1

|  |  |
| --- | --- |
| SE | Business/Financial Desk; SECTB |
| HD | A Warning Signal on **Self-Driving** Cars |
| BY | By Cade Metz |
| WC | 1639 words |
| PD | 16 February 2023 |
| SN | The New York Times |
| SC | NYTF |
| ED | Late Edition - Final |
| PG | 1 |
| LA | English |
| CY | Copyright 2023 The New York Times Company. All Rights Reserved. |
| LP | Missy Cummings, who spent more than a year at the federal auto safety agency, said that drivers were putting too much trust in systems like **Tesla**'s **Autopilot** and that regulators needed to restrict their use.  Last fall, Missy Cummings sent a document to her colleagues at the National Highway Traffic Safety Administration that revealed a surprising trend: When people using advanced **driver-assistance** systems die or are injured in a car **crash**, they are more likely to have been speeding than people driving cars on their own. |
| TD | The two-page analysis of nearly 400 **crashes** involving systems like **Tesla**'s **Autopilot** and General Motors' Super Cruise is far from conclusive. But it raises fresh questions about the technologies that have been installed in hundreds of thousands of cars on U.S. roads. Dr. Cummings said the data indicated that drivers were becoming too confident in the systems' abilities and that automakers and regulators should restrict when and how the technology was used.  People ''are over-trusting the technology,'' she said. ''They are letting the cars speed. And they are getting into **accidents** that are seriously injuring them or killing them.''  Dr. Cummings, an engineering and computer science professor at George Mason University who specializes in autonomous systems, recently returned to academia after more than a year at the safety agency. On Wednesday, she will present some of her findings at the University of Michigan, a short drive from Detroit, the main hub of the U.S. auto industry.  Systems like **Autopilot** and Super Cruise, which can steer, brake and accelerate vehicles on their own, are becoming increasingly common as automakers compete to win over car buyers with promises of superior technology. Companies sometimes market these systems as if they made cars autonomous. But their legal fine print requires drivers to stay alert and be ready to take control of the vehicle at any time.  In interviews last week, Dr. Cummings said automakers and regulators ought to prevent such systems from operating over the speed limit and require drivers using them to keep their hands on the steering wheel and eyes on the road.  ''Car companies -- meaning **Tesla** and others -- are marketing this as a hands-free technology,'' she said. ''That is a nightmare.''  But these are not measures that NHTSA can easily put in place. Any effort to rein in how **driver-assistance** systems are used will probably be met with criticism and lawsuits from the auto industry, especially from **Tesla** and its chief executive, Elon Musk, who has long chafed at rules he considers antiquated.  Safety experts also said the agency was chronically underfunded and lacked enough skilled staff to adequately do its job. The agency has also operated without a permanent leader confirmed by the Senate for much of the past six years.  Dr. Cummings acknowledged that putting in effect the rules she was calling for would be difficult. She said she also knew that her comments could again inflame supporters of Mr. Musk and **Tesla** who attacked her on social media and sent her death threats after she was appointed a senior adviser at the safety agency.  But Dr. Cummings, 56, one of the first female fighter pilots in the Navy, said she felt compelled to speak out because ''the technology is being abused by humans.''  ''We need to put in regulations that deal with this,'' she said.  The safety agency and **Tesla** did not respond to requests for comment. G.M. pointed to studies that it had conducted with the University of Michigan that examined the safety of its technology.  Because **Autopilot** and other similar systems allow drivers to relinquish active control of the car, many safety experts worry that the technology will lull people into believing the cars are driving themselves. When the technology **malfunctions** or cannot handle situations like having to veer quickly to miss stalled vehicles, drivers may be unprepared to take control quickly enough.  The systems use cameras and other sensors to check whether a driver's hands are on the wheel and his or her eyes are watching the road. And they will disengage if the driver is not attentive for a significant amount of time. But they operate for stretches when the driver is not focused on driving.  Dr. Cummings has long warned that this can be a problem -- in academic papers, in interviews and on social media. She was named senior adviser for safety at NHTSA in October 2021, not long after the agency began collecting **crash** data involving cars using **driver-assistance** systems.  Mr. Musk responded to her appointment in a post on Twitter, accusing her of being ''extremely biased against **Tesla**,'' without citing any evidence. This set off an avalanche of similar statements from his supporters on social media and in emails to Dr. Cummings.  She said she eventually had to shut down her Twitter account and temporarily leave her home because of the harassment and death threats she was receiving at the time. One threat was serious enough to be investigated by the police in Durham, N.C., where she lived.  Many of the claims were nonsensical and false. Some of Mr. Musk's supporters noticed that she was serving as a board member of Veoneer, a Swedish company that sells sensors to **Tesla** and other automakers, but confused the company with Velodyne, a U.S. company whose laser sensor technology -- called lidar -- is seen as a competitor to the sensors that **Tesla** uses for **Autopilot**.  ''We know you own lidar companies and if you accept the NHTSA adviser position, we will kill you and your family,'' one email sent to her said.  Jennifer Homendy, who leads the National Transportation Safety Board, the agency that investigates serious automobile **crashes**, and who has also been attacked by fans of Mr. Musk, told CNN Business in 2021 that the false claims about Dr. Cummings were a ''calculated attempt to distract from the real safety issues.''  Before joining NHTSA, Dr. Cummings left Veoneer's board, sold her shares in the company and recused herself from the agency's investigations that solely involved **Tesla**, one of which was announced before her arrival.  The analysis she sent to agency officials in the fall looked at advanced **driver-assistance** systems from multiple companies, including **Tesla**, G.M. and Ford Motor. When cars using these systems were involved in fatal **crashes**, they were traveling over the speed limit 50 percent of the time. In **crashes** with serious injuries, they were speeding 42 percent of the time.  In **crashes** that did not involve **driver-assistance** systems, those figures were 29 percent and 13 percent.  The amount of data that the government has collected on **crashes** involving these systems is still relatively small. Other factors could be skewing the results.  Advanced drivers-assistance systems are used far more often on highways than on city streets, for instance. And the **crash** data that Dr. Cummings analyzed is dominated by **Tesla**, because its systems are more widely used than others. This could mean that the results unfairly reflect on the performance of systems offered by other companies.  During her time at the federal safety agency, she also examined so-called phantom braking, which is when **driver-assistance** systems cause cars to slow or stop for no apparent reason. Last month, for example, the news site The Intercept published footage of a **Tesla** vehicle inexplicably braking in the middle of the Bay Bridge connecting San Francisco and Oakland and causing an eight-car pileup that injured nine people, including a 2-year-old.  Dr. Cummings said data from automakers and customer complaints showed that this was a problem with multiple **driver-assistance** systems and with robotaxis developed by companies like Waymo, owned by Google's parent company, and Cruise, a division of G.M. Now under test in multiple cities, these **self-driving** taxis are designed to operate with no driver, and they are ferrying passengers in San Francisco and the Phoenix area.  Many **crashes** apparently happen because people traveling behind these cars are not prepared for those erratic stops. ''The cars are braking in ways that people do not anticipate and are not able to respond to,'' she said.  Waymo and Cruise declined to comment.  Dr. Cummings said the federal safety agency should work with automakers to restrict advanced **driver-assistance** systems using its standard recall process, where the companies agree to voluntarily make changes.  But experts questioned whether the automakers would make such changes without a significant fight.  The agency could also establish new rules that explicitly control the use of these systems, but this would take years and could result in lawsuits.  ''NHTSA could do this, but would the courts uphold it?'' said Matthew Wansley, a professor at the Cardozo School of Law at Yeshiva University in New York who specializes in emerging automotive technologies.  Dr. Cummings said robotaxis were arriving at about the right pace: After limited tests, federal, state and local regulators are keeping a lid on their growth until the technology is better understood.  But, she said, the government must do more to ensure the safety of advanced **driver-assistance** systems like **Autopilot** and Super Cruise.  NHTSA ''needs to flex its muscles more,'' she said. ''It needs to not be afraid of Elon or of moving markets if there is an obvious unreasonable risk.'' |

2

|  |  |
| --- | --- |
| CLM | FUTURE OF TRANSPORTATION |
| SE | Business/Financial Desk; SECTB |
| HD | As Driverless Cars Falter, **Driver-Assistance** Systems Move to the Fore |
| BY | By Lawrence Ulrich |
| WC | 1650 words |
| PD | 10 October 2022 |
| SN | The New York Times |
| SC | NYTF |
| ED | Late Edition - Final |
| PG | 4 |
| LA | English |
| CY | Copyright 2022 The New York Times Company. All Rights Reserved. |
| LP | With investigations and lawsuits over **accidents** adding skepticism toward fully driverless technology, car companies are betting on systems that take some, but not all, control.  This article is part of our series on the Future of Transportation , which is exploring innovations and challenges that affect how we move about the world. |
| TD | Imagine heading eastbound on, say, I-95 when you and your pickup encounter red brake lights for miles ahead. Now imagine not touching the brakes or steering wheel and, instead, sitting back and letting the car deal with it.  For the next hour of stop-and-go slog, the truck's system does the driving: anticipating slowdowns, accelerating, braking and steering on its own. When traffic eases up, the pickup climbs to a selected 70-mile-per-hour speed and executes automated lane changes. The system checks blind spots and flashes turn signals.  But this truck isn't designed to be an entirely driverless one. The truck's infrared driver-monitoring camera watches for eye and head position. You can glance at a passenger or consult a navigation screen -- but if you look away for more than a few seconds, LEDs illuminate blue on the steering wheel rim, a transparent command to get your eyes back on the road. If you ignore prompts, the rim flashes red, and the system disengages and reverts to hands-on control.  As **Tesla** faces a federal investigation and lawsuits over fatal **accidents** involving its **Autopilot** system, shaking public confidence in robotic cars, could a pared-down approach like the one described -- variously called ''partial autonomy'' or ''**driver assistance**'' systems -- be the more realistic future of hands-free driving?  This type of system, more like a no-nonsense chaperone than one you would find in a fully robotic car, is a necessary component for top scores from the Insurance Institute for Highway Safety's forthcoming ratings of partial-autonomous tech; high ratings from the independent nonprofit are prized. And though General Motors is taking the lead with their Super Cruise system, they not alone; Ford, BMW and Mercedes-Benz are making similar attempts.  Super Cruise combines minutely detailed, 3-D laser-scanned roadway maps with cameras, radar and onboard GPS. By the end of this year, the company intends to expand the system's network to two-way undivided highways for the first time and double its total operational domain to 400,000 miles. Doing so would allow hands-free driving on some of North America's most epic byways, such as the Pacific Coast Highway, Route 66 and the Trans-Canada Highway.  None of this means that car companies are abandoning the dream of fully autonomous cars. In addition to **Tesla**, G.M.'s Cruise division, Alphabet's Waymo and Argo AI continue to develop and test robotaxis, with human safety operators aboard, in cities including Miami and Austin, Texas. Cruise has begun charging fares for robotaxi rides in modified Chevy Bolt EVs in San Francisco and is mapping Dubai with the hope of starting a robotaxi program there next year.  But as fully driverless technology has faltered, so has faith in such technology. ''The systems work great, right up until they don't,'' said Bryant Walker Smith, an associate professor in the Schools of Law and Engineering at the University of South Carolina, who has advised the federal government on autonomous vehicles. ''We don't have a full sense of the winning combo to cover most of the driving people do.''  In addition, Cruise temporarily halted and recalled its 80-car fleet for a software fix following a two-car collision that injured two occupants in June. A G.M. public filing noted that law enforcement had cited the human-driven car for being mostly at fault, including for speeding, and that the company's robotaxis had, before the collision, safely executed nearly 125,000 left-hand turns through gaps in oncoming traffic.  David Harkey, president of I.I.H.S., said that the industry's reality check over the technical challenges, and attendant public disillusionment, is masking genuine progress. For one, the building blocks of partial autonomy cars are already in every showroom. Automated emergency braking is standard on every new car as of September, thanks to a voluntary agreement forged in 2016 among automakers, I.I.H.S. and the National Highway Traffic Safety Administration.  Such radar- or camera-linked brakes have cut police-reported rear-end collisions by a striking 50 percent, Mr. Harkey of the I.I.H.S. said, according to their research, adding that automated pedestrian braking has reduced the number of car-human collisions by 30 percent versus cars without the feature. And anti-lock brakes; cameras, radar and ultrasonic sensors to manage blind spot and lane departure monitors; and adaptive cruise control have become standard as well.  ''We saw that as beneficial tech, and the same will be true for some new tech. We will continue to push to get more features on more models to save more lives and prevent **crashes**,'' Mr. Harkey said.  The trick, he said, is to build on that promise, with systems that measurably boost safety but keep human drivers in the loop.  ''These are **driver assistance** systems, not driver replacement systems. Some consumers don't know the difference,'' he said.  For its part, the I.I.H.S. is testing what it calls ''partial-autonomous'' cars (a different term for ''driver-assisted''). This fall, the nonprofit organization plans to release its first ''Safeguard Ratings'' to help guide consumers and spur the industry to integrate the most effective features.  A top ''Good'' rating will require a driver monitoring system that checks both a driver's gaze and hand position. A driver with a coffee in one hand and an iPhone in the other won't be prepared to retake the wheel. Other criteria include escalating visual, audible or haptic alerts to get a driver's attention, and a **fail**-safe procedure to safely slow or halt the vehicle if the system is misused or to aid an incapacitated driver. (Super Cruise and some similar systems integrate many of those features.) The I.I.H.S. prefers that systems have drivers initiate any automated lane changes to keep them engaged in the process.  One early study, though, points to potential barriers for driver-assisted tech to achieve that ''Good'' rating. The recent shortage of chips has made it harder for the I.I.H.S. to gather and test relatively newfangled cars and has forced G.M. to temporarily halt installation of Super Cruise. Nonetheless, in a 2020 collaborative survey with M.I.T., the I.I.H.S. found that Volvo S90's system (which lacks driver monitoring) led subjects to drive faster, look away more often and use more hand-held devices, signs of potential driver inattention.  In Germany, Mercedes has begun pushing boundaries with its new Drive Pilot, which legally allows a driver to perform nondriving tasks -- checking email, even watching a movie -- but monitors the driver and alerts when to retake the wheel. I.I.H.S. divides these sorts of systems into levels of **automation**, from zero (no **automation**) to five (full **automation**). Experts see Level 3 (some **automation**, but with a driver at the ready) as the diciest of the levels, a limbo zone compared with Level 5 cars that are truly robotic. For now, Drive Pilot can operate only on certain highways at speeds up to 37 miles per hour. Mercedes is seeking certification to offer the system in the United States next year.  Taking a different approach in marketing, G.M. and other companies have begun downplaying safety gains and citing reduced driver workloads, especially in wearying commutes and traffic.  ''Owners feel more refreshed, they feel more relaxed, yet they are still attentive,'' Mario Maiorana, the chief engineer at Super Cruise, said.  G.M. engineers say that safe and responsible deployment has guided every decision, including a delayed Super Cruise rollout in 2017, even as the company faced mounting criticism for not keeping pace with **Tesla**'s **Autopilot**.  The next test is G.M.'s Ultra Cruise, which the company intends to debut on the Cadillac Celestiq, a six-figure electric flagship sedan, late next year. The system is designed to ultimately deliver hands-free driving on 3.2 million miles of roadway -- nearly every inch of paved road in the United States and Canada.  Jason Ditman, Ultra Cruise's chief engineer, said the systems must work with full transparency and consistency to instill confidence among owners and the public.  ''If you think it's hard to get someone to let go of the steering wheel on highways,'' Mr. Ditman said, imagine a snowy country lane or crowded city street.  G.M. says Ultra Cruise will stop and start at traffic lights and stop signs, autonomously follow navigation routes, do close-object avoidance of vehicles and pedestrians, even self-park in driveways. The machine learning system will identify dicey scenarios and upload data to continuously improve performance, and G.M. can remotely shut down use of the system on any road where the company is not confident of performance. G.M. claims the system will eventually handle about 95 percent of driving, aside from complex scenarios such as multilane roundabouts.  Despite high-profile **crashes**, Prof. Smith believes excessive focus on drawbacks of **driver-assistance** systems distorts the true crisis: Nearly 43,000 Americans died last year in motor-vehicle **crashes**, which kill roughly 1.3 million people worldwide annually.  ''At least 100 people will die on U.S. roads today, and we're not going to hear about them,'' he said. ''Chances are that not one will be killed in connection with a **driver-assistance** system.'' |

3

|  |  |
| --- | --- |
| CLM | ON TECH NEWSLETTER |
| SE | Business/Financial Desk; SECTB |
| HD | Driverless Cars: Too Important to Race |
| BY | By Shira Ovide |
| WC | 1282 words |
| PD | 15 August 2022 |
| SN | The New York Times |
| SC | NYTF |
| ED | Late Edition - Final |
| PG | 2 |
| LA | English |
| CY | Copyright 2022 The New York Times Company. All Rights Reserved. |
| LP | Sometimes it's better to be safe than first.  I grind my teeth when the metaphor of ''a race'' is used in discussions about **self-driving** vehicle technology. |
| TD | Companies developing computer-piloted car technology, including **Tesla**, the Chinese company Baidu, and Waymo, a sibling company of Google, are regularly described as being in a horse race to make **self-driving** vehicles ready for widespread use. Some U.S. policy organizations and elected officials talk about America's need to demonstrate ''leadership'' by beating China at autonomous technology.  There are risks to moving too slowly with a technology that could make people's lives better, but we shouldn't uncritically buy the narrative that a technology that will take many years to develop -- and could have both profound benefits and fatal pitfalls -- should be treated as a race.  The danger is that an artificial sense of urgency or a zeal to ''win'' could create unnecessary safety risks, give companies permission to hog more of our personal information and prioritize corporations' self-interest at the expense of the public good.  When you read that a company or country is speeding, rushing, racing or winning in an emerging area of technology, it's useful to stop and ask: Why is it a race at all? What are the potential consequences of this sense of urgency? Whom is this message for?  Most **self-driving** vehicle technologists now think it may take decades until computer-piloted cars are commonplace. Another month, year or two years might not make much difference, and it's not clear that all races are worth winning.  So why does this narrative about **self-driving** cars exist? First, companies find it useful to be perceived by their employees, investors, business partners, regulators and the public as having the best shot at making safe, useful and lucrative computer-piloted transportation technology. Everyone wants to back a winner.  Pioneers have a shot at dictating the direction of a new technology and building a network of business allies and users.  But winning a ''race'' in technology isn't always meaningful. Apple wasn't the first company to make a smartphone. Google didn't develop the first online search engine. Taiwan Semiconductor Manufacturing Company didn't produce the first advanced computer chip. They are technology superstars because they did it (arguably) best, not first.  Second, the ''race'' narrative feels like a cudgel to persuade the public or elected officials to move faster with rules and regulations, justify loose ones or expose people to unnecessary risks to ''win.''  The Wall Street Journal reported last week about concerns that the autonomous trucking company TuSimple was taking safety risks with people's lives ''in a rush to deliver driverless trucks to market.'' The Journal reported that a truck fitted with TuSimple technology veered suddenly on an Arizona interstate last spring and careered into a concrete barricade. TuSimple told The Journal that no one was hurt and that safety was its top priority.  Apple's autonomous test cars have smacked into curbs near the company's Bay Area headquarters, and earlier this year one nearly **crashed** into a jogger who had the right of way crossing the street, The Information reported last month.  Cars without drivers could eventually make our roads safer, but each of those incidents was a reminder of the threats that these companies pose as they work out the kinks in **self-driving** vehicles. Developing a streaming video app doesn't kill people.  ''We are letting these companies set the rules,'' Cade Metz, a New York Times reporter who writes about autonomous vehicle technology, told me.  Cade suggested a redefinition of the race narrative. Instead of trying to win at making driverless cars widespread, there could be a race to steer this technology in the public interest, he said.  Characterizing emerging technology as a ''race'' with China isn't great, either. There are advantages if an American company is the first to commercialize a new technology, but it's also dangerous to treat everything as a superpower competition.  In an interview last year with Kara Swisher, who at the time hosted a Times Opinion podcast, the 23andMe chief executive Anne Wojcicki lamented that the U.S. was ''behind'' China in an ''information war that's going on with respect to understanding the human genome.'' Then Swisher asked: ''Is this a war we want to win?''  Good question. If China is collecting mass amounts of people's DNA, does that mean the U.S. should do it, too?  Plus, putting this much focus on driverless cars also may crowd out alternative ideas for improving transportation.  Perhaps the race metaphor we need is from Aesop's fable of the hare and the tortoise. Slowly, steadily, sensibly, with a keen awareness of the benefits and drawbacks -- that is the way to win the **self-driving** car race. (But it's not a race.)  Are folding phones awesome or awful?  Samsung this week unveiled a new set of foldable phones that combine elements of smartphones and tablets. Brian X. Chen , the consumer technology columnist for The Times, brings us his likes and (mostly) dislikes of foldable phones:  Foldable cellphones are basically smartphones with a hinge to open and close like a book to expand the screen size. Samsung has been refining this technology for years, but I remain generally skeptical about it.  These were my impressions of the pros and cons of earlier models after testing them years ago (starting with the cons):  Cons  When folded up, foldable phones are thicker than a typical smartphone, which adds bulk in your pocket or hand.  The hinge mechanism has a finite life and will eventually need to be replaced. That means in addition to worrying about the eventual death of the battery, you'll need to worry about the hinge.  Though the concept sounds cool, unfolding a phone adds an extra step to unlocking the device and starting to use it. This gets tedious over time.  Pros  For some models, you get more screen than you would on a normal phone. That's pretty much it.  For a similar take: David Pierce, a writer for The Verge, wrote that folding phones seem like a great idea but are annoyingly compromised.  Before we go ...  It's the twilight of Silicon Valley boy bosses: My colleague Erin Griffith reported on why some founders of young technology companies are quitting. Surprise: It's not so fun to run a company when investor money is harder to come by, the economy is rocky, and cost-cutting is cooler than ''vision.'' (Bonus points for the sparkling unicorn illustration.)  Bad government technology is a symptom, not a cause, of dysfunction: The Washington Post has a delightful and infuriating photo essay showing the I.R.S.'s antiquated technology and clunky bureaucracy for processing tax returns. The cafeteria is just a sea of paper. (A subscription may be required.)  Hobby drones go to war: Drones used in combat zones are no longer only large, expensive weapons. Ukraine's military is also using hobbyist drones adapted in makeshift workshops to drop bombs and spot artillery targets, my colleague Andrew E. Kramer reported.  Hugs to this  NO ONE can resist doggy Martha with the pleading eyes.  We want to hear from you. Tell us what you think of this newsletter and what else you'd like us to explore. You can reach us at ontech@nytimes.com.  If you don't already get this newsletter in your inbox, please sign up here . You can also read past On Tech columns . |

4

|  |  |
| --- | --- |
| SE | Business/Financial Desk; SECTB |
| HD | California's D.M.V. Accuses **Tesla** of Falsely Advertising Its **Autopilot** System |
| BY | By Kalley Huang and Cade Metz |
| WC | 661 words |
| PD | 6 August 2022 |
| SN | The New York Times |
| SC | NYTF |
| ED | Late Edition - Final |
| PG | 4 |
| LA | English |
| CY | Copyright 2022 The New York Times Company. All Rights Reserved. |
| LP | A state agency said the electric carmaker had misled the public in describing its **driver-assistance** service as autonomous.  California's Department of Motor Vehicles has accused **Tesla** of falsely advertising its **driver-assistance** technology in two complaints that could affect the company's ability to sell cars in the state. |
| TD | The agency said **Tesla** had misled customers by claiming in advertisements that vehicles equipped with its **Autopilot** and Full **Self-Driving** Capability programs were autonomous. If the agency's complaints to the state's Office of Administrative Hearings succeed, **Tesla**'s licenses to make and sell vehicles in California could be suspended or revoked.  **Tesla** ''made or disseminated statements that are untrue or misleading, and not based on facts, in advertising vehicles as equipped, or potentially equipped, with advanced **driver assistance** system (ADAS) features,'' the agency said in its complaints, which were filed on July 28.  The Los Angeles Times reported earlier on the agency's complaints, which are separate from its review of **Tesla**'s vehicle designs and technological abilities.  **Tesla**'s chief executive, Elon Musk, and a company lawyer did not immediately respond to a request for comment on Friday evening.  In marketing materials on its website, **Tesla** said its **driver-assistance** technology was capable of conducting trips ''with no action required by the person in the driver's seat.'' Despite **Tesla**'s disclaimer that the programs ''require active driver supervision,'' the claim and others were false and misleading, the agency said.  Available since 2015, **Autopilot** is a system that can steer, brake and accelerate the company's cars on its own. But it is designed mainly for use on highways, and the company's documentation requires drivers to keep their hands on the wheel and take control of the car should the system **malfunction**.  Its name is borrowed from aviation systems that allow planes to fly themselves in ideal conditions with limited pilot input. With the current system, the car will disengage **Autopilot** if drivers do not consistently keep a hand on the wheel.  For an additional fee, which may be as high as $12,000, car owners can buy Full **Self-Driving**, a system that expands the abilities of **Autopilot**.  For the typical buyer, the added features are minimal. When they are used on city streets, for instance, the car will stop at a red light, but it will not progress after a green light unless the driver intervenes.  In May, Mr. Musk said about 100,000 Full **Self-Driving** buyers had access to a ''beta'' test version of the service that could navigate city streets more extensively -- while drivers continued to keep their hands on the wheel in case anything went wrong. He also said Full **Self-Driving** would be ''feature complete'' by the end of the year and available to about a million car owners.  At the end of 2015, the year **Autopilot** debuted, Mr. Musk began saying Teslas would drive themselves within two years. In the years since, he has repeatedly claimed that such an ability was just a year or two away.  ''There are just so many false dawns with **self-driving**,'' he said in May. ''You think you have a handle on the problem and then -- nope -- it turns out you just hit a ceiling.''  The National Highway Traffic Safety Administration, the country's leading auto safety regulator, is investigating **Autopilot** after becoming aware of 35 **crashes** involving the system, including nine that resulted in 14 deaths. Its investigation covers 830,000 vehicles sold in the United States and will look at Full **Self-Driving** as well as **Autopilot**.  **Tesla** has until next Friday to dispute or otherwise respond to the California Department of Motor Vehicles' accusations. |

5

|  |  |
| --- | --- |
| SE | Business/Financial Desk; SECTB |
| HD | The Hands-Off Tech Era Is Over |
| BY | By Shira Ovide |
| WC | 1006 words |
| PD | 20 June 2022 |
| SN | The New York Times |
| SC | NYTF |
| ED | Late Edition - Final |
| PG | 5 |
| LA | English |
| CY | Copyright 2022 The New York Times Company. All Rights Reserved. |
| LP | More government intervention will slow tech down. Is that good or bad?  It's clear more than ever that governments will no longer leave technology alone. |
| TD | Europe mandated standard phone chargers for portable electronics while Texas passed a contested law to restrain social media companies' policing of online speech. Tech companies can count on more changes like those as government minders wade into how they do business and how we use their products.  That most likely means new technologies like driverless cars and facial recognition systems will take longer to spread into the world than they might have. For many tech proponents, more deliberation and oversight will slow invention. For others, that's exactly the point.  I wanted to hash this over in today's newsletter because it's easy to be overwhelmed by (or tune out) all the attempted government regulation. In just the past few weeks, journalists have written about pending congressional bills involving data privacy and tech antitrust; the employment classification of drivers for companies like Uber; multiple countries setting standards about how data can and cannot move around the globe; the Netherlands forcing Apple to revise payment options for dating apps; and two state laws on social media speech.  Those are all the result of a still-evolving rethinking of what had been a relatively laissez-faire approach to tech since the 1990s. With exceptions, the prevailing attitude was that new internet technologies, including digital advertising, e-commerce, social media and ''gig'' employment through apps, were too novel, fringe and useful for governments to constrain them with many rules.  As television and radio did when those mediums were new, many tech companies encouraged light regulation by saying that they were bringing change for the better, elected officials were too plodding and clueless to effectively oversee them, and government intervention would muck up progress.  Just one example: A decade ago, Facebook said U.S. rules that require TV and radio to disclose who is paying for election-related ads shouldn't apply to that company. The U.S. election agency ''should not stand in the way of innovation,'' a Facebook lawyer said at the time.  Those ad disclosures aren't always effective, but after Russia-backed propagandists spread social media ads and free posts to inflame American political divisions in 2016, Facebook voluntarily started to provide more transparency about political ads.  Better laws or ad disclosures probably wouldn't have prevented hostile foreign actors from abusing Facebook to wage information wars in the U.S. or other countries. But the hands-off conventional wisdom most likely contributed to a sense that people in charge of tech should be left alone to do what they wished.  That made it harder for governments to wade in once it was clear that social media was being abused to hurt democracy, that unproven **driver-assistance** technologies might be dangerous, and that Americans have no control in the land grab for our digital information.  ''We realized that we unleashed these powerful forces and **failed** to create appropriate safeguards,'' said Jeff Chester, the executive director of the Center for Digital Democracy, a nonprofit consumer advocacy group. ''We simply could have said in the beginning, every technology needs to be regulated in a common-sense way.''  Now regulators are feeling empowered. Lawmakers have waded in to make rules for law enforcement's use of facial recognition technology. There will be more laws like those in Texas to take power away from the handful of tech executives who set rules of free expression for billions of people. More countries will force Apple and Google to remake the app economy. More regulation is already changing the ways that children use technology.  Again, not all of this will be good government intervention. But there are more signs that people who create technologies want more government oversight, too -- or at least pay lip service to it. Any discussion about emerging technology, including the artificial intelligence illustration software Dall-E and cryptocurrency, regularly includes deliberation about the potential harms and how regulation might minimize them.  That doesn't mean that people agree on what government oversight should look like. But the answer is almost never no government intervention at all. And that's different.  If you don't already get this newsletter in your inbox, please sign up here .  Before we go ...  Over 10 months, nearly 400 car **crashes** in the U.S. involved advanced **driver-assistance** technologies, according to federal data reported by my colleagues Neal Boudette and Cade Metz. As I wrote above, federal regulators are trying to better understand the real-world safety of technologies such as **Tesla**'s **Autopilot** as they become more commonplace.  What got lost in the debate over A.I. and human intelligence: A Google employee's fear that a piece of artificial intelligence software had acquired consciousness -- it didn't -- distracted from pressing concerns about A.I., including bias built into the technology and all the humans required for supposedly automated systems, Bloomberg News wrote. (A subscription may be required.)  The sports streaming scramble: Apple paid $2.5 billion for the right to broadcast matches from Major League Soccer in the TV app for Apple devices, the Athletic reported. In India, two companies will pay $3 billion to stream cricket matches. These deals are another sign that companies are betting on sports to persuade people to pay for video streaming services.  Hugs to this  I will watch every single video of a kitty playing poker, like this one.  We want to hear from you. Tell us what you think of this newsletter and what else you'd like us to explore. You can reach us at ontech@nytimes.com.  If you don't already get this newsletter in your inbox, please sign up here . You can also read past On Tech columns .  This essay was adapted from the On Tech newsletter, delivered every weekday. To sign up, go to nytimes.com/newsletters. |

