is saying even on the other side of a room.

AVAILABILE
February

PRICE
$6,000 *(exact price depends on insurance coverage)*



Lenovo ThinkPad X1 Fold

THE WORLD'S FIRST FOLDABLE PC

● It's a laptop. No, it's a tablet. Wait, it's a mini-desktop PC. Actually, this foldable computer is all three—and more, thanks to a first-of-its-kind flexible 13.3-inch OLED screen that literally bends. The 2.2-pound device folds flat for use as a tablet or, when combined with the included Bluetooth keyboard and optional stand ($24), becomes an all-in-one computer on your desk. Bend it into a perpendicular shape, stick the keyboard on one half of the bezel (which doubles as a wireless charger), and suddenly it's a laptop. Remove the keyboard and use it a dual-screen tablet, taking notes on one half while you watch a presentation on the other. The unit packs away in a supple leather folio case and is 5G-ready, making it ideal for everything from video conferencing to TV-watching to gaming.

AVAILABILE
Summer 2020

PRICE
$2,500

Cleer Audio Crescent

A SOUND-SHIFTING WIRELESS SPEAKER

High-end smart speakers that deliver audiophile sound are a dime a dozen these days, but the WiFi- and Bluetooth-enabled Cleer Audio Crescent stands out for its impressive sound modes, including a wide-angle stereo setting for concert hall-like sound and a "room filling" mode that distributes audio evenly across a room, enabling everyone to get a balanced listen. It's the "3D immersive" mode that rocks, though. It uses beamforming technology to deliver surround sound from all directions, without the need to bounce audio off of ceilings or walls, making it just as convincing outside on the deck as in a basement rec room. That this arc-like stainless steel and aluminum unit looks great on a shelf is just icing on the cake.

AVAILABLE

August 2020

PRICE

$600

BEST OF CES Newsweek 2020

Fisker Ocean

THE GREENEST SUV EVER

● At CES, most auto manufacturers showed off tech-focused concept cars that will never see the light of day. But the Fisker Ocean, which made its debut at the show with a functioning prototype, will go into production next year. The all-electric luxury SUV puts sustainability first, with carpets manufactured out of recycled plastic bottles and fishing nets, eco-suede trim made from recycled t-shirts and protective surfaces consisting of recycled rubber. The car will go 300 miles on a single charge with a solar-panel roof that adds about 1,000 miles per year of power for free. It's fun, too, with a "California" mode that opens all the windows, including the rear windshield and solar roof, to evoke the feeling of being in a convertible.

AVAILABLE

Reserve now for $250
First cars ship 2022

PRICE

$30,000 *(after a $7,500 federal rebate);* **$379** *per month lease (with $2,999 down)*





Withings ScanWatch

A CLASSIC WATCH WITH CUTTING-EDGE SMARTS

● Unlike a typical wrist-worn health tracker, the Withings ScanWatch looks like a fashionable timepiece, with a traditional watch face that sports mini OLEDs for displaying steps, messages and health alerts. But its stylish good looks belie powerful health-monitoring capabilities inside, including sensors to monitor the irregular heart rhythms of AFib, on-demand ECG readings and sleep apnea detection. The watch also tracks calories, heart rate and exercise distances, which can be viewed, managed and archived with an accompanying app, so you can take your health data to your doctor and trainer alike.

AVAILABILE
June 2020

PRICE
$249



CookingPal Julia

A KITCHEN HELPER THAT HEARS, SEES & COOKS

● All-in-one countertop cookers are hugely popular around the world—except in the U.S. Resembling blenders or food processors, these appliances usually tackle everything from weighing and chopping to mixing and steaming in the same bowl, with real-time step-by-step instructions when human input is needed. The CookingPal Julia does all that, plus is the first to include an Android tablet with voice command capability. Choose from hundreds of recipes in the database or aim the tablet's camera at the food in your cabinets, and the device will identify what's there, suggest recipes and provide nutritional info.

AVAILABILE
September 2020

PRICE
$1,000

Celestron StarSense Explorer

THE TELESCOPE THAT'S ALSO A TOUR GUIDE

● It's an irresistible proposition for amateur astronomers and other stargazers: Get the capabilities of a professional observatory in a telescope that costs less than $500. Simply download the Starsense Explorer app to your smartphone, open it, and mount your device to the telescope's dock. Your synced-up phone then displays a rendered, augmented reality version of what's in the viewfinder and the system's AI-powered "sky recognition" capability identifies constellations and stars in real-time, offering additional information about them from an interactive database. The app will also generate a list of currently viewable stars and help you point the telescope at them. Best of all, this telescope doesn't require a wireless connection, so you can stargaze wherever night skies are clearest—often the middle of nowhere.

AVAILABILE **Now**

PRICE **$180-$400**



Samsung Sero

A TV FOR THE TIKTOK ERA

● Watching Instagram Stories and Snapchat or TikTok videos on the big screen is an enticing proposition. The problem is, vertical video just isn't the same when bordered by black bars on a fixed landscape-oriented TV. Released last year in Korea, the Samsung Sero 43-inch 4K QLED TV flips the script: Pair it with any Android phone and it'll automatically rotate between portrait or landscape mode depending on what you're watching (for now, iPhone users will need to use the remote). The bottom half of the TV's base contains a 4.1 channel, 60-watt sound system. The Sero may seem gimmicky, but it's still a nifty way to keep televisions relevant in an era where mobile viewing reigns supreme.

AVAILABILE
2nd Half 2020

PRICE
$1,600



Beam them up, Stargazer: an affordable telescope brings the power of a professional observatory to amateur astronomers

BEST OF CES Newsweek 2020



LG ThinQ Washer/Dryer with AI DD

AN AI-POWERED WASHER AND DRYER

● Until now, smart washers have mostly just allowed you to start and stop your machine remotely from your mobile phone. LG's new ThinQ ushers in a new generation with an array of sensors and algorithms that enable it to detect the volume, weight and types of fabrics in a load, then optimize the mix of motions in the wash cycle for the best results. A smart dispenser automatically releases precise amounts of detergent and fabric softener at strategic times. This reduces skin irritations, sudsy build-up and needless extra rinses, which saves energy and money and helps clothes last longer. The washer will also notify a companion dryer of the best cycle for your just-washed load and issue alerts when you use too much detergent or the unit needs maintenance.

