The Virtual Truth

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--- Real News, Real Facts, All the Time---

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ARE WE ALREADY LIVING IN VIRTUAL REALITY?

...From 2010 through 2015, the virtual-reality researchers Mel Slater and Mavi Sanchez-Vives worked with Metzinger and Blanke, in a fourteen- partner E.U.-funded project called Virtual Embodiment and Robotic Re-Embodiment. Their labs, in Barcelona, used immersive virtual reality to manipulate the body models of research subjects, convincing them that the bodies they possessed in V.R. were their own. (Slater and Sanchez-Vives are married; they met at a V.R. workshop, in 2001.) "We have the illusion that our body model is very stable, but that's only because we've never encountered anything else," Sanchez-Vives said. People who are extremely aware of their bodies—dancers, athletes, yogis—can find the adoption of a virtual body difficult, because they have trouble "letting go." "But the more you do it the easier it becomes. After you've experienced it once, twice, you click into it." In the past few years, Slater, Sanchez-Vives, and other virtual-embodiment researchers have discovered therapeutic and educational uses for the technology. Meanwhile, Metzinger, along with the philosopher Michael Madary, has drafted a virtual-reality "code of ethics" focussed on embodiment, which he believes makes V.R. fundamentally different from all other media. Embodied virtual experience, the philosophers write, can change us profoundly. It can affect us in ways we barely understand, redefining "the very relationship we have to our own minds."

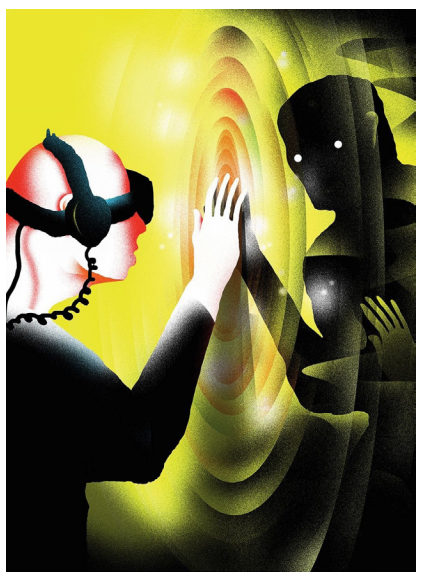


Illustration by Daniel Zender

As soon as virtual reality became workable, in the early nineteen-eighties, researchers imagined creating vivid, detailed, hallucinogenic worlds. In the memoir "Dawn of the New Everything," the V.R. pioneer Jaron Lanier recalls evangelizing the technology by describing a virtual two- hundred-foot-tall amethyst octopus with an opening in its head; inside would be a furry cave with a bed that hugs you while you sleep. ("Virtual reality tugs at the soul because it answers the cries of childhood," Lanier writes.) Later, the "Matrix" movies imagined a virtual world so accurate as to be indistinguishable from real life. Today's most advanced V.R. video games conjure visually rich space stations (Lone Echo), deserts (Arizona Sunshine), and rock faces (The Climb). The goal is to convince you that you are somewhere else.

Virtual embodiment has a different goal: convincing you that you are someone else. This doesn't require fancy graphics. Instead, it calls for tracking hardware—which allows your virtual body to accurately mirror the movements of your real head, feet, and hands—and a few minutes of guided, Tai Chi-like movement before a virtual mirror. In Slater's lab, at the Universitat de Barcelona, I put on a V.R. headset and looked into such a mirror to see the body of a young woman wearing jeans, a T-shirt, and ballet flats. When I moved, she moved.

"You're going to see a number of floating spheres, and you have to touch them," Guillermo Iruretagoyena, a software developer, said.

A few colorful balls appeared near my hands and feet, and I moved my limbs to touch them. The spheres disappeared, and new ones took their place. After I touched the new spheres, Iruretagoyena explained that the "embodiment phase" was complete—I had tricked my brain into thinking that the virtual limbs were mine. My virtual self didn't feel particularly real. The quality of the virtual world was on a par with a nineteen-nineties video game, and when I leaned into the mirror to make eye contact with myself my face was planar and cartoonish. Like a vampire's, my body cast no shadow.

To my right, I heard the sound of keys in a door. I turned and saw a hallway. At the end of it, a man entered, with dark hair and a beige sweater.

"You fat cow," he said, in a low voice. "Would it hurt to put on something nice?"

He began walking toward me. I looked at myself in the mirror. "Look at me!" he shouted. He walked up to a dresser, saw my cell phone, and threw it against the wall.

