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## The Bill Nye Effect

By [Kit Boss](#)

EQUILIBRIUM IS NOT the Science Guy's natural state. How could it be, so long as science, which can be found everywhere, constantly bombards his brain? The Science Guy complains of fatigue, but he cannot stop.

"What is cooler than science?" says he who owns the word as part of his name. "What is more interesting?"

In the very recent past, geologically speaking, the Science Guy's large dream has come true. He has evolved rapidly from local television curiosity into national star, blue-hot host of his own Seattle-produced series, which has become one of the most-watched educational TV shows in the nation. But you would be wrong to describe the Science Guy's rise as meteoric. "As I tell people: Eleven quick years (in television) and here I am," the Science Guy says. Also he points out that meteors don't really rise; they enter the earth's atmosphere and fall.

Evidence of Science Guy mania continues to mount. A Science Guy book has been published, and home videos (on dinosaurs, the body and outer space) released. Disney has built a replica of the Science Guy's TV lab at Epcot Center. A Science Guy interactive CD-ROM is in the works. Microsoft recently demonstrated the possibilities for interactive television using "Science Guy" material as a prototype. There also has been mention of a prime-time TV special and a Science Guy feature film.

Cheap Hollywood talk magnetizes the Science Guy less than something he can bank on, such as, well, magnetism. Nevertheless, these are thrilling days to be in the Science Guy's lab coat.

"Look at this," the Science Guy tells a visitor, while pausing at the office photocopier for a moment of typically childlike wonderment. "This is the copy machine. For my show."

Recently, a woman happened to look out her living room window and see the Science Guy, on location, changing his pants in a parking lot. She ran out with a copy of his book for him to sign. "Science rules!" he scrawled, then finished buckling his belt and whirled onward, like a radiometer in the sun.

The Science Guy often seems to spin like a dynamo, power source unseen. Even the Science Guy's father, after years of close observation, cannot contain his amazement: "He works seven days a week because there's only seven days in a week." Might the Science Guy hold the key to perpetual motion? Be extremely skeptical! The laws of physics cannot be broken!

It would come as no surprise to one day find an international team of researchers huddled around the Science Guy, wielding probes. For now, we must rely on the tools at hand to support a modest theory: Amazing things happen when science collides with such a guy as Bill Nye.

BILL NYE THE Science Guy enjoys a rock at least as much as the next Homo sapiens. Probably more.

"That, my friend, is a sedimentary rock!" Nye says, hefting a chunk of excellent sandstone. "Sedimentary in spades!"

For the segment of "Disney Presents Bill Nye the Science Guy" being taped today, the subject is rocks and soil. It is the sort of subject that, when printed on a chalkboard, has caused many generations of fourth-grade eyes to glaze over.

This is no classroom, though; this is Nye Labs. Nye Labs - the production offices and set where much of "Science Guy" is shot - occupies a converted clothing warehouse near the Kingdome.

On the dark laboratory set, caution lights flash. A giant fan spins lazily, wiping a shadow across workbenches, an aquarium, an oscilloscope, a half-ton winch, a Van de Graaff generator, a crab trap, some big pressure gauges, many colored liquids in beakers. Everything is arranged neatly, as per the Science Guy's wishes.

"It's really important to Bill that it's an orderly lab," says Lauren Karpo, the show's props manager. "So that it looks like people could actually be working there."

In the past, Karpo and her colleagues in the Nye Labs art department have acquired a dozen bowling balls

In the past, Karpo and her colleagues in the NYE Labs art department have acquired a dozen bowling balls (for a show on Momentum), baked gargantuan "tectonic cookies of science" to illustrate the movement of the earth's crust, molded a life-size brain (Moms: Try peach-flavored gelatin, with a splash of green food coloring and condensed milk), and, for the Plants episode, seeded a Cadillac with grass, creating a gas-guzzling Chia Pet. Now, Karpo is arranging a few rocks beside a fat red candle on a lab bench.

"Boy," says Nye, clearly impressed, "look at that granite!"