AVAILABILE
Summer 2020

PRICE
TBD

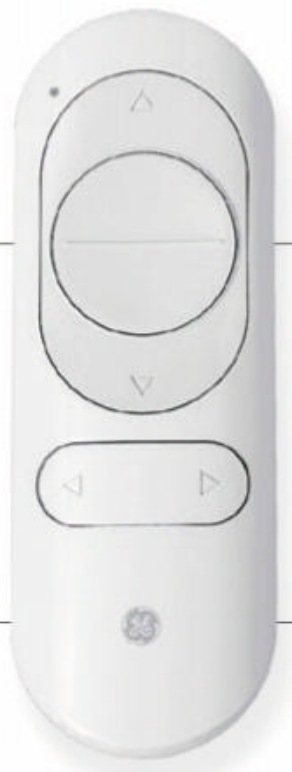
C by GE

SMART SWITCHES THAT WILL WORK IN ANY HOME

● The dirty little secret of smart home light switches is that they generally need either a neutral wire or separate smart home hub to work properly. But many houses built before the 1980s don't have the former, and the latter can be costly and complicated to set up. C by GE, which already makes smart bulbs that don't need separate hubs to work, has now launched the world's first hubless smart switches and dimmers. This means you can turn them on and off by voice or remotely, plus set up schedules, with nothing more than an Alexa, Google Assistant or C by GE app. These switches and dimmers also don't need a neutral wire to function, which means they'll work in old and new homes alike.

AVAILABLE **March 2020**

PRICE **$30-$50**



Let there be light—or less light, or no light. These smart switches and dimmers make it easy to adjust brightness levels by voice or remotely.



Insta360 ONE R

AN ACTION CAM FOR ALL VANTAGE POINTS

● GoPro-style action cams come in two flavors—those that shoot stills and 4K video and those that shoot everything in 360 degrees. Social media influencers and adventurer-videographers don't mind carrying several cameras, but the rest of us? Not so much. The Insta360 ONE R's solution: Go modular. The adaptive action camera lets shutterbugs swap out different mods for different situations. Built-in computer vision algorithms also enable the camera to track specific people, objects and scenes both in real time and while editing, which helps users cut to the chase when going through hours of 360-degree footage. Also cool: The FlashCut feature will automatically edit your footage based on user-chosen subject matter such as food, pets, sports and travel.

AVAILABILE
Now

PRICE
$300

BONUS PICK

Delta Parallel Reality

THE FLIGHTBOARD OF THE FUTURE

● Developed in conjunction with Misapplied Sciences, this new technology from Delta Airlines enables one airport screen to display unique personalized travel information—specific boarding gates, departure delays, Sky Club locations—to 100 different people simultaneously as they walk by, in their preferred languages. Parallel Reality, which will be an opt-in service when it launches at Detroit Metro Airport this summer, doesn't use facial recognition to identify specific travelers; instead, a camera captures individuals as unidentifiable blobs as soon as they scan their boarding passes, assigns them anonymous IDs, then follows them around in order activate their personalized views. Cognizant of privacy concerns, passenger data is scrapped as soon as the traveler leaves the Parallel Reality zone.

AVAILABILE
Summer 2020

PRICE
Included

Hydraloop

SAVING THE PLANET ONE FLUSH AT A TIME

Most toilets use perfectly potable drinking water to wash down waste. Plenty of systems exist to recycle and reuse water for toilets or watering lawns, but they tend to be bulky, expensive and require a lot of maintenance (those filters need to be cleaned out, after all). Not so with the Hydraloop, a self-cleaning water recycling appliance for the home that connects directly to your plumbing. Employing six different cleaning methods, none of them chemical- or filter-based, the unit automatically collects the water you use for showering and washing clothes and recycles it for use in flushing toilets, watering lawns, replenishing pools and doing laundry. Hydraloop can save up to 85 percent of your overall water usage, while also reducing energy consumption.

AVAILABILE

2nd Half 2020

PRICE

$4,000

WITH A NEW WEAPON IN DONALD TRUMP'S HANDS,

RISING

DREW ANGERER/GETTY


THE IRAN CRISIS RISKS Going Nuclear
by
William Arkin
RISKS

TEN DAYS BEFORE DONALD J. TRUMP WAS elected president in 2016, the United States nuked Iran. The occasion: a nuclear war exercise held every year in late October. In the war game, after Iran sank an American aircraft carrier and employed chemical weapons against a Marine Corps force, the Middle East commander requested a nuclear strike, and a pair of B-2 stealth bombers, each loaded with a single nuclear bomb, stood by while the president deliberated.

"Testing our forces through a range of challenging scenarios validates the safety, security, effectiveness and readiness of the strategic deterrent," Adm. Cecil D. Haney, then the commander of U.S. Strategic Command, said as the exercise got underway.

According to a government contractor who helped write the complex scenario leading up to the decision to use nuclear weapons, Global Thunder 17 (as the exercise was called because it took place in fiscal year 2017) focused on "execution of a combatant command strike at the tactical level."

In English, this means using nuclear weapons in support of one of three "theater" commands in the Middle East, Europe or the Korean Peninsula. Though North Korea and Russia dominated the news at the time, the contractor says the Iran scenario was chosen because it allowed the greatest integration of nuclear weapons, conventional military, missile defense, cyber and space into what nuclear strategists call "21st Century deterrence."

"Our deterrence is much, much more than just nuclear weapons," Adm. Haney said in a lecture at Kansas State University just days before Global Thunder 17 started. "If necessary," he said, the United States "will respond at a time and place and domain of our choosing."

The Iran scenario has never before been publicly divulged. All STRATCOM says of the 2016 war game is that it followed "a notional, classified scenario."

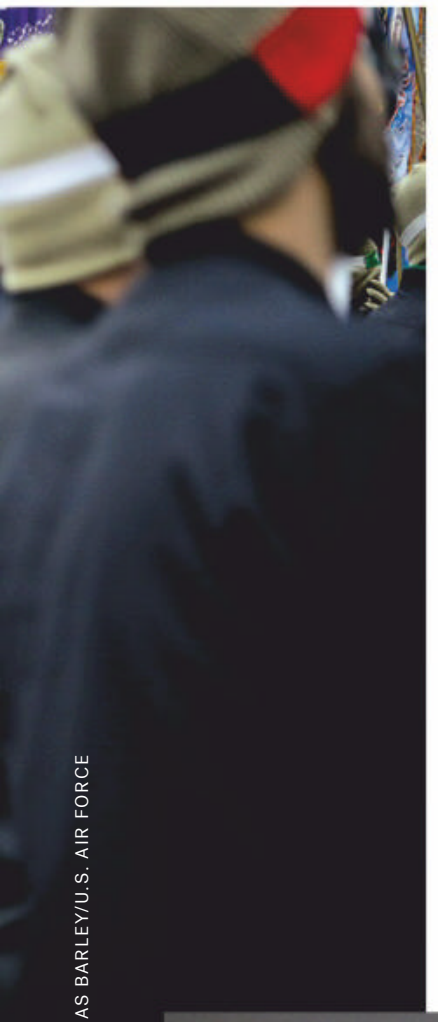
Though the United States has never made any public or explicit nuclear threat against Iran, in the past year, it has deployed a new nuclear weapon which increases the prospects for nuclear war. The new nuclear weapon, called the W76-2, is a "low yield" missile warhead intended for exactly the type of Iran scenario that played out in the last days of the Obama administration. Military sources directly involved in nuclear war planning say there has been no formal change in war plans with regard to Iran under the Trump administration, but the deployment of what they say is this "more usable" weapon, changes the nuclear calculus.