6

|  |  |
| --- | --- |
| SE | Business/Financial Desk; SECTB |
| HD | **Tesla** Delivered 87% More Cars in 2021, or 936,000 |
| BY | By Neal E. Boudette |
| WC | 825 words |
| PD | 3 January 2022 |
| SN | The New York Times |
| SC | NYTF |
| ED | Late Edition - Final |
| PG | 2 |
| LA | English |
| CY | Copyright 2022 The New York Times Company. All Rights Reserved. |
| LP | The electric-car maker managed substantial growth as Europe and China increasingly propelled sales.  **Tesla** reported Sunday that it delivered 936,000 cars in 2021, an 87 percent increase from the year before, despite the computer chip shortage that has disrupted auto production around the world. |
| TD | In the fourth quarter alone, the company delivered more than 308,000 vehicles, a 71 percent increase from the quarter a year earlier. The overwhelming share of the deliveries were of the Model 3 sedan and the Model Y hatchback. Wall Street analysts had been expecting deliveries of about 266,000 cars in the fourth quarter, and about 855,000 for the year.  ''The numbers are hard to poke holes in,'' Daniel Ives, an analyst at Wedbush Securities, wrote in a note to investors. ''While there are many competitors in the E.V. space, **Tesla** continues to dominate market share as evidenced again this quarter.''  **Tesla** increased sales despite a global shortage of computer chips, which serve as the brains for a variety of electronics, including engine controllers and touch screens. The shortage forced most automakers to idle some plants for weeks at a time and kept them from producing as many vehicles as they had planned.  In July, **Tesla**'s chief executive, Elon Musk, said his company was overcoming the shortage by switching to types of chips that were more readily available and writing new instructions, or firmware, to be embedded into the chip. **Tesla** can make such a switch because the components in its cars are designed to be controlled largely by software.  **Tesla** does not break out its deliveries by country. Much of its recent growth has been propelled by sales in Europe and China.  The jump in deliveries capped a momentous year in which **Tesla**'s stock price and profits soared. It has also worked to open factories near Austin, Texas, as well as Berlin, in hopes of sustaining its rapid growth.  In October, **Tesla**'s market value for the first time exceeded $1 trillion, making it more valuable than General Motors, Ford Motor, Toyota, Volkswagen, Stellantis, BMW and several other automakers combined.  On Friday, **Tesla**'s stock closed at $1,056.78, up from just under $700 at the end of 2020. The stock's rise was fueled by increasing sales and profits. In the third quarter, the company earned $1.6 billion, more than double its earnings in all of 2020, its first profitable year.  With shares at dizzying heights, Mr. Musk began selling large chunks of his stock, partly to cover taxes, after taking a poll among his followers on Twitter. Several times he said he was done selling but continued.  In total, Mr. Musk sold more than $16 billion worth of **Tesla** stock. The transactions involved the exercising of 22.8 million options awarded to Mr. Musk as part of his compensation and bonus packages.  **Tesla** has said it hopes deliveries will increase about 50 percent a year for the next several years, and is counting on output from its Austin and Berlin factories to reach its goal. Both factories are expected to begin producing Model Y hatchbacks soon.  At the same time, **Tesla**'s product quality has remained uneven. On Thursday, the company told federal regulators that it planned to recall more than 475,000 cars for two separate defects that could affect safety -- a misaligned latch on the front hood, which could allow the hood to open unexpectedly, and wiring to the rearview camera that can be damaged by opening and closing the trunk. A day later, vehicles in China were recalled as well.  In addition, the company and its **Autopilot driver-assistance** system have come under closer scrutiny by safety regulators in the United States. Teslas have been involved in a series of **crashes** with other vehicles, including some that resulted in fatalities, while the **Autopilot** system was engaged.  The company continues to promote its **Autopilot** system, which can take over some of the steering, braking and accelerating tasks from drivers, and a more advanced set of features, Full **Self Driving**, that it offers for $10,000 but has so far allowed only a select group of customers to test.  In August, the National Highway Traffic Safety Administration opened a formal investigation into how **Autopilot** recognizes objects on the road. It is specifically looking into 11 instances when Teslas **crashed** into emergency vehicles that had stopped on highways and had their lights flashing.  The agency is also looking at more than two dozen other **crashes** involving Teslas that were under **Autopilot** control. Eight of those **crashes** have resulted in a total of 10 deaths since the first occurred in 2016. |

7

|  |  |
| --- | --- |
| SE | Business/Financial Desk; SECTB |
| HD | Video Games In **Tesla** Cars Are Raising Safety Fears |
| BY | By Neal E. Boudette |
| WC | 1198 words |
| PD | 9 December 2021 |
| SN | The New York Times |
| SC | NYTF |
| ED | Late Edition - Final |
| PG | 1 |
| LA | English |
| CY | Copyright 2021 The New York Times Company. All Rights Reserved. |
| LP | Not long after buying a **Tesla** Model 3 this summer, Vince Patton saw a YouTube clip highlighting a feature that took him by surprise: three video games that can be played on the large touch screen mounted in front of the dashboard -- while driving down the road.  ''I thought surely that can't be right,'' Mr. Patton, a retiree in Lake Oswego, Ore. |
| TD | But in a parking lot, he gave it a try, and he was able to play a solitaire game on the Model 3 while in motion. ''I only did it for like five seconds and then turned it off,'' he said. ''I'm astonished. To me, it just seems inherently dangerous.''  The automaker added the games in an over-the-air software update that was sent to most of its cars this summer. They can be played by a driver or by a passenger in full view of the driver, raising fresh questions about whether **Tesla** is compromising safety as it rushes to add new technologies and features in its cars.  ''It's a big concern if it plays in view of the driver, for sure,'' said Jonathan Adkins, executive director of the Governors Highway Safety Association, which coordinates state efforts to promote safe driving.  **Tesla**'s **Autopilot** system, which can steer, slow and accelerate a car on its own, has for several years faced criticism from safety experts because it allows drivers to take their hands off the steering wheel for extended periods, even though they are not supposed to. And it lacks an effective means of ensuring that drivers keep their eyes on the road.  The combination of hands-free driving and drivers' looking away from the road has been connected to at least 12 traffic deaths since 2016 in **Tesla** cars that were operating in **Autopilot** mode, according to the National Highway Traffic Safety Administration. Mr. Adkins said the addition of video games ''is crying out for NHTSA to provide some guidance and regulation.''  After this article was published online, the safety agency said on Wednesday that it was looking into the video game feature and was discussing it with **Tesla**.  **Tesla** and its chief executive, Elon Musk, did not respond to several emails asking about the new video games and whether they could jeopardize safety.  Distracted driving is a major cause of the rising number of traffic deaths in the United States. In the first six months of this year, 20,160 people died in traffic **crashes**, according to estimates from the Department of Transportation. That was up 18.4 percent from the first half of 2020, and the highest total since 2006.  Driver inattention is officially cited as the cause of about 10 percent of traffic deaths, said Steve Kiefer, a senior General Motors executive who also heads a foundation dedicated to combating distracted driving. But he and other safety experts believe the actual figure is much higher because, they say, **crash** investigations often overlook distraction while naming other causes, such as reckless driving.  ''I think the number's closer to 50 percent,'' Mr. Kiefer said.  The Kiefer Foundation is dedicated to his son, Mitchel, who was killed at age 18 in 2016 when a distracted driver rear-ended his car on a highway in Michigan.  Distracted driving stems from activities that take drivers' hands from the steering wheel, draw their eyes away from the road or divert their attention from the driving task. It is often linked to smartphone use, such as texting or emailing while at the wheel, but drivers sometimes read books or put on makeup. Some states outlaw the hand-held use of cellphones while driving. Automakers, Apple and Google have developed in-car software to make it easier to use voice commands to send text messages and place phone calls, keeping hands free, while on the go.  Automakers have also added mechanisms to reduce potential distraction from front-seat screens. Stellantis -- formerly Fiat Chrysler -- offers an entertainment system that can play DVDs on a front screen, but it goes dark if the car is shifted out of park. Many navigation systems do not allow addresses to be entered manually while a car is in motion. Mazda vehicles prohibit most use of the dashboard screen while in motion.  G.M.'s Super Cruise system, which can steer and brake and allows drivers to take their hands off the steering wheel, has an infrared camera to track the driver's eyes. If they stray from the road, Super Cruise issues a warning, or shuts off and hands control back to the driver.  ''We feel that with driver monitoring and eye monitoring, these features can be enacted quite safely,'' said Mr. Kiefer, who heads G.M.'s international operations.  Some **Tesla** cars have simpler cameras that look at a driver's face, but the cameras detect less in the dark and do not precisely track eye gaze. Four years ago, after investigating a fatal **Autopilot crash**, the National Transportation Safety Board recommended that **Tesla** add an infrared camera to improve driver monitoring, but the company has not done so.  ''It's incredibly frustrating,'' said Jennifer Homendy, the safety board's chair. ''We're trying to warn the public and tell **Tesla**, 'Hey, you need to put some safeguards in.' But they haven't.''  The safety board investigates transportation **accidents** and can recommend measures to improve safety but has no power to force companies to take action. NHTSA serves that role.  NHTSA has issued guidelines telling automakers that any in-vehicle entertainment devices should be designed so the driver cannot use them ''to perform inherently distracting secondary tasks while driving.''  Until this summer, video games in **Tesla**'s software package -- there were more than a dozen -- could be played only while a car was in park. That changed when the 2021.12.25.6 update was beamed to **Tesla** vehicles. It added solitaire; a jet fighter game, Sky Force Reloaded; and The Battle of Polytopia: Moonrise, a conquest strategy game. Mr. Patton said that he was able to get access to all three with his car in drive, and that he had filed a complaint with NHTSA through its website.  In a warning that appears before the game starts, **Tesla** signals its awareness that solitaire can be played while the car is moving: ''Solitaire is a game for everyone, but playing while the car is in motion is only for passengers.'' A button asks for confirmation that the player is a passenger, but a driver can play simply by touching it.  In a second YouTube video, another **Tesla** owner also shows how the game can be played while the car is in drive. ''This is pretty dangerous,'' the owner says in the video. ''I'm sure somebody's going to use **Autopilot** and then play solitaire while they're on **Autopilot**. Take note of that, **Tesla**.'' |

8

|  |  |
| --- | --- |
| SE | Business/Financial Desk; SECTB |
| HD | **Tesla**'s Profit and Revenue Surge With Jump in Electric Car Sales |
| BY | By Neal E. Boudette |
| WC | 852 words |
| PD | 21 October 2021 |
| SN | The New York Times |
| SC | NYTF |
| ED | Late Edition - Final |
| PG | 3 |
| LA | English |
| CY | Copyright 2021 The New York Times Company. All Rights Reserved. |
| LP | The automaker also reported a big jump in revenue, to $13.8 billion from $8.8 billion a year ago, as sales of the Model Y continue to rise.  **Tesla** made $1.6 billion in the three months ending in September, the second quarter in a row that its profit has exceeded the billion-dollar mark. |
| TD | The bottom-line figure exceeded the $1.1 billion it made in the second quarter and was nearly five times its profit from the third quarter of 2020.  The automaker reported a big jump in revenue, to $13.8 billion from $8.8 billion a year ago, as sales of the Model Y continued to rise in the United States, China and Europe. The company delivered 241,000 cars to customers in the quarter, up from 140,000 a year ago.  Electric vehicle ''demand continues to go through a structural shift,'' the company said in a statement. ''We believe the more vehicles we have on the road, the more **Tesla** owners are able to spread the word about the benefits of E.V.s.''  **Tesla** repeated a previous forecast that sales would grow about 50 percent per year on average for the next few years, but the company cautioned that ''semiconductor shortages, congestion at ports and rolling blackouts have been impacting our ability to keep factories running at full speed.''  The company said it expected to begin production of the Model Y at new factories near Berlin and Austin, Texas, before the end of the year. ''The pace of the respective production ramps will be influenced by the successful introduction of many new product and manufacturing technologies in new locations, ongoing supply chain-related challenges and regional permitting,'' **Tesla** said.  In an important shift, the company said it would start using lithium iron phosphate batteries for all but its long-range cars. Those types of batteries, which are popular in China, tend to be cheaper because they do not use cobalt, an expensive mineral that is primarily mined in the Democratic Republic of Congo. Lithium iron phosphate batteries can store less energy than the lithium ion batteries that **Tesla** had been using in most of its cars.  A portion of **Tesla**'s profit comes from selling regulatory credits to automakers that need them to meet emission standards. **Tesla** reported $279 million in sales of such credits in the third quarter, compared with $397 million in the third quarter of 2020.  The strong earnings report indicates consumers are still flocking to **Tesla** even as the company faces questions about the safety of its **Autopilot** driver-assist system and as established automakers roll out electric cars and trucks.  **Autopilot**, a computerized system that uses cameras and other sensors to steer, brake and accelerate cars on its own, is the subject of an investigation by the National Highway Traffic Safety Administration, the top federal auto-safety regulator. The agency is looking into whether **Autopilot fails** to see parked police cars and other emergency vehicles with flashing lights. The agency has identified 12 **accidents** in which Teslas operating in **Autopilot** mode **crashed** into emergency vehicles.  **Tesla** recently sent a software update to **Autopilot**-equipped cars that was supposed to improve detection of emergency vehicles. The traffic safety agency asked **Tesla** to provide extensive data about the fix and to explain why it did not initiate a safety recall before distributing the update.  The traffic safety agency had come under criticism for a lax approach to regulating new technologies like **Autopilot** and **self-driving** cars. On Tuesday, the Biden administration appointed Mary Cummings, a Duke University expert in **self-driving** technology, to a senior auto-safety post at the federal agency, signaling that **Tesla** may now face tougher scrutiny.  Ms. Cummings has criticized **Autopilot**, noting the system does not effectively monitor drivers to make sure they are paying attention to the road. In a message posted on Twitter, **Tesla**'s chief executive, Elon Musk, said on Tuesday that Ms. Cummings was ''extremely biased'' against **Tesla**.  **Tesla** does not appear to have lost many customers to competitors. Ford Motor began selling its Mustang Mach-E, an electric sport-utility vehicle, but its sales have been modest by the standards of the Model Y because the global shortage of computer chips has disrupted production for most auto manufacturers. Rivian, a start-up considered a potential rival to **Tesla**, has started producing an electric pickup truck, but so far it has only delivered a small number to customers; the company won't say how many.  Porsche, the German automaker owned by the Volkswagen Group, has made inroads against **Tesla** with its Taycan electric sports car. In the first three quarters of this year, Porsche has sold more than 28,000 Taycans, which starts at about $82,000, about as much as a **Tesla** Model S or Model X costs. By comparison, **Tesla** sold 13,000 S and X vehicles. |

9

|  |  |
| --- | --- |
| SE | Business/Financial Desk; SECTB |
| HD | Does the Route To Driverless Cars Start in Germany? |
| BY | By Jack Ewing |
| WC | 1254 words |
| PD | 14 July 2021 |
| SN | The New York Times |
| SC | NYTF |
| ED | Late Edition - Final |
| PG | 1 |
| LA | English |
| CY | Copyright 2021 The New York Times Company. All Rights Reserved. |
| LP | A new law allows autonomous vehicles in everyday use and provides legal consistency lacking in the United States.  FRANKFURT -- In Hamburg, a fleet of electric Volkswagen vans owned by a ride-hailing service roams the streets picking up and dropping off passengers. The vehicles steer themselves, but technicians working from a remote control center keep an eye on their progress with the help of video monitors. If anything goes wrong, they can take control of the vehicle and steer it out of trouble. |
| TD | This futuristic vision, within reach of current technology, is about to become legal in Germany. The Parliament in Berlin approved a new law on autonomous driving in May, and it awaits the signature of Germany's president, a formality. The law opens a path for companies to start making money from autonomous driving services, which could also spur development.  With its requirement that autonomous vehicles be overseen by humans, the German law reflects a realization in the industry that researchers are still years away from cars that can safely allow the driver to disengage while the car does all the work. The law also requires that autonomous vehicles operate in a defined space approved by the authorities, an acknowledgment that the technology is not advanced enough to work safely in areas where traffic is chaotic and unpredictable.  So German companies that are pursuing the technology have adjusted their ambitions, focusing on moneymaking uses that don't require major breakthroughs.  Germany's nationwide approach contrasts with the patchwork of state laws in the United States. The U.S. government has issued guidelines for autonomous driving, but attempts to establish mandatory rules that would apply in all 50 states have foundered in Congress amid disagreement among automakers and autonomous driving developers about what the legislation should say.  Some states have encouraged autonomous driving research; Arizona allows Waymo, for example, to offer driverless taxis in Phoenix. But it's not yet possible to roll out such services nationwide, achieving the kind of scale that would help make them profitable.  ''Germany is unique in the sense that you now have a law that pertains to the entire country,'' said Elliot Katz, the chief business officer of Phantom Auto, a California company that provides software to monitor and control vehicles remotely. ''In the U.S., we do not have any overarching federal autonomous driving regulation. We have state laws, which is problematic because driving is inherently interstate.''  The German legislation could also give the country's automakers an edge in the race to design cars that can drive themselves. By deploying autonomous vehicles commercially, they will gather large amounts of data they can use to advance the technology. If the services are profitable, they will also help pay for further development.  ''There are two major topics for the German car manufacturers: the change to electric cars and autonomous driving,'' said Moritz Hüsch, a partner at the Covington law firm in Frankfurt who has followed the legislation. ''The German car manufacturers are one of our crown jewels. They are really keen to get at the forefront of both topics.''  The law permits autonomous vehicles that remain within a defined territory and are overseen by trained technicians. Crucially, it allows the monitors to keep tabs on numerous vehicles remotely. That means a person or team could supervise a fleet of autonomous shuttle vans or **self-driving** taxis by video from a command center, eliminating the need for a supervisor in every vehicle. In case of trouble, a technician would be able to take control of the vehicle from afar.  Proponents say the law will allow autonomous buses to serve rural areas where public transportation is scarce. Other services might include automated valet parking or robot package delivery. Autonomous vehicles could be used to transport components or workers around a factory complex or students around a university.  Vehicles already exist that can navigate a predictable course, such as from an airport parking lot to a departure terminal, but existing German law requires a human to be on board, which cancels out any cost savings from eliminating the driver.  If a driver can oversee a dozen buses from a command center, ''there are use cases that would now be attractive,'' said Peter Liggesmeyer, director of the Fraunhofer Institute for Experimental Software Engineering in Kaiserslautern. That will encourage more development, he said.  In technical jargon, the new law allows Level 4 autonomous driving, in which a vehicle can steer and navigate by itself most of the time but may occasionally require human intervention. That is one step away from the autonomous driving nirvana of cars that can operate without any human help.  Volkswagen, for example, has been testing a ride-sharing service in Hamburg and Hanover called Moia. The new law makes it easier for Volkswagen to achieve its goal of converting Moia's electric vans to autonomous operation by 2025, though further changes in the country's public transport law may also be needed.  ''The use of **self-driving** vehicles in Germany is now possible,'' said Christian Senger, a senior vice president at Volkswagen's commercial vehicles division responsible for autonomous driving, in a statement. ''That is something that not only Volkswagen but all market participants have been waiting for.''  Technology companies like Waymo or carmakers like Toyota have invested billions of dollars in autonomous driving technology, but have yet to see much return on their investment. Uber sold its **self-driving** unit last year after investing more than $1 billion. Fatal **crashes** involving **Tesla**'s **Autopilot** software have raised questions about the technology's shortcomings.  Whether a uniform legal framework will give German companies a decisive edge over American companies is another question. That was the intent.  ''Germany can be the first country in the world to bring vehicles without drivers from the laboratory into everyday use,'' Arno Klare, a Social Democratic member of Parliament, said during debate about the law in Berlin.  In the United States, as soon as an autonomous vehicle tries to cross states lines, things get complicated. California, Arizona, Michigan and Pennsylvania are considered leaders in providing legal parameters for autonomous driving technology. But 10 states, including New Jersey, Rhode Island and Maryland, have not enacted laws or issued executive orders governing autonomous driving, according to the National Conference of State Legislators. Rules in other states have not followed a consistent template.  Raj Rajkumar, who leads the autonomous driving program at Carnegie Mellon University in Pittsburgh, which has produced many of the leading scientists in the field, said the new legislation would give German companies an advantage. But he said he was concerned that the United States and Europe were both at risk of falling behind China in technology and regulations.  ''There is an international arms race between the U.S., Europe and China,'' said Mr. Rajkumar, who estimates that fully autonomous vehicles are still a decade away. ''China is an authoritarian country. They can pass any rules they want overnight.'' |

10

|  |  |
| --- | --- |
| SE | Business/Financial Desk; SECTB |
| HD | Britain Gets Set For Race To Space |
| BY | By Stanley Reed |
| WC | 1647 words |
| PD | 13 October 2020 |
| SN | The New York Times |
| SC | NYTF |
| ED | Late Edition - Final |
| PG | 1 |
| LA | English |
| CY | Copyright 2020 The New York Times Company. All Rights Reserved. |
| LP | Cornwall, in England's far southwest, is known for antique fishing villages and snug, cliff-lined beaches. Soon it may be the scene of something very different: a small but growing space industry.  One day in a year or two, a modified Boeing 747 is expected to lift off from the long runway at the region's airport, head out over the Atlantic Ocean and soar into the stratosphere. There, a rocket will drop from below a wing, fire its engines and ferry a load of small satellites into orbit, while the plane returns to the airport. |
| TD | After six years of planning and fund-raising, construction of a bare-bones spaceport, budgeted at about 22 million pounds ($28 million), is beginning this month at the airport in Newquay.  The anchor tenant is expected to be Virgin Orbit, a part of Richard Branson's Virgin universe. Its selling point: Putting satellites into orbit via aircraft can be done faster and with less infrastructure than earthbound rockets. It plans to bring its 747 (called the Cosmic Girl) and other gear being tested in the Mojave Desert to Britain with the help of £7.35 million from the U.K. Space Agency .  ''At the beginning, people laughed at us,'' said Melissa Thorpe, head of engagement for Spaceport Cornwall, the developer. ''It took a lot of work to convince a lot of people.''  Among the better arguments: The spaceport, which is owned by the local government, could eventually provide 150 good jobs in what, despite its charm, is a region dependent on low-paid, seasonal work from tourism.  Britain is doubling down on the always risky space business after, some would say, years of neglect. Besides Cornwall, the government is putting money behind several other potential launch sites, including one on the remote north coast of Scotland, which is being tailored for an environmentally friendly rocket to be manufactured nearby.  This is all new for a country that does not have a deep history of rocketry or launching satellites into space. The case for spaceports in Britain is far from proven. In fact, some analysts say there are already too many such facilities, including in the United States.  The first -- and, to date, only -- British-made satellite-bearing rocket was launched from Woomera in Australia in 1971. That program, called Black Arrow, was scrapped after four launches for not being cost effective.  ''You do have to pinch yourself that the U.K is within a few years of launching satellites,'' said Doug Millard, space curator at the Science Museum in London . ''That is something that never would have been considered not so long ago.''  A big reason for the turnaround is Brexit. The decision to pull away from the European Union has heightened awareness that Britain, which has largely relied on European and American space programs for services like satellite navigation, would be at risk without its own space infrastructure. This year the space agency's budget was bumped up 10 percent to £556 million (still a small fraction of NASA 's $22 billion).  Brexit has provided ''a real stimulus to get us to think about what we actually need as a country in space,'' said Graham Turnock, chief executive of the U.K. Space Agency, in an interview.  But the decision to look skyward also coincides with the growing commercial use of space around the world, promoted by deep-pocketed investors like Elon Musk , Jeff Bezos and Mr. Branson, but also pushed along by a range of less prominent entrepreneurs and businesses.  Key has been the emergence of much smaller and cheaper satellites, some the size of a shoe box and costing a relatively small $1 million or less. Some are used for observation, such as measuring how much oil is stored in a tank farm, valuable data for energy investors. Others are planned to provide internet connectivity on earth and a key link in the burgeoning internet of things, essential for **self-driving** cars and smart kitchens.  ''We are right at the beginning of this journey,'' said Mark Boggett, chief executive of London-based Seraphim Capital, which is managing a $90 million space fund.  The government of Prime Minister Boris Johnson put its own chips on such efforts by agreeing in July to spend £500 million to acquire 45 percent of OneWeb, a satellite operator.  OneWeb filed for bankruptcy this year, but is involved in the hottest area of the satellite industry: the creation of so-called constellations, blizzards of coordinated satellites in low orbit, designed to provide blanket coverage for purposes like extending the internet to remote regions.  OneWeb is building its satellites at a factory co-owned by Airbus in Florida. The hope in the British government and space community is that OneWeb will build a future generation of satellites in Britain.  Over all, the government is trying to support activity in what is known as ''new space,'' a more agile and commercial approach to an industry traditionally dominated by government and military programs.  ''OneWeb, and what we are doing on launch, is all about taking a really big role in that new economy,'' Mr. Turnock said.  While Britain has participated in prestigious space activities like making a Mars rover for an upcoming European-Russian mission, it has catching up to do. Still, space experts say the direction the industry is moving could play to its advantage.  The launch vehicles that Britain is trying to nurture would be suited for smaller satellites that operate in low-Earth orbit, around 800 miles up, compared with about 22,000 miles for telecommunications giants that sometimes cost hundreds of millions of dollars.  Smaller satellites also have much shorter life spans than the larger ones, implying the need for more of them, and more launches. Virgin Orbit says it plans to charge $12 million to take a nearly 700-pound payload of satellites into space.  Having nearby launch sites will fill a need for companies like In-Space Missions, a space service firm in Hampshire, outside London. Doug Liddle, the chief executive, said the company went all the way to New Zealand to launch a satellite this year, only to lose it when the rocket **failed**.  The new space economy is also more affordable for medium-size countries like Britain. ''The small-satellite approach now means we are not going to spend our entire national budget on our space program,'' said Martin Sweeting , a founder and executive chairman of a British university spinoff called Surrey Satellite Technology , a pioneer in small satellites.  Space is also becoming far more accessible to start-ups like Open Cosmos, which offers to build satellites and arrange their launch and early operation at a cost of $10 million or less. The company is one of many technology businesses clustered in Harwell, a community near the University of Oxford .  Among the neighbors are clients like Lacuna Space, which plans to deploy satellites for a range of uses like tracking cattle on vast Latin American ranches, and potential suppliers like Oxford Space Systems, which builds satellite-mounted antennas that unfurl once in orbit to send data to ground receivers.  ''It is a small ecosystem; everybody knows each other,'' said Rafel Jordá Siquier, the 31-year-old founder of Open Cosmos.  But not all the companies are start-ups. Airbus , the giant French maker of commercial aircraft, is also a major manufacturer of satellites and employs 3,500 people doing space work in Britain.  The company had been nervous about Brexit's implications for those operations, but the government's move into OneWeb offered some reassurance.  ''The investment in OneWeb and focus of the U.K. on space is actually making Airbus go, 'Look, the U.K. is a really good place to invest,''' said Richard Franklin, head of space and defense for Britain at Airbus .  That said, Britain's ambitions face large unknowns and risks.  The launch technologies it is counting on are unproven. Virgin Orbit's first test this year in the United States sputtered when the main rocket engine shut down. And the coronavirus pandemic has put huge financial strain on Mr. Branson's empire, including the flagship, Virgin Atlantic . To help bolster the finances of the airline and other companies, the entrepreneur sold around $500 million of shares in Virgin Galactic, a space tourism business.  But Will Pomerantz, Virgin Orbit's vice president for special projects, said the 747 would come to Cornwall ''when they are ready and they need us.''  The satellite market is also both competitive and turbulent. **Tesla**'s founder, Elon Musk , whose SpaceX has carried U.S. astronauts to the International Space Station and returned them safely to Earth, is building his own mega constellation satellite system, Starlink. Other technology companies are likely to follow, while many countries can now build satellites.  ''One of the beautiful things about small sats is that anyone can make one,'' said Alexandre Najjar, senior consultant at Euroconsult, a market research firm.  Still, Britain's space entrepreneurs say having a launchpad near home might give them an edge.  ''If we can get in a van and drive our spacecraft up to Scotland or Cornwall, the whole process becomes much more straightforward,'' said Mr. Liddle, the satellite builder. |
| ART | Britain is doubling down on the always risky space business after, some would say, years of neglect. The country does not have a deep history of rocketry or other space ventures. (B1); ''It took a lot of work to convince a lot of people,'' said Melissa Thorpe of Spaceport Cornwall, left. In Cornwall, below left, the spaceport is projected to eventually provide 150 good jobs. A satellite antenna under construction, below right, at Oxford Space Systems, one of several space-oriented businesses in Harwell, England. (PHOTOGRAPHS BY FRANCESCA JONES FOR THE NEW YORK TIMES) (B4) |
| CO | bnspce : UK Space Agency |
| IN | i3640045 : Satellites | iaer : Aerospace/Defense | i364 : Aerospace Products/Parts | iindstrls : Industrial Goods |
| NS | gspace : Space Exploration/Travel | gmora : Motor Racing | reqrad : Suggested Reading Aerospace/Defense | gcat : Political/General News | gmoto : Motor Sports | gspo : Sports | ncat : Content Types | nfact : Factiva Filters | nfce : C&E Exclusion Filter | nrgn : Routine General News | redit : Selection of Top Stories/Trends/Analysis | reqr : Suggested Reading Industry News |
| RE | uk : United Kingdom | eland : England | eurz : Europe | weurz : Western Europe |
| IPD | Business/Financial Desk |
| PUB | The New York Times Company |
| AN | Document NYTF000020201013egad0002t |

