

November 24, 2014

NPR StoryCorps brings one that will warm your heart.
When an assisted living home in California shut down last fall, many of its residents were left behind, with nowhere to go.

The staff at the Valley Springs Manor left when they stopped getting paid — except for cook Maurice Rowland and Miguel Alvarez, the janitor.

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From time to time Pickings has had items on the Air France airliner that disappeared over the South Atlantic, caused in part by the degrading of the pilots' skill sets because of all the systems that fly the plane. **The WSJ Weekend Essay** explores ways automation can make us dumb and how that might be avoided.

Artificial intelligence has arrived. Today's computers are discerning and sharp. They can sense the environment, untangle knotty problems, make subtle judgments and learn from experience. They don't think the way we think—they're still as mindless as toothpicks—but they can replicate many of our most prized intellectual talents. Dazzled by our brilliant new machines, we've been rushing to hand them all sorts of sophisticated jobs that we used to do ourselves.

But our growing reliance on computer automation may be exacting a high price. Worrisome evidence suggests that our own intelligence is withering as we become more dependent on the artificial variety. Rather than lifting us up, smart software seems to be dumbing us down. ...

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Late last year, a report from a Federal Aviation Administration task force on cockpit technology documented a growing link between crashes and an overreliance on automation. Pilots have become "accustomed to watching things happen, and reacting, instead of being proactive," the panel warned. The FAA is now urging airlines to get pilots to spend more time flying by hand. ...

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In this model, software plays an essential but secondary role. It takes over routine functions that a human operator has already mastered, issues alerts when unexpected situations arise, provides fresh information that expands the operator's perspective and counters the biases that often distort human thinking. The technology becomes the expert's partner, not the expert's replacement. ...

... We are amazed by our computers, and we should be. But we shouldn't let our enthusiasm lead us to underestimate our own talents. Even the smartest software lacks the common sense, ingenuity and verve of the skilled professional. In cockpits, offices or examination rooms, human experts remain indispensable. Their insight, ingenuity and intuition, honed through hard work and seasoned real-world judgment, can't be replicated by algorithms or robots. ...

Sink holes in Florida have been swallowing people, now a sand dune along Lake Michigan in Indiana is getting in on the act. Smithsonian Magazine has the story of the hungry dune.

Erin Argyilan was wrapping up a scientific study of wind speeds on Mount Baldy last year when she saw a circle of beachgoers on their knees halfway up the hulking sand dune. They appeared to be digging frantically.

It had been a gorgeous afternoon: sunny, mid-70s. All day, a breeze had rolled off Lake Michigan and up the dune's rumpled face. Rising 126 feet off the beach, Mount Baldy is one of the tallest lakefront dunes in the world and the most popular attraction at the Indiana Dunes National Lakeshore, a national park that straggles for 15 miles along the industrial southern shore of Lake Michigan, between Gary and Michigan City, Indiana.

For many of the park's two million yearly visitors, the grueling hike up Baldy's slip-sliding slope—and the dead run down—is a rite of passage. But on that July afternoon, Argyilan, an athletic 38-year-old geoscientist at Indiana University Northwest, who was then seven months pregnant with her first child, sensed that something was amiss. She strode up to the site of the commotion and saw a man in swim trunks clawing at the sand. "He's here," the man kept saying. "He's right here." His wife, who appeared to be in shock, was calling out to God. Their 6-year-old son, they said, had vanished down a hole.

Argilan saw no sign of an opening or even upturned sand, which you'd expect if someone had dug a hole. As for natural cavities, dunes aren't supposed to have any. Unlike hard rock, which can dissolve to form caverns and sinkholes, dunes are just big piles of sand formed as wind stacks one grain atop the next. ...

... Mount Baldy began to take shape 4,500 years ago, when the water level in Lake Michigan dropped about 20 feet, exposing vast fields of sand to the will of the wind. Before last year's incident, the dune had intrigued scientists not because it defied any principles of windblown sand, but because it followed them all too enthusiastically. Most dunes on the Indiana lakeshore are forested. But Baldy is a "blowout": a victim of some ancient force—a violent storm, a dramatic change in wind direction—that scalped the dune of the plants and trees whose roots once held it in place. And like an animal freed from its cage, Baldy began to roam.

Combining painstaking physical measurements with an analysis of aerial photographs, Zoran Kilibarda, a colleague of Argyilan's at IU Northwest, discovered that the dune had rolled nearly 440 feet inland between 1938 and 2007. It had buried trails and a staircase, and stands of black oak, 60- to 80-feet tall, that had long stood between Baldy's bottom edge and the parking lot. In March 2007, as the first of Kilibarda's figures came in, stunned park officials called Baldy's pace "alarming," warning that it could bury its own parking lot within seven years. They banned the public from its steep inland side, or slipface; footfalls were thought to be accelerating its advance. But Baldy refused to be tamed. ...

Four years ago after Wal-Mart doubled the price of eyeglasses, Pickerhead tried an on-line start-up that was manufacturing glasses in, of all places, Manhattan. Warby Parker was located on the fifth floor of an old needle trade high rise in SoHo. The purchase was a resounding success and the glasses are still in great shape four years later. The Wall Street Journal reports they have added store fronts to their operation with great success.

Warby Parker has made a name for itself by selling affordable, hipster-chic eyeglasses through a website, avoiding costly store expenses and licensing fees.

While that business has thrived, the startup's promising next act is taking shape in a chain of storefronts dotting trendy retail neighborhoods from Boston's Newbury Street to Abbot Kinney Boulevard in Los Angeles.

Warby Parker's eight brick-and-mortar stores are now collectively turning a profit, says Dave Gilboa, the company's co-founder and co-chief executive. The stores sell an average of \$3,000 a square foot annually, higher than most retailers not named Apple Inc.

It is quite a feat for a one-off experiment that began in April 2013, with Warby Parker's first physical retail showroom in Manhattan's SoHo district, where the company is based. Later this month, Warby Parker plans to open its first San Francisco and Chicago stores. ...