In exclusive reporting for *Newsweek*, four senior military officers say they doubt that the now six-month standoff with Iran could escalate to nuclear war. But they each note the deployment of the new Trident II missile warhead explicitly intended to make the threat of such an attack more credible, and point it out as a little understood or noticed change that increases the danger. They argue that the new capability should give Tehran pause before it contemplates any major attack on the United States or its forces. But all four also add, very reluctantly, that there is a "Donald Trump" factor involved: that there is something about this president and the new weapons that makes contemplating crossing the nuclear threshold a unique danger.

Nuclear weapons have been a part of military contingency plans dealing with Iran going back to the George W. Bush administration's 2002 Nuclear Posture Review. In its guidance to nuclear war planners

ORDER OF BATTLE
Clockwise from top: An anti-U.S. rally in Tehran on January 4, the day after the killing of Gen. Qassem Soleimani and other Iraqi military commanders in a U.S. drone strike in Baghdad; Admiral Cecil D. Haney, at the time commander of U.S. Strategic Command, at a U.S. Senate Armed Services Committee hearing in Washington, D.C., in 2015; and a B-2 Spirit stealth bomber, assigned to the 509th Bomb Wing, Whiteman Air Force Base, Missouri, on October 29, 2019.







FROM TOP: HAMID VAKILI/NURPHOTO/GETTY; SAMUEL CORUM/ANADOLU AGENCY/GETTY; SENIOR AIRMAN THOMAS BARLEY/U.S. AIR FORCE

just three months after 9/11, the White House added the "axis of evil" states (Iraq, Iran, North Korea) plus Syria and Libya to Strategic Command's missions.

After much internal debate, President Barack Obama wrote his own Nuclear Posture Review that affirmed there were "a narrow range of contingencies"—either to deter a massive conventional attack or to stop enemy use of chemical or biological weapons—where the United States might use nuclear weapons first and even against non-nuclear nations, precisely the scenario that later played out in Global Thunder 17. According to partially declassified documents obtained by the Federation of American Scientists, new nuclear war plans written in the Obama administration formally included Iran.

Hans Kristensen of the Federation points out that this is the state of affairs inherited by Donald Trump. National policy affirmed by two previous administrations includes the possibility of nuclear use against Iran, while the experience in war gaming such scenarios—and not just against Iran—exposed weaknesses in the ability of Strategic Command to carry out such a presidential order. Thus emerged the "requirement" on the part of the military to create a new weapon to fulfill this first-strike scenario.

"Regardless of presidencies, nuclear planning tends to have a life of its own," Kristensen said in an interview last week, adding that "Iran is very much in the crosshair." That's because, as Kristensen notes, nuclear planners operate from "relatively vague presidential guidance," writing scenarios, conducting war games, and adjusting plans, weapons and the posture of forces to anticipate countless possible scenarios.

"A 'PACKAGE' OF AMERICAN OPTIONS IN RESPONSE TO THE MOST EXTREME IRANIAN ACTIONS WILL AUTOMATICALLY INCLUDE THE **Nuclear Option.**"

When Donald Trump became president, one of his first acts was signing a memorandum on "Rebuilding" U.S. armed forces. That memorandum directed his new Secretary of Defense, retired Gen. James Mattis, to initiate a new Nuclear Posture Review and to ensure that the nuclear deterrent was "ready and appropriately tailored to deter 21st-century threats." Strategic Command had already determined that it needed a new nuclear weapon to deal with advanced and emerging nuclear powers like North Korea and Iran. Now they had their marching orders.

"They answered their own mail," one retired Air Force officer involved in the early Trump White House said of the national security directive.

Inside the nuclear establishment, "appropriately tailored" meant a new small nuclear weapon, one deliverable by a ballistic missile rather than from a bomber. The latter, as was gamed in the Global Thunder exercise, would take 11 hours to fly from home base in Missouri to either Iran or North Korea. A missile, on the other hand, could

take 30 minutes, and a forward-deployed submarine-launched missile could take just 10–15 minutes.

North Korea's string of long-range missile tests in the first year of the Trump administration accentuated this "hole" in U.S. nuclear capabilities, a senior Air Force officer involved in the nuclear deliberations says. In the most pressing scenario involving the imminent use of weapons of mass destruction, existing missiles were rejected as a credible deterrent threat because their warhead size was thought to be too large to be "usable."

In the rarified world of nuclear war planning, only a single small nuclear weapon launched from a Trident submarine represented the credible and "prompt" capability needed to respond to new threats. That is, a new nuclear weapon that could actually be used to preempt a strike on the United States or its Asian allies. B-2 bombers in theory could be forward deployed with nuclear bombs to shorten response time, but such a forward deployment had never been tried, and would demand consultation with, and permission from, allies. War planners concluded that even there, a bomber mission would take hours—not fast enough—and there was a possibility that a bomber might be shot down.

In February 2018, the Trump administration concluded its own Nuclear Posture Review.

"We must look reality in the eye and see the world as it is, not as we wish it to be," Defense Secretary Mattis wrote in the introduction.

The Review formally called for a new low-yield warhead to be deployed on Navy Trident II submarine-launched missiles. Though articulated as a counter to Russia, government and non-government officials today agree that the new W76-2 warhead was all along also intended to fill the niche of providing a usable and prompt weapon to counter imminent North Korean or Iranian attacks, either with WMD or long-range missiles.

In late January 2019, with little fanfare, the first of these low-yield W76-2 nuclear warheads started rolling off the Department of Energy production line in Amarillo, Texas. In September, according to officials who spoke on background because no announcement has been made, the first W76-2



LT. CMDR. MICHAEL L. SMITH/U.S. NAVY

"THERE IS SOMETHING ABOUT THIS PRESIDENT AND THE NEW WEAPONS THAT



AT THE READY
The submarine USS *Nebraska* nearing its home port of Bangor, Washington, on April 2, 2018, following the test launch of two unarmed Trident II D5 missiles off the coast of California.

MAKES CONTEMPLATING CROSSING THE NUCLEAR THRESHOLD A Unique Danger."





warheads were delivered to the Navy. That W76-2 is thought to have an explosive yield of between 5–6 kilotons (5–6 thousand tons)—about one-third the size of the atomic bomb dropped on Hiroshima. Kristensen estimates that some 50 of these small, "prompt" warheads will be deployed on Trident submarines, and that two of the 24 missiles aboard each of 12 submarines will be so armed.