Nye is dressed in his standard-issue powder-blue lab coat, a cursedly stifling blend of cotton-poly. "Believe me," Nye assures, "our people are working on the problem." Beneath the coat Nye sports white starched shirt and bow tie. Always, in the lab, a bow tie. "You lean over, they're not in your beaker or flask. And they have this charming quality of being unusual."

Nye studies his script. In this 97-second segment, he will discourse on "How Rocks Are Formed." He will explain the difference between the three types of rocks - sedimentary, igneous (from an old Latin word meaning "fire") and metamorphic - then a foam boulder will crush him. He will illustrate his points using Karpo's rocks, a beaker containing water and sand, the red candle, and lots of body English. He will use simple words ("smooshed"), "Billifying" the script as needed and speaking always with great brio. He will act as if rocks were the most fascinating things in the world to him. Because this is science, they are.

Later, harnessing powerful computers, the show's editors will inject even more kinetic energy into the segment. They will perform a dizzying number of edits, drop in some subtly snide comments by announcer Pat Cashman, and select numerous whoopee cushion-esque sound effects - CLANGGGs and SPLORKs and DOINKs.

"The show is a show," Nye concedes without apology. "People watch it because they're entertained."

With Bill Nye in the mix, though, science is in no danger of being eclipsed. He habitually takes whatever instructions director/co-producer Jim McKenna offers in feet or inches and converts them to centimeters. "He wants this to be an all-metric show," notes co-producer Erren Gottlieb.

In one episode, a hammer fell on the moon and some audio engineer made it go CLUNK. Upon hearing this, Nye stopped joking and turned granite-like. The moon has no atmosphere, the Science Guy pointed out. Ergo, the hammer couldn't make a noise.

WARNING: THE following should be construed as neither a critique nor an endorsement of any science-themed television show for children. Its only purpose is to inform.

The popular "Beakman's World," the CBS Saturday-morning science show for kids, features a zany scientist in a neon green lab coat answering questions sent in by viewers. Beakman is played by AN ACTOR named Paul Zaloom who WEARS A WIG.

Bill Nye, on the other hand, is an ACTUAL SCIENTIST who performs in HIS OWN HAIR.

"He is the Guy," says Gottlieb. "The Guy is him."

"What you see on TV is what you get," confirms Pat Cashman. "Which is quite scientific, really."

TOWARD A NYE-ODOGY: Assorted data, observations and field notes.

He relaxes by launching model rockets. His spirits rise visibly when packages arrive labeled: FLAMMABLE SOLID and TOY PROPELLANT DEVICE. He is 39 years old. He plays with Lionel trains.

He derives intense pleasure from dancing all manner of ballroom and country-western steps. He cooks at home using Pyrex beakers for measurement. He sorts the currency in his billfold by denomination. A pickpocket would also find in Nye's wallet a periodic table of the elements.

Whenever I have traveled in Nye's company, he could not stop dissecting, explaining and classifying the world around him. Once, wheeling into a parking space numbered 16, he reflexively muttered: "Perfect square."

His father, a retired salesman of GE appliances, once developed a "Sandial" - "So you could tell time on the beach without getting your watch sandy."

For his senior photo at Washington, D.C.'s prestigious Sidwell Friends School (the very institution now attended by Chelsea Clinton), Nye hugged an oscilloscope.

As mentors, he names noted educator Carl Sagan (Nye took his astronomy course at Cornell University), his high-school physics teacher Mr. Lang (in whose class Nye helped build a four-story pendulum), and his seventh-grade science teacher, Mr. Flowers, whose classroom featured a running faucet hanging from a string. "I thought, this is it for me," Nye recalls. "I always loved science but now, no, look out, get out of my way."

He remains nonplussed by the numerous celebrities he has observed at close range - such luminous bodies

as Letterman, Regis and Kathy Lee, Suzanne Somers, and Shari Lewis and Lambchop. "To me, they're not people I would seek out nearly as much as the scientists I've met."

