



Junior
SKEPTIC #32

Great American Skeptics

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OUR COVER



THIS ISSUE'S COVER
FEATURES A DIGITAL
PAINTING BY
DANIEL LOXTON.

Great American SKEPTICS

HELLO!

I'm Daniel, the Editor of JUNIOR SKEPTIC. This is my brother James Loxton, the guest writer for most of this issue on *great American skeptics*.

We chose this issue's theme purely for fun—of course every country has its great detectives, scientists, and critical thinkers.

Hi! It's an honor to be here.

Besides, Daniel and I are *Canadians*.

True! All the same, it's fascinating to think that famous figures from American history also helped shed light on *weird paranormal mysteries!*

Who were they?
Let's find out!

BEN FRANKLIN

When you think of Benjamin Franklin, do you imagine a chubby man in knickers and knee-high white socks flying a kite in the middle of a thunderstorm? Or, do you think of him as a "Founding Father" who helped to create the United States?

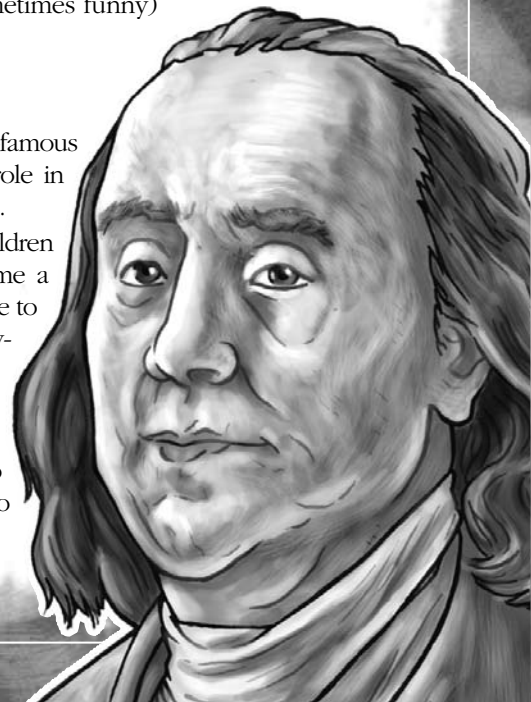
But did you know that Benjamin Franklin was also one of America's first skeptical investigators? It's true! In 1784, he participated in one of the first known scientific investigations to test a "paranormal claim." Few people know about this interesting (and sometimes funny) part of Franklin's life.

WHO WAS BEN FRANKLIN?

Benjamin Franklin was an American scientist who became world-famous for his experiments with electricity. He also played an important role in helping the American colonists win their independence from Britain.

Born in Boston in 1706, he was the youngest in a family of 17 children of a poor candle and soap maker. When he grew up and became a wealthy printer, he decided to retire early and devote himself full-time to science and other "gentlemanly pursuits" like writing and public service.

He also worked as a diplomat (someone who represents the government of one country in another country). When he arrived in France, he got a rock star's welcome from the French people, who knew all about his famous experiments with electricity. He helped to



convince France to join sides with the American colonists in their struggle against Britain—a key turning point in the American War of Independence.

After the war ended, Franklin continued to live and work in Paris for two more years. It was during this time that he was asked to participate in a scientific investigation of a weird and popular new belief called “mesmerism.”

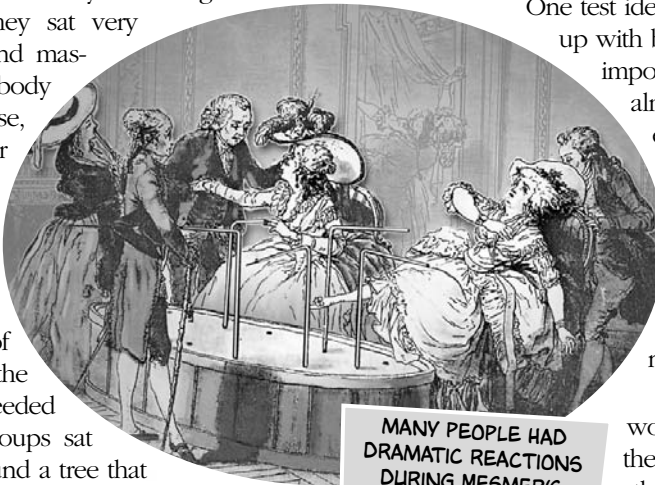
THE POWER OF MESMERISM

“Mesmerism” was fad named after the German doctor who introduced it to France—Franz Anton Mesmer. He claimed the whole universe was filled with an invisible fluid or force that caused everything from the motion of the planets to human sickness. Mesmer also made the amazing claim that he could harness this mystical energy to cure sick people!