On October 30, 2016, a day before Global Thunder 17 ended, the USS *Pennsylvania*, a Trident ballistic missile submarine based in Washington state, surfaced in Apra Harbor, Guam. It was the first visit of a ballistic missile submarine to Guam in 28 years and only the third Trident submarine to make a foreign port visit since 9/11.

"This visit is a clear demonstration of the highly survivable and lethal capabilities the United States brings to bear in support of the unwavering extended deterrence commitments to our allies," said Adm. Harry Harris, then the commander for U.S. Pacific Command (and now U.S. ambassador to South Korea).

The voyage of the USS *Pennsylvania* was an introduction to its unique and expanded "tactical" duty, one that was now extending the mission of nuclear submarines beyond Russia and China.

Nine months later, another ballistic missile submarine, the USS *Kentucky*, showed up off Dutch Harbor in the Aleutian Island chain of Alaska, just 3,400 miles from its North Korean targets.

Trident submarines rarely surface once they leave their ports, operating on 100-day cycles, about 70 days underwater followed by 30 days replenishment before a new crew takes over. Since Donald Trump has become president, though, four Trident submarines have surfaced during their patrols, the two in the Pacific and two others in the Atlantic, both making port calls in Scotland.

To conduct visible nuclear diplomacy, the U.S. military relies on its 156-strong bomber force—the B-2 Spirit stealth bombers, the venerable B-52 Stratofortress bombers and even the conventional-only B-1 Lancer bomber.

Last May, as the Trump administration began accelerated military deployments "in response to a number of troubling and escalatory indications and warnings" from Iran, bombers played a visible role. B-52 bombers were deployed to an airbase in Qatar, on the Persian Gulf, for two months. And at the end of October, B-1 bombers flew from South Dakota all the way to Saudi Arabia, the first time heavy bombers were on the ground in that country since Operation Desert Storm in 1991.

But then bombers more or less disappeared from Middle East skies. Global Thunder 20, this year's nuclear exercise, completely focused on a Russia scenario. The scenario for the October 2019 exercise had been selected more than a year before.

Last week, six B-52 bombers showed up on the Indian Ocean island of Diego Garcia, the first time bombers have forward based to the British-controlled territory in more than a decade. Retired Air Force Gen. Herbert "Hawk" Carlisle told Air Force Times that the placement of the bombers 3,000-plus miles from the southern edge of Iran put them out of range of Tehran's medium-range ballistic missiles.



PREPARATION AND AFTERMATH
Counter clockwise from top: then-U.S. Defense Secretary Jim Mattis at the U.S. Capitol on December 13, 2018; A Trident II D5 missile test launched from the submarine USS Maryland on August 31, 2016; Hiroshima, Japan, in 1945. Trident missiles can be armed with nuclear weapons with about one-third the explosive yield of the Hiroshima bomb.

FROM TOP: MANDEL NGAN/AFP/GETTY; JOHN KOWALSKI/U.S. NAVY; PRISMA BILDAGENTUR/UNIVERSAL IMAGES GROUP/GETTY

None of these forward deployed bombers have nuclear weapons with them, nor are there nuclear weapons deployed at the half dozen forward bomber bases used in the Pacific, Europe or the Middle East. If there was any conceivable American nuclear strike on Iran, sources agree, it would come from the new low-yield Trident submarine-based system.

No one in the Air Force or Strategic Command wanted to talk on the record regarding nuclear plans or the prospects of nuclear weapons playing a role in the ongoing Iran crisis, cautious in speaking of highly classified war plans and mindful of the president's operating style.

On the philosophical question of using nuclear weapons, all six Air Force and STRATCOM sources I spoke to expressed concern that the very existence of nuclear options, with this president, complicated their otherwise clear conviction that there was no way nuclear weapons could be used against Iran. American nuclear use could only occur, they agree, after the countries were in a full-scale war, and after the Iranian use of chemical or biological weapons or after a direct attack on the United States. And even then, they say, a nuclear option might only be discussed were there unmistakable intelligence that Tehran was preparing an imminent strike with some kind of improvised radiological or other weapon of mass destruction.

In such a scenario, these officers agree, the president's decision-making could be both opaque and unpredictable. In July, when Trump was offered the option of striking Iranian air-defense targets in retaliation for the downing of an unmanned reconnaissance drone, he rejected even a very limited option, concerned that 150 civilians might die. But he chose the most extreme option in the January 2 strike that killed Iranian Gen. Qassem Soleimani.

"AS THE CURRENT NUCLEAR WAR PLANS ARE WRITTEN, THE USE OF SUCH A WEAPON COULD BE JUSTIFIED AS A SHOCKING THUNDERCLAP TO FORESTALL A WIDER AND THEORETICALLY MORE DESTRUCTIVE All-Out War."



One retired Air Force officer told me this week that what worries him is that a "package" of American options in response to the most extreme Iranian actions will automatically include the nuclear option, even if it is one option out of a hundred. Having a "prompt low-collateral damage W76," the officer says, connotes a usable nuclear weapon. .

Under the current nuclear war plans, the use of such a weapon could also be justified, almost Hiroshima-like, as a shocking thunderclap to forestall all-out war. "It is a capability that the United States did not have a year ago," the officer says, built precisely to be used. "Let's just hope that option is never offered." N

→ **William Arkin** *is author of a half-dozen books on nuclear weapons. He is writing* ENDING PERPETUAL WAR *for Simon & Schuster. His Twitter handle is @warkin.*

WHAT AN IRANIAN CYBERATTACK WOULD LOOK LIKE

Heightened tensions have U.S. cyber experts worried about Iran-backed cyberattacks BY FRED GUTERL

Shortly after Iran lobbed two-dozen missiles into two U.S. military bases in Iraq, which caused no casualties, its foreign minister tweeted that Iran had "concluded" its "proportionate" response to the assassination of Major General Qassem Soleimani.

Few people in the U.S. military are taking this statement at face value. Iran is likely to step up its harassment of the U.S. using its network of proxy groups in the Middle East and elsewhere. If history is any guide, that response will include cyberattacks against the U.S. government, companies and high-profile individuals—and possibly even the 2020 elections.

"I don't think Iran is finished," says Jon Bateman, a former Iran expert at the U.S. Defense Intelligence Agency and now a fellow at the Carnegie Endowment for International Peace. The door is open, he says, to "follow-on actions that are more covert or more plausibly deniable. Cyber classically is one of the tools."

Although Iran isn't considered to be one of the world's most formidable cyber threats—its program lags behind Russia's and China's—the nation is still capable of causing a great deal of disruption. Its past cyberattacks have been characterized by unpredictability, and it's unclear how much its capabilities have improved in recent years.