Steve Hayward of Power Line spots an admission from Google of the failure of some of their green initiatives.

... two Googlers have written a worthy article for the IEEE Spectrum website (IEEE is the Institute of Electrical and Electronics Engineers) on "What Would It Really Take to Reverse Climate Change?". The subtitle tells the story: "Today's Renewable Technologies Won't Save Us."

I know one of the authors, Ross Koningstein, slightly, and kudos to him and his co-author David Fork for admitting forthrightly that Google's RE<C ("renewable energy cheaper than coal") initiative was largely a bust. I'm pretty sure we noted here at the time that Google had pulled the plug on this much-hyped project a couple years ago. As Koningstein and Fork admit:

"At the start of RE<C, we had shared the attitude of many stalwart environmentalists: We felt that with steady improvements to today's renewable energy technologies, our society could stave off catastrophic climate change. We now know that to be a false hope . . . even if Google and others had led the way toward a wholesale adoption of renewable energy, that switch would not have resulted in significant reductions of carbon dioxide emissions. Trying to combat climate change exclusively with today's renewable energy technologies simply won't work; we need a fundamentally different approach. ... '

NPR - StoryCorps

'If We Left, They Wouldn't Have Nobody'

by Jud Esty-Kendall



Cook Maurice Rowland and Janitor Miguel Alvarez

When an assisted living home in California shut down last fall, many of its residents were left behind, with nowhere to go.

The staff at the Valley Springs Manor left when they stopped getting paid — except for cook Maurice Rowland and Miguel Alvarez, the janitor.

"There was about 16 residents left behind, and we had a conversation in the kitchen, 'What are we going to do?' " Rowland says.

"If we left, they wouldn't have nobody," the 34-year-old Alvarez says.

Their roles quickly transformed for the elderly residents, who needed round-the-clock care.

"I would only go home for one hour, take a shower, get dressed, then be there for 24-hour days," says Alvarez.

Rowland, 35, remembers passing out medications during those long days. He says he didn't want to leave the residents — some coping with dementia — to fend for themselves.

"I just couldn't see myself going home — next thing you know, they're in the kitchen trying to cook their own food and burn the place down," Rowland says. "Even though they wasn't our family, they were kind of like our family for this short period of time."

For Alvarez, the situation brought back memories from his childhood.

"My parents, when they were younger, they left me abandoned," he says. "Knowing how they are going to feel, I didn't want them to go through that."

Alvarez and Rowland spent several days caring for the elderly residents of Valley Springs Manor until the fire department and sheriff took over.

The incident led to legislation in California known as the Residential Care for the Elderly Reform Act of 2014.

"If I would've left, I think that would have been on my conscience for a very long time," says Rowland.

WSJ

Automation Makes Us Dumb

Human intelligence is withering as computers do more, but there's a solution.

by Nicholas Carr

Artificial intelligence has arrived. Today's computers are discerning and sharp. They can sense the environment, untangle knotty problems, make subtle judgments and learn from experience. They don't think the way we think—they're still as mindless as toothpicks—but they can replicate many of our most prized intellectual talents. Dazzled by our brilliant new machines, we've been rushing to hand them all sorts of sophisticated jobs that we used to do ourselves.

But our growing reliance on computer automation may be exacting a high price. Worrisome evidence suggests that our own intelligence is withering as we become more dependent on the artificial variety. Rather than lifting us up, smart software seems to be dumbing us down.

It has been a slow process. The first wave of automation rolled through U.S. industry after World War II, when manufacturers began installing electronically controlled equipment in their plants. The new machines made factories more efficient and companies more profitable. They were also heralded as emancipators. By relieving factory hands of routine chores, they would do more than boost productivity. They would elevate laborers, giving them more invigorating jobs and more valuable talents. The new technology would be ennobling.

Then, in the 1950s, a Harvard Business School professor named James Bright went into the field to study automation's actual effects on a variety of industries, from heavy manufacturing to oil refining to bread baking. Factory conditions, he discovered, were anything but uplifting. More often than not, the new machines were leaving workers with drabber, less demanding jobs. An automated milling machine, for example, didn't transform the metalworker into a more creative artisan; it turned him into a pusher of buttons.

Bright concluded that the overriding effect of automation was (in the jargon of labor economists) to "de-skill" workers rather than to "up-skill" them. "The lesson should be increasingly clear," he wrote in 1966. "Highly complex equipment" did not require "skilled operators. The 'skill' can be built into the machine."

We are learning that lesson again today on a much broader scale. As software has become capable of analysis and decision-making, automation has leapt out of the factory and into the white-collar world. Computers are taking over the kinds of knowledge work long considered the preserve of well-educated, well-trained professionals: Pilots rely on computers to fly planes; doctors consult them in diagnosing ailments; architects use them to design buildings. Automation's new wave is hitting just about everyone.

Computers aren't taking away all the jobs done by talented people. But computers are changing the way the work gets done. And the evidence is mounting that the same de-skilling effect that ate into the talents of factory workers last century is starting to gnaw away at professional skills, even highly specialized ones. Yesterday's machine operators are today's computer operators.

Just look skyward. Since their invention a century ago, autopilots have helped to make air travel safer and more efficient. That happy trend continued with the introduction of computerized "fly-by-wire" jets in the 1970s. But now, aviation experts worry that we've gone too far. We have shifted so many cockpit tasks from humans to computers that pilots are losing their edge—and beginning to exhibit what the British aviation researcher Matthew Ebbatson calls "skill fade."

In 2007, while working on his doctoral thesis at Cranfield University's School of Engineering, Mr. Ebbatson conducted an experiment with a group of airline pilots. He had them perform a difficult maneuver in a flight simulator—bringing a [Boeing](#) jet with a crippled engine in for a landing in rough weather—and measured subtle indicators of their skill, such as the precision with which they maintained the plane's airspeed.