Mesmerism (also known as “animal magnetism”) became wildly popular in Paris. According to Mesmer, sickness was caused by “obstacles” to the natural flow of a mystical fluid through the human body. He said the human body had “poles” like a magnet, and that massaging these “poles” in just the right way could clear the “obstacles” and bring people back to health.

Wealthy folks in Paris eagerly flocked to clinics run by Mesmer and his followers for treatment. Mesmerists used a wide variety of strange methods. Sometimes they sat very close to their patient and massaged the “poles” of the body (such as the fingers, nose, or abdomen). Other times, they performed group treatments by tying people together in a circle around a tub filled with iron filings. Iron rods that stuck out of the tub were placed on the areas of the body that needed to be healed. Other groups sat outdoors in a circle around a tree that had been “mesmerized” (charged with mystical energy).

Incredibly, these bizarre methods seemed to *work!* During treatments, patients would often scream and shake violently (what Mesmer called a “crisis”). Afterwards, many of these patients testified that they were cured. If these treatments worked—and they definitely *seemed* to—this was a huge breakthrough for science and medicine!



MANY PEOPLE HAD DRAMATIC REACTIONS DURING MESMER'S TREATMENTS: SCREAMING, SHAKING, EVEN FAINTING!

THE COMMISSION

Although mesmerism became wildly popular, doctors were skeptical about this magical new medical treatment. They persuaded the King of France to appoint a Royal Commission to investigate the claims of Mesmer and his followers. Benjamin Franklin was selected to be on the Commission along with what were then some of the world's most prominent doctors and scientists.

A well-known doctor who performed mesmerist treatments agreed to teach the Commission about mesmerism, and helped them do experiments at his clinic.

The scientists watched as the doctor brought his mesmerized patients to a state of “crisis.” Mesmerism had dramatic effects on people who *already believed in it*. But when the doctor attempted to “mesmerize” the investigators, *nothing happened*.

The investigators observed, “magnetism has seemed to be worthless for those patients who submitted to it with a measure of incredulity,” which made them very suspicious. It suggested that the dramatic effects experienced by many patients “followed from an anticipated conviction, & could have been an effect of the imagination.”

The investigators came up with a **hypothesis**: it was *imagination that was responsible for the supposed effects of mesmerism*, not the invisible liquid claimed by Mesmer and his followers.

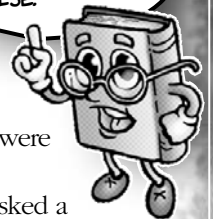
Franklin and the other scientists needed to *test* their hypothesis to find out if mesmerism was a real force. The scientists came up with a number of clever—and sometimes hilarious—experiments to see if the power of mesmerism was real or imaginary.

One test idea they came up with became an important part of almost all modern medical testing. They invented tests where the subject *only thought* they were getting the treatment, when actually they were not.

In one experiment, they asked a woman to sit in front of a closed door, then made her think a doctor was on the other side mesmerizing her (even though no one was). Sure enough, after one minute her teeth were chattering so loudly from her “crisis” that the experimenters could hear her on the other side of the door!

In another experiment, they got a mesmerist to secretly “magnetize” one tree in a group of trees. Then they asked a boy who was considered sensitive to mesmerism to hug the various trees until he found the right one. The boy put his arms around one tree, then a second, then a third, then finally, after hugging a fourth tree, had a “crisis” and fell unconscious—even though he never went anywhere near the correct tree.

A **HYPOTHESIS** IS A PROPOSED EXPLANATION FOR SOMETHING—BASICALLY AN **EDUCATED GUESS**. IT MIGHT BE RIGHT OR IT MIGHT BE WRONG. CAREFUL **TESTING** IS NEEDED TO FIND OUT WHETHER A HYPOTHESIS IS TRUE OR FALSE.