I watched, merely interested. It was obvious that he was a virtual person; I was no more intimidated by him than I would be by an image on a screen. Then he got closer, and closer still, invading my personal space. In real life, I'm tall, but I found myself craning my neck to look up at him. As he loomed over me, gazing into my eyes, I leaned away and held my breath. I could sense my heart racing, my chest tightening, and sweat breaking out on my temples. I felt physically threatened, as though my actual body were in danger. "This isn't real," I told myself. Still, I felt afraid.

Since 2011, the regional government of Catalonia has collaborated with the lab to use this simulation in rehabilitation programs for abusive men. In a controlled study performed in Sanchez-Vives's lab by the psychologist Sofia Seinfeld, and recently published in Nature's Scientific Reports, the men who experienced the simulation got significantly better at recognizing fear in the faces of women. (Domestic abusers tend to be deficient in this regard.) In the past three years, hundreds more abusive men have experienced the simulation outside the lab, as part of a larger rehabilitation program. Preliminary data, which Sanchez-Vives and Slater are hesitant to publish because of the small sample size, suggest that the men's recidivism rates are lower. ("I felt identified with my ex-wife," one man recalled. "I thought he was going to hit me, so I covered my face with one of my hands," another said.) Men who have merely watched a video, or experienced a V.R. simulation without undergoing the embodiment process, report fewer such epiphanies.

By Joshua Rothman.
Excerpt from "Are We Already Living in Virtual Reality?"
March 26, 2018, *The New Yorker*

THE REALER REAL

TAKING VIRTUAL REALITY FOR A TEST DRIVE

...Jaron Lanier, a computer scientist/musician/artist/writer, popularized the term "virtual reality," in 1987. Even then, the concept wasn't new. As with noodles or eye makeup, its origins are hard to pinpoint. We do know that, in 1962, the cinematographer Morton Heilig introduced an apparatus called the Sensorama Simulator for which he created six short 3-D films, including "I'm a Coca-Cola Bottle." In a film called "Motorcycle," the viewer, ensconced in a vibrating bucket seat, stuck his or her head into a box, where footage simulating zooming through Brooklyn unspooled. The visuals were enhanced by wind from a fan and by odors of car exhaust. The Sensorama was a commercial flop. Three years later, the computer scientist Ivan Sutherland built what is regarded as the first computerized head-mounted display. This was the Sword of Damocles, so called because the metal visor—which looked like a head vise with goggles—dangled from a mechanical arm attached to the ceiling.

Although V.R. has not been as lucrative as entertainment companies had hoped, the medium is used a lot in the military (flight and battlefield simulations), for business training, and in health care (preoperative mapping, virtual cadavers for medical students). Therapists use it to treat P.T.S.D. and phobias by exposing patients to their worst fears in controlled doses, eventually desensitizing them to whatever is causing their anxiety. Religion has gone digital, too. The flesh-and-blood pastor D. J. Soto conducts services on the social platform VRChat, in which he preaches to and performs digital baptisms on congregants represented by Winnie the Pooh, SpongeBob SquarePants, and banana avatars.

The new technology has also transformed pornography. The V.R. camera, coming in close, can play a supporting role—one that does not shy away from intimacy and eye contact—and you, the viewer, instead of being a voyeur, are a participant, if you get my drift. Moreover, by tending to focus on the hundred and eighty degrees in front of the viewer instead of on the traditional three hundred and sixty, V.R. porn is able to deliver a higher resolution than many other genres...

When is a startup no longer a startup? When it ditches its Foosball table so that the game room can be turned into additional cubicle space. Such is the situation at the bustling two-story Menlo Park headquarters of Strivr, a business created in 2015 that designs immersive software to help companies train employees. Before checking out a few of its products, I asked the company's C.E.O. and founder, Derek Belch, who is thirty-four, how Strivr started. "The founding story? I only told that six times yesterday," Belch said, before launching into a chronology that left me with the conclusion that nothing bad has ever happened to him.

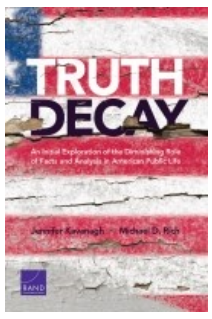
A former kicker on the Stanford football team, Belch, after earning an M.B.A., returned to his alma mater as an assistant coach while getting another master's degree. For his thesis project, he devised a virtual way to train football players—a three-hundred-and-sixty-degree photo-realistic enactment of plays, allowing, say, a quarterback to practice playing against a virtual defense simply by using a headset. When the Stanford team adopted his program, its performance improved so dramatically that the coach told Belch, as he put it, "If I were you, I'd get the hell out of here and go start a company. I'll even give you some money to get off the ground." That year, twenty N.F.L. and college football teams bought Belch's software, bringing in three million dollars in revenue. The next year, Walmart signed on, and Strivr technology is now used in all the company's forty-seven hundred U.S. stores, and by thirty Fortune 500 companies.