When he compared the simulator readings with the aviators' actual flight records, he found a close connection between a pilot's adroitness at the controls and the amount of time the pilot had recently spent flying planes manually. "Flying skills decay quite rapidly towards the fringes of 'tolerable' performance without relatively frequent practice," Mr. Ebbatson concluded. But computers now handle most flight operations between takeoff and touchdown—so "frequent practice" is exactly what pilots are not getting.

Even a slight decay in manual flying ability can risk tragedy. A rusty pilot is more likely to make a mistake in an emergency. Automation-related pilot errors have been implicated in several recent air disasters, including the 2009 crashes of Continental Flight 3407 in Buffalo and [Air France](#) Flight 447 in the Atlantic Ocean, and the botched landing of [Asiana](#) Flight 214 in San Francisco in 2013.

Late last year, a report from a Federal Aviation Administration task force on cockpit technology documented a growing link between crashes and an overreliance on automation. Pilots have become "accustomed to watching things happen, and reacting, instead of being proactive," the panel warned. The FAA is now urging airlines to get pilots to spend more time flying by hand.

As software improves, the people using it become less likely to sharpen their own know-how. Applications that offer lots of prompts and tips are often to blame; simpler, less solicitous programs push people harder to think, act and learn.

Ten years ago, information scientists at Utrecht University in the Netherlands had a group of people carry out complicated analytical and planning tasks using either rudimentary software that provided no assistance or sophisticated software that offered a great deal of aid. The researchers found that the people using the simple software developed better strategies, made fewer mistakes and developed a deeper aptitude for the work. The people using the more advanced software, meanwhile, would often "aimlessly click around" when confronted with a tricky problem. The supposedly helpful software actually short-circuited their thinking and learning.

The philosopher Hubert Dreyfus of the University of California, Berkeley, wrote in 2002 that human expertise develops through “experience in a variety of situations, all seen from the same perspective but requiring different tactical decisions.” In other words, our skills get sharper only through practice, when we use them regularly to overcome different sorts of difficult challenges.

The goal of modern software, by contrast, is to ease our way through such challenges. Arduous, painstaking work is exactly what programmers are most eager to automate—after all, that is where the immediate efficiency gains tend to lie. In other words, a fundamental tension ripples between the interests of the people doing the automation and the interests of the people doing the work.

Nevertheless, automation’s scope continues to widen. With the rise of electronic health records, physicians increasingly rely on software templates to guide them through patient exams. The programs incorporate valuable checklists and alerts, but they also make medicine more routinized and formulaic—and distance doctors from their patients.

In a study conducted in 2007-08 in upstate New York, SUNY Albany professor Timothy Hoff interviewed more than 75 primary-care physicians who had adopted computerized systems. The doctors felt that the software was impoverishing their understanding of patients, diminishing their “ability to make informed decisions around diagnosis and treatment.”

Harvard Medical School professor Beth Lown, in a 2012 journal article written with her student Dayron Rodriguez, warned that when doctors become “screen-driven,” following a computer’s prompts rather than “the patient’s narrative thread,” their thinking can become constricted. In the worst cases, they may miss important diagnostic signals.

The risk isn’t just theoretical. In a recent paper published in the journal *Diagnosis*, three medical researchers—including Hardeep Singh, director of the health policy, quality and informatics program at the Veterans Administration Medical Center in Houston—examined the misdiagnosis of Thomas Eric Duncan, the first person to die of Ebola in the U.S., at Texas Health Presbyterian Hospital Dallas. They argue that the digital templates used by the hospital’s clinicians to record patient information probably helped to induce a kind of tunnel vision. “These highly constrained tools,” the researchers write, “are optimized for data capture but at the expense of sacrificing their utility for appropriate triage and diagnosis, leading users to miss the forest for the trees.” Medical software, they write, is no “replacement for basic history-taking, examination skills, and critical thinking.”

Even creative trades are increasingly suffering from automation’s de-skilling effects. Computer-aided design has helped architects to construct buildings with unusual shapes and materials, but when computers are brought into the design process too early, they can deaden the aesthetic sensitivity and conceptual insight that come from sketching and model-building.

Working by hand, psychological studies have found, is better for unlocking designers’ originality, expands their working memory and strengthens their tactile sense. A sketchpad is an “intelligence amplifier,” says Nigel Cross, a design professor at the Open University in the U.K.

When software takes over, manual skills wane. In his book “The Thinking Hand,” the Finnish architect Juhani Pallasmaa argues that overreliance on computers makes it harder for designers to appreciate the subtlest, most human qualities of their buildings. “The false precision and apparent finiteness of the computer image” narrow a designer’s perspective, he writes, which can mean technically stunning but emotionally sterile work. As University of Miami architecture professor Jacob Brillhart wrote in a 2011 paper, modern computer systems can translate sets of dimensions

into precise 3-D renderings with incredible speed, but they also breed “more banal, lazy, and uneventful designs that are void of intellect, imagination and emotion.”

We do not have to resign ourselves to this situation, however. Automation needn’t remove challenges from our work and diminish our skills. Those losses stem from what ergonomists and other scholars call “technology-centered automation,” a design philosophy that has come to dominate the thinking of programmers and engineers.

When system designers begin a project, they first consider the capabilities of computers, with an eye toward delegating as much of the work as possible to the software. The human operator is assigned whatever is left over, which usually consists of relatively passive chores such as entering data, following templates and monitoring displays.

This philosophy traps people in a vicious cycle of de-skilling. By isolating them from hard work, it dulls their skills and increases the odds that they will make mistakes. When those mistakes happen, designers respond by seeking to further restrict people’s responsibilities—spurring a new round of de-skilling.

Because the prevailing technique “emphasizes the needs of technology over those of humans,” it forces people “into a supporting role, one for which we are most unsuited,” writes the cognitive scientist and design researcher Donald Norman of the University of California, San Diego.