|  |  |
| --- | --- |
|  |  |
|  |  |

|  |  |
| --- | --- |
| \*\*7\*  SE | Magazine Desk; SECTMM |
| HD | Elon Musk's Collision Course |
| BY | By Christopher Cox |
| WC | 7464 words |
| PD | 22 January 2023 |
| SN | The New York Times |
| SC | NYTF |
| ED | Late Edition - Final |
| PG | 26 |
| LA | English |
| CY | Copyright 2023 The New York Times Company. All Rights Reserved. |
| LP | To hear more audio stories from publications like The New York Times, download Audm for iPhone or Android .  Early on, the software had the regrettable habit of hitting police cruisers. No one knew why, though **Tesla**'s engineers had some good guesses: Stationary objects and flashing lights seemed to trick the A.I. The car would be driving along normally, the computer well in control, and suddenly it would veer to the right or left and -- smash -- at least 10 times in just over three years. |
| TD | For a company that depended on an unbounded sense of optimism among investors to maintain its high stock price -- **Tesla** was at one point worth more than Toyota, Honda, Volkswagen, Mercedes, BMW, Ford and General Motors combined -- these **crashes** might seem like a problem. But to Elon Musk, **Tesla**'s chief executive, they presented an opportunity. Each collision generated data, and with enough data, the company could speed the development of the world's first truly **self-driving** car. He believed in this vision so strongly that it led him to make wild predictions: ''My guess as to when we would think it is safe for somebody to essentially fall asleep and wake up at their destination: probably toward the end of next year,'' Musk said in 2019. ''I would say I am certain of that. That is not a question mark.''  The future of **Tesla** may rest on whether drivers knew that they were engaged in this data-gathering experiment, and if so, whether their appetite for risk matched Musk's. I wanted to hear from the victims of some of the more minor **accidents**, but they tended to fall into two categories, neither of which predisposed them to talk: They either loved **Tesla** and Musk and didn't want to say anything negative to the press, or they were suing the company and remaining silent on the advice of counsel. (Umair Ali, whose **Tesla** steered into a highway barrier in 2017, had a different excuse: ''Put me down as declined interview because I don't want to piss off the richest man in the world.'')  Then I found Dave Key. On May 29, 2018, Key's 2015 **Tesla** Model S was driving him home from the dentist in **Autopilot** mode. It was a route that Key had followed countless times before: a two-lane highway leading up into the hills above Laguna Beach, Calif. But on this trip, while Key was distracted, the car drifted out of its lane and slammed into the back of a parked police S.U.V., spinning the car around and pushing the S.U.V. up onto the sidewalk. No one was hurt.  Key, a 69-year-old former software entrepreneur, took a dispassionate, engineer's-eye view of his own **accident**. ''The problem with stationary objects -- I'm sorry, this sounds stupid -- is that they don't move,'' he said. For years, **Tesla**'s artificial intelligence had trouble separating immobile objects from the background. Rather than feeling frustrated that the computer hadn't figured out such a seemingly elementary problem, Key took comfort in learning that there was a reason behind the **crash**: a known software limitation, rather than some kind of black-swan event.  Last fall, I asked Key to visit the scene of the **accident** with me. He said he would do me one better; he would take me there using **Tesla**'s new Full **Self-Driving** mode, which was still in beta. I told Key that I was surprised he was still driving a **Tesla**, much less paying extra -- F.S.D. now costs $15,000 -- for new autonomous features. If my car had tried to kill me, I would have switched brands. But in the months and years after his Model S was totaled, he bought three more.  We met for breakfast at a cafe in Laguna Beach, about three miles from the **crash** site. Key was wearing a black V-neck T-shirt, khaki shorts and sandals: Southern California semiretirement chic. As we walked to our table, he locked the doors of his red 2022 Model S, and the side mirrors folded up like a dog's ears when it's being petted.  Key had brought along a four-page memo he drafted for our interview, listing facts about the **accident**, organized under subheadings like ''**Tesla** Full **Self-Driving** Technology (Discussion).'' He's the sort of man who walks around with a battery of fully formed opinions on life's most important subjects -- computers, software, exercise, money -- and a willingness to share them. He was particularly concerned that I understand that **Autopilot** and F.S.D. were saving lives: ''The data shows that their **accident** rate while on Beta is far less than other cars,'' one bullet point read, in 11-point Calibri. ''Slowing down the F.S.D. Beta will result in more **accidents** and loss of life based on hard statistical data.''  **Accidents** like his -- and even the deadly ones -- are unfortunate, he argued, but they couldn't distract society from the larger goal of widespread adoption of autonomous vehicles. Key drew an analogy to the coronavirus vaccines, which prevented hundreds of thousands of deaths but also caused rare deaths and injuries from adverse reactions. ''As a society,'' he concluded, ''we choose the path to save the most lives.''  We finished breakfast and walked to the car. Key had hoped to show off the newest version of F.S.D., but his system hadn't updated yet. ''Elon said it would be released at the end of the week,'' he said. ''Well, it's Sunday.'' Musk had been hinting for weeks that the update would be a drastic improvement over F.S.D. 10.13, which had been released over the summer. Because Musk liked to make little jokes out of the names and numbers in his life, the version number would jump to 10.69 with this release. (The four available **Tesla** models are S, 3, X and Y, presumably because that spells the word ''sexy.'')  Key didn't want to talk about Musk, but the executive's reputational collapse had become impossible to ignore. He was in the middle of his bizarre, on-again-off-again campaign to take over Twitter, to the dismay of **Tesla** loyalists. And though he hadn't yet attacked Anthony Fauci or spread conspiracy theories about Nancy Pelosi's husband or gone on a journalist-banning spree on the platform, the question was already suggesting itself: How do you explain Elon Musk?  ''People are flawed,'' Key said cautiously, before repeating a sentiment that Musk often said about himself: If partisans on both sides hated him, he must be doing something right. No matter what trouble Musk got himself into, Key said, he was honest -- ''truthful to his detriment.''  As we drove, Key compared F.S.D. and the version of **Autopilot** on his 2015 **Tesla**. **Autopilot**, he said, was like fancy cruise control: speed, steering, **crash** avoidance. Though in his case, he said, ''I guess it didn't do **crash** avoidance.'' He had been far more impressed by F.S.D. It was able to handle just about any situation he threw at it. ''My only real complaint is it doesn't always select the lane that I would.''  After a minute, the car warned Key to keep his hands on the wheel and eyes on the road. ''**Tesla** now is kind of a nanny about that,'' he complained. If **Autopilot** was once dangerously permissive of inattentive drivers -- allowing them to nod off behind the wheel, even -- that flaw, like the stationary-object bug, had been fixed. ''Between the steering wheel and the eye tracking, that's just a solved problem,'' Key said.  Soon we were close to the scene of the **crash**. Scrub-covered hills with mountain-biking trails lacing through them rose on either side of us. That was what got Key into trouble on the day of the **accident**. He was looking at a favorite trail and ignoring the road. ''I looked up to the left, and the car went off to the right,'' he said. ''I was in this false sense of security.''  We parked at the spot where he hit the police S.U.V. four years earlier. There was nothing special about the road here: no strange lines, no confusing lane shift, no merge. Just a single lane of traffic running along a row of parked cars. Why the **Tesla** **failed** at that moment was a mystery.  Eventually, Key told F.S.D. to take us back to the cafe. As we started our left turn, though, the steering wheel spasmed and the brake pedal juddered. Key muttered a nervous, ''OK. ... ''  After another moment, the car pulled halfway across the road and stopped. A line of cars was bearing down on our broadside. Key hesitated a second but then quickly took over and completed the turn. ''It probably could have then accelerated, but I wasn't willing to cut it that close,'' he said. If he was wrong, of course, there was a good chance that he would have had his second A.I.-caused **accident** on the same one-mile stretch of road.  Three weeks before Key hit the police S.U.V., Musk wrote an email to Jim Riley, whose son Barrett died after his **Tesla** **crashed** while speeding. Musk sent Riley his condolences, and the grieving father wrote back to ask whether **Tesla**'s software could be updated to allow an owner to set a maximum speed for the car, along with other restrictions on acceleration, access to the radio and the trunk and distance the car could drive from home. Musk, while sympathetic, replied: ''If there are a large number of settings, it will be too complex for most people to use. I want to make sure that we get this right. Most good for most number of people.''  It was a stark demonstration of what makes Musk so unusual as a chief executive. First, he reached out directly to someone who was harmed by one of his products -- something it's hard to imagine the head of G.M. or Ford contemplating, if only for legal reasons. (Indeed, this email was entered into evidence after Riley sued **Tesla**.) And then Musk rebuffed Riley. No vague ''I'll look into it'' or ''We'll see what we can do.'' Riley receives a hard no.  Like Key, I want to resist Musk's tendency to make every story about him. **Tesla** is a big car company with thousands of employees. It existed before Elon Musk. It might exist after Elon Musk. But if you want a parsimonious explanation for the challenges the company faces -- in the form of the lawsuits, a **crashing** stock price and an A.I. that still seems all too capable of catastrophic **failure** -- you should look to its mercurial, brilliant, sophomoric chief executive.  Perhaps there's no mystery here: Musk is simply a narcissist, and every reckless swerve he makes is meant solely to draw the world's attention. He seemed to endorse this theory in a tongue-in-cheek way during a recent deposition, when a lawyer asked him, ''Do you have some kind of unique ability to identify narcissistic sociopaths?'' and he replied, ''You mean by looking in the mirror?''  But what looks like self-obsession and poor impulse control might instead be the fruits of a coherent philosophy, one that Musk has detailed on many occasions. It's there in the email to Riley: the greatest good for the greatest number of people. That dictum, as part of an ad hoc system of utilitarian ethics, can explain all sorts of mystifying decisions that Musk has made, not least his breakneck pursuit of A.I., which in the long term, he believes, will save countless lives.  Unfortunately for Musk, the short term comes first, and his company faces a rough few months. In February, the first lawsuit against **Tesla** for a **crash** involving **Autopilot** will go to trial. Four more will follow in quick succession. Donald Slavik, who will represent plaintiffs in as many as three of those cases, says that a normal car company would have settled by now: ''They look at it as a cost of doing business.'' Musk has vowed to fight it out in court, no matter the dangers this might present for **Tesla**. ''The dollars can add up,'' Slavik said, ''especially if there's any finding of punitive damages.''  Slavik sent me one of the complaints he filed against **Tesla**, which lists prominent **Autopilot crashes** from A to Z -- in fact, from A to WW. In China, a **Tesla** slammed into the back of a street sweeper. In Florida, a **Tesla** hit a tractor-trailer that was stretched across two lanes of a highway. During a downpour in Indiana, a **Tesla** Model 3 hydroplaned off the road and burst into flames. In the Florida Keys, a Model S drove through an intersection and killed a pedestrian. In New York, a Model Y struck a man who was changing his tire on the shoulder of the Long Island Expressway. In Montana, a **Tesla** steered unexpectedly into a highway barrier. Then the same thing happened in Dallas and in Mountain View and in San Jose.  The arrival of **self-driving** vehicles wasn't meant to be like this. Day in, day out, we scare and maim and kill ourselves in cars. In the United States last year, there were around 11 million road **accidents**, nearly five million injuries and more than 40,000 deaths. **Tesla**'s A.I. was meant to put an end to this blood bath. Instead, on average, there is at least one **Autopilot**-related **crash** in the United States every day, and **Tesla** is under investigation by the National Highway Traffic Safety Administration.  Ever since **Autopilot** was released in October 2015, Musk has encouraged drivers to think of it as more advanced than it was, stating in January 2016 that it was ''probably better'' than a human driver. That November, the company released a video of a **Tesla** navigating the roads of the Bay Area with the disclaimer: ''The person in the driver's seat is only there for legal reasons. He is not doing anything. The car is driving itself.'' Musk also rejected the name ''Copilot'' in favor of ''**Autopilot**.''  The fine print made clear that the technology was for **driver assistance** only, but that message received a fraction of the attention of Musk's announcements. A large number of drivers seemed genuinely confused about **Autopilot**'s capabilities. (**Tesla** also declined to disclose that the car in the 2016 video **crashed** in the company's parking lot.) Slavik's legal complaint doesn't hold back: ''**Tesla**'s conduct was despicable, and so contemptible that it would be looked down upon and despised by ordinary decent people.''  The many claims of the pending lawsuits come back to a single theme: **Tesla** consistently inflated consumer expectations and played down the dangers involved. The cars didn't have sufficient driver monitoring because Musk didn't want drivers to think that the car needed human supervision. (Musk in April 2019: ''If you have a system that's at or below human-level reliability, then driver monitoring makes sense. But if your system is dramatically better, more reliable than a human, then monitoring does not help much.'') Drivers weren't warned about problems with automatic braking or ''uncommanded lane changes.'' The company would admit to the technology's limitations in the user manual but publish viral videos of a **Tesla** driving a complicated route with no human intervention.  Musk's ideal customer was someone like Key -- willing to accept the blame when something went wrong but possessing almost limitless faith in the next update. In a deposition, an engineer at **Tesla** made this all but explicit: ''We want to let the customer know that, No. 1, you should have confidence in your vehicle: Everything is working just as it should. And, secondly, the reason for your **accident** or reason for your incident always falls back on you.''  After our **failed** left turn in Laguna Beach, Key quickly diagnosed the problem. If only the system had upgraded to F.S.D. 10.69, he argued, the car surely would have managed the turn safely. Unfortunately for Musk, not every **Tesla** owner is like Dave Key. The plaintiffs in the **Autopilot** lawsuits might agree that the A.I. is improving, but only on the backs of the early adopters and bystanders who might be killed along the way.  Online, there's a battle between pro-Musk and anti-Musk factions about **Autopilot** and F.S.D. Reddit has a forum called r/RealTesla that showcases the most embarrassing A.I. screw-ups, along with more generic complaints: squeaky steering wheels, leaky roofs, haywire electronics, noisy cabins, stiff suspensions, wrinkled leather seats, broken door handles. The Musk stans tend to sequester themselves in r/TeslaMotors, where they post **Tesla** sightings, cheer on the company's latest factory openings and await the next big announcement from the boss.  I found David Alford on YouTube, where he posted a video called ''**Tesla** Full **Self-Driving** Running a Red Light.'' In it, we see the view through the windshield as Alford's car approaches an intersection with a left-turn lane that has a dedicated traffic signal. With a few hundred yards remaining, the light shifts from green to red, but the car doesn't stop. Instead, it rolls into the intersection, where it's on track to collide with oncoming traffic, until Alford takes over.  In the comments, **Tesla** fans grow angry with Alford for posting the video, but he pushes back: ''How does it help put pressure on **Tesla** to improve their systems if you are scared to post their faults?'' Replying to one comment, he writes that F.S.D. is ''unethical in the context they are using it.''  When I called Alford, I was expecting someone suited for r/RealTesla, but he ended up having more of an r/TeslaMotors vibe. He told me that he would be willing to take me to the site of his video and demonstrate the **failure**, but first I had to make a promise. ''The only thing I ask is try not to put me in a bad light toward **Tesla**,'' he said. ''I don't want anybody to think that I hate the company or whatnot, because I'm a very, very big supporter of them.''  Alford lives in Fresno, Calif., and before I went to meet him one day last fall, he told me some exciting news: He had just received the F.S.D. 10.69 update. Our drive would be his first attempt to navigate the intersection from the YouTube video with the new system.  The morning I met him, he was wearing a black T-shirt that showed off his tattoos, black sunglasses and faded black jeans with holes in the knees. Hollywood would typecast him as a white-hat hacker, and indeed he's a software guy like Key: He is a product engineer for a Bay Area tech company.  His white 2020 **Tesla** Model 3 had a magnetic bumper sticker he found on Etsy: CAUTION FULL **SELF-DRIVING** TESTING IN PROGRESS. He said he drives in F.S.D. mode 90 percent of the time, so his car is always acting a bit strange -- the sticker helped keep some of the honking from other cars at bay. He seemed to be, like Key, an ideal F.S.D. beta tester: interested in the software, alert to its flaws, dogged in his accumulation of autonomous miles.  I climbed into the passenger seat, and Alford punched in our first destination: a spot a few blocks away in downtown Fresno. We were lucky it was overcast, he said, because the car behaved well in these conditions. On days when it was sunny out and there was a lot of glare, the car could be ''moody.'' And when it was foggy, and it was often foggy in Fresno, ''it freaks out.''  After a few minutes, we approached a crosswalk just as two parents pulling a child in a wagon began to cross. A screen next to the steering wheel showed that the A.I. had registered the two pedestrians but not the wagon. Alford said he was hovering his foot over the brake, but the car stopped on its own.  After the wagon came a woman in a wheelchair. The car stayed put. Alford told me that the automotive jargon for anyone on the street who is not in a car or a truck is a ''V.R.U.,'' a vulnerable road user. And it's true: Pedestrians and cyclists and children in strollers and women in wheelchairs -- they are so fragile compared with these giant machines we've stuffed into our cities and onto our highways. One wrong move, and a car will crush them.  We turned on to Van Ness Avenue, which cuts through downtown. It had been newly paved, and instead of lines on the street, there were little yellow tabs indicating where the lines would eventually go. The **Tesla** hated this and dodged worriedly right and left, looking for something to anchor it. There were no other cars around, so Alford let it get that out of its system and eventually find a lane line to follow.  ''You build a tolerance to the risks it takes,'' he said. ''Yes, it's swerving all over the place, but I know it's not going to **crash** into something.'' Still, the experience of the beta had changed the way he approached his own work. ''It's actually made me, as a software developer, more hesitant to put my software in the hands of people'' before it's fully ready, he said, ''even though it's not dangerous.''  Seconds later, we drove through an intersection as two V.R.U.s -- a man walking a dog -- entered the crosswalk. They were a safe distance away, but the dog started to strain against its leash in our direction. Alford and I knew that the pet wasn't in peril because the leash would stop it. But all the **Tesla** saw was a dog about to jump in front of us, and it came to an abrupt stop. It was a good outcome, all things considered -- no injuries to any life-form -- but it was far from a seamless **self-driving** experience.  Alford nudged the steering wheel just often enough that the car never warned him to pay attention. He didn't mind the strict driver monitoring: He never tired of studying the car's behavior, so he was never tempted to tune out. Still, he knew people who abused the system. One driver tied an ankle weight to the steering wheel to ''kick back and do whatever'' during long road trips. ''I know a couple of people with Teslas that have F.S.D. beta,'' he said, ''and they have it to drink and drive instead of having to call an Uber.''  We left downtown and got on the highway, headed toward an area northeast of the city called Clovis, where the tricky intersection was. Alford pulled up his F.S.D. settings. His default driver mode was Average, but he said he has found that the two other options -- Chill and Assertive -- aren't much different: ''The car is just really aggressive anyway.'' For highway driving, though, he had the car set to something called Mad Max mode, which meant it would overtake any vehicle in front of him if it was going even a few miles per hour slower than his preferred speed.  We exited the highway and quickly came to a knot of cars. Something had gone wrong with the traffic light, which was flashing red, and drivers in all four directions, across eight lanes, had to figure out when to go and when to yield. The choreography here was delicate: There were too many cars to interweave without some allowances being made for mercy and confusion and expediency. Among the humans, there was a good deal of waving others on and attempted eye contact to see whether someone was going to yield or not.  We crept toward the intersection, car by car, until it was our turn. If we were expecting nuance, there was none. Once we had come to a complete stop, the **Tesla** accelerated quickly, cutting off one car turning across us and veering around another. It was not so much inhuman as the behavior of a human who was determined to be a jerk. ''That was bad,'' Alford said. ''Normally I would disengage once it makes a mistake like that.'' He clicked a button to send a snapshot of the incident to **Tesla**.  Later, at a four-way stop, the car was too cautious. It waited too long, and the other two cars at the intersection drove off before we did. We talked about the old saying about safe driving: ''Don't be nice; be predictable.'' For a computer, **Tesla**'s A.I. was surprisingly erratic. ''It's not nice or predictable,'' Alford said.  A few miles down the road, we reached the intersection from the video: a left turn onto East Shepherd Avenue from State Route 168. The traffic light sits right at the point where the city's newest developments end and open land begins. If we drove straight, we would immediately find ourselves surrounded by sagebrush, on the way up into the Sierra.  To replicate the error that Alford uncovered, we needed to approach the intersection with a red left-turn arrow and a green light to continue straight. On our first pass, the arrow turned green at the last second. On the second pass, though, on an empty road, the timing was right: a red for our turn and green for everyone else.  As we got closer, the car moved into the turning lane and started to slow. ''It sees the red,'' I said.  ''No,'' Alford said. ''It always slows down a little here before plowing through.'' But this time, it kept slowing. Alford couldn't believe it. ''It's still going to run the light,'' he said. But he was wrong: We came to a tidy stop right at the line. Alford was shocked. ''They fixed it!'' he said. ''That one I've been giving them an issue about for two years.'' We waited patiently until the light turned green, and the **Tesla** drove smoothly onto Shepherd Avenue. No problem.  It was as clear a demonstration of Musk's hypothesis as one could hope for. There was a situation that kept stumping the A.I. until, after enough data had been collected by dedicated drivers like Alford, the neural net figured it out. Repeat this risk-reward conversion X number of times, and maybe **Tesla** will solve **self-driving**. Maybe even next year.  On the drive back to the center of Fresno, Alford was buoyant, delighted with the possibility that he had changed the **Tesla** world for the better. I asked him whether the F.S.D. 10.69 release met the hype that preceded it. ''To be honest, yeah, I think so,'' he said. (He was even more enthusiastic about the version of F.S.D. released in December, which he described as nearly flawless.)  A few minutes later, we reached a rundown part of town. Alford said that in general **Tesla**'s A.I. does better in higher-income areas, maybe because those areas have more **Tesla** owners in them. ''Are there data biases for higher-income areas because that's where the Teslas are?'' he wondered.  We approached an intersection and tried to make a left -- in what turned out to be a repeat of the Laguna Beach scenario. The **Tesla** started creeping out, trying to get a clearer look at the cars coming from our left. It inched forward, inched forward, until once again we were fully in the lane of traffic. There was nothing stopping the **Tesla** from accelerating and completing the turn, but instead it just sat there. At the same time, a tricked-out Honda Accord sped toward us, about three seconds away from hitting the driver-side door. Alford quickly took over and punched the accelerator, and we escaped safely. This time, he didn't say anything.  It was a rough ride home from there. At a standard left turn at a traffic light, the system freaked out and tried to go right. Alford had to take over. And then, as we approached a cloverleaf on-ramp to the highway, the car started to accelerate. To stay on the ramp, we needed to make an arcing right turn; in front of us was a steep drop-off into a construction site with no guard rails. The car showed no sign of turning. We crossed a solid white line, milliseconds away from jumping off the road when, at last, the wheel jerked sharply to the right, and we hugged the road again. This time, F.S.D. had corrected itself, but if it hadn't, the **crash** would have surely killed us.  Peter Thiel, Musk's former business partner at PayPal, once said that if he wrote a book, the chapter about Musk would be called ''The Man Who Knew Nothing About Risk.'' But that's a misunderstanding of Musk's attitude: If you parse his statements, he presents himself as a man who simply embraces astonishing amounts of present-day risk in the rational assumption of future gains.  Musk's clearest articulation of his philosophy has come, of course, on Twitter. ''We should take the set of actions that maximize total public happiness!'' he wrote to one user who asked him how to save the planet. In August, he called the writings of William MacAskill, a Scottish utilitarian ethicist, ''a close match for my philosophy.'' (MacAskill, notably, was also the intellectual muse of Sam Bankman-Fried, though he cut ties with him after the FTX scandal came to light.)  Musk's embrace of risk has produced true breakthroughs: SpaceX can land reusable rockets on remote-controlled landing pads in the ocean; Starlink is providing internet service to Ukrainians on the front lines; OpenAI creeps ever closer to passing the Turing test. As for **Tesla**, even Musk's harshest critics -- and I talked to many of them while reporting this article -- would pause, unbidden, to give him credit for creating the now-robust market in electric vehicles in the United States and around the world.  And yet, as Robert Lowell wrote, ''No rocket goes as far astray as man.'' In recent months, as the outrages at Twitter and elsewhere began to multiply, Musk seemed determined to squander much of the good will he had built up over his career. I asked Slavik, the plaintiffs' attorney, whether the recent shift in public sentiment against Musk made his job in the courtroom any easier. ''I think at least there are more people who are skeptical of his judgment at this point than were before,'' he said. ''If I were on the other side, I'd be worried about it.''  Some of Musk's most questionable decisions, though, begin to make sense if seen as a result of a blunt utilitarian calculus. Last month, Reuters reported that Neuralink, Musk's medical-device company, had caused the needless deaths of dozens of laboratory animals through rushed experiments. Internal messages from Musk made it clear that the urgency came from the top. ''We are simply not moving fast enough,'' he wrote. ''It is driving me nuts!'' The cost-benefit analysis must have seemed clear to him: Neuralink had the potential to cure paralysis, he believed, which would improve the lives of millions of future humans. The suffering of a smaller number of animals was worth it.  This form of crude long-term-ism, in which the sheer size of future generations gives them added ethical weight, even shows up in Musk's statements about buying Twitter. He called Twitter a ''digital town square'' that was responsible for nothing less than preventing a new American civil war. ''I didn't do it to make more money,'' he wrote. ''I did it to try to help humanity, whom I love.''  **Autopilot** and F.S.D. represent the culmination of this approach. ''The overarching goal of **Tesla** engineering,'' Musk wrote, ''is maximize area under user happiness curve.'' Unlike with Twitter or even Neuralink, people were dying as a result of his decisions -- but no matter. In 2019, in a testy exchange of email with the activist investor and steadfast **Tesla** critic Aaron Greenspan, Musk bristled at the suggestion that **Autopilot** was anything other than lifesaving technology. ''The data is unequivocal that **Autopilot** is safer than human driving by a significant margin,'' he wrote. ''It is unethical and false of you to claim otherwise. In doing so, you are endangering the public.''  I wanted to ask Musk to elaborate on his philosophy of risk, but he didn't reply to my interview requests. So instead I spoke with Peter Singer, a prominent utilitarian philosopher, to sort through some of the ethical issues involved. Was Musk right when he claimed that anything that delays the development and adoption of autonomous vehicles was inherently unethical?  ''I think he has a point,'' Singer said, ''if he is right about the facts.''  Musk rarely talks about **Autopilot** or F.S.D. without mentioning how superior it is to a human driver. At a shareholders' meeting in August, he said that **Tesla** was ''solving a very important part of A.I., and one that can ultimately save millions of lives and prevent tens of millions of serious injuries by driving just an order of magnitude safer than people.'' Musk does have data to back this up: Starting in 2018, **Tesla** has released quarterly safety reports to the public, which show a consistent advantage to using **Autopilot**. The most recent one, from late 2022, said that Teslas with **Autopilot** engaged were one-tenth as likely to **crash** as a regular car.  That is the argument that **Tesla** has to make to the public and to juries this spring. In the words of the company's safety report: ''While no car can prevent all **accidents**, we work every day to try to make them much less likely to occur.'' **Autopilot** may cause a **crash** WW times, but without that technology, we'd be at OOOOOOOOOOOOOOOOOOO.  Singer told me that even if **Autopilot** and human drivers were equally deadly, we should prefer the A.I., provided that the next software update, based on data from **crash** reports and near misses, would make the system even safer. ''That's a little bit like surgeons doing experimental surgery,'' he said. ''Probably the first few times they do the surgery, they're going to lose patients, but the argument for that is they will save more patients in the long run.'' It was important, however, Singer added, that the surgeons get the informed consent of the patients.  Does **Tesla** have the informed consent of its drivers? The answer might be different for different car owners -- it would probably be different for Dave Key in 2018 than it is in 2022. But most customers are not aware of how flawed **Autopilot** is, said Philip Koopman, the author of ''How Safe Is Safe Enough? Measuring and Predicting Autonomous Vehicle Safety.'' The cars keep making ''really crazy, crazy, surprising mistakes,'' he said. ''**Tesla**'s practice of using untrained civilians as test drivers for an immature technology is really egregious.''  Koopman also objects to Musk's supposed facts. One obvious problem with the data the company puts out in its quarterly safety report is that it directly compares **Autopilot** miles, which are mainly driven on limited-access highways, with all vehicle miles. ''You're using **Autopilot** on the safe miles,'' Koopman said. ''So of course it looks great. And then you're comparing it to not-**Autopilot** on the hard miles.''  In the third quarter of 2022, **Tesla** claimed that there was one **crash** for every 6.26 million miles driven using **Autopilot** -- indeed, almost 10 times better than the U.S. baseline of one **crash** for every 652,000 miles. **Crashes**, however, are far more likely on surface streets than on the highway: One study from the Pennsylvania Department of Transportation showed that **crashes** were five times as common on local roads as on turnpikes. When comparing **Autopilot** numbers to highway numbers, **Tesla**'s advantage drops significantly.  **Tesla**'s safety claims look even shakier when you try to control for the age of the car and the age of the driver. Most **Tesla** owners are middle-aged or older, which eliminates one risky pool of drivers: teenagers. And simply having a new car decreases your chance of an **accident** significantly. It's even possible that the number of Teslas in California -- with its generally mild, dry weather -- has skewed the numbers in its favor. An independent study that tried to correct for some of these biases suggested that Teslas **crashed** just as often when **Autopilot** was on as when it was off.  ''That's always been a problem for utilitarians,'' Singer told me. ''Because it doesn't have strict moral rules, people might think they can get away with doing the sums in ways that suit their purposes.''  Utilitarian thinking has led individuals to perform acts of breathtaking virtue, but putting this ethical framework in the hands of an industrialist presents certain dangers. True utilitarianism requires a careful balancing of all harms and benefits, in the present and the future, with the patience to do this assessment and the patience to refrain from acting if the amount of suffering and death caused by pushing forward wasn't clear. Musk is using utilitarianism in a more limited way, arguing that as long as he's sure something will have a net benefit, he's permitted to do it right now.  In the past two decades, Musk has somehow maneuvered himself into running multiple companies where he can plausibly claim to be working to preserve the future of humanity. SpaceX can't just deliver satellites into low orbit; it's also going to send us to Mars. **Tesla** can't just build a solid electric car; it's going to solve the problem of **self-driving**. Twitter can't just be one more place where we gather to argue; it's one of the props holding up civilization. With the stakes suitably raised, all sorts of questionable behavior begin to look -- almost -- reasonable.  ''True believers,'' the novelist Jeanette Winterson wrote, ''would rather see governments topple and history rewritten than scuff the cover of their faith.'' Musk seems unshakable in his conviction that his approach is right. But for all his urgency, he still might lose the A.I. race.  Right now in San Francisco and Austin, Texas, and coming soon to cities all over the world, you can hail a robotaxi operated by Cruise or Waymo. ''If there's one moment in time where we go from fiction to reality, it's now,'' Sebastian Thrun, who founded Google's **self-driving** car team, told me. (''I didn't say this last year, by the way,'' he added.) Thrun was no r/RealTesla lurker; he was on his fifth **Tesla**, and he said he admired the company: ''What **Tesla** has is really beautiful. They have a fleet of vehicles in the field.'' But at this point, **Tesla**'s competitors are closer to achieving full **self-driving** than any vehicle equipped with F.S.D.  In recent months, Musk has stopped promising that autonomous Teslas are just around the corner. ''I thought the **self-driving** problem would be hard,'' he said, ''but it was harder than I thought. It's not like I thought it'd be easy. I thought it would be very hard. But it was actually way harder than even that.''  On Dec. 29, 2019, the same day a **Tesla** in Indiana got into a deadly **crash** with a parked fire truck, an off-duty chauffeur named Kevin George Aziz Riad was driving his gray 2016 **Tesla** Model S down the Gardena Freeway in suburban Los Angeles. It had been a long drive back from a visit to Orange County, and Riad had **Autopilot** turned on. Shortly after midnight, the car passed under a giant sign that said END FREEWAY SIGNAL AHEAD in flashing yellow lights.  The **Autopilot** kept Riad's **Tesla** at a steady speed as it approached the stoplight that marked the end of the freeway and the beginning of Artesia Boulevard. According to a witness, the light was red, but the car drove straight through the intersection, striking a Honda Civic. Riad had only minor injuries, but the two people in the Civic, Gilberto Alcazar Lopez and Maria Guadalupe Nieves, died at the scene. Their families said that they were on a first date.  Who was responsible for this **accident**? State officials have charged Riad with manslaughter and plan to prosecute him as if he were the sole actor behind the two deaths. The victims' families, meanwhile, have filed civil suits against both Riad and **Tesla**. Depending on the outcomes of the criminal and civil cases, the **Autopilot** system could be judged, in effect, legally responsible, not legally responsible or both simultaneously.  Not long ago, I went to see the spot where Riad's **Tesla** reportedly ran the red light. I had rented a **Tesla** for the day, to find out firsthand, finally, what it felt like to drive with **Autopilot** in control. I drove east on surface streets until I reached a ramp where I could merge onto State Route 91, the Gardena Freeway. It was late at night when Riad **crashed**. I was taking my ride in the middle of the day.  As soon as I was on the highway, I engaged **Autopilot**, and the car took over. I had the road mostly to myself. This **Tesla** was programmed to go 15 percent above the speed limit whenever **Autopilot** was in use, and the car accelerated quickly to 74 miles per hour, which was Riad's speed when he **crashed**. Were his **Autopilot** speed settings the same?  The car did a good job of staying in its lane, better than any other traffic-aware cruise control I've used. I tried taking my hands off the wheel, but the **Tesla** beeped at me after a few seconds.  As I got closer to the **crash** site, I passed under the giant END FREEWAY SIGNAL AHEAD sign. The **Autopilot** drove on blithely. After another 500 feet, the same sign appeared again, flashing urgently. There was only a few hundred feet of divided highway left, and then Route 91 turned into a surface street, right at the intersection with Vermont Avenue.  I hovered my foot over the brake. What was I doing? Seeing if the car truly would just blaze through a red light? Of course it would. I suppose I was trying to imagine how easy it would be to do such a thing. At the end of a long night, on a road empty of cars, with something called **Autopilot** in control? My guess is that Riad didn't even notice that he had left the highway.  The car sped under the warning lights, 74 miles an hour. The **crash** data shows that before the **Tesla** hit Lopez and Nieves, the brakes hadn't been used for six minutes.  My **Tesla** bore down on the intersection. I got closer and closer to the light. No brakes. And then, just before I was about to take over, a pickup truck swung out of the far right lane and cut me off. The **Tesla** sensed it immediately and braked hard. If only that truck -- as undeniable as any giant chunk of hardware can be -- had been there in December 2019, Lopez and Nieves would still be alive.  Source photographs: Alamy; Shutterstock.  Christopher Cox is an editor at New York magazine and the author of ''The Deadline Effect.'' His last article for The Times Magazine was about the business empire of the restaurateur Jean-Georges Vongerichten. Justin Metz is an art director and illustrator known for his bold concepts rendered in C.G.I. |
| ART | A wave of lawsuits argue that 's d software is o angerously verhyped. (MM26-MM27); (PHOTOGRAPHS BY JUSTIN METZ; ALAMY; SHUTTERSTOCK) (MM30-MM31) This article appeared in print on page MM26, MM27, MM28, MM29, MM30, MM31, MM44, MM46. |
| CO | teslmi : Tesla, Inc. |
| IN | i35101 : Passenger Cars | iadrive : Autonomous Driving Technologies | iaut : Automotive | i351 : Motor Vehicles | itech : Technology | i35104 : Alternative Fuel Vehicles |
| NS | gcat : Political/General News | gtacc : Transport Accidents | reqrau : Suggested Reading Automobiles | gdis : Disasters/Accidents | gmmdis : Accidents/Man-made Disasters | gtrans : Transport | redit : Selection of Top Stories/Trends/Analysis | reqr : Suggested Reading Industry News |
| RE | usa : United States | namz : North America |
| IPD | Magazine Desk |
| PUB | The New York Times Company |
| AN | Document NYTF000020230122ej1m0006g |

|  |  |
| --- | --- |
| \*\*9\*  SE | Business/Financial Desk; SECTB |
| HD | The Digest |
| BY | By Associated Press and Reuters |
| WC | 519 words |
| PD | 10 January 2023 |
| SN | The New York Times |
| SC | NYTF |
| ED | Late Edition - Final |
| PG | 2 |
| LA | English |
| CY | Copyright 2023 The New York Times Company. All Rights Reserved. |
| LP | FAST FOOD  McDonald's Former Chief Faces S.E.C. Charges |
| TD | Stephen Easterbrook, the former McDonald's C.E.O., has been charged by federal regulators with making false and misleading statements to investors about the circumstances of his firing by the burger giant in November 2019.  Mr. Easterbrook was ousted for engaging in an inappropriate personal relationship with a McDonald's employee in violation of company policy, the Securities and Exchange Commission said in its order Monday. But the separation agreement with McDonald's concluded that his termination was without cause, which allowed him to keep substantial compensation in McDonald's stock that he otherwise would have forfeited, the agency said.  The S.E.C. said Mr. Easterbrook's separation agreement was valued at more than $40 million.  Mr. Easterbrook told his company at the time that there were no other similar instances. But in July 2020, McDonald's found otherwise. ASSOCIATED PRESS  AUTOMOTIVE  U.S. Safety Regulators Question Musk Tweet  A tweet from Elon Musk indicating that **Tesla** might allow some owners who are testing a ''Full **Self-Driving**'' system to disable an alert that reminds them to keep their hands on the steering wheel has drawn attention from U.S. safety regulators.  The National Highway Traffic Safety Administration says it asked **Tesla** for more information about the tweet. Last week, the agency said the issue is now part of a broader investigation into at least 14 Teslas that have **crashed** into emergency vehicles while using the **Autopilot** driver assist system.  Since 2021, **Tesla** has been beta-testing ''Full **Self-Driving**'' using owners who haven't been trained on the system but are actively monitored by the company. Earlier this year, **Tesla** said 160,000, roughly 15 percent of Teslas on U.S. roads, were participating. A wider distribution of the software was to be rolled out late in 2022.  Despite the name, **Tesla** still says on its website that the cars can't drive themselves.  ASSOCIATED PRESS  AUTOMOTIVE  Rolls-Royce Enjoyed Record Sales in 2022  Rolls-Royce on Monday reported record sales last year despite an average price tag of around $534,000 for its luxury cars and a drop in Chinese demand, with orders stretching into 2023.  The British carmaker, which began as Rolls-Royce in Manchester, England, nearly 120 years ago and is now owned by Germany's BMW, said that it sold 6,021 cars in 2022, up from 5,586 in 2021, which was also a record year.  Rolls-Royce's sales were led by the Americas, with the U.S. comprising around 35 percent of sales. In China, coronavirus-related lockdowns led to a ''single-digit drop'' in sales.  But Torsten Müller-Ötvös, Rolls-Royce's chief executive, said in an online presentation that this decrease was offset by growth in other markets.  Rolls-Royce said that pre-orders for its fully-electric Spectre, due to go on sale at the end of 2023, had exceeded all expectations.  REUTERS |
| ART | (PHOTOGRAPH BY AP) This article appeared in print on page B2. |
| CO | bigmac : McDonald's Corporation |
| IN | i66 : Lodgings/Restaurants/Bars | i661 : Restaurants/Cafes/Fast Food Places | i6612 : Limited-Service Restaurants/Cafes | ilea : Leisure/Arts/Hospitality |
| NS | c13 : Regulation/Government Policy | ncdig : Corporate Digests | ccat : Corporate/Industrial News | ncat : Content Types | nfact : Factiva Filters | nfcpin : C&E Industry News Filter |
| RE | usa : United States | namz : North America |
| IPD | Business/Financial Desk |
| PUB | The New York Times Company |
| AN | Document NYTF000020230110ej1a0004x |