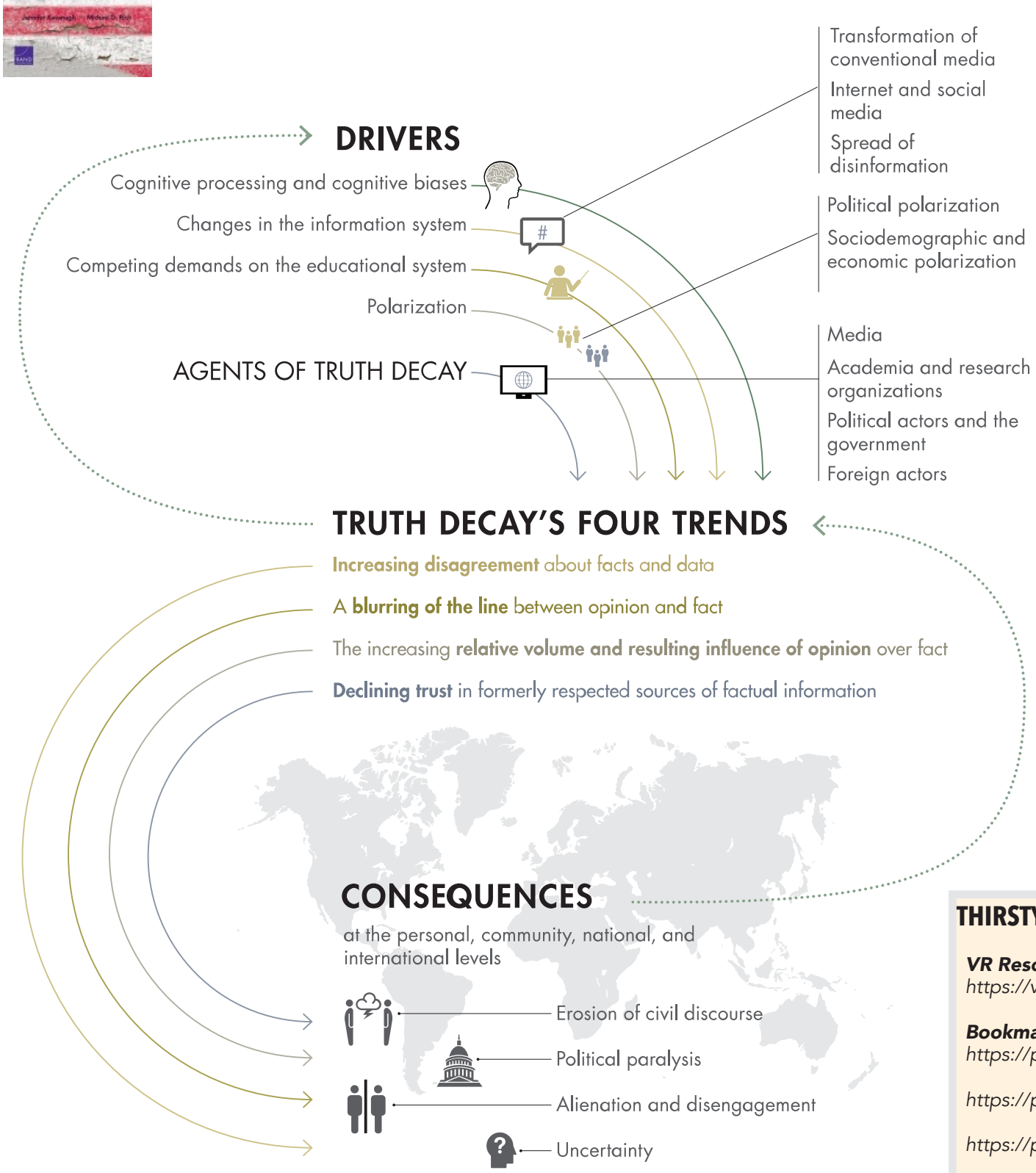
In my first demo, I am a JetBlue technician, standing on the runway under an Airbus 320, which I'm preparing for flight. "This is instead of renting an airplane or doing the training at three in the morning because that's the only time the plane is available," Belch explained. The lesson was not unlike a driver's-ed class, minus the couple who crash on their way to the prom. More intense was the Verizon drama in which I played a store manager being held up at gunpoint. No matter how much your brain knows that the masked guy in the hoodie is an actor holding a toy in cyberspace, the message is not conveyed to your pounding heart when you hear "Open the door!" and turn around to see the barrel of a pistol. Walmart also has a V.R. instruction module on how to deal with an active shooter. Doug McMillon, the company's C.E.O., credits this program with preventing the death of even more people at its El Paso store in August. (Right now, let's try not to think about what happens when the bad guy buys an Oculus.)