There is an alternative.

In “human-centered automation,” the talents of people take precedence. Systems are designed to keep the human operator in what engineers call “the decision loop”—the continuing process of action, feedback and judgment-making. That keeps workers attentive and engaged and promotes the kind of challenging practice that strengthens skills.

In this model, software plays an essential but secondary role. It takes over routine functions that a human operator has already mastered, issues alerts when unexpected situations arise, provides fresh information that expands the operator’s perspective and counters the biases that often distort human thinking. The technology becomes the expert’s partner, not the expert’s replacement.

Pushing automation in a more humane direction doesn’t require any technical breakthroughs. It requires a shift in priorities and a renewed focus on human strengths and weaknesses.

Airlines, for example, could program cockpit computers to shift control back and forth between computer and pilot during a flight. By keeping the aviator alert and active, that small change could make flying even safer.

In accounting, medicine and other professions, software could be far less intrusive, giving people room to exercise their own judgment before serving up algorithmically derived suggestions.

When it comes to the computerization of knowledge work, writes John Lee of the University of Iowa, “a less-automated approach, which places the automation in the role of critiquing the operator, has met with much more success” than the typical practice of supplanting human judgment with machine calculations. The best decision-support systems provide professionals with “alternative interpretations, hypotheses, or choices.”

Human-centered automation doesn't constrain progress. Rather, it guides progress onto a more humanistic path, providing an antidote to the all-too-common, misanthropic view that venerates computers and denigrates people.

One of the most exciting examples of the human-focused approach is known as adaptive automation. It employs cutting-edge sensors and interpretive algorithms to monitor people's physical and mental states, then uses that information to shift tasks and responsibilities between human and computer. When the system senses that an operator is struggling with a difficult procedure, it allocates more tasks to the computer to free the operator of distractions. But when it senses that the operator's interest is waning, it ratchets up the person's workload to capture their attention and build their skills.

We are amazed by our computers, and we should be. But we shouldn't let our enthusiasm lead us to underestimate our own talents. Even the smartest software lacks the common sense, ingenuity and verve of the skilled professional. In cockpits, offices or examination rooms, human experts remain indispensable. Their insight, ingenuity and intuition, honed through hard work and seasoned real-world judgment, can't be replicated by algorithms or robots.

If we let our own skills fade by relying too much on automation, we are going to render ourselves less capable, less resilient and more subservient to our machines. We will create a world more fit for robots than for us.

Mr. Carr is the author of "The Shallows: What the Internet Is Doing to Our Brains" and most recently, of "The Glass Cage: Automation and Us."

Smithsonian

[**The Mystery of Why This Dangerous Sand Dune Swallowed a Boy**](#)

When a boy suddenly disappeared into a sand dune, a scientist embarked on a quest to find out where he went

by Ariel Sabar

Erin Argyilan was wrapping up a scientific study of wind speeds on Mount Baldy last year when she saw a circle of beachgoers on their knees halfway up the hulking sand dune. They appeared to be digging frantically.

It had been a gorgeous afternoon: sunny, mid-70s. All day, a breeze had rolled off Lake Michigan and up the dune's rumpled face. Rising 126 feet off the beach, Mount Baldy is one of the tallest lakefront dunes in the world and the most popular attraction at the Indiana Dunes National Lakeshore, a national park that straggles for 15 miles along the industrial southern shore of Lake Michigan, between Gary and Michigan City, Indiana.

For many of the park's two million yearly visitors, the grueling hike up Baldy's slip-sliding slope—and the dead run down—is a rite of passage. But on that July afternoon, Argyilan, an athletic 38-year-old geoscientist at Indiana University Northwest, who was then seven months pregnant with her first child, sensed that something was amiss. She strode up to the site of the commotion and saw a man in swim trunks clawing at the sand. "He's here," the man kept saying. "He's right here." His wife, who appeared to be in shock, was calling out to God. Their 6-year-old son, they said, had vanished down a hole.

Argyilan saw no sign of an opening or even upturned sand, which you'd expect if someone had dug a hole. As for natural cavities, dunes aren't supposed to have any. Unlike hard rock, which can dissolve to form caverns and sinkholes, dunes are just big piles of sand formed as wind stacks one grain atop the next.



"This doesn't make any sense," Argyilan told a pair of fieldworkers from the National Park Service, who'd been helping lug around her 45-pound wind meter. Someone had called 911, and soon police and firefighters were clambering over Baldy's crest with shovels.

Argyilan, a former CrossFit trainer with a nose stud and shoulder tattoo, was no milquetoast. As Hurricane Sandy bore down the October before, she'd summited Baldy in ski goggles to record the erosional brawn of the winds and waves. The sand-laced 50-mile-per-hour gusts scoured the numbers off her surveying rod. But now, as park brass arrived to coordinate an emergency response, Argyilan kept a cool distance. She scanned Baldy's taupe slopes, sure the boy was just hiding somewhere. At 6 p.m., almost two hours after his disappearance, she packed up her wind meter and drove home.

He'll turn up, she told herself.

For dinner that night, Argyilan, her fiancé and her father went to a nearby Applebee's. As they finished their meal, the restaurant's TV screens flashed with news from Baldy: After a three-and-a-half hour search involving 50 rescuers and a pair of construction-site excavators, the boy was found a dozen feet beneath the dune's surface. He had no pulse or breath at first, and his sand-encrusted body was ice-cold.

"I felt absolutely shattered," Argyilan remembers. Everything she knew about geology—all the courses she'd taken, all the papers she'd read over years of study—told her this couldn't happen. But her science had led her astray.

She sobbed on the way home, and spent a sleepless night on the couch, hunting online for any reports of similar cases. She scolded herself for not digging alongside the father. As a mom-to-be, she wished she'd tried to comfort the boy's mother. Worst of all, though, was a recurring thought: "If they had listened to me, they wouldn't have kept looking."