It's been a decade since Iran weathered a sophisticated cyberattack that set its nuclear weapons program back on its heels. The U.S. and Israel are widely thought to have launched an astonishingly intelligent bit of malware called Stuxnet, which was small enough to fit on a thumb drive but smart enough to wend its way like a heat-seeking missile through the internet to penetrate Tehran's heavily-fortified nuclear program. Not only did Stuxnet destroy uranium centrifuges, used to make bomb-grade uranium, it disguised itself by creating a false appearance of normalcy to the engineers who monitored the equipment—until it was too late. "Iran…has demonstrated a clear ability to learn from the capabilities and actions of others," said an NSA report released by Edward Snowden and reported in 2013 by The Intercept.

THE BIG WORRIES

The most worrying cyber threats from Iran are those that could result in a loss of life. In this respect, Iran is capable of using hackers to support some kind of conventional military action, such as a bombing or the assassination of an individual or a kidnapping. It could also use cyber espionage or data collection techniques to monitor the movement of troops, ships or planes in the Middle East and target them for attack.

To conduct a targeted assassination, Iran would need to bring together a variety of streams of intelligence. Infecting mobile phones with malware would give it access to a cornucopia of information—including potentially the real-time whereabouts of targets. A phone hack could provide what experts call "pattern of life" information—where an individual tends to go, and when—that could be used to predict a target's whereabouts. By gaining access to phone calls, emails, text messages and contact lists, hackers could even manipulate a target to walk unwittingly into a trap. "Iran has conducted many targeted killings abroad through its proxies and, perhaps, directly," says Bateman. "In 2020 that would include a cyber element. Any state would use that."

Installing malware on a mobile device is not as hard as you might think. The simplest method is through "social engineering"—tricking targets into divulging compromising information such as passwords or, as Russian operatives did with Clinton campaign chairman John Podesta in 2016, installing malware. In recent years, popular messaging apps WhatsApp and iMessage have had "no-click" vulnerabilities—software bugs allow hackers to implant malware simply by sending a message, without requiring any action on the part of the target. Although these particular no-click vulnerabilities have since been patched, there could be others. Iran is not known to have exploited these vulnerabilities in the past, but that doesn't mean they wouldn't in the future.

DISINFORMATION CAMPAIGNS

Another worry is that Iran could generate disinformation for the purposes of inspiring violence. In recent months, Iran-backed groups have used social media to share false data about the U.S. military—one widely-circulated claim was that U.S. Marines had arrested an Iraqi Parliamentarian, says Bateman. "Actions that kind of foment anger and distrust of U.S. forces and incite violence against them would be concerning," he says.

Although Iran doesn't have the kind of massive misinformation apparatus in place to sow division, the way Russia did in the run-up to 2016, it's conceivable that Iran could seek to influence the 2020 election, if it wanted to, by other means. Iran has good cyberattack chops in breaking and entering computer systems. These skills could be





CLOCKWISE FROM TOP LEFT: IRANIAN SUPREME LEADER PRESS OFFICE/HANDOUT/ANADOLU AGENCY/GETTY; MICHELLE GUSTAFSON/BLOOMBERG/GETTY; LOGAN CYRUS/AFP/GETTY; SAEID ZAREIAN/PICTURE ALLIANCE/GETTY

useful for finding and leaking sensitive information—similar to Russia's hack of the Democratic National Committee in 2016. U.S. officials suspect that Iran was behind the 2015 attack on the Saudi Ministry of Foreign Affairs, which uncovered confidential diplomatic cables that were subsequently leaked, according to Bateman.

Iran was already caught once trying to hack the Trump campaign. In October, Microsoft reported that a hacker group called Phosphorous, which it believes is linked to the Iranian government, made more than 2700 attempts to identify email accounts and attacked 241 of them, including some associated with a U.S. political campaign. *The Wall Street Journal* later reported that the campaign under attack was Trump's.

NEXT MOVES?
Clockwise from top left: Iranian leader Ayatollah Ali Khamenei and other top leaders in Tehran on January 20; the Three Mile Island nuclear power plant in 2018; voting in Charlotte, North Carolina, on November 6, 2018; and a rally in Tehran on January 4.





The hackers had succeeded in breaking into four accounts, none directly linked to the campaign, before Microsoft shut it down. "This effort suggests Phosphorus is highly motivated and willing to invest significant time and resources engaging in research and other means of information gathering," Microsoft said in its October statement.

Iran could also pose a threat to voting machines. Although the U.S. election system is fragmented, Iran could try to compromise voting infrastructure in key districts, spreading fear and doubt. Undermining Americans' faith in the legitimacy of the election could be even more destabilizing than tampering with the actual results.

Experts say that such a tactic would be out of character for Iran, which in the past hasn't shown much interest in the U.S. political election system. From Iran's point of view, there isn't much difference between the policies of the two U.S. parties. "Iran sees a consistent four-decade-long pressure campaign that has bipartisan approval," says Bateman. "But the killing of Soleimani is more personal than previous U.S. actions because of the relationship he had with the Supreme Leader [Ayatollah Ali Khamenei], so I wouldn't rule out something that sought to embarrass or harm Donald Trump personally."

SOFT CORPORATE TARGETS

Disrupting corporations is both in character for Iran and well within its current capabilities. Although Iran wouldn't be able to make much headway with tech giants like Apple, Google, Facebook, Amazon and Microsoft, many other organizations are vulnerable to hacking, including banks, chemical plants, oil refineries, drug companies, water treatment plans and the electrical grid. It's likely that Iran has been installing malware in such organizations over the past decade, to lie dormant until the right moment. "It's called 'preparing the battlefield,'" says Steven Bellovin, a computer-science professor at Columbia University in New York who consults for defense organizations. "You wait, like sleeper cells, until you have three or four chemical plants and a couple of power plants, and then you act."

The malware would presumably activate on a signal from Iran and then carry out a coordinated cyberattack. This could take many forms. In a power plant, malware could cause turbines to spin so erratically that they breakdown—which is how Stuxnet took out the uranium centrifuges. In a pharmaceutical company, malware could change dosages in pills on a factory line, sowing panic.

It's unlikely that Iran has the capacity to wage a cyberwar that results in significant loss of life, experts say. For instance, although it could use malware against power plants, it would not likely be able to cause enough damage to create a prolonged outage of the U.S. electrical grid. "A real cyberwar would destroy critical infrastructure, killing potentially millions of people," says Scott Borg, director of the U.S. Cyber Consequences Unit, a non-profit research group specializing in cybersecurity. "If we're totally talking about real cyberwar, Iran has no capability."