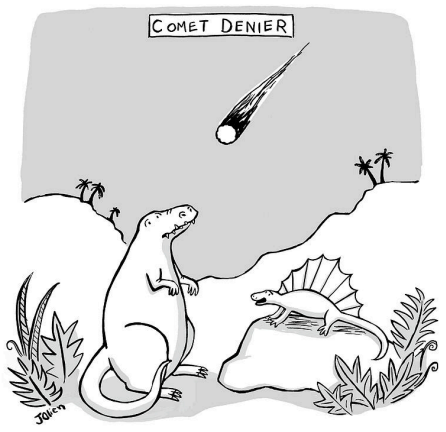
"We're going to do the holodeck thing and jump to somewhere new," Philip Rosedale's avatar said to my avatar, both constructed from selfies we had taken. When he is not posing as a bunch of pixels conjured by data, Rosedale resembles a Danish movie star, but his stand-in was a dead ringer for Andy Warhol. Mine had a Nancy Pelosi-in-leggings vibe. "Just press the Enter key and you're going to disappear. I'll be right behind you," Rosedale added, and, presto, I was making my way down the steep stone steps of Queen Nefertari's tomb, trying not to trip, although, in fact, I was sitting in a small room at Stanford, wearing a headset and manipulating a joystick with my thumb. Rosedale was doing the same in a room down the hall. In 2003, he created Second Life, an artificial world not unlike The Sims, that's accessible through a computer. At its peak, in 2007, Second Life's active population was a million. So-called residents can marry, have babies, buy or rent property, construct buildings, go dancing, take classes at accredited colleges (on a pirate ship, if that's your thing), shop, and earn virtual money that can be converted to the real thing. (Some users make hundreds of thousands of dollars a year selling virtual clothes for avatars.)...

By Patricia Marx.
Excerpt from "The Realer Real"
December 6, 2019, *The New Yorker*

TRUTH DECAY







"That thing's always been there."

THE STORY OF FILM QR CODE

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What Is Truth Decay?

Truth Decay is defined as a set of four related trends: increasing disagreement about facts and analytical interpretations of facts and data; a blurring of the line between opinion and fact; an increase in the relative volume, and resulting influence, of opinion and personal experience over fact; and declining trust in formerly respected sources of factual information.

Is Truth Decay New?

This report explores three historical eras — the 1890s, 1920s, and 1960s — for evidence of the four Truth Decay trends and compares those eras with the past two decades (2000s–2010s). Two of the four trends occurred in earlier periods: the blurring of the line between opinion and fact and an increase in the relative volume, and resulting influence, of opinion over fact. Declining trust in institutions, while evident in previous eras, is more severe today. No evidence of an increase in disagreement about facts and analytical interpretations of facts and data was seen in the earlier periods.

What Causes Truth Decay?

Four drivers, or causes, of Truth Decay are described: cognitive bias, changes in the information system (including the rise of social media and the 24-hour news cycle), competing demands on the educational system that limit its ability to keep pace with changes in the information system, and political, sociodemographic, and economic polarization. Various agents also amplify Truth Decay's trends.

What Are the Consequences?

The consequences of Truth Decay manifest in many ways. The most damaging effects might be the erosion of civil discourse, political paralysis, alienation and disengagement of individuals from political and civic institutions, and uncertainty about U.S. policy.

RECOMMENDATIONS

Unraveling the Complex System of Truth Decay Will Require Multifaceted and Interdisciplinary Efforts

Interdisciplinary research and cooperation among research organizations, policymakers, educators, and other stakeholders will be necessary to shed light on the problem of Truth Decay and to develop a clearer understanding of the problem and devise possible solutions.

There Are Four High-Priority Areas of Research

Examine more closely how Truth Decay has manifested in the past at home and abroad, extracting lessons that can assist in the fight against Truth Decay.

Further explore Truth Decay trends, including such areas as how media content has changed over time, the ways in which the speed and nature of information flow have evolved, developments in the education system and its curricula, the ways in which polarization and political gridlock have (or have not) worsened, the erosion of civil discourse and engagement, and changes in the severity of uncertainty about U.S. policy.

Investigate the processes and mechanisms that connect Truth Decay to information dissemination, processing, and consumption; institutions, authorities, and intermediaries; polarization, engagement, and discourse; the benefits and challenges of technological advancement; and agency. Truth Decay as an interconnected system should also be explored.

Finally, develop and evaluate potential solutions and mitigations to the problems caused by Truth Decay. Priority areas include educational interventions; improving the information market; institutional development and rebuilding; bridging social divides; harnessing new technologies; behavioral economics, psychology, and cognitive science; and organizational self-assessment.

For more information, please visit

https://www.rand.org/pubs/research_reports/RR2314.html