We live in an era when the robotic arms of unmanned spaceships can scoop sand on Mars, then phone home across millions of miles to tell us its chemistry. Yet here, in the well-traveled regions of Earth, on the very ground we walk, we are still being surprised by geologic mystery.

In California's Death Valley, "sailing stones" cruise the desert floor under a locomotion that science struggled for decades to explain. In Siberia's Yamal Peninsula, a patch of permafrost snapped earlier this year into a gaping crater, a previously unrecorded phenomenon.

Mount Baldy stands out even in this rogues' gallery. It lazes not in some far-flung badlands, but in the temperate Midwest, on a popular beach an hour's drive from Chicago.

People have turned a scientific eye on minerals since at least the fourth century B.C., when Theophrastus, a disciple of Aristotle, wrote his treatise "On Stones." But because deserts are inhospitable and sand has scant commercial value, the subdiscipline of dunes had to wait until the 20th century to find a champion. Ralph Bagnold, a Cambridge-educated engineer in the British Army, explored the Sinai and Sahara on leave before drafting his 1941 masterwork *The Physics of Blown Sand and Desert Dunes*, which is still routinely cited in scientific journals.

Today a great deal is known about dunes: how wind launches individual grains of sand and piles them into parabolas, ridges and other distinctive shapes; how plants steady dunes, and how waves weather them; how a dune's history and age can be deduced from certain properties of buried sand and soil. Riddles remain (the movement of small particles is a complicated, chaotic business), but one thing about dunes has never been in doubt: their solidity.

"For sand to accumulate in a way that would leave holes or caverns in the subsurface doesn't at first glance make a whole lot of sense," says Alan Arbogast, a Michigan State University geographer who is the leading authority on the region's dunes.

Jeff Lee, a physical geographer at Texas Tech University who co-edits *Aeolian Research*, the field's pre-eminent journal, told me that "dunes just don't do that. They don't swallow people, except in *Lawrence of Arabia*." In the movie, a Bedouin boy drowns in Sinai quicksand—a scene ridiculed by scientists because dunes, both desert and coastal, are almost always too high above the water table for quicksand to form.

Mount Baldy began to take shape 4,500 years ago, when the water level in Lake Michigan dropped about 20 feet, exposing vast fields of sand to the will of the wind. Before last year's incident, the dune had intrigued scientists not because it defied any principles of windblown sand, but because it followed them all too enthusiastically. Most dunes on the Indiana lakeshore are forested. But Baldy is a "blowout": a victim of some ancient force—a violent storm, a dramatic change in wind direction—that scalped the dune of the plants and trees whose roots once held it in place. And like an animal freed from its cage, Baldy began to roam.

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Argilan wasn't a Baldy expert, *per se*; for her dissertation at the University of Illinois at Chicago, she'd analyzed buried beach sand to chart water level shifts in the Great Lakes. But as a specialist in coastal geology at a nearby university, she, like Kilibarda, soon found herself under Baldy's spell.

With park service funding in 2011, she began a multifaceted study of changes in the dune's overall shape. The results confirmed what many people could see with their own eyes. "It's flattening, it's pancaking in the middle," she told me. The sand fueling Baldy's migration was coming not from the beach, where erosion left little to spare anyway, but from the middle of its lakeward slope, the side still open to the public.

But none of these revelations prepared Argyilan for that long summer day. The idea of a void opening in a dune was so beyond the ken of geologists that in the days and weeks afterward one question in particular haunted her: In a place with so many tourists, rangers and scientists, why did no one notice holes before now? When she asked Todd Thompson, an expert on the Indiana lakeshore who'd been a grad school mentor, he paraphrased a quote from the French philosopher Henri Bergson: "The eye sees only what the mind is prepared to comprehend."

Nathan Woessner, a cherubic 6-year-old from the cornfields of northwestern Illinois, had been looking forward to the trip all summer. Normally for vacation, the family stayed close to home, venturing across the nearby Iowa line to a Best Western with a nice swimming pool and a Medieval castle theme. Nathan's father, Greg, sold tractor tires for a living, and his mother, Faith, quit her nursing job to focus on their four kids.

Neither had heard of the Indiana Dunes National Lakeshore until some church friends suggested a weekend camping trip there. So after breakfast on July 12, 2013, Nathan and his three siblings piled into a Chevy Tahoe that Greg had borrowed from his parents and drove east for nearly three hours to a campsite near the dunes.

Among the siblings, Nathan, the third-born, was "the lover" of the family, says his mother. More than the others, he liked to cuddle, and to help his teacher in the morning by taking chairs off tables and passing out papers. Though shy around new people, he was adventurous outdoors, an ace frog hunter who liked casting for catfish in the river behind his house.

At the beach in front of Baldy that July afternoon, Nathan and his best friend, Colin, a son of their church friends, splashed in the waves for a couple of hours before deciding they were ready for something new. Someone suggested a race up the lakefront side of the dune, and off they went. Greg and Keith, Colin's dad, were in the lead, halfway up the dune, when they heard Colin cry out.

"Nathan fell," Colin said. (According to park investigators, Colin, the only witness to the moment of Nathan's disappearance, later reported that Nathan saw an open hole and lowered himself in to

see where it went.) When the fathers turned around, there was no sign of Nathan—just a round, 12-inch-diameter hole in the sand. Keith, tall and beanpole thin, lay across the sand and reached into the hole.

"I'm scared," came the boy's voice from somewhere in the darkness.

"We'll get you out," his father said.

The men dug furiously, confident they'd soon feel Nathan's hand or head. But within minutes, sand was sloughing into the hole from every direction.

Over the next three and a half hours, rescuers with flexible probes, shovels and heavy machinery would excavate a pit a dozen feet deep and at least 50 feet across. At about eight feet down, they began noticing odd features in the sand: pipe-like cylinders, eight inches in diameter and a foot or two long, of what looked like old bark. Brad Kreighbaum, 36, a third-generation firefighter, soon came across a six-inch diameter hole that shot deep into the sand: "You could shine a flashlight and see 20 feet down." Almost as soon as the holes were uncovered, sand rushed in to fill them. "Just like an hourglass."