WANT TO KNOW MORE?
READ FRANKLIN'S ENTIRE
REPORT ON MESMERISM IN
SKEPTIC VOL. 4, #3
AVAILABLE AT SKEPTIC.COM!

In yet another experiment, they got a mesmerist to “magnetize” different parts of the body of a woman who was supposed to be especially sensitive to mesmerist treatment. Then they asked her what was being magnetized at that moment. She had no problem saying what part of her body was being magnetized *when she could see what was going on*. But when they blindfolded her, all of her guesses were totally wrong!

Based on many experiments like these, the investigators concluded that their hypothesis was correct. It was people’s imagination that caused them to have such reactions to mesmerism, not manipulation of an invisible liquid or magical energy.

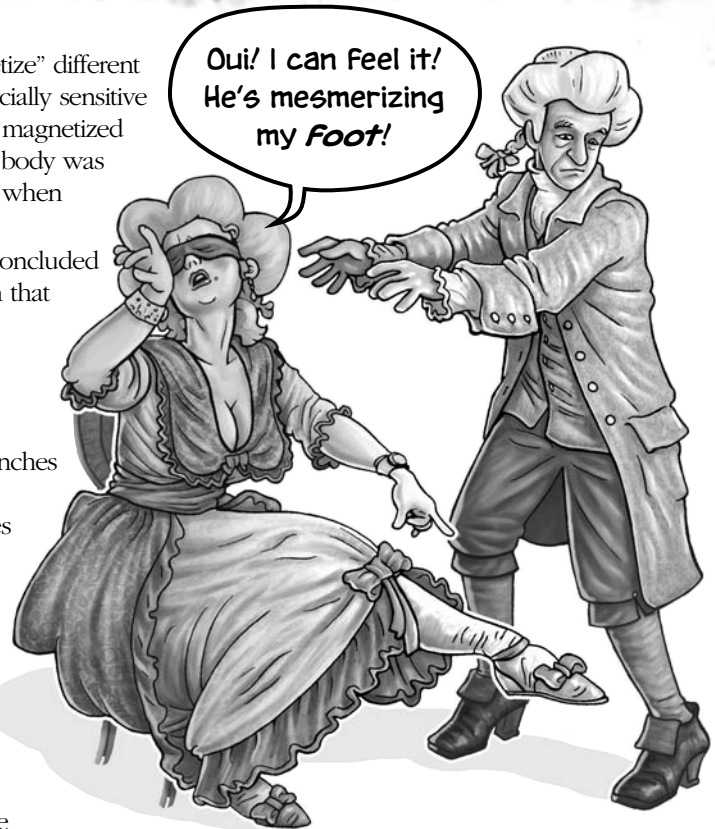
THE SCIENTISTS’ FINDINGS

Benjamin Franklin and the other investigators pulled no punches in their report: “Having finally demonstrated by decisive experiments that the imagination without magnetism produces convulsions, & that magnetism without imagination produces nothing; they have unanimously concluded, on the question of the existence & utility of magnetism, that nothing proves the existence of Animal-magnetism fluid.”

In other words, the claims made by Mesmer and his followers were all baloney. Although they looked good on the surface, these extraordinary claims just didn’t stand up to a careful examination.

But if mesmerism was nonsense, why did so many people believe in it? Were people back then more gullible than today? No.

We must not be too quick to judge! There was so much new knowledge being discovered at around that time that it was hard for regular people to know what was true and what was not. As one historian explains, “Science had captivated Mesmer’s contemporaries by revealing to them that they were surrounded by wonderful, invisible forces: Newton’s gravity...Franklin’s electricity... and the miraculous gases... that astonished Europe by lifting man into the air for the first time [in balloons].... Mesmer’s invisible



fluid seemed no more miraculous.”

Benjamin Franklin and other early skeptics didn’t reject mesmerism because it was *weird*. (Lots of weird science from that time turned out to be true.)

Instead of making assumptions, or taking somebody else’s word for it, they decided to simply *find out* whether mesmerism was true or false. They *tested* mesmerism with well-designed experiments, followed the evidence—and *learned* that Mesmer’s claims were wrong.

ELECTRIC CHICKEN?