The Stuxnet malware is also not likely to be replicated by Iran's engineers. That weapon required more than just expert programming: it required a massive amount of intelligence gathering to figure out how to launch the virus to the exact computer chips the Iranian nuclear engineers had built into their centrifuges. Iran doesn't have the expertise or resources to develop malware on such a scale, experts believe. "Cyber weapons, or malware, aren't as simple as just picking a gun off the street that someone has dropped and then loading it and firing it yourself," says Bateman. "A cyber operation is a complex sequence of events, in which you need to understand, and penetrate, a specific target and work your way up to a specific effect you'd like to achieve."

LEARNING CURVE

One factor working against Iran's cyber capabilities, says Borg, is distrust of the government. Although Iran possesses considerable computing talent, most capable hackers in Iran and its diaspora don't see eye-to-eye with the Ayatollah, and therefore withhold cooperation. "The Iran hacker groups are more moderate politically," he says. "It's hard to acquire technological expertise without becoming a little cosmopolitan."

"But if you could offend them enough to get them to rally around their leaders," he says, "Iran could become a formidable cyber power in a short time—a matter of months."

BY THE NUMBERS

The Oscars

If history is a guide, the 92nd Academy Awards, which take place on February 9th at the Dolby Theater in Hollywood, will be 2020's most-watched entertainment program. To inform your viewing and help you win at Oscar trivia, here is some perspective on the movie industry's biggest night of the year. —*Noah Miller*



12

The number of times an actor has had two nominations in the same year for performances in different films. This includes Scarlett Johannsen, nominated in 2020 for *Marriage Story* (lead actress) and *Jojo Rabbit* (supporting).



The percentage of Best Director nominations in Oscar history that have gone to women—none this year and only five out of 447 official nominations in 92 years. The sole female winner: Kathryn Bigelow, for *The Hurt Locker*, in 2009.

20% → The estimated boost in pay for a Best Actor/Best Actress winner for their next film

Oscar Acting Droughts

Years since last nomination, for current acting nominees (all are former winners)





99%

The Tomatometer score on Rotten Tomatoes for *Parasite*, the best-reviewed movie among this year's Best Picture nominees. The highest audience score goes to *Ford v Ferrari* (98%).

SOURCES: ACADEMY OF MOTION PICTURE ARTS AND SCIENCES; WALLETHUB; ROTTEN TOMATOES; NIELSEN, BOX OFFICE MOJO



(actual size)

13½ inches, 8½ pounds

The height and weight of the Oscar statuette

5 ½ MINUTES

The longest Oscar acceptance speech on record, given by Greer Garson, Best Actress winner in 1943 for *Mrs. Miniver*. The time limit of Oscar speeches is now capped at 45 seconds.

The number of career nominations for composer John Williams—including this year's nod for Best Score for *Star Wars: The Rise of Skywalker*—more than any other living person. In Oscar history, he's second only to Walt Disney, who was nominated 59 times; Disney also holds the record for most wins, at 22 (plus four honorary awards).



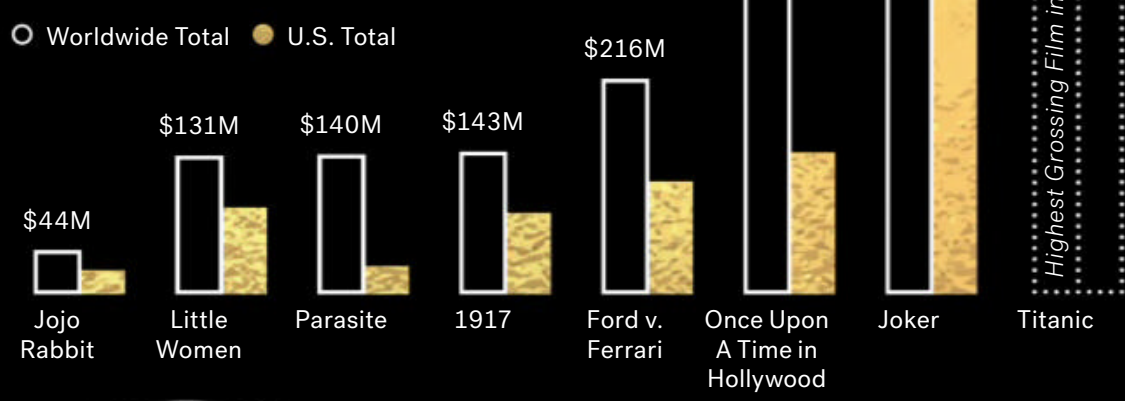
29,600,000

The number of viewers who tuned in to last year's ceremony—a 12 percent increase over the previous year but still the second smallest audience on record

ONE

How many people of color were nominated in the four major acting categories this year. The lone nominee: actress Cynthia Erivo for her lead performance in *Harriet*.