\*\*17\*

|  |  |
| --- | --- |
| SE | Style Desk; SECTST |
| HD | Is Scott Galloway a Howard Stern for the M.B.A. Set? |
| BY | By Christopher Beam |
| WC | 3625 words |
| PD | 7 August 2022 |
| SN | The New York Times |
| SC | NYTF |
| ED | Late Edition - Final |
| PG | 4 |
| LA | English |
| CY | Copyright 2022 The New York Times Company. All Rights Reserved. |
| LP | Scott Galloway sat in his home studio in Delray Beach, Fla., staring off into space, trying to think of a joke to kick off the 164th episode of his podcast, ''The Prof G Show.'' His team of producers waited patiently. After a minute of silence, Mr. Galloway, an N.Y.U. marketing professor and business guru, started a riff about people (like him) born in 1964, including Sandra Bullock. He likened her career to Covid -- it continues but no one seems to care. (Mr. Galloway used saltier language.)  Crickets. ''I need positive reaffirmation,'' Mr. Galloway told his team. ''Were those good?'' |
| TD | Claire Miller, one of this producers, said, ''I think you can do better.'' He tried out a joke about Mary Poppins performing fellatio. ''Not a fan,'' said Caroline Schagrin, another producer. Mr. Galloway attempted one more, about **accidentally** giving a diabetic friend a spoonful of sugar. After a pause, Ms. Schagrin weighed in: ''We can go with that.''  Then, in a high-speed nasal baritone by way of Venice Beach, Mr. Galloway, 57, went into the meat of his show: a discussion of international money laundering, layoffs at fast-growing companies, and the legal intricacies of Elon Musk's Twitter deal (which at that point seemed more likely to happen).  In any given episode, Mr. Galloway serves a heady cocktail of data-driven analysis, bold-to-brash bets, center-left politics, dirty jokes and sudden emotional vulnerability that appeals to his core audience of men, and helps him stand out in a world of bland talking heads. He's a little like Howard Stern for aspiring M.B.A.s and restless middle managers, offering listeners permission to have feelings and assert mildly politically incorrect opinions. (Fast Company called him a ''progressive Jordan Peterson.'')  His hobbyhorses include the worship of tech founders (we should stop), antitrust regulation (we need more), higher education (costs too much), ''**failing** young men'' (they need role models), physical fitness (he does CrossFit) and the importance of building personal relationships. He is also apt to take off his shirt, as he did in a promo for a doomed Bloomberg TV show, or put on a wig, as he did at a tech conference while lip-syncing to Adele.  ''He's one of those rare people who cut through,'' said Jeff Zucker, the former president of CNN, who hired Mr. Galloway to host a show on CNN+ before the streaming network shut down in April. ''I don't know if everything he says is right, but he says it in a damn interesting way.''  Mr. Galloway aspires to be ''the most influential thought leader in the history of business,'' he said. Sometimes it seems as if by ''most influential'' he means ''most frequent'': In addition to the main podcast, his company, Prof G Media, produces a weekly newsletter, four podcast episodes a week, YouTube videos, a column for New York magazine and a book every 18 months or so. (The latest, Adrift: America in 100 Charts, will be published in September.)  Plus, he makes regular prime-time TV appearances and teaches brand strategy one semester a year at N.Y.U., along with online courses for his education start-up, Section4. Mr. Galloway, who was already wealthy from selling two companies and taking a third public, also makes more than $5 million a year from speaking gigs, he said, largely from corporations and industry groups that pay him $50,000 (for virtual events) to $250,000 (for international events). ''I should be broken up,'' he joked.  'A Huge White Space for Heterosexual Men to Talk About Their Emotions'  Mr. Galloway got his most meaningful break as a pundit in 2017 when, during an appearance on Kara Swisher's podcast, he predicted that Amazon would acquire Whole Foods. Four days after the episode aired, Amazon announced plans to do just that, and Ms. Swisher, a tech journalist who is a former columnist for The New York Times, soon invited him to host a new podcast with her, ''Pivot.''  ''Literally nobody knew who he was,'' Ms. Swisher said. When she first saw him speak, she thought he was a jerk, she said. ''Then he said something super-friggin' insightful.'' Each episode now gets a quarter-million downloads, according to Mr. Galloway, putting it on the cusp of Apple's top 100 podcasts, in a league with ''The Glenn Beck Program'' and the NPR show ''Wait Wait ... Don't Tell Me!'' He said his newsletter reaches an audience of about 250,000, and ''The Prof G Show'' about half that.  His celebrity has grown along with his audience. In 2019, Mr. Galloway wrote a scathing indictment of WeWork, calling its $47 billion valuation ''seriously loco,'' which set the stage for the collapse of its I.P.O. In the Apple TV+ series ''WeCrashed,'' the actor Kelly AuCoin channels Mr. Galloway -- shiny dome, glasses and all -- as he interrogates Adam Neumann, the WeWork founder (played by Jared Leto), during an event at J.P. Morgan, all of which really happened. ''It was chilling how exact the dialogue was,'' Mr. Galloway said on a podcast.  Mr. Galloway tends to seek out confrontation. At a recent conference for the digital advertising industry, he told the audience that ''most advertising sucks.'' ''The reason I brought him here is to be a provocateur,'' the host Anthony Katsur told me afterward, adding that it's helpful to have Mr. Galloway ''call us out.''  In various forums, he has lately offered blistering opinions on the executives behind the stock trading app Robinhood (''mendacious''), Mark Zuckerberg (''the most dangerous person in the world''), Sheryl Sandberg (she made a fortune by exploiting ''personal loss'' and ''this important conversation around gender balance''), **Tesla** stock (''My prediction: pain'') and chasing one's dreams (instead, ''make Benjamins'').  But Mr. Galloway also has a willingness -- compulsion, even -- to get personal. He weaves in anecdotes about family, **failure** and grief. One of his most popular newsletters reflected on the death of his dog. Ms. Swisher described him as an ''open wound.'' Mr. Galloway said his vulnerability amounts to a competitive advantage: ''You fight the enemy with the weapons they can't use.''  ''I can't out-CNBC them,'' he added, ''but I can talk about my kids or my up-and-down relationship with my dad.''  His work often verges on self-help, particular for struggling young men. With a ''Prof G Show'' audience that's three-quarters male, according to Mr. Galloway, he said his imagined listener is a young father who's ''in the thick of it, stressed out, and what I call at the bottom of the smile curve,'' or the U-shaped chart that maps happiness against age. He offers these men ''an emotional outlet,'' he said. (The business talk perhaps gives them cover.)  Mr. Galloway, who cites Muhammad Ali and Richard Simmons as heroes, also models a certain type of masculinity: nerdy but fit, aggressively liberal but not dogmatic, a bro who nonetheless likes a good cry. He believes this kind of man is underrepresented in media: ''I think there's a huge white space for heterosexual men to talk about their emotions,'' he said.  When I asked one listener, Connor Queen, 28, a former sales executive in Idaho, how Mr. Galloway had influenced him, Mr. Queen said he recently started telling his brother that he loves him.  Not everyone enjoys the schtick. The entrepreneur and investor Jason Calacanis, an early backer of Uber and Robinhood, has made Mr. Galloway a regular target of derision on Twitter. Mr. Calacanis chides ''Professor Cold Takes'' for making predictions without having ''skin in the game.'' (''I have a lot of skin in the game,'' said Mr. Galloway, who has investments in Airbnb, Amazon and Apple, among other companies.)  Keith Rabois, another prominent investor, mocked Mr. Galloway on Twitter in 2019 for suggesting that the microblogging company replace Jack Dorsey: Mr. Dorsey and Elon Musk ''can do more in their sleep than Prof Galloway can do 24/7,'' he wrote. Mr. Dorsey resigned as C.E.O. of Twitter in 2021 and left the board of directors this year.  Mr. Rabois described Mr. Galloway in an email to me as ''a buffoon who likes attention.'' (Mr. Galloway said many of his haters are just mad that he has criticized their companies.)  Critics also point out that his predictions often miss, sometimes wildly. In 2015, he speculated that Macy's would beat out Amazon. Macy's has since shed three-quarters of its value, while Amazon's stock has sextupled.  In 2019, Mr. Galloway said that **Tesla** stock would tank by 80 percent; it has since exploded upward. His forecasts inspired Julie Young, an investor and analyst, to propose an index that invests by betting against Mr. Galloway's predictions. The imaginary ''Anti-Galloway Index,'' albeit based on one set of prognostications and fluctuating wildly in recent months, currently has a return of about 200 percent.  'I Worry My Narcissism Is Getting the Better of Me'  ''I am financially much more secure than I ever thought I would be,'' Mr. Galloway said. ''I still have massive anxiety and fear around it.'' We were sitting on matching leather armchairs in his 3,300-square-foot SoHo apartment with floor-to-ceiling windows overlooking the cobblestones of what he said is ''supposedly the most Instagrammed street in the United States.''  Despite the bustle outside, the room was nearly silent with the windows closed, as if to complement its clean minimalism -- everything gray scale except for an orange, scroll-like print by the gender-playful British artist Grayson Perry hanging above the dining table.  Mr. Galloway's 11-year-old son lounged on the L-shaped couch, watching European soccer on mute. Mr. Galloway and I sipped protein shakes after a circuit workout at the Equinox around the corner. (Mr. Galloway got his first job out of college, at Morgan Stanley, in part because he was a personal trainer for someone at the firm. Also because, he says, he lied about his grades.) His wife, Beata, 43, a property developer from Germany whom Mr. Galloway first met at a hotel pool, soon arrived to take their son to their seaside mansion in Florida.  Mr. Galloway grew up in Los Angeles to immigrant parents. His father, a charming sales executive raised in Depression-era Scotland, had a ''terrible relationship with money,'' he said. His parents divorced when he was 9, and he lived with his mother, who worked as a secretary.  ''It was an enormous source of stress that we didn't have money,'' he said. ''It was also very emasculating.'' Mr. Galloway became obsessed with money, and bought his first stock (Columbia Pictures) as an eighth grader. He wasn't popular. ''I looked like Ichabod Crane with bad skin,'' he said. In high school, he ran for class president three years in a row, and lost each time. He also developed body dysmorphia, he said.  He went to college at U.C.L.A. and described his time there, in a not-entirely-convincing tone of regret, as a ''missed opportunity to be responsible.'' He joined a fraternity, rowed crew and gained 20 pounds of muscle. ''Quite frankly, my life changed,'' he said. ''All of a sudden women were very interested in me.''  During business school at the University of California, Berkeley, he and a classmate started a firm called Prophet Brand Strategy, advising companies on how to build their brands. This being the early 1990s, their advice often amounted to: Use the internet. They attracted big clients, including Williams-Sonoma, Levi Strauss and Apple. In the dot-com boom, they started a series of companies, including an e-commerce site called RedEnvelope, where people could buy and send last-minute gifts.  RedEnvelope got an influx of cash from venture capital firms, including Sequoia Capital, but Mr. Galloway thought the new financiers were steering the company in a terrible direction. His battle to replace the board **failed**, but did attract the attention of hedge funds. ''They said, 'We like the cut of your crazy jib,''' he said.  He entered a new phase as an activist investor and started looking for companies to flip, like Gateway and Sharper Image. ''It fit my personality,'' Mr. Galloway said, describing himself with a profane synonym for jerk. In 2008, Mr. Galloway and a partner targeted The New York Times Company, buying nearly 20 percent of the company and securing two seats on its board. (It was a tense relationship, and he stepped down in 2010; Arthur Sulzberger Jr., then the publisher of The Times, declined an interview request made through a spokeswoman for the company.)  His profile began to rise. During the very public Times saga, a reporter from the gossip site Radar Online turned up at a showing of Mr. Galloway's house in the Hamptons and spotted some of his old college photos on the wall. A series of pictures showed Mr. Galloway partying with his frat brothers, with captions that included ''The Vagilantes'' and more crude nicknames.  After that, any time Gawker or the Intelligencer blog (at New York magazine) reported on Mr. Galloway and his dealings with The Times, they used one of those nicknames.  Cable networks starting inviting him on to share his takes. In 2014, to promote his new luxury brand intelligence firm L2, Mr. Galloway started a YouTube series called ''Winners and Losers,'' in which he highlighted companies that did especially well or poorly. The videos were shot in black and white, with Mr. Galloway appearing from the waist up against a white background, wearing what he calls his ''uniform'': Brunello Cucinelli shirt, John Varvatos jacket and chunky Warby Parker glasses.  Mr. Galloway hit his stride when he started calling out big tech companies. In 2015, in a speech at the DLD conference (a tech summit in Munich), he deadpanned that ''Google Glass is not a wearable, it's a prophylactic ensuring that you will not conceive a child, as no one will get near you.'' The speech, Mr. Galloway said, got him a contract for his first book, a jeremiad against big tech called ''The Four: The Hidden DNA of Amazon, Apple, Facebook, and Google.''  Despite his multimedia success, episodic television has proved Galloway-resistant. In 2020, he quit his show on Vice TV after the first few episodes turned out so badly that, he said, his wife cried. (She confirmed that she'd been upset by the quality.) Then, in 2021, Bloomberg TV scrapped his new series after Mr. Galloway shot a teaser in which he appeared shirtless and cracked jokes about one-night stands and erectile dysfunction.  It was a big deal, therefore, when Mr. Zucker called Mr. Galloway last summer and offered him a show on CNN+. In April of this year, a few weeks after the network started, Mr. Galloway's producer called with good news: His show was the service's top weekly program. (A spokeswoman for CNN declined to comment.)  The next morning, Mr. Galloway got a text from Ms. Swisher asking if he was OK. It turned out that CNN's new parent company, Discovery, had decided to shut down CNN+. While his show's cancellation wasn't his fault, this made him 0 for 3. ''The universe is telling me I have a face for podcasting,'' he said. Adding to the stress, his education start-up laid off a quarter of its staff around the same time.  But within days after the shutdown, he said he was already fielding calls from TV networks. ''I worry my narcissism is getting the better of me,'' he said. Despite TV being ''pretty much empty calories'' and ''by far the lowest R.O.I. of any medium I've engaged in,'' he said, ''I keep coming back for more.''  For all his obvious desire for attention, Mr. Galloway said he's an introvert. Indeed, one on one, he can seem distant, avoiding eye contact and often reverting to a monotonous **autopilot**. Any question you ask, he manages to steer the answer back to one of his talking points, like a jukebox of monologues.  When I first met Mr. Galloway for lunch, at Balthazar in SoHo, he told me that one of his core tenets is atheism. ''I'm one hundred percent convinced I'm going to look into my sons' eyes at some point and know our relationship is coming to an end,'' he said. ''And that's OK.''  Later, as I read through his recent newsletters, I stumbled on a familiar line: ''At some point I'll look into my sons' eyes and know our relationship is coming to an end. And that's OK.''  Is He Cancellation-Proof?  Last November, Mr. Galloway's son came home from school and asked: ''What's a numbskull?'' The day before, Elon Musk had called Mr. Galloway an ''insufferable numbskull'' on Twitter, and some of his son's classmates had brought it up. ''I told him, 'We have a funny little back-and-forth.'''  In fact, Mr. Galloway has been one of Mr. Musk's most vocal antagonists, criticizing him for a host of misdeeds, including manipulating **Tesla**'s stock price (an accusation Mr. Musk denies), calling a private citizen -- a caver who helped with the rescue of Thai schoolboys -- a ''pedo,'' and exploiting tax loopholes (Mr. Musk has denied this as well). Mr. Galloway said that bad behavior by tech executives like Mr. Musk ''triggers'' him, in part because it reminds him of himself. ''I'm disgusted with some of my past behavior,'' he said.  Mr. Galloway remembered one incident that occurred soon after he started L2. He was sitting in a meeting with a couple dozen people, watching a man in his 20s go through a slide presentation. Afterward, Mr. Galloway turned to the presenter and, using harsh language, told him he wasn't making sense and was wasting everyone's time.  Later, Mr. Galloway went to the bathroom and stood next to the young man at the urinals. ''I saw his hand shaking,'' Mr. Galloway said. ''And I thought, Jesus Christ, this guy actually has no control over his motor functions because of what I said to him.'' The incident rattled Mr. Galloway. ''I thought, what's the point of being successful if you make people feel that way?''  Mr. Galloway gives his critics plenty of ammunition. Perhaps most notoriously, he speculated publicly that the GameStop stock frenzy of early 2021 was the result of young men not having enough sex. Julie Young, the financial analyst, called his Twitter thread on the subject ''legitimately insane'': ''If a female commentator were this confident and this wrong this often, she would be destroyed in the media.'' Instead, Netflix approached Mr. Galloway to consult on its GameStop movie script.  Mr. Galloway said he has been criticized for his gender-normative analysis before, sometimes fairly. But he argued that he's always hired and promoted people from underrepresented groups. ''Every C.E.O. of every company I've ever hired except for one has either been gay or a woman,'' he said.  After his keynote speech at South by Southwest in March, an audience member named Christopher Haines confronted him about his proclivity for putting on women's clothing as comic relief, arguing that it perpetuates stereotypes that promote bullying. ''I'm wondering,'' Mr. Haines said, ''as a father of a transgender child, if you would consider retiring your cross-dressing, transphobic presentations?''  Mr. Galloway became uncharacteristically flustered. He worked through his thoughts onstage. ''Regardless of what I think I'm doing, I recognize my privilege may make me ignorant to the impact that you've just outlined,'' he said. ''So, let me cut to the chase: I believe that you are sincere. I will stop.''  Mr. Galloway seemed sincere, too, even if he knew that the moment would make for great TV. The incident closed out the first episode of his CNN+ show.  I asked Ms. Swisher if she worries about Mr. Galloway crossing a line in a way that torpedoes his career. ''Every day,'' she said. But Mr. Galloway seems in some ways immune to cancellation. He runs his own company, and has enough income streams that one or two or even five could dry up and he'd be fine. He'd have to alienate his own audience, who were presumably drawn in by his provocations in the first place.  And if it didn't happen when he endorsed Dr. Mehmet Oz for U.S. Senate, or when he fat-shamed Mr. Musk, or when he applauded the decision by the world governing body for swimming to limit the participation of transgender women in international competition, or when he regularly denounces ''wokistan,'' it's hard to imagine when it will.  In September, Mr. Galloway and his family are moving to London. ''We want our kids to experience a different culture,'' he said. He's currently exploring a new TV project with the BBC. He's leery after his hat trick of TV fiascos, but said he tries not to worry about **failure**. ''What if this doesn't work? We're all going to be dead,'' he said. ''Well, it's going to be a really public **failure**. Well, OK, the person you're worried about is going to be dead, and so are you.'' |
| ART | Scott Galloway at his home in the SoHo neighborhood of Manhattan. ''I think there's a huge white space for heterosexual men to talk about their emotions,'' he said. (PHOTOGRAPH BY PETER FISHER FOR THE NEW YORK TIMES) |
| NS | gtvrad : Television/Radio | gcele : Celebrities | glife : Living/Lifestyle | gcat : Political/General News | gent : Arts/Entertainment |
| RE | usa : United States | namz : North America |
| IPD | Style Desk |
| PUB | The New York Times Company |
| AN | Document NYTF000020220807ei870002w |

\*\*19\*

|  |  |
| --- | --- |
| SE | Business/Financial Desk; SECTB |
| HD | Make $$ on YouTube! (Just Pay Upfront.) |
| BY | By Nico Grant |
| WC | 1735 words |
| PD | 4 August 2022 |
| SN | The New York Times |
| SC | NYTF |
| ED | Late Edition - Final |
| PG | 1 |
| LA | English |
| CY | Copyright 2022 The New York Times Company. All Rights Reserved. |
| LP | Scott Mitchell became convinced YouTube would make him rich.  Mr. Mitchell, 33, got the idea last year from videos that promoted courses on how to build so-called cash cow channels, which are often created through a process called YouTube **automation**. |
| TD | So he bought one course, then another and another. He also paid for mentorship services. Mr. Mitchell spent around $15,000 on his YouTube venture, encountering stumbling blocks at every stage -- courses that taught him little, freelancers who stole content and audience-growth tactics that got him into trouble with YouTube.  ''I've tried three courses and one expert on the side, and the only thing I got out of it was an empty wallet,'' Mr. Mitchell said.  YouTube **automation** has led to a cottage industry with online influencers offering tutorials and opportunities for fast money. But, as is often the case with promises of quickly made fortunes in online businesses, the YouTube **automation** process can be a money pit for aspiring internet entrepreneurs and a magnet for poseurs selling unhelpful services.  It is not difficult to find a video that fits the YouTube **automation** model, though it is hard to say for certain how many of them have been made. They usually have an unseen narrator and a catchy headline. They share news, explain a topic or offer a Top 10 list about celebrities or athletes. They often aggregate material like video clips and photos from other sources. Sometimes, they run into trouble with copyright rules.  The term ''YouTube **automation**'' is a bit of a misnomer. It usually means farming out work to freelancers rather than relying on an automated process. It is hardly a new idea and yet one that has recently become more popular. Farming out work allows people to run multiple channels, without the time-consuming tasks of writing scripts, recording voice-overs or editing video. And the process is often pitched as a foolproof way to make cash. To get started, you just need money -- for how-to courses and video producers.  The courses instruct people to find video topics that viewers crave. They are told to hire freelancers from online marketplaces where independent contractors, like Fiverr and Upwork, offer to manage their channels and to produce videos that cost from under $30 to more than $100, depending on freelancers' rates. And that's where many people run into trouble.  Cash cow channels with big audiences can rake in tens of thousands of dollars in monthly ad revenue, while unpopular ones can make nothing. YouTube shares ad revenue with a channel's owner after a channel gets 1,000 subscribers and 4,000 hours of viewership. Monetized channels get 55 percent of the money their videos generate -- that is, if they manage to scratch out that much interest. YouTube declined to comment on the **automation** process.  Last summer, Mr. Mitchell paid $500 for a course titled ''Tube Mastery and Monetization'' taught by Matt Par, who said he made $30,000 a month on YouTube. He said successful students had earned $20,000 a month.  The course featured videos on different aspects of YouTube **automation**, including choosing the most lucrative subject matter, outsourcing the work and using keywords to make videos easier to find on YouTube. Mr. Par also explained how YouTube's algorithms worked.  But Mr. Mitchell said the course had gaps -- it lacked information on making high-quality videos with good scripts. He and other students also complained in a private Facebook group that the contents of Mr. Par's course were available for free on his YouTube page.  ''It is basically selling dreams,'' Mr. Mitchell said. Mr. Par did not respond to a request for comment.  Mr. Mitchell, who asked The New York Times to not disclose where he lived, started his first channel, Bounty Lux, about wealth and celebrities, last fall. He paid a freelancer he had found on Fiverr $2,000 for 20 videos. YouTube took down one of those videos, about Dwayne Johnson, that featured content stolen from another channel, prompting a dispute with the freelancer. Bounty Lux did not make money and struggled for viewers, so Mr. Mitchell abandoned it.  He later bought a $1,500 course and spent more than $3,000 to learn from an influencer at Pivotal Media, Victor Catrina. He paid another $3,000 for Mr. Catrina's team to make videos, but, he said, the ideas and scripts were taken from other channels.  After his freelancer went missing for five days, Mr. Mitchell decided to stop investing in the profitless channel. Mr. Catrina said that if he ever discovered any of his teams paraphrasing other people's scripts, he would replace them.  ''I'm nowhere near perfect, and neither is the program,'' Mr. Catrina said. ''And I have openly and happily sent refunds to those who either had financial struggles or considered that the program was not up to their standards.''  Alexandra Fasulo of Fort Myers, Fla., and her cousin spent $20,000 on a YouTube **automation** program from Caleb Boxx in March 2021. In exchange, Mr. Boxx's team managed a celebrity channel for Ms. Fasulo, 29, and produced videos for more than six months. But there were quality issues, she said, and the videos **failed** to capture many viewers. Mr. Boxx did not respond to a request for comment. The channel made less than $10 a day, so when it was time to pay for a new batch of videos, she dropped it.  ''That's what makes **automation** not worth it -- you put a lot of money in upfront,'' Ms. Fasulo said.  Dave Nick, a Serbian creator whose real name is Dejan Nikolic, has promoted YouTube **automation** since 2019. Mr. Nikolic, 20, appears on camera on three channels, and he said he had four channels with unseen narrators and 12 on YouTube Shorts, a quick-clip competitor to TikTok.  Mr. Nikolic said that he made $1.4 million in 2021, including for his own how-to courses and services, and that he had already racked up $1 million this year. The key was his $995 course, responsible for 70 percent of his income.  ''Not a lot of people have done more than a couple million a year with YouTube **automation**,'' he said. Online business services is ''how you get to eight figures.''  He said that a number of his students had made five figures a month on YouTube but that he did not have an exact count of how many.  Mr. Nikolic's YouTube videos highlight the money he has made and how much viewers could expect to make themselves. His Instagram account features travel destinations, a Rolex and Porsches as well as passages about building a YouTube business. But Mr. Nikolic said his life was ''not just all glamorous.''  ''I spend almost 15 hours a day on my computer,'' he said.  One key to making money from automated YouTube videos is feeding the internet's obsession with Elon Musk, the tech billionaire.  Jelline Brands of Urk, the Netherlands, started the channel Elon Musk Rewind last fall. Some of its content is incorrect, such as a recent video proclaiming the introduction of a **Tesla** smartphone. Still, Ms. Brands said it had made $250,000 since it had begun. (The Times was unable to verify the figure.) Her channel included, alongside news, rumors and speculation about upcoming **Tesla** products.  She also offers a how-to course, and many students of her course have started Musk channels as well, even though she asked them not to. She even competes with her sister, who has a channel devoted to the billionaire.  The business model ''is going downhill because the competition is so fierce,'' said Noah Morris, a coach for Ms. Brands's course, Cash Cow Academy Netherlands.  Ms. Brands began offering courses in December 2020, months after paying $1,000 for a YouTube tutorial she later learned was just a four-page document. She has had 1,700 students, most of whom paid 1,000 euros for her course, she said. Between 100 and 200 of them have told her they are making money on YouTube.  ''I love my work,'' she said. ''I don't even consider it as work. It's like a hobby to me. It's like a game.''  Still, she is not immune to the vagaries of YouTube's algorithms. She said her Musk channel yielded €7,500 a month, down from €50,000, or about $50,000, in November. Her former students have also seen a drop in income, she said. Recently, she created 16 channels in a single week to stabilize her business.  The challenging landscape has even prompted some of Ms. Brands's students to offer their own courses.  Youri van Hofwegen, a 21-year-old Dutch creator who is known online as Youri **Automation**, said some people had unrealistic expectations about finding YouTube success.  ''They want to pay $200 and make $20,000 by next week,'' he said. ''There is no secret, magic strategy. It's just about putting in the work.''  Courses created problems for Mr. Mitchell. A freelancer in a guru's Facebook group told him to buy moneymaking channels from a companythat accrued fake viewers from bots. Mr. Mitchell gave the freelancer $5,000 to produce around 60 videos, about crypto and making money online.  YouTube quickly stripped one of the channels of its ability to make money. The other struggled for months to find an audience before someone uploaded three pirated videos. YouTube deleted the channel for copyright violations. The freelancer claimed someone else had posted the videos in an act of sabotage.  But Mr. Mitchell has still been considering a loan to buy a $30,000 YouTube channel.  ''It's my last-ditch strategy,'' he said. ''I just need a little more time.'' And Mr. Mitchell may offer a course or a manual of his own, when he figures out what to teach. |
| ART | Twenty-year-old Dejan Nikolic in Belgrade, Serbia, has promoted YouTube since 2019. He said that he made $1.4 million in 2021. Some 70 percent of his income comes from his $995 course teaching others how to do it.; Youri van Hofwegen, known online as Youri , said many approach YouTube videos with unrealistic expectations of finding quick success. (PHOTOGRAPHS BY MARKO RISOVIC FOR THE NEW YORK TIMES) (B5) |
| IN | imssoft : Streaming Services | idistr : Media Content Distribution | iint : Online Service Providers | imed : Media/Entertainment | itech : Technology |
| NS | ccat : Corporate/Industrial News | reqrcm : Suggested Reading Computers | redit : Selection of Top Stories/Trends/Analysis | reqr : Suggested Reading Industry News |
| RE | usa : United States | namz : North America |
| IPD | Business/Financial Desk |
| PUB | The New York Times Company |
| AN | Document NYTF000020220804ei840004v |