He has never played the lottery, nor pulled a one-armed bandit, not even when the show visited Las Vegas, where Nye posed amid the neon of Glitter Gulch for a segment on Light and Color. He respects the laws of probability and statistics, and regards his own success as a great, sweet, hilarious anomaly.

SCIENTISTS HAVE spent their lives in pursuit of elusive prey. Sometimes the quest ends successfully (coelacanths; quarks), sometimes not (the evolutionary "missing link;" a magnet with a single pole).

About 10 years ago, Nye decided he wanted to become the next Mr. Wizard. "The trick is," Nye said at the time, "how do you pull that off?"

Television, those who commit it often say, is not rocket science, which doesn't mean it's easy to figure out. There are no formulas for guaranteed success. Cream sometimes rises to the top, but raw sewage also floats.

After Nye graduated from Cornell and moved to Seattle to design 747 rudders for Boeing, he fiddled around after hours as a stand-up comedian and Steve Martin impersonator. Of TV's inner workings, though, Nye knew little when he left his engineering job in 1985 and joined the fledgling local comedy show "Almost Live!"

Nye wrote monologue gags and sketches, some of which baffled his fellow comedy technicians. (Current "Almost Live" host John Keister classified them "jokes of the future.") It was during this period of Nye's basic research into TV comedy that the Science Guy precipitated.

The exact time and circumstances are unclear, but this much is known: It seemed to hinge on a call Nye placed to original "Almost Live!" host Ross Shafer, while Shafer was on the radio, announcing a giveaway and mispronouncing the word "gigawatt" - a billion watts. Before Nye hung up, he was on the air, ranting about science and singing off as "Bill Nye the Science Guy."

In 1987 Nye conducted an experiment on "Almost Live!" that would hint at the Science Guy's awesome TV potential. Donning lab coat and safety glasses from his personal collection, he dunked an onion in liquid nitrogen and shattered it. The studio audience went nuclear. "It hit me so hard," Nye recalls. "Here was everything I wanted to do. With science, and being funny, all at once." He won a local Emmy for the bit and, that same year, trademarked the Bill Nye the Science Guy name and printed up stationery and business cards ("comedian - actor - writer - engineer").

More demonstrations followed. "Fire and explosions, that's what I wanted to see," recalls "Almost Live!" director Steve Wilson. Gradually, the unified theory of Science Guy comedy was broadened to include non-incendiary demos on a grand scale, with weather balloons and 50-gallon drums.

Nye pitched the idea of an entire show built around the Science Guy to several KING-TV executives. Nye recalls they looked at him "blankly."

Eventually, though, Nye bonded with two KING-TV alumnae, producers Jim McKenna and Erren Gottlieb, who had independently produced an award-winning wetlands video starring the Science Guy. To them goes the credit for building the slick containment vessel that harnesses the Science Guy's raw energy to enlighten and entertain. "Pee-wee science," was the shorthand they used to describe their idea for a kid's TV series.

"Then Pee-wee got busted," Gottlieb says. "So we changed it to MTV science."

"We pitched PBS, MTV," McKenna recalls.

He and Gottlieb are married. Their office at Nye Labs is littered with numerous awards, along with jars of baby food, toys and a box of diaper wipes - items used by their daughter, a k a the Baby of Science.

"People at Fox told us they didn't think Bill could hold up a half hour," Gottlieb says. "Other people said animation is the way to go. We pitched the show for four years."

Finally, Elizabeth Brock, chief of national productions at KCTS-9, Seattle's public television station, took a shine to the project. KCTS commissioned a pilot episode, which aired nationally across the Public Broadcasting Service in April of '93. PBS liked it, as did test groups of kids, and more than a few older viewers. "I think I learned more . . . than during an entire semester of geology at Washington State University," one 22-year-old caller told the station. Even with such encomia, it looked as if using PBS sources to raise the money for more episodes would take a year or more.