2020 Best Picture Nominees, by Gross Revenue

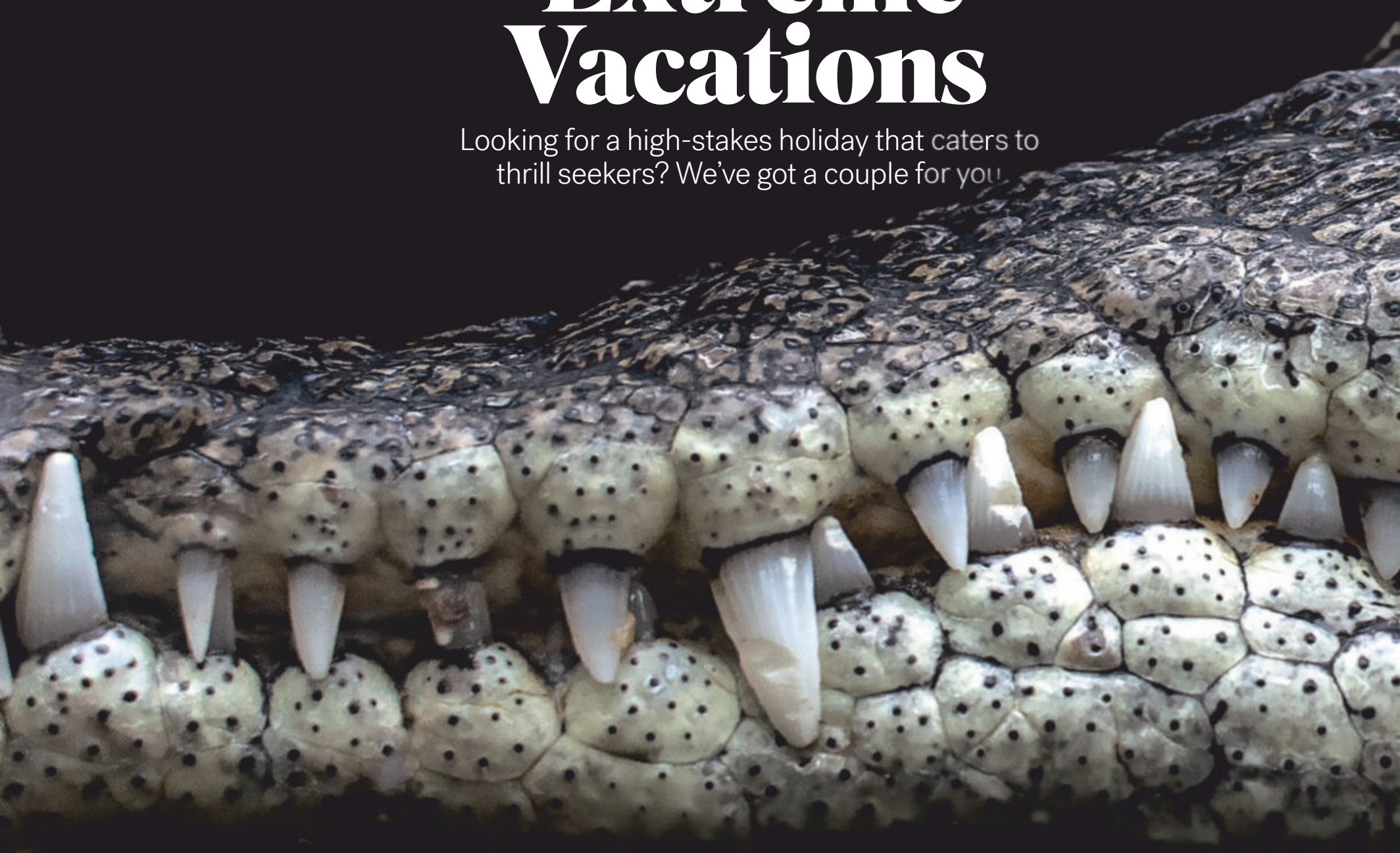


KURT KRIEGER/CORBIS/GETTY

TRAVEL

Extreme Vacations

Looking for a high-stakes holiday that caters to thrill seekers? We've got a couple for you



WHAT IS TOO EXTREME? THAT WAS A COMMON QUESTION AMONG VACATIONERS—AND OTHERS FOR THAT MATTER—IN THE WAKE of the deadly volcanic eruption in New Zealand in December. To be sure, many of those exploring White Island last year didn't think they were putting themselves in danger. But for some adventurers, danger is exactly the point; in fact, there is a whole category of vacations custom-designed for extreme thrill seekers. "Our clients are looking for high-adrenaline experiences, something that gets their heart pumping," says Geordie Mackay-Lewis, co-founder of Pelorus, a London-based travel company that designs individualized adventures. Adds co-founder, Jimmy Carroll: "For one group, we created a drug trafficking plot in Cambodia. It started with urban surveillance training in Siem Reap and then moved into the jungle to track an international arms gang, who chased them with guns, to a helicopter that transferred them to safety." Read on for some more options—not for the faint of heart.

BY

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NOVICESHOOTER98 PHOTOGRAPHY/GETTY; TOP RIGHT: STEPHANE CARDINALE/CORBIS/GETTY

RELUCTANT VAMPIRE NO LONGER
Paul Wesley on his new psychological thriller, *Tell Me a Story*. » P.48



Dive with Nile Crocodiles

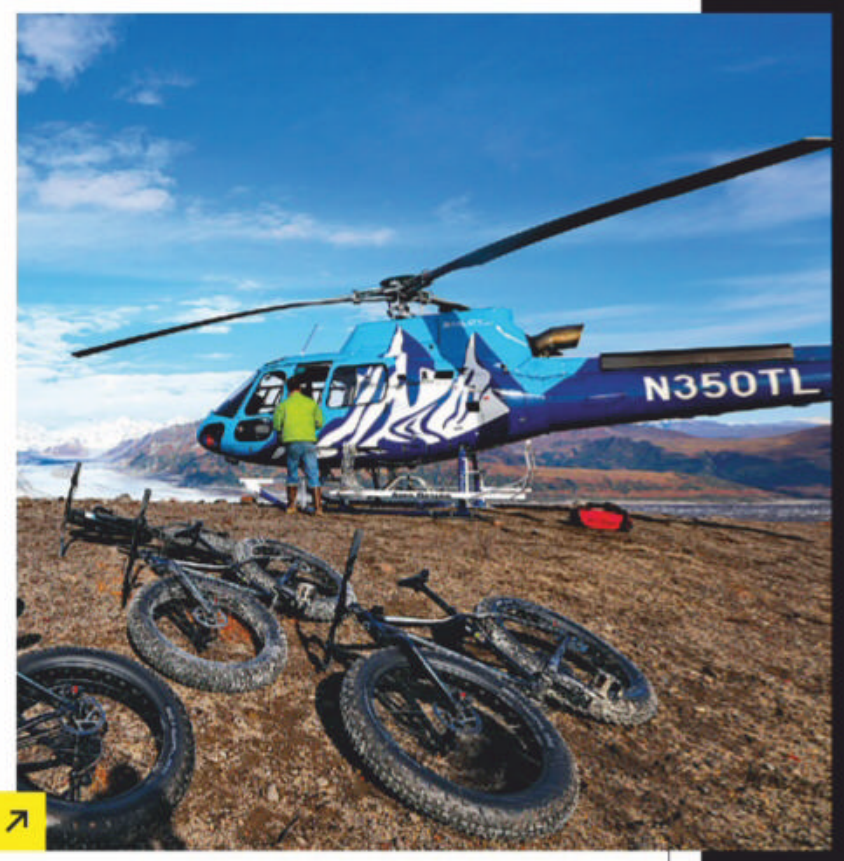
BIGANIMALS.COM

For upwards of $20,000 per person, Big Animals Global Expeditions takes you diving in Botswana with African crocodiles, the second largest living reptile in the world. While these crocs have bites more powerful than those of a great white shark, the good news is that the cold water makes these predators lethargic, and their poor underwater vision might let you sneak a photograph or two from as close as 12 inches away.

Heli-Bike in Alaska

TORDRILLOMOUNTAINLODGE.COM

In the summer and fall, you can now try heli-biking. Olympic Gold Medalist Tommy Moe and fellow heli-ski veterans devised the country's first helicopter outfitted with a bike rack. It allows cyclists of all ages and levels and their bikes to be flown deep into the Tordrillo Mountain Range and dropped down into remote Alaskan trails carved in the flanks of area volcanos. Or you can forge a brand-new path on a glacier.