When he scooped Nathan's body out of the sand at 8:05 p.m., Kreighbaum noticed other patterns, in the cavity cocooning the boy. Its inside wall was sandy and soft, but bore the imprint of bark, almost like a fossil. It was as if the boy had wound up at the bottom of a hollowed-out tree trunk, except not a bit of tree was there.

Most people buried in sand suffocate within ten minutes. But Nathan walked out of the hospital two weeks later—the sand mostly removed from his lungs, the scrapes on his head mostly healed. Local officials called it "The Miracle on Mount Baldy." Indiana Gov. Mike Pence came to Michigan City to meet the boy and award a plaque to 140 people who participated in his rescue. Doctors said he must have had an air pocket, or that he'd been saved by some version of the mammalian diving reflex, a slowdown of the vital organs in cold water that conserves oxygen.

Nathan recalls nothing of his ordeal. His parents, deeply religious Christians, believe that divine grace is the only reason for their son's survival and full recovery. "There are a lot of things science can't explain," Faith told me, cradling a mug of coffee in the living room of the family's rustic home, in Sterling, Illinois. "I have God, and that's enough for me. I don't need a how and a why for why those holes are there."

But Argyilan did. When she learned that on the way to the hospital the boy had begun to show vital signs, it annealed her shame into resolve. "It was like a switch," her fiancé, DeWet Le-Roux, told me. "She wanted to get to the bottom of it and maybe save others" from a similar—or worse—fate.

As the public deluged park headquarters with wild theories (*lightning did it!*), Argyilan spent late nights emailing prominent geologists and badgering park officials for new leads. When she asked Kilibarda, the resident Baldy expert, he told her someone must have dug a hole. "That's still my leading explanation," he said when we met. Just about everything else "simply disobeys physics."

A month to the day after the accident, another hole was discovered: a saw-toothed maw a few hundred feet east of Nathan's. Park officials called Argyilan, but by the time she arrived, the hole

had refilled. Undeterred, she pounded in a coring tube. But the sand she extracted was perfectly ordinary. Investigators with the U.S. Environmental Protection Agency fared scarcely better. Their survey with ground-penetrating radar picked up 66 faint “anomalies”—irregularities inside the dune. What they were, the technology couldn’t say.

As news of the mystery spread, Argyilan began hearing from scientists around the world. Could the thawing of winter snow and ice, which can infiltrate sand, trigger a collapse? It wasn’t a terrible hypothesis, except that the accident happened in July. Another thought was that sections of clay undergirding the dune had eroded, allowing groundwater to pipe away columns of sand. Locals reminded Argyilan that there had once been beach shacks, wells and other structures behind Baldy. Might their roofs be caving, sucking down sand?



When Argyilan returned to Baldy last spring with a trowel and brush, she found a growing number of clues pointing in another direction: the black oaks buried decades ago by the dune’s inland march. Their crooked upper limbs still pierced the dune surface, like the arms of drowning men. If the trees were rotting from the inside out, would they leave tunnels? If so, how would those tunnels withstand the pressure of all that surrounding sand? They couldn’t—unless, Argyilan thought, the bark or maybe a decay fungus was releasing chemicals that somehow cemented the sand into a cast. She has sent samples to labs, but the tests hinge on the schedules of scientists with other priorities.

As she waits, she has had to hang on to just one, lonely parallel—on Facebook. Dina Pavlis, a U.S. Forest Service volunteer who leads tours and ranger training at the Oregon Dunes National Recreation Area, on the Pacific Coast, had posted photos she’d taken of deep, funnel-like openings in off-trail areas there. Pavlis told me she calls them “tree holes.” As in Indiana, wandering dunes are burying old forests. But no scientists have studied the Oregon holes, and their origins remain an enigma.

The park's decision to close all of Baldy to the public after the accident turned out to be a shrewd one. Workers have discovered half a dozen new holes since, a sign that Baldy is not through with its mischief. Investigators now have to work in pairs and radio in on arrival and departure.

One bright and windy morning this past August, I followed a ranger up a chute of slippery sand onto Baldy's western shoulder. I was there to see Argyilan and two of her colleagues, who were in the first days of what is expected to be an intensive yearlong investigation. Argyilan had pressed the National Park Service to enlist Thompson, her grad school mentor, who was now assistant research director at the Indiana Geological Survey. Thompson, in turn, brought in G. William Monaghan, a veteran geoarchaeologist with a lab at Indiana University's flagship campus, in Bloomington.



Ducking under a strip of yellow tape, Thompson, in cargo shorts, aviator sunglasses and a reflective vest, spoke about the devices scattered behind him. The ones that looked like luggage carts bore ground-penetrating radar that would capture images of deformations up to 75 feet beneath the surface. The one that evoked a dentistry nightmare was a hydraulic coring drill called a GeoProbe that would pluck samples from deep within. The scientists' goal: a navigable 3-D map of Baldy's interior, a first-of-its-kind undertaking that might finally unlock the dune's secrets.

"As the guy in the lab described it, you'll put on glasses and take a walk through the inside of the dune," Argyilan told me.

Dunes are the backdrop to beach vacations the world over, marvels of slippery geometry that mirror the shifting swells of the sea. Will dunes elsewhere sprout holes, too? Or is Baldy a kind of

perfect storm, where the peculiarities of mineralogy, microbiology and climate have produced a singular freak of nature?

Either way, says dune expert Alan Arbogast, “if they are able to document a legitimate geological process, that would be news.”

I met Argyilan again later in the week at Shoreline Brewery, a restaurant a short drive from Baldy. Her father, Don, had joined us, to look after her daughter, Charlotte, now a cheerful 11-month-old.