Coincidentally, though, the Federal Communications Commission was pressuring local commercial TV stations to start living up to the spirit of the 1990 Children's Television Act. The FCC made it clear that shows such as "Leave it to Beaver" and "G.I. Joe" were not exactly what the commissioners meant by "educational." Hollywood went looking for TV shows to fill the void, and Disney's television arm, Buena Vista, sucked up the Science Guy.

Disney and KCTS reached an agreement that allows the series to be aired concurrently on public TV (daily)

and commercial TV stations (on weekends, where it has appeared since fall of '93). By early next year, a total of 65 episodes will have been produced, covering everything from Germs to Outer Space.

"We're hoping we go another 20 years, like 'Sesame Street,'" says Brock.

To date, Disney has invested about \$7 million in producing the show, PBS \$2 million, and the National Science Foundation an additional \$4 million, according to Hyman Field, who directs the NSF's efforts in science education outside the classroom.

Disney reckons the show reaches approximately 1.2 million homes a week via commercial TV stations, and another 560,000 homes each day via public TV.

"It's really a solid presentation of science," said Field. The show's staff works with an educational consultant to develop basic learning objectives for each episode, and an outside panel of scientific advisors reviews each finished script to catch any slip-ups before they reach the screen.

An early NSF concern was that Nye might "reinforce a stereotypical image of a scientist as a weird person," Field said. Surveys conducted among young viewers found this not to be the case, however. In fact, after the test group viewed the show, "the percent that said scientists are interesting, fun people to be around went up significantly."

Field, supported by the survey results, judged Nye to be "more zany rather than crazy."

MORE NOTES FROM the Science Guy File.

Science is a jealous mistress. These days, Nye knows no other paramour. "I've been busy," he says, deflecting any scrutiny of the vacuum in his life. "We'll finish the shows and I'll take a meeting."

He is thin but strong, a piece of human spring steel. He bikes, though not as much these days as he'd like. During less hectic times he has pedaled from Seattle to Spokane, 300 miles nonstop at the height of summer, his neck wrapped in an ice-filled tube sock. His bicycles hang from the ceiling, so small is his one-bedroom Lake City condo with its earthquake-proofed bookshelves. He could afford something more spacious now that he earns more than the average mechanical engineer (in this one area he will not talk numbers, though he claims the figure is far less than the average host of a national TV show). "I'm very interested in getting a house, with a workbench," he says, though time has not yet permitted. "I'd really like to have a life."

He appears to enjoy children, yet the spectre of overpopulation haunts him so, he may never procreate. "It makes me nuts. What right do I have to have a kid? Oh yeah, it makes me crazy. But then I think, the only reason that I'm here, the only reason people go dancing or to the grocery store or write songs or newspaper articles or build houses, is so that they can pass their genes on."

Also perplexing is the scarcity of properly engineered boxer shorts. "It makes one wonder," Nye once said after writing to Jockey International, "if men's underwear is designed by angry women."

He has proved himself a persistent correspondent. An excerpt from the Science Guy Letters to the author of the college-level textbook "Universe" should serve to illuminate: "I recently made a special trip to the Baringer Crater near Flagstaff, Arizona . . ." wrote Nye. "I believe I came across some small errors in the Third Edition . . ."

"The guy's got a doctorate in astronomy and here I am writing him," Nye says. "That's so flippin' Bill."

Among his 10-year goals is his desire to fly aboard the space shuttle and videotape "Science Guy" segments while in orbit. For now, he is content to remain earthbound while sharing the rhapsody he felt upon building that 4-story pendulum and confirming the equation that relates the time of an object's swing to the inverse of the square root of the length of its rope. "It hits you hard, between the eyes. You don't have to take anybody's word for it. You can believe in yourself. You can hang something from a string. You can get it."

Observed "Science Guy" researcher, Ian Saunders: "The mission of the show is, step one: Change the world."

THE POINT IS: Cold doesn't cause colds; germs cause colds.

To help make the point, the Science Guy strips down to shorts, a fleece vest, and a pair of Sorel boots. Then he stands in a meat freezer chilled to 20 below.