FRANKLIN’S ELECTRICAL EXPERIMENTS REVOLUTIONIZED OUR UNDERSTANDING OF ELECTRICITY. HE GAVE SCIENTISTS MANY OF THE TERMS USED TO DESCRIBE ELECTRICITY TODAY, SUCH AS “CONDUCTOR,” “CHARGE,” “DISCHARGE,” “CONDENSE,” “ELECTRIFY,” “POSITIVE,” “NEGATIVE,” AND OTHERS. HOWEVER, HE WAS ANNOYED AT FIRST THAT HE COULDN’T THINK OF ANY *PRACTICAL USE* FOR HIS DISCOVERIES.

EVENTUALLY, HE USED HIS KNOWLEDGE OF ELECTRICITY TO INVENT SAFETY DEVICES CALLED LIGHT-

NING RODS (WHICH HELPED TO PROTECT HOUSES AND OTHER BUILDINGS BY SAFELY CHANNELING ENERGY FROM LIGHTNING STORMS TO THE GROUND). BUT FIRST HE TOYED AROUND WITH OTHER EARLIER IDEAS ABOUT HOW TO USE ELECTRICITY—SOME OF THEM PRETTY KOOKY!

AS ONE BIOGRAPHER WROTE, “INITIALLY, THE BEST HE COULD DO WAS TO SUGGEST USING AN ELECTRICAL SHOCK TO KILL HENS AND TURKEYS FOR EATING: IT MADE THEM UNUSUALLY TENDER. THE FRENCH EVENTUALLY PICKED UP THIS TECHNIQUE AND, PREDICTABLY, SPENT MANY YEARS TRYING TO USE ELECTRICITY TO IMPROVE THE COOKING OF FOOD. THEY EVEN WONDERED IF ELECTRICITY MIGHT NOT MAKE LARGE ANIMALS MORE TENDER FOR EATING, BUT FRANKLIN THOUGHT THE ELECTRICAL CHARGE NECESSARY TO KILL LARGE ANIMALS MIGHT END UP KILLING THE COOK INSTEAD.”

YIKES! THAT GIVES “FRIED CHICKEN” A WHOLE NEW MEANING!



THE GREAT HOUDINI

Imagine: thousands of spectators look up in amazed silence. Far above them, a man dangles in a straitjacket—upside-down, helpless, suspended by his feet hundreds of feet in the air. Then, the man starts to twist and thrash. Incredibly, he somehow breaks free and waves his arms in triumph!

It's no wonder that Harry Houdini, the man who performed this death-defying stunt, is still considered the greatest magician and escape artist that ever lived. But skeptics celebrate another side of the man called the "World's Greatest Mystery Man and Escape King." Houdini led a no-holds-barred assault against a belief system called "Spiritualism": the paranormal idea that certain gifted people called "mediums" could communicate with the spirits of the dead.

Why would a rich, famous stage magician devote years of his life to debunking those who claimed to possess supernatural gifts? Well, Houdini knew "mediums" and psychics were fake because he knew how they really did their tricks. He also knew that they took advantage of grieving people to make money.

He decided he had a moral duty to expose these frauds for the entire world to see. It was tough work, but he knew that his expertise in fooling people made him perfectly suited for it.

"It takes a flimflammer to catch a flimflammer," he said.

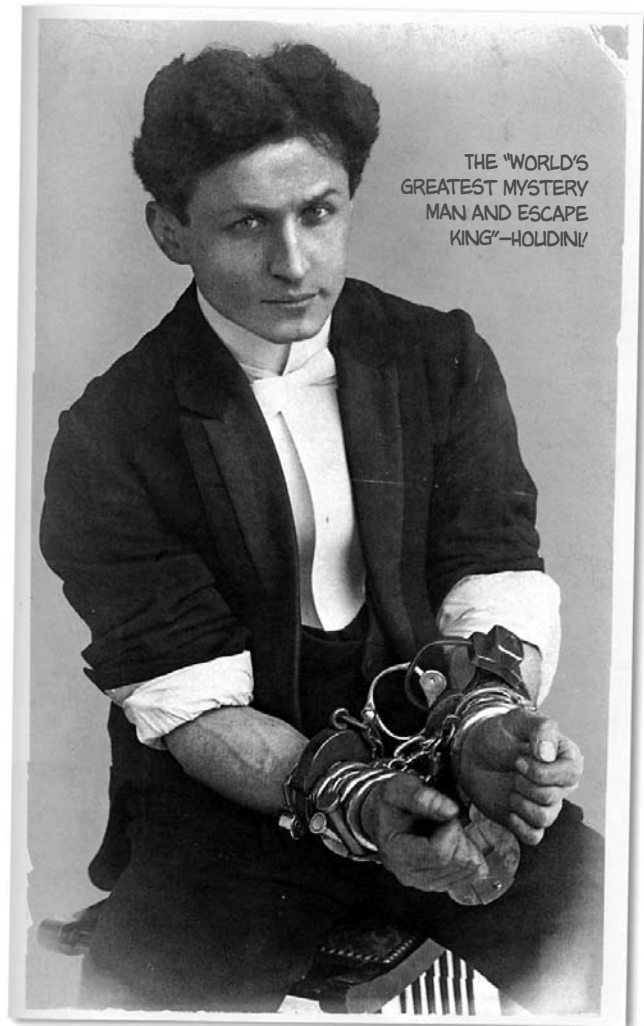
WHO WAS HOUDINI?