|  |  |
| --- | --- |
|  |  |
|  |  |
|  |  |
|  |  |

\*\*24\*

|  |  |
| --- | --- |
| SE | Business/Financial Desk; SECTB |
| HD | How Safe Is **Autopilot**? No One Knows. |
| BY | By Cade Metz |
| WC | 1452 words |
| PD | 9 June 2022 |
| SN | The New York Times |
| SC | NYTF |
| ED | Late Edition - Final |
| PG | 1 |
| LA | English |
| CY | Copyright 2022 The New York Times Company. All Rights Reserved. |
| LP | Automakers and technology companies say they are making driving safer, but verifying these claims is difficult.  Every three months, **Tesla** publishes a safety report that provides the number of miles between **crashes** when drivers use the company's **driver-assistance** system, **Autopilot**, and the number of miles between **crashes** when they do not. |
| TD | These figures always show that **accidents** are less frequent with **Autopilot**, a collection of technologies that can steer, brake and accelerate **Tesla** vehicles on its own.  But the numbers are misleading. **Autopilot** is used mainly for highway driving, which is generally twice as safe as driving on city streets, according to the Department of Transportation. Fewer **crashes** may occur with **Autopilot** merely because it is typically used in safer situations.  **Tesla** has not provided data that would allow a comparison of **Autopilot**'s safety on the same kinds of roads. Neither have other carmakers that offer similar systems.  **Autopilot** has been on public roads since 2015. General Motors introduced Super Cruise in 2017, and Ford Motor brought out BlueCruise last year. But publicly available data that reliably measures the safety of these technologies is scant. American drivers -- whether using these systems or sharing the road with them -- are effectively guinea pigs in an experiment whose results have not yet been revealed.  Carmakers and tech companies are adding more vehicle features that they claim improve safety, but it is difficult to verify these claims. All the while, fatalities on the country's highways and streets have been climbing in recent years, reaching a 16-year high in 2021. It would seem that any additional safety provided by technological advances is not offsetting poor decisions by drivers behind the wheel.  ''There is a lack of data that would give the public the confidence that these systems, as deployed, live up to their expected safety benefits,'' said J. Christian Gerdes, a professor of mechanical engineering and co-director of Stanford University's Center for Automotive Research who was the first chief innovation officer for the Department of Transportation.  G.M. collaborated with the University of Michigan on a study that explored the potential safety benefits of Super Cruise but concluded that they did not have enough data to understand whether the system reduced **crashes**.  A year ago, the National Highway Traffic Safety Administration, the government's auto safety regulator, ordered companies to report potentially serious **crashes** involving advanced **driver-assistance** systems along the lines of **Autopilot** within a day of learning about them. The order said the agency would make the reports public, but it has not yet done so.  The safety agency declined to comment on what information it had collected so far but said in a statement that the data would be released ''in the near future.''  **Tesla** and its chief executive, Elon Musk, did not respond to requests for comment. G.M. said it had reported two incidents involving Super Cruise to NHTSA: one in 2018 and one in 2020. Ford declined to comment.  The agency's data is unlikely to provide a complete picture of the situation, but it could encourage lawmakers and drivers to take a much closer look at these technologies and ultimately change the way they are marketed and regulated.  ''To solve a problem, you first have to understand it,'' said Bryant Walker Smith, an associate professor in the University of South Carolina's law and engineering schools who specializes in emerging transportation technologies. ''This is a way of getting more ground truth as a basis for investigations, regulations and other actions.''  Despite its abilities, **Autopilot** does not remove responsibility from the driver. **Tesla** tells drivers to stay alert and be ready to take control of the car at all times. The same is true of BlueCruise and Super Cruise.  But many experts worry that these systems, because they enable drivers to relinquish active control of the car, may lull them into thinking that their cars are driving themselves. Then, when the technology **malfunctions** or cannot handle a situation on its own, drivers may be unprepared to take control as quickly as needed.  Older technologies, such as automatic emergency braking and lane departure warning, have long provided safety nets for drivers by slowing or stopping the car or warning drivers when they drift out of their lane. But newer **driver-assistance** systems flip that arrangement by making the driver the safety net for technology.  Safety experts are particularly concerned about **Autopilot** because of the way it is marketed. For years, Mr. Musk has said the company's cars were on the verge of true autonomy -- driving themselves in practically any situation. The system's name also implies **automation** that the technology has not yet achieved.  This may lead to driver complacency. **Autopilot** has played a role in many fatal **crashes**, in some cases because drivers were not prepared to take control of the car.  Mr. Musk has long promoted **Autopilot** as a way of improving safety, and **Tesla**'s quarterly safety reports seem to back him up. But a recent study from the Virginia Transportation Research Council, an arm of the Virginia Department of Transportation, shows that these reports are not what they seem.  ''We know cars using **Autopilot** are **crashing** less often than when **Autopilot** is not used,'' said Noah Goodall, a researcher at the council who explores safety and operational issues surrounding autonomous vehicles. ''But are they being driven in the same way, on the same roads, at the same time of day, by the same drivers?''  Analyzing police and insurance data, the Insurance Institute for Highway Safety, a nonprofit research organization funded by the insurance industry, has found that older technologies like automatic emergency braking and lane departure warning have improved safety. But the organization says studies have not yet shown that **driver-assistance** systems provide similar benefits.  Part of the problem is that police and insurance data do not always indicate whether these systems were in use at the time of a **crash**.  The federal auto safety agency has ordered companies to provide data on **crashes** when **driver-assistance** technologies were in use within 30 seconds of impact. This could provide a broader picture of how these systems are performing.  But even with that data, safety experts said, it will be difficult to determine whether using these systems is safer than turning them off in the same situations.  The Alliance for Automotive Innovation, a trade group for car companies, has warned that the federal safety agency's data could be misconstrued or misrepresented. Some independent experts express similar concerns.  ''My big worry is that we will have detailed data on **crashes** involving these technologies, without comparable data on **crashes** involving conventional cars,'' said Matthew Wansley, a professor the Cardozo School of Law in New York who specializes in emerging automotive technologies and was previously general counsel at an autonomous vehicle start-up called nuTonomy. ''It could potentially look like these systems are a lot less safe than they really are.''  For this and other reasons, carmakers may be reluctant to share some data with the agency. Under its order, companies can ask it to withhold certain data by claiming it would reveal business secrets.  The agency is also collecting **crash** data on automated driving systems -- more advanced technologies that aim to completely remove drivers from cars. These systems are often referred to as ''**self-driving** cars.''  For the most part, this technology is still being tested in a relatively small number of cars with drivers behind the wheel as a backup. Waymo, a company owned by Google's parent, Alphabet, operates a service without drivers in the suburbs of Phoenix, and similar services are planned in cities like San Francisco and Miami.  Companies are already required to report **crashes** involving automated driving systems in some states. The federal safety agency's data, which will cover the whole country, should provide additional insight in this area, too.  But the more immediate concern is the safety of **Autopilot** and other **driver-assistance** systems, which are installed on hundreds of thousands of vehicles.  ''There is an open question: Is **Autopilot** increasing **crash** frequency or decreasing it?'' Mr. Wansley said. ''We might not get a complete answer, but we will get some useful information.'' |
| ART | publishes a safety report every three months on its system, but experts say the report does not provide a complete picture. (PHOTOGRAPH BY ROGER KISBY FOR THE NEW YORK TIMES) (B1); The number of people killed in traffic has been rising in recent years and hit a 16-year high in 2021. (PHOTOGRAPH BY CAYCE CLIFFORD FOR THE NEW YORK TIMES) (B6) |
| CO | teslmi : Tesla, Inc. |
| IN | iaut : Automotive | iadrive : Autonomous Driving Technologies | itech : Technology | i351 : Motor Vehicles | i35104 : Alternative Fuel Vehicles |
| NS | ccat : Corporate/Industrial News | reqrau : Suggested Reading Automobiles | redit : Selection of Top Stories/Trends/Analysis | reqr : Suggested Reading Industry News |
| RE | usa : United States | namz : North America |
| IPD | Business/Financial Desk |
| PUB | The New York Times Company |
| AN | Document NYTF000020220609ei690003g |

|  |  |
| --- | --- |
| ART | Elon Musk, center, in April 2019 in New York. To a degree unseen in any other mogul, he acts on whim and the certainty he is right, those who know him say. (PHOTOGRAPH BY JEFFERSON SIEGEL FOR THE NEW YORK TIMES); Alex Spiro, Mr. Musk's personal lawyer whose other clients include celebrities like Jay-Z.; Kimbal Musk, Mr. Musk's younger brother and a board member at .; Gwynne Shotwell, SpaceX's president and chief operating officer.; Jared Birchall, the head of the family office that manages Mr. Musk's wealth.; Sam Teller, who was one of Mr. Musk's chiefs of staff until he left in 2019.; Shivon Zilis, a former venture capitalist, is a chief of staff who still works for Mr. Musk.; Peter Thiel, left, and Mr. Musk in 2000. They worked together on the company that would become PayPal before Mr. Thiel helped oust Mr. Musk. (PHOTOGRAPH BY PAUL SAKUMA/ASSOCIATED PRESS); Mr. Musk talking to reporters in 2018 about the SpaceX Falcon Heavy rocket. He invested more than $100 million of his money in SpaceX in its early years. (PHOTOGRAPH BY TODD ANDERSON FOR THE NEW YORK TIMES) (A19) |
| CO | twnit : Twitter Inc. |
| IN | iint : Online Service Providers | imed : Media/Entertainment | isocial : Social Media Platforms/Tools | itech : Technology |
| NS | npag : Page One Stories | cacqu : Acquisitions/Mergers | c18 : Ownership Changes | c181 : Acquisitions/Mergers/Shareholdings | cactio : Corporate Actions | ccat : Corporate/Industrial News | ncat : Content Types | nfact : Factiva Filters | nfcpin : C&E Industry News Filter |
| RE | usa : United States | namz : North America |
| IPD | National Desk |
| PUB | The New York Times Company |
| AN | Document NYTF000020220503ei530004o |

\*\*30\*

|  |  |
| --- | --- |
| SE | Business/Financial Desk; SECTB |
| HD | With an Electric S.U.V., Lotus Trades 'Lightness' for Heft |
| BY | By Brett Berk |
| WC | 1649 words |
| PD | 22 April 2022 |
| SN | The New York Times |
| SC | NYTF |
| ED | Late Edition - Final |
| PG | 5 |
| LA | English |
| CY | Copyright 2022 The New York Times Company. All Rights Reserved. |
| LP | The boutique British carmaker, known for lightweight sports cars more than supermarket runs, is planning to expand production substantially as it goes fully electric.  It is not a lithe, analog sports car or racer, powered by gasoline -- making it an outlier among nearly all the 131 Lotus vehicles that preceded it. |
| TD | Known internally at Lotus, the boutique British carmaker, as the Type 132 and to consumers as the Eletre, it also does not adhere to the company's ethos, as stated by the founder Colin Chapman: ''Simplify, then add lightness.''  Instead, it is a big, battery-powered sport utility vehicle, with a spacious back seat, ''semiautonomous'' **driver assistance** technology and myriad LCD screens. Late last month, at the BBC Television Centre in London, Lotus unveiled what may be the most unconventional vehicle in its 74-year oddball history.  ''I can guarantee that Type 132 will be the heaviest Lotus we've ever done,'' said Matt Windle, the company's managing director and a former engineer and executive at **Tesla** and the electric vehicle start-up Zenos. ''But even in that category, we're looking for opportunities to save weight. So it's going to be a heavy Lotus, but it will be on the lighter side of other products out there.''  Lotus would not provide weight figures for the Eletre, which is expected to be priced around $130,000. But competitors like the Audi e-Tron S.U.V., with their heavy lithium-ion batteries, weigh nearly three tons, or about four times Lotus's famed 1962 Elan/Type 26.  As a midsize S.U.V., a sales leader in the global car market, the Eletre is important to Lotus's future. But it is just one component in its new-product onslaught, financed by the marque's latest investors: A 49 percent share is owned by Etika Automotive, a Malaysian company, and the 51 percent controlling stake is held by the Chinese automotive conglomerate Geely, which also owns Volvo.  ''We have six cars going into production in the next five years,'' Mr. Windle said.  These vehicles include the Emira, a $77,000 sports coupe and the brand's final gasoline-powered model, and the Evija, a $2 million-plus, all-electric supercar, both of which will commence production this spring in new facilities at the brand's headquarters in Hethel, England. The Eletre will be built at a factory in China starting at the end of this year.  A midsize electric sedan (Type 133) is poised to follow in 2023. A more compact electric S.U.V. (Type 134) is expected in 2024. And a fully electric sports car (Type 135) is planned for 2026.  These cars are crucial to Lotus's ''Vision 80'' strategy, named for the brand's 80th anniversary, which arrives in 2028. ''The mission statement is to transform us into a global premium performance car brand, taking us from niche sports cars into significant volumes, globally, with products that are innovative, bring us into new markets and new segments, and generally grow the brand across the globe,'' Mr. Windle said.  Lotus's goal is to be selling 100,000 vehicles, annually, worldwide by 2028. This is a lofty target. In 2021, the brand sold just 1,701. Another esteemed and long-lived sports car maker, Maserati, has had similar sales targets during the past decade, with deep-pocketed investment and expanded products. Last year, Maserati delivered just over 24,000 cars.  Moreover, this is not the first time Lotus has promised a major expansion. In 2010, under the leadership of Dany Bahar, a former Ferrari executive, the brand unveiled five new cars and promised they would be in production in five years. Accusations of financial impropriety by Mr. Bahar, and dueling lawsuits, ensued. None of these cars materialized.  Mr. Windle distinguishes the brand's current situation from that one. ''I think in that era, they were trying to sell a plan to go and get investment,'' he said. ''In this era, we have the investment, we have the plan, and then we'll go and talk about it afterward.'' He added that Lotus had ''a 10-year strategy that is fully invested.''  This heavy stake is unfamiliar for the brand. ''Lotus has always been just shy of bankruptcy,'' said Ross Robbins, a 78-year-old retired businessman, marque historian and author, and member of Lotus Limited, among the oldest and largest of the brand's American affinity groups. ''Even when Chapman was there in the early days, they never had enough capital, and they ricocheted from disaster to disaster.''  Yet this resource poverty catalyzed some of the scrappy company's achievements. ''They've always bootstrapped stuff,'' yielding cars that were advanced and innovative and that punched above their weight, Mr. Robbins said. ''But they're fragile, and not for a person who wasn't pretty well versed in mechanical things, because they need a lot of attention.''  Loving something that consistently **fails** is a perverse compulsion common to many owners of temperamental cars. So it follows that Lotus maintains an extremely engaged owner group.  ''People who have had a Lotus in their past, or currently have a Lotus, are very devoted to it,'' Mr. Robbins said. ''It's not a dalliance with Lotus. You get sucked in. And it just becomes a part of who you are.''  This avidity leads to another challenge for the brand. Might this affection diminish with an all-electric lineup, since battery-powered cars have far fewer moving parts and require far less maintenance than gasoline-powered ones? Or might the notoriously finicky electrical systems in British vehicles bedevil these vehicles with compounded gremlins?  Moreover, as it aims to expand its sales nearly a hundredfold, will Lotus's position as a small-scale manufacturer -- beloved by a passionate, protective and nearly evangelical cohort of automotive cognoscenti -- cause it to lose what has long made it special?  ''Because Lotus is a boutique brand, consumers feel like they're getting a little bit of something else,'' said Alexander Edwards, president of Strategic Vision, an automotive research and consulting firm. ''Most people that are familiar with exotic or ultraluxury brands, they know Lamborghini, they know Ferrari. Lotus is a little different.  ''If you're an owner, you're part of this secret, cool, handshake club that very few people are aware of, and it provides a little extra prestige.''  This status could include special first-name treatment at the dealership, insider acknowledgment from car fanatics (including the automotive press, where Lotus ownership is worn like a badge of honor) and association with the brand's starring roles in notable films. These include James Bond's car-cum-submarine in ''The Spy Who Loved Me,'' Richard Gere's pickup in ''Pretty Woman'' and Number Six's car in the cult 1960s BBC series ''The Prisoner.''  However, according to Mr. Edwards's research, this cachet is not the primary reason that people purchase a Lotus. Lotus buyers -- even more than those who buy Lamborghinis and Ferraris -- are mainly seeking optimal performance, as well as a ''merging of the driver and the machine to create their fantasy mobility experience,'' a condition he likens to the synergy between Batman and the Batmobile.  Because the insider status is not at the core of its consumers' decision, Mr. Edwards said, the brand's risks in becoming significantly larger ''can be easily managed, and even relegated to unimportant.''  He cites **Tesla** as an example of an insider brand that expanded readily without losing its appeal. ''Yes, there was some sort of specialness initially,'' he said, noting the innovation, exclusivity and six-figure prices of its first offerings, the Roadster and the Model S. ''But if we see how that has evolved to today, nobody really seems to care about the uniqueness of the **Tesla** when it comes to nobody else having one, because that isn't the primary reason why they were buying. They were buying for technology and performance. And they're still getting that.''  If Mr. Robbins is any example of the faithful undergoing conversion, this thesis may be correct. ''The only reason Lotus hasn't become a more full-line manufacturer like everybody else, and built an S.U.V. to pay the bills, is they never had the capital. Now they do. So I think that's a good thing,'' he said.  ''And I think Matt Windle is exactly there,'' he added. ''I think he's going to do a great job. He understands the brand. He understands the heritage.''  As it turns out, being a relatively unknown carmaker with reverential brand association is a bonus as the market shifts to electrification. According to Mr. Edwards, as more mainstream luxury brands like BMW, Audi and Mercedes-Benz enter the E.V. market, they are likely to siphon off buyers from less established start-ups like Lucid, or even from **Tesla**, attracting customers who want the security and experience of a more venerable brand for their first electric car.  ''For Lotus, it's an open playing field, and they have a lot of room to navigate this reintroduction to this brand,'' Mr. Edwards said. ''The one thing they absolutely need to do is convince people why Lotus is really a leader in this performance and connected vehicle experience. If they do that right, they will have magnified success.'' |
| ART | Inside the Lotus Eletre, an electric sport utility vehicle that is central to the 74-year-old carmaker's ambitious growth targets.; The Eletre, which will be made in China, was introduced to the world in March in London. Its price is expected to be around $130,000.; Lotus's strategy calls for increasing global sales of the Eletre to 100,000 cars a year by 2028. (PHOTOGRAPHS BY LOTUS) |
| CO | gplo : Group Lotus plc | zghgcl : Zhejiang Geely Holding Group Co. Ltd. |
| IN | i35104 : Alternative Fuel Vehicles | iaut : Automotive | i351 : Motor Vehicles | i35101 : Passenger Cars |
| NS | gcar : Cars | c24 : Capacity/Facilities | reqrau : Suggested Reading Automobiles | ccat : Corporate/Industrial News | gcat : Political/General News | glife : Living/Lifestyle | redit : Selection of Top Stories/Trends/Analysis | reqr : Suggested Reading Industry News |
| RE | uk : United Kingdom | eurz : Europe | weurz : Western Europe |
| IPD | Business/Financial Desk |
| PUB | The New York Times Company |
| AN | Document NYTF000020220422ei4m00056 |

\*\*31\*

|  |  |
| --- | --- |
| CLM | GUEST ESSAY |
| SE | Sunday Review Desk; SECTSR |
| HD | Why Truckers Are Rebelling |
| BY | By Robin Kaiser-Schatzlein |
| WC | 1490 words |
| PD | 20 March 2022 |
| SN | The New York Times |
| SC | NYTF |
| ED | Late Edition - Final |
| PG | 3 |
| LA | English |
| CY | Copyright 2022 The New York Times Company. All Rights Reserved. |
| LP | A few years ago, Jon Knope was standing in a rainy parking lot littered with smashed soda bottles in Cartersville, Ga., learning the finer details of how to park a Class 8 combination tractor-trailer. He was in his early 20s, somewhat rootless, and needed a job that would beat hustling on ride share apps in his mother's station wagon.  He liked driving fine, so he went through trucking school. He could make a lot more money, largely because he was allowed to work much more than Uber or Lyft would let him. In the next few years, he would spend more than 900 nights on the road, drive at least 350,000 miles, and, while he was technically alone in his truck cab watching every sunrise and sunset fly by, he was never really by himself. While many associate trucking with freedom, he was, like every trucker, hemmed in by low wages, long hours and an unbelievable level of **automation** and surveillance. |
| TD | Today, long-haul truckers are some of the most closely monitored workers in the world. Cameras and sensors dot their trucks, watching the road, the brakes and even the driver's eye movements. Once, when his truck's cabin heater broke, Mr. Knope was forced to sleep in freezing temperatures for several days while traveling across northern Ohio and New York because an automated system made sure his engine was turned off at night. The company told him there was no way to override the system.  Just imagine finishing 10 hours at a desk job, only to return to your apartment to find the heat didn't work. That'd be quite frustrating. Then imagine your apartment was your office and most nights dinner was a microwaveable burrito or a bag of fast food. And then imagine your desk job required you regularly press a little pedal, you couldn't stand up, you had essentially no face-to-face contact with co-workers, and if a bathroom didn't easily present itself you were forced to use a plastic jug -- all while a computer or a person at a desk hundreds of miles away monitors your every move.  Trucking is a supremely dangerous job, with large trucks involved in 10 percent of fatal **crashes** in the United States in 2019. Mr. Knope often described tractor-trailers as ''40 tons of death.'' One wrong move and your truck could easily kill the family in the minivan next to you. Much of the surveillance truckers experience is in the name of safety, and truckers agree that safety is paramount.  However, experts say the fatigue that leads truckers to be unsafe -- to fall asleep at the wheel or lose focus -- is a direct result of low wages that encourage drivers to spend too much time on the road. While we often think of **automation** and A.I. as developments that will eventually replace workers (think of **Tesla**'s partly automated tractor-trailer), those tools are already in heavy use in the workplace. And they haven't replaced workers; they've simply been brought in to manage declining working conditions.  While journalists tracked the Canadian trucker protest as it radiated out from Ottawa, becoming a worldwide movement adopted and amplified by conservative politics, few asked why it was truckers specifically who started the movement when plenty of other workers in Canada and the United States had already been subject to vaccine mandates. And yet there were warnings that truckers would rebel.  The American Trucking Associations, a major industry trade group, noted last October that truckers were likely to cause supply chain disruptions if subjected to a vaccine mandate. They already experience the extreme end of workplace control, diminishing wages and an intense lack of privacy, and ultimately a vaccine mandate pushed more than a few of them over the edge.  Ask almost anyone what's wrong with trucking -- drivers, transportation economists, advocacy groups -- and they'll all begin with one number: the extraordinarily high turnover rate.  For decades, truckers have quit at alarming rates, leading to a chronic shortage. The turnover rate was at a staggering 91 percent in 2019, which means that for every 100 people who signed up to drive, 91 walked out the door. Plenty of people have the commercial driver's licenses needed to operate trucks, said Michael Belzer, a Wayne State University economist who has studied the industry for 30 years. ''None of them will work for these wages,'' he added. Studies even show that their pay, when adjusted for inflation, has declined markedly since the 1970s.  It wasn't always like this, said Jerry Fritts, a retired long-haul trucker from Memphis who started full-time in the field in 1966. Trucking used to be a good job, with union representation, decent pay and benefits, and normal hours.  ''There used to be only three ways that you got a trucking job,'' he told me. ''Someone retired, was killed on the job, or died.'' Few quit. I asked Mr. Fritts how he landed his position at a national trucking firm and he told me that he simply received a call one day in 1969 from someone who told him, ''Scotty just got killed.''  Before deregulation during the Carter administration, trucking was an industry with high union representation. But fears of inflation pushed the government to allow less regulated, nonunionized firms to compete with the unionized common carriers. That effectively took the bottom out of the labor market, and as companies raced to offer the lowest rates to customers, wages were squeezed. Working conditions and pay cratered, and truckers fled.  To compensate for low wages, some truckers now work dangerously long hours, the average trucker well over 60 hours a week. Many truckers report working 100 hours or more each week. This is in part because truckers are not actually paid for all the time they spend working. They're almost always paid by the mile.  So if Mr. Knope were to show up to, say, a pet food warehouse, exhausted from a day of driving, looking to unload quickly, find something to eat and catch some sleep, the warehouse staff might tell him there wasn't anyone available to unload his truck for six hours, and he would be forced to wait, lonely in his truck, paid for only part of the time he spent waiting. (Other trucking companies might not compensate their drivers at all.)  Working more, and driving more, leads to endemic exhaustion, a problem so well known that companies deploy a bevy of ''fatigue management'' technologies and automated collision avoidance systems, Karen Levy, a sociologist at Cornell, told me. These tools monitor the drivers with that bevy of cameras and sensors.  Many companies now even have software programs that can review camera footage and detect whether a driver had his eyes on the road. At some companies, you can be fired if you are caught looking at your phone, even if it was just to change your podcast.  Mr. Belzer said that mandating that truckers be paid for their time, not just the miles they log, would be a step toward getting them to work a safer 40-hour week -- and it might even help companies retain workers by ensuring that they can make it home to see their families more than a few times a month.  When I asked Mr. Knope and Mr. Fritts whether they were surprised that truckers had started the protest movement in Ottawa, neither was. ''Trucking has been a keg of dynamite waiting to explode for 39 years,'' Mr. Fritts said. ''I'm surprised it took this long.''  In some ways the story of a trucker rebellion in reaction to a government mandate is odd because truckers, particularly the ones who drive the long-distance freight routes between the United States and Canada, are some of the most highly monitored and regulated workers in the world. Just to get a job interview, Mr. Knope told me, he had to submit to a blood pressure test and urinalysis. But of all the tests and monitoring that violate their privacy and diminish their autonomy, the vaccine mandate just so happens to have a radioactive political valence. For many truckers, it was the straw that broke the camel's back.  ''It's a lightweight straw,'' Mr. Knope said, ''but it's also a very encumbered camel.''  Robin Kaiser-Schatzlein (@robinsreport) is a journalist who writes about economic life and culture in America.  The Times is committed to publishing a diversity of letters to the editor. We'd like to hear what you think about this or any of our articles. Here are some tips . And here's our email: letters@nytimes.com .  Follow The New York Times Opinion section on Facebook , Twitter (@NYTopinion) and Instagram . |
| ART | (PHOTOGRAPH BY KRISTON JAE BETHEL FOR THE NEW YORK TIMES) |
| NS | gjob : General Labor Issues | ncolu : Columns | nedc : Commentaries/Opinions | nedi : Editorials | nrvw : Reviews | gcat : Political/General News | ncat : Content Types | nfact : Factiva Filters | nfce : C&E Exclusion Filter | nfcpex : C&E Executive News Filter |
| RE | usa : United States | namz : North America |
| IPD | Sunday Review Desk | Op-Ed |
| PUB | The New York Times Company |
| AN | Document NYTF000020220320ei3k00035 |

\*\*35\*

|  |  |
| --- | --- |
| CLM | FARHAD MANJOO |
| SE | Sunday Review Desk; SECTSR |
| HD | Help. I've Fallen for the Cadillac Escalade. |
| BY | By Farhad Manjoo |
| WC | 1720 words |
| PD | 6 February 2022 |
| SN | The New York Times |
| SC | NYTF |
| ED | Late Edition - Final |
| PG | 7 |
| LA | English |
| CY | Copyright 2022 The New York Times Company. All Rights Reserved. |
| LP | I was not prepared to fall head over heels for the Cadillac Escalade. It's not my kind of car -- or, at least, it's not supposed to be. The Escalade is one of the largest, heaviest, least efficient and most expensive S.U.V.s on the road. It is also among the most unembarrassedly decadent, the ride of choice for Manhattan bigwigs and reality-TV housewives, the sort of car that rappers, movie stars and professional athletes buy for their mothers after making it big.  Aesthetically, financially, environmentally and perhaps even morally, everything about the Escalade felt poorly suited to someone like myself, the bookish newspaper columnist who frequently rails against the cultural dominance of cars and so on. |
| TD | And yet here I sit, pining for the 2021 Escalade in Dark Moon Blue Metallic that I drove during a two-week, 2,400-mile family road trip through Arizona and Nevada over the winter holiday.  I'd chosen this Escalade because it's emblematic of a trend sweeping car design: It has been stuffed to the gills with technology. Among other things, much of the dashboard is composed of a sweeping, 38-inch curved touch-screen display. The stereo system has 36 speakers. Cameras mounted pretty much everywhere allow you to pull up views of the car from every angle. Microphones set around the car can amplify voices through the speakers, creating a kind of in-car intercom.  These many tech-enabled comforts and conveniences turn the Escalade into something more couch than conveyance. I imagine cars like it functioning as a kind of third space in the daily routines of the upper middle class -- a very nice home theater, home office or den that happens to be on wheels. Plus, sometimes, it can pretty much drive itself.  I fell for these digital charms. I have driven many faster and more fun cars than the Escalade. I have definitely driven cheaper and more practical cars. But I have never been in a car that makes being stuck in a car as comfortable and effortless as this one.  The market seems to agree: The Escalade's tech-heavy 2021 redesign sent sales surging by 65 percent. Escalades start at around $80,000, but after piling on upgrades, nearly half of the owners spend over $100,000. The one I drove, which The New York Times paid to rent from a fleet management company that handles G.M.'s press-review cars -- and which had most but not all available options -- carried a sticker price of nearly $109,000.  But mine is a troubled love, a guilty love, a love whose implications confuse and alarm me. The digital transformation of cars won't stop with luxury S.U.V.s. Many of the features that I found so compelling in the Escalade will eventually make their way to its lower-priced Chevrolet cousins, the Tahoe and Suburban, and probably to every other car.  What's so terrible about that? I have argued before that we can't solve problems caused by cars -- among them climate-warming emissions -- simply by building better cars. Research has shown that even with more efficient electric cars, Americans will have to drive much less and walk, bike and ride transit much more in order to meet climate goals.  The Escalade's comforts defeat that goal; many times, I found myself driving more, longer, because driving the Escalade was so totally easy. If most cars become as comfortable, convenient and luxurious as this one -- while growing ever larger -- what hope is there that we might ever reduce our dependence on these monstrous machines? Also, should I plan to lease or to buy?  To see why I'm so taken with the Escalade, let me tell you about Super Cruise, G.M.'s autonomous driving system, which is among the industry's most advanced. Many cars now offer some version of driving assistance, but most manufacturers' **self-driving** systems, even **Tesla**'s **Autopilot**, require the humans sitting in the driver's seats to keep their hands on the steering wheel while the car is piloting itself. Super Cruise dispenses with the wheel touching.  After engaging the system, you can twiddle your toes and put your hands in the air like you just don't care. The car will steer, stay centered in a lane and adjust its speed to keep pace with the traffic around you (up to a set maximum speed). When you tap the turn signal, it will search for a safe spot and change lanes. Sometimes the car encounters a problem (for instance, the road's lane lines are too faint for it to pick out), and it informs you to take over.  The car does not navigate by itself -- that is, it won't follow a route to an address -- so you've got to enter and exit the freeway manually. But if you're going to be on one road for a long while, you can turn it on and, for the most part, do nothing while it keeps chugging.  All the car asks is that you keep looking forward, in the general direction of the road. A small camera mounted on the steering column watches you to make sure. If you look away for more than a few seconds or cover or block your eyes while eating, reading, texting and the like, the car will issue a series of warnings for you to pay attention. If you **fail** to heed the warnings, the car will eventually disengage Super Cruise and begin to slow down. Ignoring it isn't easy; there are angry red lights, a buzzer in your seat, a stern voice scolding you, and I, for one, was quick to obey.  Super Cruise's main limitation is geographic. Unlike **Tesla**'s system, which can be activated on pretty much any road, Super Cruise can be engaged only on the few hundred thousand miles of American roadway that G.M. has mapped. In practice, this means it works on most state and Interstate highways. I wasn't keeping track, but I'd estimate it was available on about two-thirds of our trip.  The system takes some getting used to; there's a bit of nervousness the first few times you turn it on -- you keep your hands on the wheel just to be sure that it's really driving -- but it wasn't long before I began to trust it.  What does one do in the driver's seat, if not drive? It's basically like being a passenger. For dozens of miles at a time, the car asks nothing from you. Freed from the drudgery of driving, you can let your eye wander across the scenery and your mind contemplate the mundane and the profound. It's not that you're completely distracted -- even lost in thought, you can keep situational awareness of the road ahead -- but the reduction in stress is significant. With Super Cruise, I could drive much farther in a day and feel much calmer afterward, almost as if I hadn't done anything at all.  What all of this amounts to, after a while, is an inflated sense of confidence, a feeling that your car can take you anywhere more or less hassle-free. Super Cruise let me drive farther than I could otherwise, with less stress. (And the Escalade's many screens let my kids sit longer in the car than they would have otherwise, with less whining. My son, who's 11, spent much of the trip playing Xbox on the back-seat display.)  A snowstorm rolled in when we were in Los Alamos, N.M., and if I'd been in another car, I would probably have waited for the snow to pass before I set off out of town. But the Escalade had me hopped up: Because I suspected **self-driving** in the snow would not be all that much more of an annoyance than **self-driving** in clear weather, I'd chosen to keep driving in potentially dangerous conditions.  This is exactly the sort of thinking that urban scholars say promotes sprawl. America's first wave of urban sprawl, which took off after World War II, was fueled in part by the plummeting price of cars and the development of the Interstate highway system. The artificial intelligence researcher Carlos Ignacio Gutierrez argues in a recent paper that autonomous cars can produce a similar effect: If **self-driving** an hourlong commute is as easy as manually driving a half-hour commute, an owner of a **self-driving** car may reasonably decide to move to more affordable housing farther from city centers. And moving farther away -- that is, creating sprawl -- intensifies car dependence by making alternative forms of transportation like walking or biking more difficult.  At this point this is only a theory, but it's a plausible one. Some research has already shown that people who use advanced **driver-assistance** systems drive more than those who don't.  And **self-driving** systems will keep getting better. G.M. has announced an update that will be available on some 2023 vehicles that will ''enable hands-free driving in 95 percent of all driving scenarios.''  But how far does this go? As the cars get better at driving themselves, as the screens get bigger and the speakers louder and the seats more comfortable, what role will cars come to play in our lives? They might become our new living rooms. They could also become our very luxurious prisons.  Office Hours With Farhad Manjoo  Farhad wants to chat with readers on the phone . If you're interested in talking to a New York Times columnist about anything that's on your mind, please fill out this form. Farhad will select a few readers to call.  The Times is committed to publishing a diversity of letters to the editor. We'd like to hear what you think about this or any of our articles. Here are some tips . And here's our email: letters@nytimes.com .  Follow The New York Times Opinion section on Facebook , Twitter (@NYTopinion) and Instagram . |
| ART | (PHOTOGRAPH BY Tim Peacock FOR THE NEW YORK TIMES) |
| CO | gnmoc : General Motors Company |
| IN | i351 : Motor Vehicles | i35101 : Passenger Cars | iaut : Automotive |
| NS | gcar : Cars | ncolu : Columns | nedc : Commentaries/Opinions | nrvw : Reviews | cenvire : Corporate Environmental Responsibility | ccat : Corporate/Industrial News | cesg : Environmental/Social/Governance | gcat : Political/General News | glife : Living/Lifestyle | ncat : Content Types | nfact : Factiva Filters | nfce : C&E Exclusion Filter | nfcpex : C&E Executive News Filter |
| RE | usa : United States | namz : North America |
| IPD | Sunday Review Desk | Op-Ed |
| PUB | The New York Times Company |
| AN | Document NYTF000020220206ei2600042 |