PLAY SURVIVOR ON A DESERTED ISLAND

DESERTISLANDSURVIVAL.COM

Be a castaway for 10 days on an uninhabited island in French Polynesia, Tonga or Panama with a tribe of strangers from around the world. You'll learn bushcraft survival skills for the first half before putting them to the test when left to your own devices for 72 hours before you're rescued.

Sail the Drake Passage

BARKEUROPA.COM

Forget merely crossing the most dangerous sea in the world, try sailing it. Also known as the Mar de Hoces and famed for its treacherous crosscurrents and high winds, the Drake Passage's 600-mile stretch between Antarctica and the southern tip of South America isn't for the faint of heart, even on a more traditional cruise ship. Sail to Antarctica on Bark Europa's tall-ship and you'll have to hold on extra tight.





COMPETE IN A SUSPENSE THRILLER

PELORUSX.COM

Mackay-Lewis and Carroll of Pelorus are two ex-British army captains. They'll let you safely live out your own action-packed suspense thriller with its team of actors, as well as by tapping Special Forces and intel agency experts to develop simulated escape-and-evasion or espionage missions. You'll see how you would react and negotiate in high-pressure, your-life-might-depend-on-it situations. And you'll have major bragging rights when talking about your last vacation.



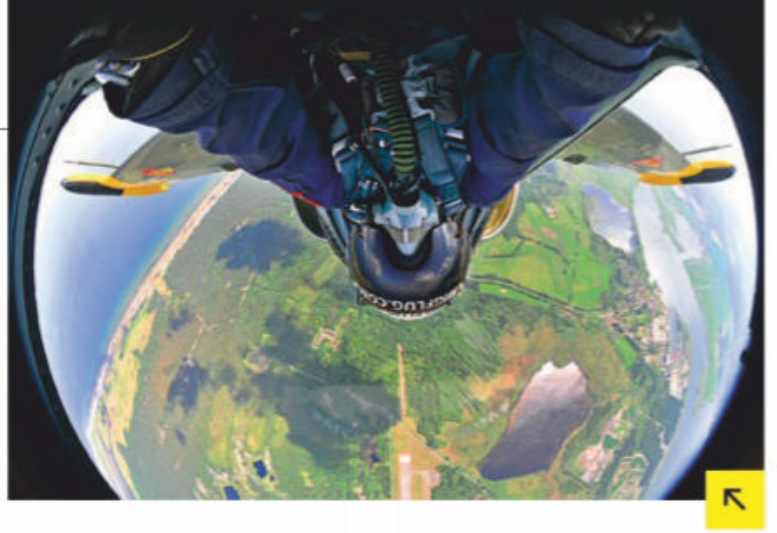
CLOCKWISE FROM LEFT: MATT MAYNARD; TORDRILLO MOUNTAIN LODGE; CMANNPHOTO/GETTY; MIGFLUG; BUSHMASTERS; MILO ZANECCHIA/ASCENT XMEDIA/GETTY; JORDI PLANA MORALES

Conquer Europe's Highest Peak

WHOATRAVEL.COM

Forget the crowded lines at Everest and instead summit Mount Elbrus in the Russian Caucasus Mountains. Considered to be one of the more accessible of the "Seven Summits," the tallest mountains on each continent, Elbrus towers at 18,510 feet. Adventure companies such as WHOA (Women High on Adventure) lead expeditions to Elbrus' breathtaking peak that include on-site mountaineering training—including how to self-arrest with an ice ax (a technique to stop yourself from freefalling down steep, icy slopes).





BE A "TOP GUN" PILOT

MIGFLUG.COM

Leave it up to the country with the oldest policy of military neutrality in the world to come up with flying a real fighter jet for fun. Swiss aviation enthusiasts at MiGFlug offer flight experiences in locations around the world. Sitting in the cockpit beside a highly trained fighter pilot—and often holding the controls yourself—you'll try out aerobatic maneuvers like spins and barrel rolls, negotiate between mountain peaks, and in one experience, you can even participate in an aerial dogfight.



Navigate the Jungle Alone

BUSHMASTERS.CO.UK

Naked and afraid? Not if you have your wits about you on this true-to-life survival adventure in the remote jungle of Guyana, South America. You'll be dropped alone—or with a buddy—in the jungle for a week with no more than the clothes on your back, a machete, bow and arrow, and a few days of survival training. Thirty percent of participants pull out of the experience during the training phase. Can *you* make it all the way? Bushmasters also offers other realistic, survival expeditions to remote and harsh destinations including the Amazon jungle and the Arabian Desert.

Illustration by BRITT SPENCER

PARTING SHOT

Paul Wesley

PAUL WESLEY IS READY TO LEAVE BEHIND HIS CHARACTER FROM *THE VAMPIRE Diaries*. Reluctant vampire Stefan "was the hero," Wesley told *Newsweek,* but he is no longer interested in playing heroes. Wesley has gone even darker in Kevin Williamson's *Tell Me a Story* on CBS All Access, now finishing its second season. Inspired by the sinister side of classic fairy tales like *Beauty and the Beast, The Three Little Pigs, Little Red Riding Hood* and *Cinderella*, the series turns them into intense psychological thrillers. Wesley says the show works because adults read these "relatable cautionary tales" with a "different perspective" than the way children do. Describing how *The Vampire Diaries* resonated with fans, Wesley says that, even though it was a tale about vampires, fundamentally it was a story about being an outsider, which made it relatable to a broad audience. Now, with *Tell Me a Story* and his new foray into directing—he previously directed episodes of *Vampire Diaries*, in addition to the short films *Isabel* and the forthcoming *Abel*—Wesley is ready to bite into something a bit more nuanced.



"One woman asked me to sign her baby. She gave me a Sharpie, 'Sign my baby's arm.'"

Was it important for you to play a different sort of character on *Tell Me a Story*?
Stefan was the guy who saved the day. I've intentionally sought out roles that are the antithesis of that. Just because, obviously, we don't want to be typecast. I think anytime you're on anything popular, people know who you are. I'm trying to do anything and everything that I can to just separate myself from that at this point.

What's the strangest encounter you've had with a fan?
One woman asked me to sign her baby, and I said, "I'm not going to do that." She gave me a Sharpie, "Sign my baby's arm."

Why do you think *The Vampire Diaries so* resonated with fans?
I think this was just a metaphor for danger and the loner who is misunderstood and the girl who is looking for eternal love. I think it's relatable in many ways, although it's obviously extreme.

You've shifted your focus from acting to directing in recent years. Do you hope to do more of that?
Acting is very interesting. But I also think I'm deeply invested in the directorial style. Any time I watch a film, it's the first thing I really notice. I have always regretted not going to film school, not studying directing. I'm trying to find my voice as a director, and the TV directing was a really good step in that direction. *—H. Alan Scott*

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Stand Up To Cancer Ambassador

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