Houdini was born in the central European country of Hungary (at about the time Wild West folks like Billy the Kid and Colonel Custer were making history in far-away America). Houdini's real name was Ehrich Weiss. He later adopted the name "Harry Houdini" as his stage name.

When he was four-years-old, his family moved to the United States. Houdini's father was a rabbi who struggled to find enough work in his new country to support his large family. Meanwhile, young Houdini showed talent as an athlete and magician—skills that later proved essential for performing the stunning escapes that would make him famous.

He married a young woman named Bess, and the two of them took to the road performing as a magic duo in "dime museums" alongside trained monkeys and freak show stars. He worked hard to improve his skills until one day he got his lucky break after dazzling a bigwig vaudeville theater manager. ("Vaudeville" was a popular style of stage show in North America in those days. It offered a mix of short, often funny acts).

Soon his reputation soared and the world watched in awe as Houdini did the seemingly impossible: escaping from multiple sets of handcuffs, or wriggling free of locks and chains after leaping from a bridge into a freezing river—he even made a live elephant vanish into thin air!



THE "WORLD'S
GREATEST MYSTERY
MAN AND ESCAPE
KING"—HOUDINI!

WHY IS "SPIRITUALISM" BAD?

Spiritualism is the belief that it is possible to communicate with the spirits of the dead with the help of a psychic go-between called a "medium." It first became popular when two young sisters from upstate New York named Margaret and Katie Fox claimed that a spirit was communicating with them through a knocking sound. This amazing claim soon made the girls famous.

But it was all a hoax. Later in life, Margaret admitted that the whole thing was just a prank that got out of hand, and that the supposed supernatural knocks were nothing more than a popping sound that she and her sister made by cracking their toe joints!

But by the time they admitted that the whole business of Spiritualism and mediums was based on their own deliberate hoax, it was too late. The Spiritualist movement had already spread rapidly across North America, Europe, and beyond.

Soon it became common for people to take part in Spiritualist meetings known as "séances." Small groups gathered in a darkened room with a medium who claimed to make contact with spirits, and make it appear that ghosts were performing miraculous feats. For example, furniture would tip over, strange voices were heard, musical instruments would fly around the room play-

ing on their own, and glowing gunk called “ectoplasm” would appear out of nowhere! Some mediums even claimed to be able to catch spirits on film in so-called “spirit photographs.” (The “spirits” in the photos were often discovered to be healthy, living people—a sure sign of trickery!)

But the most convincing séances didn’t involve any of these elaborate tricks. Many mediums *simply made up* messages from people’s dead loved ones, saying they were in a better place and happy, and that they sent their love. These comforting messages were especially popular after the First World War, because millions of people were grieving for lost husbands, sons, fathers and brothers. Fake mediums quickly realized that they could make a whole lot of money from other people’s sorrow.

Even Houdini had cashed in on this deception, back when he was young, poor and unknown. After doing undercover research by sending someone to chat with the people of a town or visit the local graveyard, Houdini would give riveting onstage séances. (This is a perfect example of “hot reading,” or using research to make yourself appear psychic.) However, he felt guilty about deceiving people this way, and decided to give it up. As he explained, “When I noted the deep earnestness with which my utterances were received... I felt that the game had gone far enough, for I most certainly did not relish the idea of treading on the sacred feelings of my admirers.”