\*\*48\*

|  |  |
| --- | --- |
| SE | National Desk; SECTA |
| HD | Pushing for **Self-Driving Tesla**, Musk Downplayed Tech Limits |
| BY | By Cade Metz and Neal E. Boudette |
| WC | 2838 words |
| PD | 7 December 2021 |
| SN | The New York Times |
| SC | NYTF |
| ED | Late Edition - Final |
| PG | 1 |
| LA | English |
| CY | Copyright 2021 The New York Times Company. All Rights Reserved. |
| LP | To hear more audio stories from publications like The New York Times, download Audm for iPhone or Android .  Elon Musk built his electric car company, **Tesla**, around the promise that it represented the future of driving -- a phrase emblazoned on the automaker's website. |
| TD | Much of that promise was centered on **Autopilot**, a system of features that could steer, brake and accelerate the company's sleek electric vehicles on highways. Over and over, Mr. Musk declared that truly autonomous driving was nearly at hand -- the day when a **Tesla** could drive itself -- and that the capability would be whisked to drivers over the air in software updates.  Unlike technologists at almost every other company working on **self-driving** vehicles, Mr. Musk insisted that autonomy could be achieved solely with cameras tracking their surroundings. But many **Tesla** engineers questioned whether it was safe enough to rely on cameras without the benefit of other sensing devices -- and whether Mr. Musk was promising drivers too much about **Autopilot**'s capabilities.  Now those questions are at the heart of an investigation by the National Highway Traffic Safety Administration after at least 12 **accidents** in which Teslas using **Autopilot** drove into parked fire trucks, police cars and other emergency vehicles, killing one person and injuring 17 others.  Families are suing **Tesla** over fatal **crashes**, and **Tesla** customers are suing the company for misrepresenting **Autopilot** and a set of sister services called Full **Self Driving**, or F.S.D.  As the guiding force behind **Autopilot**, Mr. Musk pushed it in directions other automakers were unwilling to take this kind of technology, interviews with 19 people who worked on the project over the last decade show. Mr. Musk repeatedly misled buyers about the services' abilities, many of those people say. All spoke on the condition of anonymity, fearing retaliation from Mr. Musk and **Tesla**.  Mr. Musk and a top **Tesla** lawyer did not respond to multiple email requests for comment for this article over several weeks, including a detailed list of questions. But the company has consistently said that the onus is on drivers to stay alert and take control of their cars should **Autopilot malfunction**.  Since the start of **Tesla**'s work on **Autopilot**, there has been a tension between safety and Mr. Musk's desire to market **Tesla** cars as technological marvels.  For years, Mr. Musk has said **Tesla** cars were on the verge of complete autonomy. ''The basic news is that all **Tesla** vehicles leaving the factory have all the hardware necessary for Level 5 autonomy,'' he declared in 2016. The statement surprised and concerned some working on the project, since the Society of Automotive Engineers defines Level 5 as full driving **automation**.  More recently, he has said that new software -- currently part of a beta test by a limited number of **Tesla** owners who have bought the F.S.D. package -- will allow cars to drive themselves on city streets as well as highways. But as with **Autopilot**, **Tesla** documentation says drivers must keep their hands on the wheel, ready to take control of the car at any time.  Regulators have warned that **Tesla** and Mr. Musk have exaggerated the sophistication of **Autopilot**, encouraging some people to misuse it.  ''Where I get concerned is the language that's used to describe the capabilities of the vehicle,'' said Jennifer Homendy, chairwoman of the National Transportation Safety Board, which has investigated **accidents** involving **Autopilot** and criticized the system's design. ''It can be very dangerous.''  In addition, some who have long worked on autonomous vehicles for other companies -- as well as seven former members of the **Autopilot** team -- have questioned **Tesla**'s practice of constant modifications to **Autopilot** and F.S.D., pushed out to drivers through software updates, saying it can be hazardous because buyers are never quite sure what the system can and cannot do.  Hardware choices have also raised safety questions. Within **Tesla**, some argued for pairing cameras with radar and other sensors that worked better in heavy rain and snow, bright sunshine and other difficult conditions. For several years, **Autopilot** incorporated radar, and for a time **Tesla** worked on developing its own radar technology. But three people who worked on the project said Mr. Musk had repeatedly told members of the **Autopilot** team that humans could drive with only two eyes and that this meant cars should be able to drive with cameras alone.  They said he saw this as ''returning to first principles'' -- a term Mr. Musk and others in the technology industry have long used to refer to sweeping aside standard practices and rethinking problems from scratch. In May of this year, Mr. Musk said on Twitter that **Tesla** was no longer putting radar on new cars. He said the company had tested the safety implications of not using radar but provided no details.  Some people have applauded Mr. Musk, saying that a certain amount of compromise and risk was justified as he strove to reach mass production and ultimately change the automobile industry.  But recently, even Mr. Musk has expressed some doubts about **Tesla**'s technology. After repeatedly describing Full **Self Driving** in speeches, in interviews and on social media as a system on the verge of full autonomy, Mr. Musk in August called it ''not great.'' The team working on it, he said on Twitter, ''is rallying to improve as fast as possible.''  Cameras as Eyes  **Tesla** began developing **Autopilot** more than seven years ago as an effort to meet new safety standards in Europe, which required technology like automatic braking, according to three people familiar with the origins of the project.  The company originally called this an ''advanced **driver assistance**'' project, but was soon exploring a new name. Executives led by Mr. Musk decided on ''**Autopilot**,'' though some **Tesla** engineers objected to the name as misleading, favoring ''Copilot'' and other options, these three people said.  The name was borrowed from the aviation systems that allow planes to fly themselves in ideal conditions with limited pilot input.  At **Autopilot**'s official announcement in October 2014, **Tesla** said that the system would brake automatically and keep the car in a lane but added that ''the driver is still responsible for, and ultimately in control of, the car.'' It said that **self-driving** cars were ''still years away from becoming a reality.''  At the beginning, **Autopilot** used cameras, radar and sound-wave sensors. But Mr. Musk told engineers that the system should eventually be able to drive autonomously from door to door -- and it should do so solely with cameras, according to three people who worked on the project.  They said the **Autopilot** team continued to develop the system using radar and even planned to expand the number of radar sensors on each car, as well as exploring lidar -- ''light detection and ranging'' devices that measure distances using laser pulses.  But Mr. Musk insisted that his two-eyes metaphor was the way forward and questioned whether radar was ultimately worth the headache and expense of buying and integrating radar technology from third parties, four people who worked on the **Autopilot** team said.  Over time, the company and the team moved closer to his way of thinking, placing more emphasis on camera technology, these people said.  Other companies developing **driver-assistance** systems and fully autonomous cars thought cameras were not enough. Google, for example, outfitted its **self-driving** test cars with expensive lidar devices as big as buckets mounted on the roof.  Cameras, by contrast, were cheap and small, which made them appealing to **Tesla** for its sleek cars. Radar, which uses radio waves and has been around for decades, was cheaper than lidar, a less common technology. But according to three people who worked on the project, some engineers backed Mr. Musk's cameras-only approach, arguing that radar was not always accurate and that it was difficult to reconcile radar data with information from cameras.  Autonomous driving experts said Mr. Musk's cameras-as-eyes analogy was deeply flawed, as did eight former **Autopilot** engineers interviewed for this article, though some said there were colleagues who supported Mr. Musk's view.  Aesthetics also influenced decisions about radar.  In late 2014, **Tesla** began installing radar on its Model S sedans as it prepared to roll out the first version of **Autopilot**. But Mr. Musk did not like the way the radar looked inside an open hole in the front of the cars and told his engineers to install a rubber seal, according to two people who worked on the project at the time, even though some employees warned that the seal could trap snow and ice and prevent the system from working properly.  These people said the company went ahead with Mr. Musk's instructions without testing the design in winter weather -- but resolved the situation after customers complained that the radar stopped working in winter.  In mid-2015, Mr. Musk met with a group of **Tesla** engineering managers to discuss their plans for the second version of **Autopilot**. One manager, an auto industry veteran named Hal Ockerse, told Mr. Musk he wanted to include a computer chip and other hardware that could monitor the physical components of **Autopilot** and provide backup if parts of the system suddenly stopped working, according to two people with knowledge of the meeting.  But Mr. Musk slapped down the idea, they said, arguing it would slow the progress of the project as **Tesla** worked to build a system that could drive cars by themselves. Already angry after **Autopilot malfunctioned** on his morning drive that day, Mr. Musk berated Mr. Ockerse for even suggesting the idea. Mr. Ockerse soon left the company.  By the end of 2015, Mr. Musk was publicly saying that Teslas would drive themselves within about two years. ''I think we have all the pieces, and it's just about refining those pieces, putting them in place, and making sure they work across a huge number of environments -- and then we're done,'' he told Fortune magazine.  Other companies like Google, Toyota and Nissan exploring autonomous driving were not nearly as optimistic in their public statements.  A Fatal **Accident**  In May 2016, about six months after Mr. Musk's remarks appeared in Fortune, a Model S owner, Joshua Brown, was killed in Florida when **Autopilot failed** to recognize a tractor-trailer crossing in front of him. His car had radar and a camera.  Mr. Musk held a short meeting with the **Autopilot** team and briefly addressed the **accident**. He did not delve into the details of what went wrong but told the team that the company must work to ensure that its cars did not hit anything, according to two people who were part of the meeting.  **Tesla** later said that during the **crash**, **Autopilot**'s camera could not distinguish between the white truck and the bright sky. **Tesla** has never publicly explained why the radar did not prevent the **accident**. Radar technology, like cameras and lidar, is not flawless. But most in the industry believe that this means you need as many types of sensors as possible.  Less than a month after the **crash**, Mr. Musk said at an event hosted by Recode, a tech publication, that autonomous driving was ''basically a solved problem'' and that Teslas could already drive more safely than humans. He made no mention of the **accident** in which Mr. Brown was killed, though **Tesla** said in a blog post a few weeks later -- headlined ''A Tragic Loss'' -- that it had immediately reported the episode to federal regulators.  While it is not clear that they were influenced by the fatal **accident**, Mr. Musk and **Tesla** soon showed a renewed interest in radar, according to three engineers who worked on **Autopilot**. The company began an effort to build its own radar technology, rather than using sensors built by other suppliers. The company hired Duc Vu, an expert in the field, in October 2016 from the auto parts company Delphi.  But 16 months later, Mr. Vu suddenly parted ways with the company after a disagreement he had with another executive over a new wiring system in **Tesla**'s cars, the three people said. In the weeks and months that followed, other members of the radar team left as well.  Over several months after those departures, **Tesla** reclassified the radar effort as a research undertaking rather than one actively aimed at production, the three people said.  The Quest for Fully Autonomous Cars  As **Tesla** approached the introduction of **Autopilot** 2.0, most of the **Autopilot** team dropped their normal duties to work on a video meant to show just how autonomous the system could be. But the final video did not provide a full picture of how the car operated during the filming.  The route taken by the car had been charted ahead of time by software that created a three-dimensional digital map, a feature unavailable to drivers using the commercial version of **Autopilot**, according to two former members of the **Autopilot** team. At one point during the filming of the video, the car hit a roadside barrier on **Tesla** property while using **Autopilot** and had to be repaired, three people who worked on the video said.  The video was later used to promote **Autopilot**'s capabilities, and it is still on **Tesla**'s website.  When Mr. Musk unveiled **Autopilot** 2.0 in October 2016, he said at the news conference that all new **Tesla** cars now included the cameras, computing power and all other hardware they would need for ''full **self driving**'' -- not a technical term, but one that suggested truly autonomous operation.  His statements took the engineering team by surprise, and some felt that Mr. Musk was promising something that was not possible, according to two people who worked on the project.  Sterling Anderson, who led the project at the time and later started an autonomous driving company called Aurora, told **Tesla**'s sales and marketing teams that they should not refer to the company's technology as ''autonomous'' or ''**self-driving**'' because this would mislead the public, according to two former employees.  Some in the company may have heeded the advice, but **Tesla** was soon using the term ''full **self driving**'' as a standard way of describing its technology.  By 2017, **Tesla** began selling a set of services that the company has described as a more advanced version of **Autopilot**, calling the package Full **Self Driving**. Its features include responding to traffic lights and stop signs -- and changing lanes without being prompted to by the driver. The company sold the package for up to $10,000.  Engineers who have worked on the technology acknowledge that these services have yet to reach the full autonomy implied in its name and promised by Mr. Musk in public statements. ''I'm highly confident the car will drive itself for the reliability in excess of a human this year,'' he said during an earnings call in January 2021. ''This is a very big deal.''  In early November, **Tesla** recalled nearly 12,000 vehicles that were part of the beta test of new F.S.D. features, after deploying a software update that the company said might cause **crashes** because of unexpected activation of the cars' emergency braking system.  Schuyler Cullen, who oversaw a team that explored autonomous-driving possibilities at the South Korean tech giant Samsung, said in an interview that Mr. Musk's cameras-only approach was fundamentally flawed. ''Cameras are not eyes! Pixels are not retinal ganglia! The F.S.D. computer is nothing like the visual cortex!'' said Mr. Cullen, a computer vision specialist who now runs a start-up that is building a new kind of camera-based sensor.  Amnon Shashua, chief executive of Mobileye, a former **Tesla** supplier that has been testing technology that is similar to the electric-car maker's, said Mr. Musk's idea of using only cameras in a **self-driving** system could ultimately work, though other sensors may be needed in the short term. He added that Mr. Musk might exaggerate the capabilities of the company's technology, but that those statements shouldn't be taken too seriously.  ''One should not be hung up on what **Tesla** says,'' Mr. Shashua said. ''Truth is not necessarily their end goal. The end goal is to build a business.'' |
| ART | The system has yet to reach full autonomy. (PHOTOGRAPH BY CHRISTOPHER GOODNEY/BLOOMBERG) (A1); A using to navigate the streets of Los Angeles. Federal investigators are examining at least 12 in which Teslas using drove into emergency vehicles. (PHOTOGRAPH BY MIKE BLAKE/REUTERS); Joshua Brown, a Model S owner, was killed in Florida in May 2016 when the system to recognize a tractor-trailer in front of him. (PHOTOGRAPH VIA REUTERS); Elon Musk insisted that could rely solely on cameras, saying humans drive with only two eyes. (PHOTOGRAPH BY ALY SONG/REUTERS) (A16) |
| CO | teslmi : Tesla, Inc. |
| IN | i35104 : Alternative Fuel Vehicles | iadrive : Autonomous Driving Technologies | icellph : Cell/Mobile/Smart Phones | iaut : Automotive | i3302 : Computers/Consumer Electronics | i3441 : Telecommunications Equipment | i34411 : Mobile Communications Devices | i3454 : Personal Electronics | i351 : Motor Vehicles | ielec : Consumer Electronics | ihandaps : Handheld Electronic Devices | itech : Technology |
| NS | npag : Page One Stories | reqrau : Suggested Reading Automobiles | ncat : Content Types | redit : Selection of Top Stories/Trends/Analysis | reqr : Suggested Reading Industry News |
| RE | usa : United States | namz : North America |
| IPD | National Desk |
| PUB | The New York Times Company |
| AN | Document NYTF000020211207ehc70004r |

\*\*55\*

|  |  |
| --- | --- |
| SE | Business/Financial Desk; SECTB |
| HD | **Tesla** Is Ordered to Give **Autopilot** Data to Safety Agency |
| BY | By Neal E. Boudette |
| WC | 509 words |
| PD | 2 September 2021 |
| SN | The New York Times |
| SC | NYTF |
| ED | Late Edition - Final |
| PG | 3 |
| LA | English |
| CY | Copyright 2021 The New York Times Company. All Rights Reserved. |
| LP | The request by the National Highway Traffic Safety Administration is part of an investigation into **Tesla** cars **crashing** into parked emergency vehicles.  The main federal auto safety agency has ordered **Tesla** to hand over a trove of data on its **Autopilot driver-assistance** system as part of an investigation into **Tesla** cars **crashing** into fire trucks or other emergency vehicles parked on roads and highways. |
| TD | In a letter dated Tuesday, the National Highway Traffic Safety Administration told the electric carmaker to produce detailed information on how **Autopilot** works, how it ensures drivers are paying attention to the road and whether there are any limits on where it can be turned on.  The safety agency is also seeking detailed data on how many cars **Tesla** has sold in the United States, any arbitration proceedings or lawsuits related to **Autopilot crashes** that the company has been involved in, and the complaints **Tesla** has received about **Autopilot** from customers.  The agency asked **Tesla** to deliver the information by Oct. 22, noting that it could impose fines of up to $115 million if the company **fails** or refuses to comply. The letter is signed by Gregory Magno, chief of the vehicle defects division in the agency's Office of Defects Investigation.  The safety agency informed **Tesla** weeks ago that it was looking into the spate of **crashes** in which **Tesla** vehicles operating on **Autopilot failed** to detect stopped emergency vehicles with flashing lights. The regulator originally said it was looking into 11 such **crashes**. A 12th occurred on Saturday, when a Model 3 hit a police cruiser that had stopped behind a car that had broken down on an interstate in Orlando, Fla.  The driver told the police that the Model 3 had been in **Autopilot** mode, according to the Florida Highway Patrol. The **Tesla** narrowly missed hitting a state trooper.  The request for data suggests that the safety agency's investigation is moving quickly. Safety experts have criticized the agency for doing little to investigate a growing number of **crashes**, injuries and fatalities involving **Tesla** vehicles operating with **Autopilot** turned on over the last five years. The safety agency said this summer that it was looking into about 30 **Autopilot**-related **crashes**, including eight that resulted in 10 deaths.  Safety experts and another federal agency, the National Transportation Safety Board, have pointed out that **Autopilot** lacks effective safeguards to ensure drivers keep their eyes on the road and hands on the wheel while using the system. It is supposed to be used only on divided highways but lacks mechanisms for prohibiting use on local roads -- features that General Motors, Ford Motor and other automakers have built into similar systems. |
| ART | A Model S. The National Highway Traffic Safety Administration asked to deliver data by Oct. 22, noting that it could impose fines of up to $115 million if the company does not comply. (PHOTOGRAPH BY Lucas Jackson/Reuters FOR THE NEW YORK TIMES) |
| CO | nathg : National Highway Traffic Safety Administration |
| NS | gtacc : Transport Accidents | gmmdis : Accidents/Man-made Disasters | gcat : Political/General News | gdis : Disasters/Accidents | gtrans : Transport |
| RE | usa : United States | usfl : Florida | namz : North America | uss : Southern U.S. |
| IPD | Business/Financial Desk |
| PUB | The New York Times Company |
| AN | Document NYTF000020210902eh920004h |

\*\*56\*

|  |  |
| --- | --- |
| SE | Business/Financial Desk; SECTB |
| HD | **Tesla** Add-On Kit Gets New Scrutiny |
| BY | By Cade Metz |
| WC | 1599 words |
| PD | 23 August 2021 |
| SN | The New York Times |
| SC | NYTF |
| ED | Late Edition - Final |
| PG | 1 |
| LA | English |
| CY | Copyright 2021 The New York Times Company. All Rights Reserved. |
| LP | As federal investigators escalate their scrutiny of **Tesla**'s **driver-assistance** technology, another problem is emerging for the electric carmaker: complaints among customers that they have been sold an additional **driver-assistance** option that doesn't operate as advertised.  Over the years, **Tesla** owners have paid as much as $10,000 for the package, called Full **Self-Driving**. F.S.D., which can be purchased as an extra on **Tesla** cars, is a collection of services that add to **Tesla**'s **Autopilot**, the **driver-assistance** technology that government investigators are taking a look at after a string of **crashes**. |
| TD | Critics say F.S.D. hasn't lived up to its name since its debut more than two years ago. It can help a car navigate off one highway and onto another, and respond to traffic lights and stop signs. It also includes a service for summoning a car out of a parking space or parking lot with a mobile app. But full **self-driving**? Not quite.  When Joel M. Young paid $6,000 for F.S.D. in 2019, he assumed he would receive a system that could drive anywhere on its own by year's end. Two years later, that remains beyond the system's abilities. Mr. Young, a lawyer, writer and car enthusiast living in Placitas, N.M., recently asked **Tesla** to refund his money, and it declined. On Wednesday, he sued the company, accusing it of fraud and breach of contract, among other complaints.  ''**Tesla** has not delivered what it promised,'' he said.  Mr. Young's suit is most likely the second from a customer aimed at the F.S.D. add-on feature. Two brothers in Southern California have filed a suit that raises similar complaints. And as many enthusiasts on social media platforms like Reddit question whether they have paid for something that does not exist, the California Department of Motor Vehicles recently said it was reviewing **Tesla**'s use of the term Full **Self-Driving**.  Also on Wednesday, Senators Richard Blumenthal of Connecticut and Edward J. Markey of Massachusetts, both Democrats, sent the chair of the Federal Trade Commission a letter calling on the agency to investigate the marketing and advertising of **Autopilot** and F.S.D.  **Tesla** privately acknowledges the limitations of the technology. As the public advocacy website PlainSite recently revealed after a public records request, **Tesla** officials have told California regulators that the company is unlikely to offer technology that can drive in any situation on its own by the end of 2021.  ''If we can't trust **Tesla** when they say their vehicles are full **self-driving**, how can we trust the company when it says they are safe?'' said Bryant Walker Smith, an associate professor in the Schools of Law and Engineering at the University of South Carolina who specializes in autonomous vehicles.  **Tesla** did not respond to several requests for comment.  Complaints about the F.S.D. kit may pale in comparison with the concerns that people are being killed by misuse of or glitches in **Tesla**'s **driver-assistance** technology. But they point to a common thread of **Tesla**'s approach to driving **automation**: The company is making promises that other carmakers shrink from, and its customers think their cars can do more on their own than they really can.  ''One of the downsides of automated technology can be overreliance -- people relying on something it may not be able to do,'' said Jason K. Levine, executive director of the Center for Auto Safety, a nonprofit that has monitored the industry since the early 1970s.  Other automakers are being considerably more conservative when it comes to **automation**. The likes of General Motors and Toyota offer **driver-assistance** technologies akin to **Autopilot** and F.S.D., but they do not market them as **self-driving** systems.  Backed by billions of dollars from major automakers and tech giants, companies like Argo, Cruise and Waymo have been developing and testing autonomous vehicles for years. But in the near term, they have no intention of selling the technology to consumers. They are designing vehicles they hope to deploy in certain cities as ride-hailing services. Think Uber without the drivers.  In each city, they begin by building a detailed, three-dimensional map. First they equip ordinary cars with lidar sensors -- ''light detection and ranging'' devices that measure distances using pulses of light. As company workers drive these cars around the city, the sensors collect all the information needed to generate the map, pinpointing the distance to every curb, median and roadside tree.  The cars then use this map to navigate roads on their own. They continue to monitor their surroundings using lidar, and they compare what they see with what the map shows, keeping close track of where they are in the world.  At the same time, these sensors alert the cars to nearby objects, including other cars, pedestrians and bicyclists. But they do not do this alone. Additional sensors -- including radar and cameras -- do much the same. Each sensor provides its own snapshot of what is happening on the road, serving as a check on the others.  Waymo now offers an automated ride-hailing service in the suburbs of Phoenix, but the roads are wide, pedestrians are few and rain is rare. Expanding into other areas is a painstaking process that involves constant testing and retesting, mapping and remapping. Chris Urmson, the chief executive of the autonomous vehicle company Aurora, said the rollout could take 30 years or more.  **Tesla** is taking a very different tack. The company and its chief executive, Elon Musk, believe that **self-driving** cars can navigate city streets without three-dimensional maps. After all, human drivers do not need these maps. They need only eyes.  For years, **Tesla** has argued that autonomous vehicles can understand their surroundings merely by capturing what a human driver would see as they speed down the road. That means the cars need only one kind of sensor: cameras.  Since its cars are already equipped with cameras, **Tesla** argues, it can transform them into autonomous vehicles by gradually improving the software that analyzes and responds to what the cameras see. F.S.D. is a step toward that.  But F.S.D. has notable limits, said Jake Fisher, senior director of Consumer Reports' Auto Test Center, who has extensively tested these services. Automatically changing lanes can be enormously stressful and potentially dangerous, for instance, and summoning the car from a parking space works only occasionally.  ''These systems are good at dealing with the boring, monotonous stuff,'' Mr. Fisher said. ''But when things get interesting, I prefer to drive.''  Machines cannot yet reason like a human. Cars can capture what is happening around them, but they struggle to completely understand what they have captured and predict what will happen next.  That's why other companies are deploying their autonomous cars so slowly. And it is why they equip these cars with additional sensors, including lidar and radar. Radar and lidar can track the speed of nearby objects as well as their distance, giving cars a better sense of what is happening.  **Tesla** recently removed the radar from its new cars, which now rely solely on cameras, as the company always said they would. During a January earnings call, Mr. Musk said he was ''highly confident the car will be able to drive itself with reliability in excess of humans this year.''  This promise rests on a ''beta'' service, now under test with a limited number of **Tesla** owners, that aims to automate driving beyond highways. In a March post on Twitter, Mr. Musk estimated that 2,000 people were using the beta, called ''Autosteer on city streets.''  But like **Autopilot** and other F.S.D. services, the beta calls for drivers to keep their hands on the wheel and take control of the car when needed.  Most experts say this is unlikely to change soon. Given the speed of cameras and the limitations in the algorithms that analyze camera images, there are still situations where such a setup cannot react quickly enough to avoid **crashes**, said Schuyler Cullen, a computer vision specialist who oversaw autonomous driving efforts at the South Korean tech giant Samsung.  With a system that relies solely on cameras, **crash** rates will be too high to offer the technology on a wide scale without driver oversight, said Amnon Shashua, chief executive of Mobileye, a company that supplies **driver-assistance** technology to most major carmakers and has been testing technology that is similar to what **Tesla** is testing. Today, he said, additional sensors are needed.  **Tesla** was not necessarily wrong to remove the radar from its cars, Mr. Shashua added. There are questions about the usefulness of radar sensors, and **Tesla** may have seen an opportunity to remove their cost. But that does not mean the company can reach full autonomy solely with cameras. The technology needed to do this safely and reliably does not yet exist.  ''That approach, in my opinion, will never work,'' Dr. Cullen said. |
| ART | An owner demonstrating his 's technology. privately acknowledges the limitations of its automated technology. (PHOTOGRAPH BY EVAN JENKINS FOR THE NEW YORK TIMES) (B1); 's factory in Fremont, Calif., in 2018. '' has not delivered what it promised,'' said an owner who paid $6,000 for Full and sued last week after trying unsuccessfully to get a refund from the company. (PHOTOGRAPH BY JUSTIN KANEPS FOR THE NEW YORK TIMES) (B5) |
| CO | teslmi : Tesla, Inc. |
| IN | iaut : Automotive | iadrive : Autonomous Driving Technologies | itech : Technology | i351 : Motor Vehicles | i35104 : Alternative Fuel Vehicles |
| NS | gcar : Cars | gtacc : Transport Accidents | reqrau : Suggested Reading Automobiles | gcat : Political/General News | gdis : Disasters/Accidents | glife : Living/Lifestyle | gmmdis : Accidents/Man-made Disasters | gtrans : Transport | redit : Selection of Top Stories/Trends/Analysis | reqr : Suggested Reading Industry News |
| RE | usa : United States | namz : North America |
| IPD | Business/Financial Desk |
| PUB | The New York Times Company |
| AN | Document NYTF000020210823eh8n0003a |

\*\*57\*

|  |  |
| --- | --- |
| SE | Money and Business/Financial Desk; SECTBU |
| HD | The Week in Business: Turning Up the Heat on **Tesla** |
| BY | By Sarah Kessler |
| WC | 591 words |
| PD | 22 August 2021 |
| SN | The New York Times |
| SC | NYTF |
| ED | Late Edition - Final |
| PG | 2 |
| LA | English |
| CY | Copyright 2021 The New York Times Company. All Rights Reserved. |
| LP | What's Up? (Aug. 15-21)  **Tesla** Under Investigation |
| TD | The country's top auto-safety agency announced the broadest investigation yet into **Tesla**'s assisted-driving technology, which it calls **Autopilot**, prompted by at least 11 **accidents** in which Teslas **crashed** into parked emergency vehicles. The agency is investigating more than two dozen **crashes** that occurred with **Autopilot** in use, which resulted in at least 10 deaths. Despite its name, the feature does not make Teslas autonomous. Safety experts say it may encourage distracted driving by giving a false impression about its capabilities.  Amazon > Walmart  Twenty-six years after Amazon sold its first book, it surpassed Walmart in total sales. The value of all things sold on Amazon, by it and its third-party sellers, surpassed $610 billion in the 12 months through June, according to estimates compiled by FactSet. Walmart on Tuesday reported $566 billion in sales over a similar period. A pandemic-driven surge in online shopping accelerated the timeline for what many saw as an inevitable milestone. Even so, online sales still represent just 14 percent of overall retail spending.  Facebook Trust Issues  The Federal Trade Commission refiled its antitrust lawsuit against Facebook on Thursday. The new complaint is more detailed and almost twice as long as the original, but the claim is the same: Facebook holds a monopoly on social networking that it has tried to maintain through acquisitions. In the past, monopoly power has often been gauged by impact on prices. A federal judge threw out the F.T.C.'s initial Facebook case in June, highlighting the challenge of defining a monopoly when the product is free.  What's Next? (Aug. 22-28)  Taper Talk  Central bankers meet for their annual gathering in Jackson Hole, Wyo., starting on Thursday. The Federal Reserve has made important announcements at the event in the past, and many expect Jerome H. Powell, the Fed chair, to reveal details about how and when the bank plans to begin winding down its bond-buying program, one of several policies it created to reduce the economic impact of the pandemic. Minutes from the Fed's last meeting showed that officials generally agreed that they would soon meet their standards for slowing bond-buying, but they were still debating exactly when to begin the so-called taper.  U.K. Travel Restrictions  The U.K. will make updates to its much-criticized ''traffic light'' system of pandemic travel restrictions. Under the system, residents traveling to ''green list'' countries do not need to quarantine upon return but are required to take coronavirus tests. Those returning from countries on the ''amber list,'' which includes the United States, must be tested and, unless they are fully immunized with an approved vaccine, isolate for 10 days. People returning from ''red list'' countries may only enter Britain if they have residence rights, and then must quarantine for 10 days in a government-approved hotel.  Paralympics Begin  Tokyo is still grappling with a high level of coronavirus infections and a low rate of vaccination while preparing for the Paralympics to start on Tuesday. As with the Olympics, no spectators will be allowed at the games.  What Else?  Retail sales fell in July, but the Delta variant is not to blame. Facebook is betting you'll want to attend meetings in virtual reality. ''Jeopardy!'' is looking for a permanent host once again. And Pope Francis called getting vaccinated ''an act of love.'' |