I asked Argyilan what Thompson had meant when he said the eye sees only what the mind can comprehend. She said it had come up in a meeting, when he was asked why so many holes were suddenly appearing now. “His basic answer was, ‘Because we’re looking for them.’

“Mount Baldy is a great reminder that geological processes are still happening that are unrecorded,” Argyilan said. She nursed a pint of Singing Sands Oatmeal Stout as Charlotte toddled precariously around us, clutching her mother’s knee for balance. “You could have holes developing all through time and no one cares”—“no one notices,” she corrected herself—“until a boy falls in.”

WSJ

[**Warby Parker Adds Storefronts to Its Sales Strategy**](#)

Firm Built Brand on Web but Finds Storefronts Sell Glasses Too

by Douglas MacMillan

Warby Parker has made a name for itself by selling affordable, hipster-chic eyeglasses through a website, avoiding costly store expenses and licensing fees.

While that business has thrived, the startup’s promising next act is taking shape in a chain of storefronts dotting trendy retail neighborhoods from Boston’s Newbury Street to Abbot Kinney Boulevard in Los Angeles.

Warby Parker’s eight brick-and-mortar stores are now collectively turning a profit, says Dave Gilboa, the company’s co-founder and co-chief executive. The stores sell an average of \$3,000 a square foot annually, higher than most retailers not named Apple Inc.

It is quite a feat for a one-off experiment that began in April 2013, with Warby Parker’s first physical retail showroom in Manhattan’s SoHo district, where the company is based. Later this month, Warby Parker plans to open its first San Francisco and Chicago stores.

“We quickly realized that while we were seeing all the benefits we expected from branding and marketing—the ‘halo’ effect of having a store open—stores could be a meaningful driver of sales and profitability, which was really unexpected,” Mr. Gilboa says.



The Warby Parker store in Manhattan's Meatpacking District.

Many e-commerce players have tested the waters of physical retail, but most of these efforts are still experiments. RentTheRunway has three shops where women can pick up high-end fashion to rent, and it plans to open its fourth, in Washington, D.C., this month. Amazon.com Inc. is expected to open its first brick-and-mortar location in New York in time for the holidays.

New York-based men's apparel retailer Bonobos aims to have 40 outlets by 2016, up from 10 at the end of 2011. The stores have limited inventory for sale and are designed primarily to help customers try on clothes so they can order them from the website.

Mr. Gilboa says the first stores it opened in 2013 have already generated enough cash to cover the initial construction costs, rent and staff salaries incurred over the nine months it usually takes for a store to open.

A payback period of two years or less is about average for retail shops in popular locations so it's a good sign that the stores will eventually be sustainable, says Anne Zybowsky, vice president of retail insights at Kantar Retail. "When they are able to hit that hurdle and they are able to overcome those costs in two years, as long as they are able to at least maintain that sales volume, it definitely means that they've got a winning model," Ms. Zybowsky says.

In moving offline, Warby and others face larger overhead costs and new challenges, such as hiring and training a sales staff. Mr. Gilboa confronted another risk when it came time to sign a 10-year lease on his company's first New York store. At the time, his company was just three years old. "It was scary in a lot of ways," he says.

At the same time, the stores do help cut down on shipping expenses. Warby Parker sends customers as many as five frames to try on at a time at no cost. The company also donates one pair to charity for each pair it sells online or in stores.

Mr. Gilboa declines to say how much revenue the company generates, whether the overall business is profitable, or what portion is coming from brick-and-mortar sales. He still expects e-commerce to always make up the majority of revenue.

Since it is a private company, there is no way to verify Warby Parker's estimate of its sales per square foot. But compared with the top 168 publicly traded retailers tracked by New York-based research analyst RetailSails, that would be second only to Apple, which averaged \$4,568 a square foot at the end of last year. Luxury retailers Tiffany & Co. and Coach Inc. make just below \$3,000.

Unlike those retailers, Warby sells most of its products for less than \$100. It says its average store is 1,613 square feet.

Back-of-the-napkin math would suggest annual store sales of nearly \$50 million if 10 locations were running for a full year at an average of \$3,000 a square foot. As for the overall business, Warby Parker said in June that it had donated its one-millionth pair of glasses, suggesting it had at least \$100 million in sales in its four-year history, although a company spokeswoman cautions that milestone numbers like this "don't necessarily track with revenue."

One advantage of brick-and-mortar stores is the potential for more personalized customer service. "Consumers want to be talked to in a personal way," says Bruce Cohen, senior partner at retail consultant Kurt Salmon. "Once you get a good retail Sherpa—your curator of good taste and fashion that knows you—you become incredibly loyal."

Warby learned this early on. Soon after Mr. Gilboa and co-founder Neil Blumenthal launched the site in 2010, while students at the University of Pennsylvania's Wharton School of Business, they got calls from customers who wanted to try on the frames. The two invited the customers into Mr. Blumenthal's apartment, where they laid out glasses on a dining-room table.

"They loved being able to touch and feel the product," Mr. Gilboa says. "That was in some ways our first foray into brick-and-mortar retailing."

Since then, Warby Parker has raised more than \$115 million from investors including Tiger Global, General Catalyst Partners and Spark Capital as well as credit-card company American Express Co. The company was valued at \$500 million in its most recent round of funding in December 2013, according to a report in Fortune. A spokeswoman for Warby Parker declined to comment on the company's valuation.

Its staff of nearly 400 includes executives poached from retail leaders like Nike Inc. Mickey Drexler, the CEO of J. Crew and a board member at Apple, joined Warby's board last year.

The startup's new store in San Francisco's Hayes Valley neighborhood—set to open the week of Thanksgiving—is decidedly low tech. The 2,112-square-foot shop features chevron wood floors, original murals painted by local artists, banquette seating and magazine racks boasting the latest issues of "The Paris Review" and "Lapham's Quarterly."