Batteries die at this temperature. Video cables stiffen. Pen ink solidifies. The Science Guy, surrounded by hamburger patties and lamb roasts, shivers and calls for another take. His words form clouds.

"You gotta sell it," Nye says during a thawing-out break. "You gotta see the breath."

To stay hot, TV must keep moving, and "Science Guy" zooms along at a brisk clip. A typical half-hour

episode (actually 26 minutes, 30 seconds) contains 40 segments, each a variation on that particular show's two or three learning objectives.

"Channel surfing through a topic - that's the whole idea," says editor Darrell Suto. "Like you're changing the channel but you can't get away."

Segments include music video parodies, home experiments, field trips, big demonstrations at Nye Labs, fake ads and movie trailers (the recent "High Plains Squinter" was followed by Siskel and Ebert's review), real kids engaged in science, and a profile of a "Way Cool Scientist."

"The scientists hate to be called that," says the segment's producer, Simon Griffith. "We get them to try and loosen up, but all of them are thinking: What are my colleagues going to think?"

The show's writers and researchers, whose credits range from "America's Funniest People" to Ph.D. work in physical chemistry, are a veritable Manhattan Project of humor.

Head writer Scott Schaefer, upon reading an archeology backgrounder that included a picture of the skeleton of the early humanlike creature australopithecus, nicknamed Lucy: "We'll have to do an 'I Love Lucy' sketch in this show. Ricky! I'm home! . . ."

"Cut to a pile of old bones," suggested another writer, Adam Gross.

To return to Nye's classification of the show as entertainment: "Bear in mind," Nye said, "if something's interesting, it's very often entertaining. Science has entertained me my whole life."

SCIENCE rules! . . . Have a blast with science! . . . Science rules! . . .

As Bill Nye signs copies of his book, "Bill Nye the Science Guy's Big Blast of Science," children stare at his moving pen as if it dispenses magic ink.

Downstairs at Elliott Bay Books in Pioneer Square, the room is awash in pig tails and stuffed animals and first pairs of glasses. Some of the kids actually gasped when the Science Guy entered. Now they stand in line, inching forward, swollen with questions. Sometimes, when they get to the front of the line, a thing inside them plugs up and they just stare.

Before the signing began, everyone sat silently and watched Nye break the cellophane on a Bill Nye the Science Guy's Amazing Box O' Science - free to anyone who calls 1-800-BILLNYE - and demonstrate a few "kitchen science" experiments. He poured some vinegar and baking soda in an Erlenmeyer flask and watched the carbon dioxide inflate a blue balloon.

A little girl clutching a stuffed sheep loosened her grip.

"I tell you guys," Nye said. "I've been doing vinegar and baking soda a long time, and I still don't get tired of it . . . The bubbles are the same gas that comes out of volcanos. Exact same gas!"

Nye is a beaker on the boil, never treating science as something elementary or obvious, always energized by what others might think commonplace: gravity, air pressure, the eye.

Have a blast with science! . . . A boy in a cowboy hat casts a shadow over the book Nye is trying to sign. The human eye can handle some pretty wide extremes of bright and dark, the Science Guy says offhandedly. "It's when the light changes that it's hard to see."

A 13-year-old boy thanks Nye for "making the show understandable." A ponytailed girl wants Nye to know she loves science. The wife of a chemistry professor tells Nye they just discovered his show and they're hooked. Moments like these recharge Nye's battery. After the last child leaves and Nye signs a pile of books for the store, he returns to Nye Labs.

"I think he could be the next Barney," says head writer Schaefer.

Actual dinosaurs, of course, went extinct millions of years ago, whereas science lives.

Kit Boss is a Pacific writer. Harley Soltes is Pacific's staff photographer.

Published Correction Date: 01/01/95 - This Story Listed A Toll- Free Phone Number For Use In Ordering Free Science Kits. Instead, Orders Should Be Placed By Mail To Amazing Box Of Science, Bill Nye The Science Guy, P.O. Box 3626, Seattle, WA 98124-3626.

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