\*\*58\*

|  |  |
| --- | --- |
| SE | Money and Business/Financial Desk; SECTBU |
| HD | God, Money, YOLO: How Cathie Wood Found a Flock |
| BY | By Matt Phillips |
| WC | 3370 words |
| PD | 22 August 2021 |
| SN | The New York Times |
| SC | NYTF |
| ED | Late Edition - Final |
| PG | 1 |
| LA | English |
| CY | Copyright 2021 The New York Times Company. All Rights Reserved. |
| LP | Ms. Wood says the Holy Spirit moved her to strike out on her own after an up-and-down career in money management. But it's her belief in herself that won the Reddit crowd's faith.  Cathie Wood was in familiar territory. She was listening to someone tell her she was wrong. |
| TD | It was February 2018. Ms. Wood, a veteran money manager and the chief executive of Ark Invest, was on a panel on CNBC with the Canadian entrepreneur Kevin O'Leary, who is best known as Mr. Wonderful on the business-related reality show ''Shark Tank.''  The topic was **Tesla**, and the two did not agree. At the time, **Tesla** shares were trading just below record-high levels, even though the company was facing one of the roughest patches in its history. Its stock was indefensibly expensive compared with those of other automakers, Mr. O'Leary argued. As giants like General Motors entered the electric vehicle business, the premium that **Tesla**'s shares commanded from investors was bound to shrink.  ''No,'' said Ms. Wood, the only female investor on the panel that day, after hearing Mr. O'Leary out. She then rattled off all the reasons Elon Musk's company was different. G.M. doesn't have the software engineers, distribution network or battery technology that **Tesla** has. In the future, software, artificial intelligence and automaking would converge. **Tesla** was ready for that.  ''The future is electric. G.M.'s not electric yet,'' she said.  It was classic Cathie Wood, a mash-up of in-the-weeds business analysis and an almost prophetic certainty about the future. It was also precisely what the online army of fanatical **Tesla** shareholders wanted to hear.  As **Tesla** struggled with production problems, dwindling cash and an erratic Mr. Musk in 2018, Ms. Wood gave a full-throated defense of the company, her largest single holding. That began an unlikely mind meld between Ms. Wood and the new generation of tech-focused, risk-hungry people who started trading in droves in 2020.  On paper, she seems an odd standard-bearer for these younger, diverse and deeply irreverent ranks of retail investors. Ms. Wood is a 65-year-old creature of Wall Street's asset management industry and the well-heeled Connecticut suburbs, as well as a deeply religious donor to conservative political campaigns.  But Ms. Wood and her firm's unusual approach to investing -- which combines high levels of risk with high levels of transparency about her views to produce, at least last year, astronomically high returns -- have connected with new investors in a way the financial industry had only dreamed of.  Her aggressive bets on often unprofitable technology stocks are a better fit for traders who brag on Reddit about YOLO-ing their rent money than it ever was for the endowments and institutions that rely on the traditional money management industry, where she spent more than 30 years.  In other words, Ms. Wood has finally found her people.  ''I listened to her and I was like, 'That's how I think,''' said Casey Flores, a 30-year-old amateur trader from Richmond, Va., who first saw Ms. Wood on CNBC over a year ago and was soon following her every trade. ''I just was like, 'I like this lady.'''  Her ability to connect with individual investors like Mr. Flores has helped make Ms. Wood the most influential investor at work in the markets today. After the funds she managed posted astounding gains in 2020, many of these new traders have embraced her feast-or-famine style of investing the way previous generations mimicked the relatively risk-averse methods of stock pickers like Fidelity's Peter Lynch or Berkshire Hathaway's Warren E. Buffett.  Ms. Wood is unlikely to match last year's performance, which was driven by an unpredictable confluence of events: the economic shock of the Covid-19 pandemic; the Federal Reserve's move to cut interest rates; the trading boom among individual investors. Her funds are trailing the overall market badly in 2021.  Even so, Ms. Wood has already changed Wall Street, perhaps for good, as some of the world's biggest financial players rush to introduce the kind of products that she and Ark pioneered.  Ms. Wood now manages nearly $85 billion -- up from less than $10 billion at the end of 2019.  Her firm bet heavily on tech stocks that flourished with most of the country stuck at home. Its flagship fund, Ark Innovation -- crammed with shares like Roku, Zillow and the payment technology firm Square -- soared almost 150 percent, trouncing the S&P 500's 16 percent gain.  Her decisions to buy and sell companies are disclosed daily to any investor who signs up for her email updates. Her frequent -- and seemingly fearless -- pronouncements on television can make headlines and move share prices.  Despite her frequent pronouncements about transparency as a core value of her firm, Ms. Wood declined repeated requests to be interviewed for this article, which is based on conversations with former colleagues and employees and her frequent public statements to the business media and religious groups.  In such appearances, she repeatedly describes her late-career decision to start her own investment shop as more than a business leap of faith.  It began, she says, with a head-on encounter with the Holy Spirit.  A Business Plan, From Beyond  On a gorgeous day in August 2012, Ms. Wood -- a fund manager struggling through a rough quarter at AllianceBernstein -- was struck by the silence inside her stately home in Wilton, Conn.  Her three children were gone, off to camp and other activities for the summer. She was facing two full weeks alone in the nearly 6,000-square-foot house she bought with her ex-husband in the 1990s.  Then she felt it.  ''Wham,'' Ms. Wood said last year on the ''Jesus Calling'' podcast, which is centered on the devotional writings of the best-selling Christian author Sarah Young. ''I really feel like that was the Holy Spirit just saying to me, 'OK, this is the plan.'''  The plan was for Ms. Wood to use her experience as a tech investor to build a new kind of money management firm -- optimized for the social media age and embracing a level of transparency that was radical, at least on Wall Street.  To do it, Ms. Wood had to quit her job and put her personal wealth on the line at the age of 57.  ''Most of my friends told me I was nuts, and yet I wasn't listening to them. I knew that I needed to follow God's will for me,'' she told a Christian ministry organization in 2016. ''That was the only way I was going to be happy.''  The first of four children of Irish immigrants, Ms. Wood spent much of her childhood on the move -- her father was a radar technician for the Air Force -- before the family settled in Culver City, Calif. She graduated from an all-girls Catholic school in 1974, and then attended the University of Southern California, majoring in business administration.  There she found a mentor in Arthur Laffer, one of the patron saints of supply-side economics, after she petitioned to be admitted to one of his graduate courses.  ''That took a lot of chutzpah,'' Mr. Laffer, 81, said.  He found Ms. Wood to be an impressive student, unwilling, he said, to abandon any topic until she understood it completely.  ''I've never seen anyone so thorough, so careful and so research-oriented in my life, which makes her quite self-confident,'' he said.  Ms. Wood's work ethic and voracious consumption of information are recurring themes among former co-workers. She often woke well before dawn to get one of the first trains to Grand Central Terminal each day, treating the nearly two-hour journey from Connecticut as a sort of perpetual cram session on rails.  In the days before smartphones, tablets and laptop computers, colleagues remembered her lugging bags laden with research reports into and out of the office each day.  Sig Segalas co-founded Jennison Associates, a New York money management shop where Ms. Wood worked from the early 1980s until 1998, first as an economist and then as an analyst and a fund manager. For many of those years, his office was next to hers, and he remembers her as typically one of the last people to leave the office each day.  But even given her work ethic and deep preparation, Mr. Segalas -- who started on Wall Street in the early 1960s -- said Ms. Wood's tendency to present her investment decisions as near certainties was unusual.  ''I've never met anybody with as much conviction,'' he said. ''It's almost mystical, to be very honest with you.''  Of course, even the best-informed forecaster sometimes gets it wrong.  For instance, in the early 1980s, when Ms. Wood was a portfolio manager at Jennison, it held a large position in Mexican stocks. Rumors began to circulate that Mexico might devalue the peso -- a move that would crush the firm's investments there.  While many economists thought the move was unlikely, Ms. Wood was especially sure it wouldn't happen, Mr. Segalas said.  ''She was adamant. 'There's no way they're going to do it. No way they're going to do it,''' he said. ''Sure enough, they did it. And everything collapsed.''  Such an approach to investing produces sharp ups and downs, which is why volatility has been a hallmark of Ms. Wood's career and, at times, a hurdle.  In 2001, Ms. Wood joined AllianceBernstein, where she oversaw a respectable $5 billion in assets at her peak. True to form, her performance at the Manhattan firm was a roller-coaster ride. Consider the AllianceBernstein Global Thematic Growth Fund, which she took over in the midst of a brutal year, 2008, when it tumbled 45 percent. The next year it rose 55 percent.  But an analysis of her record by Morningstar, published in March, found that her investments at AllianceBernstein were notable for their high volatility and ''underwhelming long-term results.'' Her global fund fared especially poorly in 2011, tumbling roughly 24 percent when the market was flat. In 2012 -- the year of her epiphany that she should start her own firm -- she again undershot her bench mark's rise, even without subtracting the cost of fees.  Such a return profile proved a difficult fit at AllianceBernstein, which catered to conservative fiduciary institutions such as pension funds and endowments. Many simply couldn't stomach Ms. Wood's style.  ''I think she was viewed as brilliant,'' said Lisa Shalett, a colleague at AllianceBernstein who is now chief investment officer at Morgan Stanley Wealth Management. But she was also seen as ''not institutional,'' Ms. Shalett said.  In 2013, Ms. Wood left AllianceBernstein. By January 2014, she had founded Ark.  Launching Ark  Chris Burniske, then a senior at Stanford, didn't know much about whom he was meeting that day in 2013, but he had heard that she was some sort of financial big shot.  A mutual friend had asked if he would be willing to show Cathie Wood and her son, Robert, the campus.  A surfer from Hawaii who studied ocean science, Mr. Burniske rolled up barefoot on his skateboard, and spent much of a weekend squiring Ms. Wood and her son around, using the opportunity to make a number of casual digs at the financial industry. Ms. Wood wanted to hire him anyway.  He didn't take her up on the offer at first. The idea of moving to New York and spending his days at a computer were unappealing. But after spending a few months working as a fishmonger at a Whole Foods in Austin, Texas, he decided he might give it a try.  Philosophically, Ark is unlike any other money management firm, not just in its investment strategy and products but also, and especially, in its staffing.  Mr. Burniske ultimately helped steer Ark into cryptoassets. (He has since written a book on valuing cryptoassets, and is a partner in a venture capital firm.) Another analyst, who covered **automation** at the company soon after it started, had little experience, though he had published a book in 2012 about how to strike it rich by trying to find silver coins mistakenly included in coin rolls. The analyst covering a broad swath of highly sophisticated technologies lists his employment history as two brief internships -- one as a brand manager for the energy drink Red Bull and a year captaining a 43-foot sailboat.  The unconventional approach extends to Ark's investment product of choice: actively managed exchange-traded funds, which allow investors to buy and sell shares throughout the trading day, just as they do with stocks. The vast majority of E.T.F.s are modeled on broadly traded indexes, which saves money because they don't need to pay professionals to pick stocks. But Ms. Wood buys and sells stocks constantly.  And anyone can follow along.  Ark churns out an unceasing stream of podcasts, white papers, YouTube videos and newsletters, broadcasting to millions of followers both Ms. Wood's image and her firm's views on investments as varied as Bitcoin and biopharmaceuticals. And decisions to buy or sell stocks are disclosed in a daily email blast that has become required reading for many traders.  Such transparency is anathema on Wall Street, where firms typically disclose their holdings once a quarter and shield their strategy from counterparts and rivals.  ''Cathie is a big believer in her stocks, and she promotes her stocks,'' Ms. Shalett said. ''So for her, it's kind of like, 'I don't mind having an open kimono.'''  Open access also seems to be a key reason that Ms. Wood has connected with the kind of investors who have recently been drawn to stock trading.  ''That's very punk rock,'' said Maximillian Lawrence, who began buying the Ark Innovation fund early last year. A 46-year-old artist and teacher in Philadelphia, Mr. Lawrence respected Ms. Wood's transparency, which fit well with the do-it-yourself ethos of the art and skateboarding communities he runs in.  ''The difference between her and a lot of these other folks is she legitimately believes in these things, and she doubles down,'' Mr. Lawrence said, injecting an expletive for emphasis. ''You can see it in her trades.''  And investors don't have to hand Ms. Wood their money to invest with her. Many, like Mr. Flores would do on occasion, just pick up shares of whatever she's buying.  Mr. Flores, who works in sales at a financial technology start-up, didn't know anything about some of the companies he was buying when he started mirroring her trades last year. But that didn't matter.  ''They would go up 11 percent, sometimes like 17 percent the next day,'' Mr. Flores said. ''It was ... wow.''  The effect was magnified as more amateurs followed along. ''It was just insane to see her buy list, and then every single thing on the buy list the next day would be up a ridiculous amount,'' he said.  Ms. Wood's disclosures continued to move the markets. Her purchase of more than 1.5 million shares of the stock-trading app Robinhood, which went public late last month, were credited for a price surge after they were publicized in late July and early August. The stock jumped more than 50 percent on Aug. 4.  ''The golden touch of Cathie Wood continues to carry a lot of weight,'' wrote Chris Vecchio, a market analyst with DailyFX.com, in a client note.  More Money, More Scrutiny  As Ms. Wood has attracted more attention, money and power to move markets, those scrutinizing her company argue that Ark's unique structure may be creating risks for its investors -- not to mention her online disciples.  Ms. Wood is the sole portfolio manager overseeing almost $85 billion in assets. She represents what's known as ''key man risk'' -- essentially the chance that illness, **accident**, death or something else renders an important leader unable to perform. Many investors would flee Ark if Ms. Wood wasn't at the helm.  She may also be a victim of her own success. Ark has far more money to invest than it did just 18 months ago, and spending it poses a challenge. The kind of technology stocks the company has traditionally favored are small and lightly traded, so big bets can move their prices sharply. Ark risks bidding the price up when it buys, then taking a big hit when it sells because such stocks often have few buyers.  Also, many of the stocks that Ms. Wood buys appear highly correlated -- they go up together -- which worked out well last year. But they also go down together, exposing her to crushing losses when market conditions turn against her.  Investors got a sneak peek of what such an ugly sell-off might look like this year. The flagship Ark Innovation fund plunged more than 35 percent between February and May -- far worse than the market -- as investors began to favor traditional sectors that were poised to benefit from the economic recovery.  Recent volatility -- partly a result of the rise of the Delta variant of the coronavirus and concerns about an uneven recovery -- has helped Ms. Wood's fund recover somewhat, but the Ark Innovation fund is still down about 7 percent for the year. In comparison, the Nasdaq is up roughly 14 percent and the S&P 500 about 18 percent.  But her funds' lackluster showing this year pales next to last year's surge. And the niche that has become almost synonymous with Ark -- actively managed, fully transparent exchange-traded funds -- is one of the fastest-growing parts of the money management business.  Over the past year, investors dumped about $110 billion into the kinds of actively traded funds that disclose their holdings daily, analysts at J.P. Morgan said in a recent research report, noting that such huge inflows demonstrate that ''portfolio transparency need not be an impediment to the success of an active E.T.F. strategy.''  On Wall Street, major firms are rushing in to siphon off their share of those investor dollars. Late last year, the world's largest money manager BlackRock, added three transparent funds -- which disclose positions daily -- to its offerings. Just last month, Goldman Sachs Asset Management began selling its first transparent, actively managed version of an E.T.F. JPMorgan Chase's asset management group also announced plans this month to convert four of its mutual funds into ''active transparent'' E.T.F.s, along the lines of Ark's offerings.  Others are predicting that Ms. Wood's luck is about to run out. Recent filings from some prominent hedge funds showed they had been purchasing 'puts' -- bets that make money when the price of an investment declines -- against her fund during the second quarter.  For her part, she continues to look for new opportunities. In May, as tech stocks were tumbling and cryptocurrencies took a nosedive, she said on Bloomberg News that Bitcoin could rise to $500,000 over the next five years. It is currently trading around $45,000.  Her firm has also filed plans with regulators to start a Bitcoin-themed E.T.F. that would track the performance of the S&P Bitcoin index.  And even though her funds are lagging the rest of the market, Ms. Wood stresses that her belief in her picks is remain steadfast.  Recent months had been difficult for her clients, she acknowledged to her interviewer. But in the next breath, she hastened a bit of advice.  ''Keep the faith,'' she said. |
| ART | Above, Cathie Wood speaking remotely during the Bloomberg Crypto Summit in February. Near right, an assembly line at 's factory in Fremont, Calif., in 2018. Far right, Casey Flores, an investor, wearing a shirt with Ms. Wood's face. (PHOTOGRAPHS BY DANIEL ACKER/BLOOMBERG; JUSTIN KANEPS FOR THE NEW YORK TIMES; PARKER MICHELS-BOYCE FOR THE NEW YORK TIMES) (BU5) |
| NS | grel : Religion | gcat : Political/General News | gcom : Society/Community |
| RE | usa : United States | namz : North America |
| IPD | Money and Business/Financial Desk |
| PUB | The New York Times Company |
| AN | Document NYTF000020210822eh8m0006o |

\*\*62\*

|  |  |
| --- | --- |
| CLM | GREG BENSINGER |
| SE | Editorial Desk; SECTA |
| HD | We're All **Tesla**'s Guinea Pigs |
| BY | By Greg Bensinger |
| WC | 1054 words |
| PD | 31 July 2021 |
| SN | The New York Times |
| SC | NYTF |
| ED | Late Edition - Final |
| PG | 18 |
| LA | English |
| CY | Copyright 2021 The New York Times Company. All Rights Reserved. |
| LP | One of the greatest tricks technology companies ever played was convincing their human guinea pig users that they were a privileged group called beta testers.  From novel email software to alternative versions of Twitter to voice-enabled listening devices, such trials are cheap and easy to make available to thousands or millions of customers. It's a great way to see how a new version stacks up against the old. |
| TD | Other than some annoying glitches or unfamiliar icons, software beta testing is generally innocuous. The stakes for most apps are far below life and death.  But there's nothing innocuous about the beta tests being run by Elon Musk, the billionaire C.E.O. of **Tesla**. He has turned American streets into a public laboratory for the company's supposed **self-driving** car technology.  **Tesla** says that its inaccurately named full **self-driving** and **autopilot** modes are meant to assist drivers and make Teslas safer -- but **autopilot** has been at the center of a series of erratic driving incidents.  In public, Mr. Musk sometimes overhypes these technologies on social media and in other statements. Yet **Tesla** engineers have privately admitted to California regulators that they are not quite ready for prime time.  **Tesla**'s **autopilot** mode uses software, sensors and cameras to detect lanes, objects and other vehicles on the road and can steer, brake, accelerate and even change lanes with minimal input from the driver. Full **self-driving** beta version 9 -- available today to just a few thousand **Tesla** owners -- is supposed to assist with more complicated driving on local streets.  Mr. Musk has assured buyers of his electric vehicles that they would have ''full **self-driving**, software, everything,'' yet the autos are not fully **self-driving**, nor do they have anything like a real **autopilot**.  This kind of experimental technology, in the hands of regular drivers, has caused multiple fiery **crashes** and may have other fatal flaws, like an inability to distinguish the moon from a yellow traffic light. **Autopilot**, features of which must be activated by the driver, has come installed in all new Teslas since 2016. The technology is the subject of multiple lawsuits, including allegations of false advertising.  Mr. Musk tweeted this month, ''Beta 9 addresses most known issues, but there will be unknown issues, so please be paranoid. Safety is always top priority at **Tesla**.'' Safety may be a top priority at the factory, but out on the public roads, it's not only **Tesla** drivers who have a vested interest in the safety of the vehicles.  On **Tesla**'s quarterly earnings call this week, Mr. Musk appeared to acknowledge that full **self-driving** is still half-baked. ''We need to make full **self-driving** work in order for it to be a compelling value proposition,'' he said of the technology, when asked about the $199 monthly fee to access it when **Tesla** releases it to a wider swath of drivers.  **Tesla** drivers may fall victim to a version of what's known in clinical drug trials as therapeutic misconception, in which trial participants (beta testers, in this case) tend to overlook the potential risks of participating in an experiment, mistakenly regarding themselves as consumers of a finished product rather than as guinea pigs. And with **self-driving** cars, **Tesla** owners aren't the only trial participants.  Consumer Reports has raised serious alarms about the safety of **Tesla** vehicles using the automated systems. Videos of full **self-driving** in action ''don't show a system that makes driving safer or even less stressful,'' said a Consumer Reports official. ''Consumers are simply paying to be test engineers for developing technology without adequate safety protection.'' This is simple: The cars are a hazard to pedestrians, cyclists and other drivers. Which makes it all the more alarming that the internet is full of videos of **Tesla** drivers reading books, checking email, leaving the driver's seat or snoozing behind the wheel.  In other words, Teslas appear to be a risk to drivers and others on the road when a computer is behind the wheel. The National Transportation Safety Board has criticized **autopilot** for lacking proper means to prevent driver misuse and effective driver monitoring systems. That should have all Americans concerned that their public streets are a testing ground.  Competitors like General Motors Co.'s Cruise and Alphabet's Waymo have taken a more measured approach, putting paid employees behind the wheel as a safety check while the cars are tested in real-world environments. At least they have no misconceptions about what's going on. Unlike Teslas, those vehicles are easily identifiable as prototypes on the road, giving drivers of other cars a chance to steer clear.  When engineers say the autonomous systems aren't yet ready, regulators should listen. Only this year did the National Highway Traffic Safety Administration begin requiring tracking and regular monthly reporting of **crashes** involving autonomous vehicles, perhaps a step toward more regulation. The agency has also ongoing investigations into about three dozen **crashes** involving vehicles using **driver-assistance** systems. The vast majority of those involved Teslas, including 10 fatalities.  **Tesla** didn't respond to a request for comment.  **Self-driving** vehicles hold tremendous promise to improve traffic safety. Humans are surprisingly bad at driving. Autonomous vehicles don't drink and drive, and one day they may be able to see better than the human eye, to respond more quickly to sudden movements from other cars on the road and to lower costs for long-haul trucking operations, among other benefits. But the technology isn't there yet.  Putting it on the road before it is ready risks not only lives now but also swift public acceptance of the technology down the road when it is ready. If **Tesla** wants to run beta tests with human guinea pigs, it should do so on a closed track. We'd all feel safer.  The Times is committed to publishing a diversity of letters to the editor. We'd like to hear what you think about this or any of our articles. Here are some tips . And here's our email: letters@nytimes.com .  Follow The New York Times Opinion section on Facebook , Twitter (@NYTopinion) and Instagram . |
| ART | PHOOT (PHOTOGRAPH BY MICHAEL DALDER/REUTERS) |
| CO | teslmi : Tesla, Inc. |
| IN | iadrive : Autonomous Driving Technologies | iaut : Automotive | itech : Technology | i351 : Motor Vehicles | i35104 : Alternative Fuel Vehicles |
| NS | ncolu : Columns | nedc : Commentaries/Opinions | nedi : Editorials | ncat : Content Types | nfact : Factiva Filters | nfcpex : C&E Executive News Filter |
| RE | usa : United States | namz : North America |
| IPD | Editorial Desk | Op-Ed |
| PUB | The New York Times Company |
| AN | Document NYTF000020210731eh7v0003e |

\*\*67\*

|  |  |
| --- | --- |
| SE | Business/Financial Desk; SECTB |
| HD | The Digest |
| BY | By Alan Rappeport and Associated Press |
| WC | 509 words |
| PD | 22 May 2021 |
| SN | The New York Times |
| SC | NYTF |
| ED | Late Edition - Final |
| PG | 2 |
| LA | English |
| CY | Copyright 2021 The New York Times Company. All Rights Reserved. |
| LP | AGRICULTURE Minority Farmers to Get Debt Relief Payments The United States Department of Agriculture said on Friday that it will begin making loan forgiveness payments in June to thousands of minority farmers as part of the Biden administration's $4 billion debt relief program. The initiative, part of the $1.9 trillion economic relief package that Congress passed in March, has been criticized by white farmers, who claim that it is a form of reverse discrimination, and by banks, which have complained they are losing out on profits from lost interest payments. Delays in implementing the program have frustrated Black farmer organizations, whose members have struggled financially for years and received little help from the Trump administration's farm bailouts last year. The U.S.D.A. will initially make debt relief payments for about 13,000 loans that were made directly by the agency to minority farmers. |
| TD | The next phase will apply to the approximately 3,000 loans that were made by banks and guaranteed by the U.S.D.A. That will begin ''no later'' than 120 days from Friday, the agency said. ALAN RAPPEPORT AUTOMOBILES Ford Boss Urges U.S. Set Rules for Automated Cars The chief executive of Ford, America's second-largest auto company, is calling for the federal government to set standards for fully or partially automated vehicles to tighten the safety of electronic driving systems. In urging federal regulation, the C.E.O., Jim Farley, right, becomes the highest-profile auto executive to publicly recognize a need to more closely monitor the emerging technology, which is becoming more prevalent on America's roadways as questions are being raised about the potential risks to motorists. Companies are beginning to deploy fully autonomous ride-hailing services. Mr. Farley's statements in an interview follow increased scrutiny by regulators of **Tesla**'s partially automated ''**Autopilot**'' driver-assist system, which has been involved in a series of high-profile **crashes**. He suggested legislators and the National Highway Traffic Safety Administration were moving too slowly. Mr. Farley said Argo AI, a company in which Ford is a major investor, is moving quickly with technology that will let Ford start an autonomous ridehailing service next year. And later this year, Ford will offer ''Blue Cruise,'' its own partly automated highway driving system. ASSOCIATED PRESS TRAVEL New Airline to Target Secondary Cities in U.S. American travelers are about to get their second new airline of the spring. Breeze Airways said on Friday that it would begin flying on May 27 and expand by July to 16 cities, mostly in the Southeast and central U.S. Breeze, the creation of the JetBlue founder, David Neeleman, is targeting secondary cities that are largely overlooked or abandoned by bigger carriers. Like the startup Avelo Airlines, Breeze plans to offer low base fares to attract leisure travelers. Breeze's first flights will connect Charleston, S.C.; Tampa, Fla.; and Hartford, Conn. ASSOCIATED PRESS |
| ART | (PHOTOGRAPH BY AGENCE FRANCE-PRESSE -- GETTY IMAGES) |
| CO | usdag : United States Department of Agriculture |
| IN | i0 : Agriculture |
| NS | ncdig : Corporate Digests | reqraf : Suggested Reading Agriculture/Forestry | ncat : Content Types | redit : Selection of Top Stories/Trends/Analysis | reqr : Suggested Reading Industry News |
| RE | usa : United States | namz : North America |
| IPD | Business/Financial Desk |
| PUB | The New York Times Company |
| AN | Document NYTF000020210522eh5m0004y |

\*\*69\*

|  |  |
| --- | --- |
| SE | The Arts/Cultural Desk; SECTC |
| HD | Elon Musk Tries to Have Fun Hosting 'S.N.L.' |
| BY | By Dave Itzkoff |
| WC | 1394 words |
| PD | 10 May 2021 |
| SN | The New York Times |
| SC | NYTF |
| ED | Late Edition - Final |
| PG | 3 |
| LA | English |
| CY | Copyright 2021 The New York Times Company. All Rights Reserved. |
| LP | The much-discussed **Tesla** and SpaceX executive took a self-deprecating approach, telling viewers, ''I'm pretty good at running human in emulation mode.''  In the end, an episode of ''Saturday Night Live'' hosted by Elon Musk turned out to be exactly that, no more and no less. |
| TD | Musk, the billionaire chief executive of **Tesla** and founder of SpaceX, appeared in several ''S.N.L.'' sketches this weekend, playing characters that included a doctor at a hospital that caters to Generation Z patients, the producer of an Icelandic TV talk show and the video game villain Wario.  He used his opening monologue to share some personal details about himself, introducing viewers to his mother and discussing his diagnosis of Asperger's syndrome -- and to gratuitously plug a cryptocurrency.  [Video: Watch on YouTube.]  Sure, a couple of sketches felt a little eager to polish Musk's public image, like a filmed segment that cast him as the mission commander of an effort to save a Martian colony running dangerously low on oxygen. (Meanwhile, it was up to Pete Davidson, playing his hapless doofus character, Chad, to save the day on the red planet.)  Even so, Musk's presence didn't stop ''S.N.L.'' from taking a few satirical potshots at him.  Colin Jost, the ''Weekend Update'' anchor, noted during that portion of the show that debris from a Chinese rocket had **crashed** into the Indian Ocean only a short while earlier.  ''And for once,'' Jost said, ''we know it's not Elon's fault. A lot of people have been wondering, Why is he hosting our show? And now we know it's because he needed an alibi.''  Musk took what opportunities he could to humanize himself to the ''S.N.L.'' audience. As he said in his monologue: ''To anyone I've offended, I just wanted to say, I reinvented electric cars and I'm sending people to Mars on a rocket ship. Did you think I was also going to be a chill, normal dude?''  [Video: Watch on YouTube.]  The lead-up to this weekend's broadcast was like few, if any, in ''S.N.L.'' history. Not long after it was announced that Musk would be hosting, some of the show's cast members went on social media to register their dissent.  Bowen Yang posted a frowny-face emoji on his Instagram story. Aidy Bryant used her account to publish a tweet from Senator Bernie Sanders, in which he wrote that ''the 50 wealthiest people in this country own more wealth than some 165 MILLION Americans'' -- a phenomenon Sanders described as ''a moral obscenity.''  Other cast members voiced their support for Musk and said they were excited to have him on the show. Michael Che said in a radio interview with the Breakfast Club that the debate over Musk was ''a good thing.''  ''I think it means people still care about the show in some way, at least,'' Che added.  Musk himself was busy generating plenty of headlines in recent weeks: **Tesla** posted record quarterly earnings in April. A team of four astronauts completed a nighttime splashdown at the start of the month, returning to Earth in a SpaceX Dragon spacecraft after a mission that sent them to the International Space Station. On Wednesday, a prototype of a SpaceX rocket successfully landed during a test flight in Texas, after other such crafts had exploded in previous tests.  Not all of the headlines have been positive. SpaceX has also come into conflict with residents of Boca Chica, Tex., who say they have been pressured to sell their properties as the company expands its operations there. And **Tesla**'s **Autopilot** technology has come under scrutiny, including in an investigation by the National Highway Traffic Safety Administration into about two dozen car **accidents** involving Teslas.  [Video: Watch on YouTube.]  Musk took a self-deprecating tone in his ''S.N.L.'' monologue, telling the audience: ''Sometimes, after I say something, I have to say, 'I mean that,' so people really know that I mean it. That's because I don't always have a lot of intonational variation in how I speak. Which I'm told makes for great comedy.''  He also described himself as ''the first person with Asperger's to host 'S.N.L.' -- or at least the first to admit it.'' (Dan Aykroyd, the ''S.N.L.'' alum and former host, has also said that he was given a diagnosis of Asperger's syndrome in the 1980s.)  ''Don't worry,'' Musk added. ''I'm pretty good at running human in emulation mode.''  Musk's mother, Maye Musk, joined her son onstage after an opening sketch led by the week's musical guest, Miley Cyrus, that featured members of the ''S.N.L.'' cast alongside their mothers.  Wondering what her Mother's Day gift might be, Maye Musk said, ''I just hope it's not Dogecoin,'' referring to the cryptocurrency that Elon Musk has frequently touted.  ''It is,'' her son told her. (Despite Elon Musk's mentioning Dogecoin here and in a ''Weekend Update'' segment, the price of the cryptocurrency declined during the ''S.N.L.'' broadcast.)  Cocktail chatter of the week  [Video: Watch on YouTube.]  Let's take it as an optimistic sign that ''S.N.L.'' is now producing sketches about what post-pandemic life might look like.  That category includes this filmed segment about a party where guests find themselves navigating all the awkward conversations that come up when you run into people you haven't seen in months. While Kate McKinnon tells Beck Bennett she went through some ups and downs, she thinks to herself: ''Ups and downs? You stabbed your husband with a screwdriver.'' (Bennett, meanwhile, is thinking that the pandemic ''affected me zero'' as he licks his hand and plunges it into a bowl of party snacks.)  Musk availed himself reasonably well, playing a character who tries to make small talk with Heidi Gardner about which Covid-19 vaccines they received.  Weekend Update jokes of the week  [Video: Watch on YouTube.]  Over at the ''Weekend Update'' desk, the anchors Jost and Che, also mocked news developments in the lives of prominent politicians like former President Trump, Governor Andrew M. Cuomo of New York and President Biden.  Jost started in on Trump:  A prominent white nationalist has begun posting manifestoes online. Oh, I'm sorry, that was the sub-headline. The headline was, ''Donald Trump Launches New Blog.'' That's right, disgraced former fast-food spokesman Donald Trump has launched a website called From the Desk of Donald J. Trump. Though a more accurate name would be, From the Brain Fog of Long-Haul Covid. I don't understand why the Republican Party is still betting their entire future on Trump. He turns 75 next month. It's like getting your family an old dog and saying, ''Hey kids, invest all your emotions in this.''  Che later teased the current leadership, saying, ''Kamala Harris will become the first vice president to be featured as a wax figure at Madame Tussauds wax museum, while Joe Biden is the first wax figure to become president.''  Jost soon turned the subject to Cuomo, adding: ''New York Governor Andrew Cuomo announced that Broadway could reopen on September 14. Except for the new musical about Cuomo's handling of the pandemic, 'Nursinghoma!'''  Fake TV promo of the week  [Video: Watch on YouTube.]  If you can't get enough of Kate Winslet's efforts at a regional Pennsylvania accent the HBO limited series ''Mare of Easttown'' (or if you just appreciate her describing the local Wawa convenience-store chain as ''a mythical place''), has ''S.N.L.'' got the show for you.  Their answer, offered in this filmed fake commercial, stars McKinnon as a similarly rugged cop investigating the killing of a young woman that provides the series with its title, ''Murder Durdur.'' (As she forcefully declares to a perplexed fellow investigator at the crime scene: ''Did I sturdur? The durdur's been murdered!'')  Look out for the Philadelphia Flyers mascot, Gritty; a pretzel vape; and Musk as the crime's obvious culprit. |
| ART | As the host, Elon Musk appeared with his mother, Maye, during the ''Saturday Night Live'' monologue. They joked about cryptocurrency. (PHOTOGRAPH BY WILL HEATH/NBC) |
| CO | spaetc : Space Exploration Technologies Corp. | teslmi : Tesla, Inc. |
| IN | i9741112 : Television Program Production | imed : Media/Entertainment | i971 : Audiovisual Production | i351 : Motor Vehicles | i35104 : Alternative Fuel Vehicles | i364 : Aerospace Products/Parts | i3640046 : Space Vehicles | iaer : Aerospace/Defense | iaut : Automotive | iindstrls : Industrial Goods |
| NS | gspace : Space Exploration/Travel | gtvrad : Television/Radio | gent : Arts/Entertainment | reqrme : Suggested Reading Media | gcat : Political/General News | redit : Selection of Top Stories/Trends/Analysis | reqr : Suggested Reading Industry News |
| RE | usa : United States | namz : North America |
| IPD | The Arts/Cultural Desk |
| PUB | The New York Times Company |
| AN | Document NYTF000020210510eh5a00047 |