Customers can try on new Warby Parker frames, including a limited-edition line of "Keene" sunglasses that will be offered only at that location. A squad of salespeople called "advisors" will roam the showroom in designer French worker jackets and fine-tune spectacles at a "reference desk" that is made, like everything in the store, from sustainable materials.

Power Line
Climate, Energy Policy
by Steve Hayward

Yesterday's *Wall Street Journal* [story](#) about the production difficulties of the Arizona supplier that Apple selected to make sapphire screens for the iPhone 6 was fascinating in its own right, but there was one little detail in the story that zipped by too quickly:

Mr. Squiller, the GT operations chief, told the bankruptcy court that GT lost three months of production to power outages and delays building the facility.

Whoa, show down there a moment: what's this about *power outages*? I'd sure like to know more of the full story here. Was this simply bad engineering on site, or was there a problem with the local grid or the energy sources supplying the grid in that area? Grid stability is going to be a more serious issue going forward as we compel more and more "renewable" (meaning "less stable") energy as part of the EPA's mania to restructure the electricity sector through the Clean Air Act.

Meanwhile, two Googlers have written a worthy article for the IEEE Spectrum website (IEEE is the Institute of Electrical and Electronics Engineers) on "[What Would It Really Take to Reverse Climate Change?](#)". The subtitle tells the story: "Today's Renewable Technologies Won't Save Us."

I know one of the authors, Ross Koningstein, slightly, and kudos to him and his co-author David Fork for admitting forthrightly that Google's RE<C ("renewable energy cheaper than coal") initiative was largely a bust. I'm pretty sure we noted here at the time that Google had pulled the plug on this much-hyped project a couple years ago. As Koningstein and Fork admit:

At the start of RE<C, we had shared the attitude of many stalwart environmentalists: We felt that with steady improvements to today's renewable energy technologies, our society could stave off catastrophic climate change. We now know that to be a false hope . . . even if Google and others had led the way toward a wholesale adoption of renewable energy, that switch would not have resulted in significant reductions of carbon dioxide emissions. Trying to combat climate change exclusively with today's renewable energy technologies simply won't work; we need a fundamentally different approach.

As I've been pointing out for more than six years, the mathematics of climate orthodoxy, which call for an 80 percent reduction in global greenhouse gas emissions by the year 2050 so as to stabilize CO₂ levels at no more than 450 parts per million, essentially requires replacing the world's entire hydrocarbon energy systems with zero-emission sources. In practical terms, it means the United States would have to roll back its oil, coal, and gas use to the amount last seen in 1910. This is looney tunes. I've still not seen any credible plan to do this in the space of 40 years. (One narrow example: Roger Piekle Jr. has calculated that if you set out to replace the world's *existing* coal fired power plants with nuclear power, you'd need to build one 800 MW nuclear plant per week, every week, for the next 40 years. And this would only displace coal, and not touch oil and natural gas. Ts is looney tunes. Anyone think the U.S. is going to build 400 new nuclear power plants—we have about 100 now—to replace our 500 coal-fired power plants?)

To their credit Koningstein and Fork reach much the same conclusion, though with different arithmetic than me:

Even if every renewable energy technology advanced as quickly as imagined and they were all applied globally, atmospheric CO₂ levels wouldn't just remain above 350 ppm; they would continue to rise exponentially due to continued fossil fuel use. So our best-case scenario, which was based on our most optimistic forecasts for renewable energy, would still result in severe climate change, with all its dire consequences: shifting climatic zones, freshwater shortages, eroding coasts, and ocean acidification, among others. Our reckoning showed that reversing the trend would require both radical technological advances in cheap zero-carbon energy, as well as a method of extracting CO₂ from the atmosphere and sequestering the carbon.

Koningstein and Fork are equally realistic about the limitations of today's renewable technologies:

Unfortunately, most of today's clean generation sources can't provide power that is both distributed and dispatchable. . . Across the board, we need solutions that don't require subsidies or government regulations that penalize fossil fuel usage.

Even though Koningstein and Fork are writing from within the framework of climate orthodoxy, their call for the development of market-oriented disruptive energy technologies that don't need government diktats is a refreshing departure from the totally unserious happy talk about wind and solar and banana peels and unicorn flop sweat we get from most of the climatistas. What I think they fail to appreciate, however, is that if such technologies do come about (say, cheap fusion), the bulk of the environmental establishment will oppose it, because it would be another triumph of capitalism. (See: [Naomi Klein](#).)

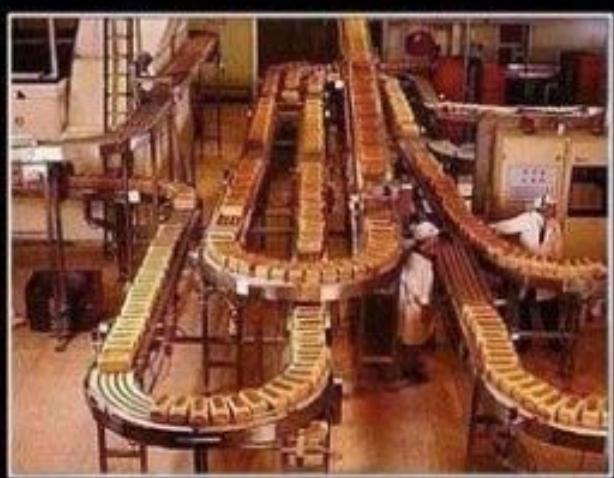


**WHEN POVERTY
DECLINES THE NEED
FOR GOVERNMENT
DECLINES, WHICH IS
WHY EXPECTING
GOVERNMENT TO
SOLVE POVERTY IS
LIKE EXPECTING A
TOBACCO COMPANY TO
MOUNT AN AGGRESSIVE
ANTI-SMOKING CAMPAIGN.**



SOCIALISM

WHERE YOU WAIT ON BREADLINES



CAPITALISM

WHERE BREADLINES WAIT ON YOU