\*\*75\*

|  |  |
| --- | --- |
| CLM | NONFICTION |
| SE | Book Review Desk; SECTBR |
| HD | After the Pandemic |
| BY | By Josef Joffe |
| WC | 1400 words |
| PD | 13 December 2020 |
| SN | The New York Times |
| SC | NYTF |
| ED | Late Edition - Final |
| PG | 17 |
| LA | English |
| CY | Copyright 2020 The New York Times Company. All Rights Reserved. |
| LP | TEN LESSONS FOR A POST-PANDEMIC WORLD  By Fareed Zakaria |
| TD | Oh, no, not a book about the pandemic just a few months into Covid-19. Not another series of snapshots overtaken by tomorrow's events. Fareed Zakaria, a CNN host with a Ph.D. from Harvard, does not fall into this trap.  Wisely, he stays away from the daily battles over masks and lockdowns. Nor is doom-mongering his business. Instead ''Ten Lessons for a Post-Pandemic World'' employs a wide lens, drawing on governance, economics and culture. Call it ''applied history.'' What insights does it offer during a catastrophe that evokes the Spanish flu after World War I, which claimed 50 million -- some reckon 100 million -- lives?  That story comes with a word of caution about historical analogies. Zakaria ascribes ''seismic effects'' to such cataclysms. Ancient Athens, a proud democracy, never recovered from the plague. The late-medieval Black Death all but wiped out Europe with a toll between 75 million and 200 million. Yet note that it was estimated to have run for 100 years. The Spanish flu trickled away after two. As mortality soared in the United States, the economy dropped by only 3.5 percent. It took until the 1930s before we could actually see a virus under the electron microscope. Today, SARS-CoV-2 was sequenced almost instantaneously.  The past, then, is like the Sphinx with her ambiguous advice. Not only has science learned a few things. So have governments, which went for penny-pinching and deflation after the **Crash** of 1929, but now pour out trillions.  Having laid out a ''gloomy compendium of threats,'' Zakaria rightly celebrates ''our resilient world.'' States actually ''gain strength through chaos and crises.'' He also dispatches the facile notion that despots like China's Xi Jinping do better than democratic leaders. We owe the coronavirus's leap around the globe to China's suppression of lifesaving data; thereafter, the police state took over. Khamenei's Iran and Erdogan's Turkey performed badly, and so did Brazil, ruled by a would-be caudillo.  [ This book was one of our most anticipated titles of October. See the full list . ]  The democracies did not succumb to authoritarianism, but neither is there any clear pattern. At least until recently Germany, Denmark and Austria performed best, Belgium, Sweden and the United Kingdom worst. Taiwan and South Korea quickly contained the virus without totalitarian tactics. The United States is so-so, near the bottom of the Top 10 in deaths per million. So, what are the lessons?  What matters is not the ideological coloration of government or its size, but its quality, Zakaria says. He argues for ''a competent, well-functioning, trusted state.'' Sweden is all that, but also high up on the League Table of Death. The United States has proved neither competent nor cohesive. It is an archipelago of some 2,600 federal, state and local authorities charged with health policy.  Yet federal Germany, with its ancient history of decentralization, is also a hodgepodge and still shines forth. The ur-model of the strong state is France. In terms of deaths per million, it ranks far above confederate Switzerland, with its 26 cantons jealously holding off Berne.  So, what is good governance? An efficient bureaucracy like Prussia's, infused with the spirit of freedom rooted in the American Creed? Beyond your small-town D.M.V., the United States seems to enjoy neither. Social Security is superb, Veterans Affairs a disaster. Meanwhile, officialdom has grown exponentially in a supposedly ''anti-statist'' country. America, Zakaria says, must learn ''not big or small, but good government.'' Amen to that -- though not forgetting Churchill's quip that the United States will eventually do the right thing after exhausting all the alternatives.  Zakaria lays out the road from the pandemic to the transcendence of America the Dysfunctional. The to-do list is long. Upward mobility is down, inequality is up. The universities of the United States lead the global pack, but a B.A. at one of those top schools comes with a price tag upward of a quarter-million dollars. The country boasts the best medical establishment, but health care for the masses might just as well dwell on the moon.  We should adopt the best practices of northern Europe, Zakaria counsels. Like Sweden long ago, Denmark is the new Promised Land, even when compared with the rest of Europe. Striking a wondrous balance between efficiency, market economics and equality, those great Danes embody an inspiring model; alas, it is hard to transfer. A small and homogeneous country on the edge of world politics, Denmark is the very opposite of the United States. Maybe its people should occupy America for a couple of generations to reform 330 million über-diverse citizens.  The world's troubles are not just Made in U.S.A., Zakaria rightly notes. They are rooted in ultramodernity: globalization, **automation**, alienation, mass migration, the lure and decay of the world's sprawling metropolises. These are the stuff of misery -- and the fare of cultural critics since the dawn of the industrial age.  With his lively language and to-the-point examples, Zakaria tells the story well, while resisting boilerplate as served up by the left and the right. Nor does he spare his own liberal class, the ''meritocracy'' of the best educated and better off, which he fingers ever so gently as deepening the divide between urban and rural, elites and ''deplorables.'' He might have said a bit more about the uses and abuses of cultural hegemony that have driven hoi polloi into the arms of Donald Trump and triggered defections from the democratic left in Europe.  The book's central message comes in the last paragraph: ''This ugly pandemic has ... opened up a path to a new world.'' Which one? The gist of Zakaria's program is revealed by a recent editorial in The Financial Times, which he quotes approvingly. That newspaper was once a cheerleader of global capitalism. Now it argues that ''many rich societies'' do not honor ''a social contract that benefits everyone.'' So, the neoliberalism of decades past must yield to ''radical reforms.'' Governments ''will have to accept a more active role in the economy. They must see public services as investments. ... Redistribution will again be on the agenda; the privileges of the ... wealthy in question.'' Now is the time for ''basic income and wealth taxes.''  Not bad for a supposedly capitalist mouthpiece. Yet this should not come as a surprise. Both The Financial Times and Zakaria's book urge a revolution already upon us, and probably represent today's zeitgeist and reality. Free-market economics à la Ronald Reagan and Margaret Thatcher have had a nice run since the 1980s. These days, Covid-19 is merely accelerating the mental turn engendered by the 2008 financial crisis. We are all social democrats now.  Government in the West is back with industrial policy and trillions in cash. It is not a radical, but a consensual project. Taxation, a tool of redistribution, will rise along with border walls. For the more perfect welfare state can flourish only in a well-fenced world that brakes the influx of competing people and products.  If that mends the miserable American health, transportation and public education system without cutting into the country's dynamism, then more power to the spendthrift. Still, ''writing checks,'' Zakaria warns, sometimes ''goes badly.'' Especially if it feeds consumption, not investment. Or favors giga-corporations. After half a lifetime of retraction from the economy, big government is back -- and looks as if it will stay. But beware of what you wish for.  Meanwhile, read ''Ten Lessons.'' It is an intelligent, learned and judicious guide for a world already in the making. May we all be as smart as the Danes. They have marvelously combined welfarism and individual responsibility. But they have not invented the PC, MRT, iPhone or **Tesla**, not to speak of Post-its and the microwave popcorn bag.  Josef Joffe serves on the editorial council of Die Zeit in Hamburg and as a fellow of Stanford's Hoover Institution. TEN LESSONS FOR A POST-PANDEMIC WORLD By Fareed Zakaria 307 pp. W.W. Norton & Company. $26.95. |
| ART | Danish Prime Minister Mette Frederiksen at a reopened school, May 2020. (PHOTOGRAPH BY Ritzau Scanpix, via Reuters FOR THE NEW YORK TIMES) |
| NS | gsars : Novel Coronaviruses | gbook : Books | gglobe : Global/World Issues | gout : Outbreaks/Epidemics | ncolu : Columns | nrvw : Reviews | gcat : Political/General News | gcold : Respiratory Tract Diseases | gent : Arts/Entertainment | ghea : Health | gmed : Medical Conditions | gspox : Infectious Diseases | ncat : Content Types | nfact : Factiva Filters | nfce : C&E Exclusion Filter |
| RE | usa : United States | namz : North America |
| IPD | Book Review Desk | Review |
| PUB | The New York Times Company |
| AN | Document NYTF000020201213egcd0008l |

\*\*77\*

|  |  |
| --- | --- |
| CLM | WHEELS |
| SE | Business/Financial Desk; SECTB |
| HD | First Step for Electric Trucks? The Last Mile |
| BY | By Jim Motavalli |
| WC | 1761 words |
| PD | 28 August 2020 |
| SN | The New York Times |
| SC | NYTF |
| ED | Late Edition - Final |
| PG | 6 |
| LA | English |
| CY | Copyright 2020 The New York Times Company. All Rights Reserved. |
| LP | With deliveries surging during the pandemic, carriers like UPS and FedEx and companies like Amazon are renewing their push toward electric vehicles.  Going back years, you might have been able to spot a truck from the likes of FedEx and UPS, and more recently Amazon, that ran on electricity. But most of these were small, short test runs that left the internal-combustion status quo in place. |
| TD | Now that battery technology is catching up to ambitions, many companies are making big commitments to electrify the last delivery mile, typically from transportation hub to destination. The momentum means that plugging in the fleet may happen well before another vaunted goal -- **self-driving** -- is reached. Success is not guaranteed, though. The companies are eager to buy, but they will need the latest in battery-powered trucks, and a lot of them.  The rush to electrify, prompted by concern about climate change, a chance to offset growing delivery costs, government regulation and big advances in battery technology, is occurring as the coronavirus pandemic has caused a huge spike in package delivery. UPS, for instance, was delivering up to 21.1 million packages a day in the second quarter, a nearly 23 percent jump in average daily U.S. volume from a year earlier. Avery Vise, vice president for trucking at FTR Transportation Intelligence, said big increases in delivery truck orders hadn't shown up yet, but they're very likely coming.  ''The rise in e-commerce is increasing demand for electric delivery vans,'' said Tim Denoyer, vice president and senior analyst at ACT Research, a forecaster and consulting company specializing in commercial vehicles. ''And because of three factors -- the short length of operation, the ability to return to a central base, and frequent stops and starts that work well with regenerative braking -- the duty cycle works well with electric.''  In an estimate before the pandemic, Statista said the North American last-mile delivery market was $31.25 billion in 2018, but would reach just under $51 billion in 2022. The incentives to electrify that market are partly financial. The Bloomberg New Energy Finance ''Electric Vehicle Outlook 2020'' predicts that, by the mid-2020s, even without subsidies, E.V.s will be at cost parity with their polluting counterparts in most segments.  Mr. Denoyer said that was happening already. ''In short local delivery operations, the cost economics for electric are now better than diesel in some cases,'' he said.  With more deliveries to make, the carriers will need more trucks. Compared with, say, compact S.U.V.s or full-size pickups, it's a niche market, but it's growing and new players are arriving.  Robert Bollinger, chief executive of Bollinger Motors, has a battery-powered S.U.V. and pickup planned for late 2021. In an interview, he revealed that the company was also exploring a third vehicle, a midsize Class 3 delivery van with at least 200-mile range that will be built with a manufacturing partner.  ''We can get to market quicker that way,'' Mr. Bollinger said.  Like Bollinger, the Michigan-based start-up Rivian -- with large investments from Ford, Amazon and others totaling $6 billion -- has announced an electric pickup (R1T) and an S.U.V. (R1S), with vehicles reaching customers starting in 2021. But by 2022 it is also planning to deliver the first 10,000 of what by 2030 will be 100,000 delivery trucks for Amazon.  ''We worked closely with our shareholder Amazon to develop a vehicle optimized in terms of efficiency, driver ingress and driver comfort for last-mile delivery,'' the chief executive, R.J. Scaringe, said in an interview. The vans will be built alongside the other Rivian vehicles in a former Mitsubishi plant in Normal, Ill.  Rivian's initial plan, in 2009, was to build a sports car. ''By 2010, it became clear that the strategy wasn't right,'' Mr. Scaringe said. ''**Tesla** had launched its Roadster, and the world didn't need another company doing that. We shelved everything and started thinking about how to go forward.''  Amazon intends for this electric fleet, designed with feedback from drivers, to cut its annual carbon emissions by four million metric tons by 2030.  UPS, which has 125,000 vehicles on the road globally, is also committed to electrifying its trucks, with multiple partners. The company's largest order, for 10,000 vehicles, is to Arrival, a British company in which it has a minority stake. According to Scott Phillippi, senior director of maintenance and engineering for UPS's international operations, 70 percent of those trucks will be deployed in the United States, and they'll also be used across Europe.  Electric delivery, Mr. Phillippi said, ''gives us a chance to be transformational, not just in energy consumption but in terms of leveraging all the technology beyond just making the wheels turn that is available to fully connected vehicles.'' These include driving and braking by wire, over-the-air software upgrades and safety technology that will reduce **accidents**.  Mr. Phillippi said the biggest challenge is actually getting the eagerly anticipated electric trucks, which are just starting to trickle out of the manufacturers.  ''We want something that we can purchase that makes sense and is available,'' he said. ''Right now we're just starting to see the sweat on the ice cubes.'' The first Arrival trucks will be delivered next year, then, he hopes, ramp up in 2022 and 2023.  The Corporate Electric Vehicle Alliance, led by the Massachusetts-based corporate sustainability nonprofit Ceres, is pushing for more commitments, but the marketplace has to deliver. Sara Forni, senior manager for clean vehicles at Ceres, said: ''Companies are taking serious action to make this a reality, but there is a lack of commercially available vehicles to meet their diverse needs. It's a real gap.'' It helps that Ford will field an all-electric Transit cargo van for the 2022 model year.  Meanwhile, segments generally thought immune to electric power, because of range considerations, are starting to evolve. In late 2017, UPS ordered 125 **Tesla** heavy-duty Class 8 electric semi-trucks, for longer-distance deliveries.  ''Those will definitely be disruptive,'' Mr. Phillippi said. ''Covid has pushed out the delivery of these trucks, but we're likely to see them next year.'' A fleet that includes up-to-500-mile-range semis and 150-mile local delivery trucks ''will do a lot of what we need,'' he said.  FedEx is collaborating with Chanje, which is deploying a Chinese-made truck. In 2018, FedEx said it would add 1,000 of Chanje's V8100 electric vehicles to its fleet, 100 of them through direct purchase and 900 leased through Ryder. The timetable to deliver the first trucks this year has been set back, but the overall plan is still intact.  Bryan Hansel, chief executive of Chanje, said: ''2020 was a difficult year for everyone, but it put a spotlight on our industry. We expect to produce more than 5,000 vehicles in 2021, with our anchor customer, FedEx, getting the largest percentage of them. We think this number will start to move the needle and give our customers, who are desperately in need of supply, access to real-life units.''  Chanje will also supply charging infrastructure, including 42 stations at FedEx locations in California.  In a statement, FedEx, which operates more than 100,000 trucks in its express division globally, said it added almost 400 electric vehicles to its international fleet in the 2019 fiscal year. The international electric fleet then totaled 2,944, including forklifts and airport ground service equipment. Each new Chanje van would avoid 20 tons of emissions each year compared with its regular package vans, the company said.  Electric vans make sense for a variety of reasons, Mr. Hansel said, including reducing the cost per mile for deliveries -- especially crucial when online retailers compete by offering free deliveries. ''The last mile for deliveries used to be overnight envelopes, but now it's dog food,'' he said. The same-day delivery market will account for $200 billion in U.S. online sales by 2025, according to Accenture.  An Ohio company, Workhorse, is hoping to deliver 300 to 400 delivery vans this year, and UPS is an eager customer. But the big prize is what the U.S. Postal Service calls Next Generation Delivery Vehicles, which has been in a bidding process going back five years.  Suppliers provided test vehicles, which have electric, hybrid and internal-combustion drivetrains, and testing of those was completed in early 2019. The post office has been struggling financially, but it wants as many as 186,000 of these vehicles to be delivered at a cost of more than $6 billion to replace its aging fleet. Workhorse is a finalist, and the post office plans to make awards for the production phase by the end of 2020.  Some of the companies pushing for change don't actually own their own fleets, but direct their supply chains. The Swedish giant Ikea, which aims to be ''climate positive'' by 2030, announced two years ago that by 2025 all of its deliveries across 30 markets ''will use electric vehicles or other zero-emission solutions.''  ''Shanghai is up and running today with fully electric vehicles,'' said Steven Moelk, project implementation manager at Ikea. ''The other markets we've prioritized are Paris, Los Angeles, New York and Amsterdam.''  The company is close to meeting its goal in New York, he said, and Los Angeles ''will take a little longer.'' A big part of making these deliveries work is adding charging infrastructure to Ikea's stores, and that process is underway, Mr. Moelk said.  In 2018, McKinsey & Company said that electric delivery was emerging from the pilot stages to series production. That trend is much more apparent now, though the pandemic and other factors are still slowing down those production lines. But for manufacturers, the incentives are clear -- in the form of concrete orders from companies that want desperately to plug in. |
| ART | An electric UPS truck in London in 2018, top. The company is eager to electrify its fleet, but capable vehicles are just starting to trickle out from manufacturers. Left, Rivian is aiming to make 100,000 electric delivery trucks for Amazon by 2030. Above, Bollinger Motors and a partner are planning to produce an electric delivery van with a range of at least 200 miles. (PHOTOGRAPHS BY JEREMIE SOUTEYRAT FOR THE NEW YORK TIMES; JORDAN STEAD/AMAZON, VIA REUTERS; BOLLINGER MOTORS) |
| CO | amzcom : Amazon.com, Inc. | fdexps : FedEx Corporation | upser : United Parcel Service Inc |
| IN | i35104 : Alternative Fuel Vehicles | iaut : Automotive | i351 : Motor Vehicles | i64 : Retail/Wholesale | i656000301 : Etailing | i78 : Couriers/Messengers | icargo : Freight Transport/Logistics | iecom : E-commerce | iint : Online Service Providers | iretail : Retail | itech : Technology | itsp : Transportation/Logistics |
| NS | gout : Outbreaks/Epidemics | gsars : Novel Coronaviruses | ncolu : Columns | reqrau : Suggested Reading Automobiles | gcat : Political/General News | gcold : Respiratory Tract Diseases | ghea : Health | gmed : Medical Conditions | gspox : Infectious Diseases | ncat : Content Types | redit : Selection of Top Stories/Trends/Analysis | reqr : Suggested Reading Industry News |
| RE | usa : United States | namz : North America |
| IPD | Business/Financial Desk |
| PUB | The New York Times Company |
| AN | Document NYTF000020200828eg8s00051 |

\*\*84\*

|  |  |
| --- | --- |
| SE | Business/Financial Desk; SECTB |
| HD | Robots Will Need Humans in Future |
| BY | By John Markoff |
| WC | 1196 words |
| PD | 22 May 2020 |
| SN | The New York Times |
| SC | NYTF |
| ED | Late Edition - Final |
| PG | 1 |
| LA | English |
| CY | Copyright 2020 The New York Times Company. All Rights Reserved. |
| LP | The **Tesla** chief Elon Musk and other big-name Silicon Valley executives have long promised a car that can do all the driving without human assistance.  But Ben Shneiderman, a University of Maryland computer scientist who has for decades warned against blindly automating tasks with computers, thinks fully automated cars and the tech industry's vision for a robotic future is misguided. Even dangerous. Robots should collaborate with humans, he believes, rather than replace them. |
| TD | Late last year, Dr. Shneiderman embarked on a crusade to convince the artificial intelligence world that it is heading in the wrong direction. In February, he confronted organizers of an industry conference on ''Assured Autonomy'' in Phoenix, telling them that even the title of their conference was wrong. Instead of trying to create autonomous robots, he said, designers should focus on a new mantra, designing computerized machines that are ''reliable, safe and trustworthy.''  There should be the equivalent of a flight data recorder for every robot, Dr. Shneiderman argued.  It is a warning that's likely to gain more urgency when the world's economies eventually emerge from the devastation of the coronavirus pandemic and millions who have lost their jobs try to return to work. A growing number of them will find they are competing with or working side by side with machines.  Dr. Shneiderman, 72, began spreading his message decades ago. A pioneer in the field human-computer interaction, he co-founded in 1982 what is now the Conference on Human Factors in Computing Systems and coined the term ''direct manipulation'' to describe the way objects are moved on a computer screen either with a mouse or, more recently, with a finger.  In 1997, Dr. Shneiderman engaged in a prescient debate with Pattie Maes, a computer scientist at the Massachusetts Institute of Technology's Media Lab, over the then-fashionable idea of intelligent software agents designed to perform autonomous tasks for computer users -- anything from reordering groceries to making a restaurant reservation.  ''Designers believe they are creating something lifelike and smart -- however, users feel anxious and unable to control these systems,'' he argued.  Since then, Dr. Shneiderman has argued that designers run the risk not just of creating unsafe machines but of absolving humans of ethical responsibility of the actions taken by autonomous systems, ranging from cars to weapons.  The conflict between human and computer control is at least as old as interactive computing itself.  The distinction first appeared in two computer science laboratories that were created in 1962 near Stanford University. John McCarthy, a computer scientist who had coined the term ''artificial intelligence,'' established the Stanford Artificial Intelligence Laboratory with the goal of creating a ''thinking machine'' in a decade. And Douglas Engelbart, who invented the computer mouse, created the Augmentation Research Center at the Stanford Research Center and coined the term ''intelligence augmentation,'' or I.A.  In recent years, the computer industry and academic researchers have tried to bring the two fields back together, describing the resulting discipline as ''humanistic'' or ''human-centered'' artificial intelligence.  Dr. Shneiderman has challenged the engineering community to rethink the way it approaches artificial intelligence-based **automation**. Until now, machine autonomy has been described as a one-dimensional scale ranging from machines that are manually controlled to systems that run without human intervention.  The best known of these one-dimensional models is a set of definitions related to **self-driving** vehicles established by the Society of Automotive Engineers. It describes six levels of vehicle autonomy ranging from Level 0, requiring complete human control, to Level 5, which is full driving **automation**.  In contrast, Dr. Shneiderman has sketched out a two-dimensional alternative that allows for both high levels of machine **automation** and human control. With certain exceptions such as automobile airbags and nuclear power plant control rods, he asserts that the goal of computing designers should be systems in which computing is used to extend the abilities of human users.  This approach has already been popularized by both roboticists and Pentagon officials. Gill Pratt, the head of the Toyota Research Institute, is a longtime advocate of keeping humans ''in the loop.'' His institute has been working to develop Guardian, a system that the researchers have described as ''super advanced **driver assistance**.''  ''There is so much that **automation** can do to help people that is not about replacing them,'' Dr. Pratt said. He has focused the laboratory not just on car safety but also on the challenge of developing robotic technology designed to support older drivers as well.  Similarly, Robert O. Work, a deputy secretary of defense under Presidents Trump and Barack Obama, backed the idea of so-called centaur weapons systems, which would require human control, instead of A.I.-based robot killers, now called lethal autonomous weapons.  The term ''centaur'' was originally popularized in the chess world, where partnerships of humans and computer programs consistently defeated unassisted software.  At the Phoenix conference on autonomous systems this year, Dr. Shneiderman said Boeing's MCAS flight-control system, which was blamed after two 737 Max jets **crashed**, was an extreme example of high **automation** and low human control.  ''The designers believed that their autonomous system could not **fail**,'' he wrote in an unpublished article that has been widely circulated. ''Therefore, its existence was not described in the user manual and the pilots were not trained in how to switch to manual override.''  Dr. Shneiderman said in an interview that he had attended the conference with the intent of persuading the organizers to change its name from a focus on autonomy to a focus on human control.  ''I've come to see that names and metaphors are very important,'' he said.  He also cited examples where the Air Force, the National Aeronautics and Space Administration, and the Defense Science Board, a committee of civilian experts that advises the Defense Department on science and technology, had backed away from a reliance on autonomous systems.  Robin Murphy, a computer scientist and robotics specialist at Texas A&M University, said she had spoken to Dr. Shneiderman and broadly agreed with his argument.  ''I think there's some imperfections, and I have talked to Ben about this, but I don't know anything better,'' she said. ''We've got to think of ways to better represent how humans and computers are engaged together.''  There are also skeptics.  ''Ben's notion that his two-dimensional model is a fresh perspective simply is not true,'' said Missy Cummings, director of Duke University's Humans and Autonomy Laboratory, who said she relied on his human-interface ideas in her design classes.  ''The degree of collaboration should be driven by the amount of uncertainty in the system and the criticality of outcomes,'' she said. ''Nuclear reactors are highly automated for a reason: Humans often do not have fast enough reaction times to push the rods in if the reactor goes critical.'' |
| ART | Ben Shneiderman believes robots should collaborate with humans, not replace them. Left, a test of Toyota's Guardian system that simulated a car's sudden emergence from a driveway between parked cars. (PHOTOGRAPHS BY ROBERT KOSARA; TOYOTA) (B6) |
| NS | gaiml : Artificial Intelligence/Machine Learning | grobo : Robotics | gcat : Political/General News | gcsci : Computer Science | gsci : Sciences/Humanities |
| RE | usa : United States | namz : North America |
| IPD | Business/Financial Desk |
| PUB | The New York Times Company |
| AN | Document NYTF000020200522eg5m00048 |

\*\*90\*

|  |  |
| --- | --- |
| SE | Business/Financial Desk; SECTB |
| HD | The Digest |
| BY | By Kashmir Hill, David Yaffe-Bellany and Reuters |
| WC | 586 words |
| PD | 25 January 2020 |
| SN | The New York Times |
| SC | NYTF |
| ED | Late Edition - Final |
| PG | 2 |
| LA | English |
| CY | Copyright 2020 The New York Times Company. All Rights Reserved. |
| LP | TECHNOLOGY  New Jersey Tells Police to Stop Using Face ID App |
| TD | New Jersey police officers are now barred from using a facialrecognition app made by a startup that has licensed its groundbreaking technology to hundreds of law enforcement agencies around the country.  Gurbir S. Grewal, New Jersey's attorney general, on Friday told the state's 21 county prosecutors that police officers should stop using the Clearview AI app, an order first reported by NJ.com.  The New York Times reported last week that Clearview had amassed a database of over three billion photos across the web. The vast database powers an app that can match people to their online photos and link back to the sites the images came from.  ''Until this week, I had not heard of Clearview AI,'' Mr. Grewal said. ''I was troubled. The reporting raised questions about data privacy, about cybersecurity, about law enforcement security, about the integrity of our investigations.''  In a promotional video posted to its website this week, Clearview included images of Mr. Grewal because the company said its app had played a role last year in Operation Open Door, a New Jersey police sting that led to the arrest of 19 people accused of being child predators.  Mr. Grewal's office sent Clearview a cease-and-desist letter that asked the company to stop using the office and its investigations to promote its products.  ''We've received the attorney general's letter and are complying,'' said Tor Ekeland, Clearview's lawyer. ''The video has been removed.'' KASHMIR HILL  RETAIL  Papyrus to Close Stores, but the Brand Remains  The latest victim of the retail apocalypse? Birthday cards.  Papyrus, the greeting card and stationery chain, will close all its stores in the United States and Canada after its parent company filed for bankruptcy.  Schurman Fine Papers, which operates 254 stores, including the Papyrus brand as well as the American Greetings and Carlton Card chains, filed for bankruptcy protection on Thursday. All three store chains will close, but the branded cards they sell will still be available at other retailers.  In its filing, Schurman Fine Papers said business had declined as part of ''the general downturn in the brick-and-mortar retail industry.'' But the store closings are not the end of the Papyrus brand.  While Schurman Fine Papers operates the Papyrus stores, the brand itself is owned by American Greetings, which supplies Papyrus products to more than 300 retailers, according to a spokeswoman for American Greetings, Patrice Molnar. DAVID YAFFE-BELLANY  AUTOMOBILES  U.S. Senator Urges **Tesla** to Rename Safety System  A United States senator on Friday urged **Tesla** to rebrand its **driver assistance** system, saying it has ''an inherently misleading name'' and is subject to potentially dangerous misuse.  But the electric automaker said in a letter that it had taken steps to ensure driver engagement with **Autopilot** and enhance its safety features. **Tesla** introduced new warnings for red lights and stop signs last year ''to minimize the potential risk of red light- or stop sign-running as a result of temporary driver inattention,'' the company said in the letter  Senator Edward Markey of Massachusetts called for ''rebranding and remarketing the system to reduce misuse, as well as building backup driver monitoring tools that will make sure no one falls asleep at the wheel.''  **Autopilot** has been engaged in at least three **Tesla** vehicles involved in fatal **crashes** in the United States since 2016. REUTERS |
| NS | cdip : Bankruptcy Financing | gcrim : Crime/Legal Action | ncdig : Corporate Digests | c16 : Bankruptcy | c17 : Corporate Funding | cactio : Corporate Actions | cbro : Bankruptcy Reorganization | ccat : Corporate/Industrial News | ccfd : Corporate Financial Difficulty | gcat : Political/General News | ncat : Content Types | nfact : Factiva Filters | nfcpin : C&E Industry News Filter |
| RE | usnj : New Jersey | usa : United States | namz : North America | use : Northeast U.S. |
| IPD | Business/Financial Desk |
| PUB | The New York Times Company |
| AN | Document NYTF000020200125eg1p00052 |