He realized it was wrong to manipulate people when they were at their most vulnerable. He later described the profits made by mediums as “blood money made at the cost of torture to the souls of their victims.” He heard horror stories of fraudulent mediums robbing people of their life savings—and families torn apart by the experience. He decided to do all he could to put a stop to this foul practice.

HOUDINI AND ARTHUR CONAN DOYLE

The most famous promoter of Spiritualism was Sir Arthur Conan Doyle, the writer who created Sherlock Holmes. After Doyle lost a son and other close family members in the First World War, mediums convinced him it was possible to contact his lost loved ones in the afterlife. Doyle soon made it his life’s mission to promote Spiritualism, which brought him into contact—and into conflict—with Houdini.

The two met when Houdini wrote a new book and sent a copy to Doyle. The book cast doubt on some of the early and most famous Spiritualists. Doyle strongly disagreed with the skeptical book, but became friends with Houdini anyway. He hoped he could convince Houdini that Spiritualism was, as Doyle believed, “absolutely the most important development in the whole history of the human race.”

Then, one peculiar event exposed the deep differences between the two men. Doyle and his wife invited Houdini and his wife to vacation with them in Atlantic City. While there, Lady Doyle led an “automatic-writing” séance for Houdini. (In this type of séance, spirits supposedly guide the

hand of the medium to write messages.) During the séance, Lady Doyle feverishly scribbled out 15 pages of messages—supposedly from Houdini’s dearly departed mother! Was this clear evidence that Spiritualism was real?

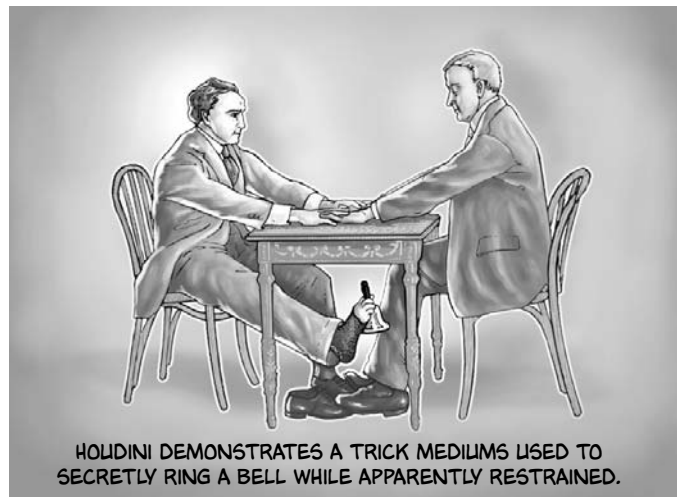
Not so fast! Houdini immediately saw a number of serious flaws in the supposed message from his mom. First, it began with a Christian cross symbol, which is not something the Jewish wife of a rabbi would draw. Second, the message was written in English, but Houdini’s mother *didn’t know English!* Finally, although Houdini focused his mind on special family knowledge, the supposed message from his mother only included general remarks like: “Oh, my darling, thank God, thank God... now I am happy. Why, of course, I want to talk to my boy—my own beloved boy.” Houdini did not believe the séance was real. He thought the Doyles were misled by their religious feelings about Spiritualism.

Despite Houdini’s best efforts to explain the many ways fake mediums fooled people, he was never able to convince Doyle. In fact, Doyle came to believe exactly the opposite: that *Houdini himself was a medium!* Doyle thought the only possible explanation for Houdini’s stunning escapes was a supernatural “dematerializing and reconstructing force” that allowed him to pass through handcuffs and other restraints. Houdini publicly concluded that Doyle was “a bit senile” and “easily bamboozled.” Not surprisingly, their friendship fell to pieces—without the help of any dematerializing force.

HOUDINI vs SPIRITUALISM

Stage magicians (who *admit* they use trickery) use the same methods as paranormal con artists such as mediums (who *don’t* admit that they use trickery), so magicians are often better at detecting fraud than anyone else.

After years of research and after attending countless séances, Houdini decided he’d never met a medium who possessed genuine supernatural powers. He concluded that all mediums relied on sleight-of-hand, hot reading, and other standard magic tricks. He set out to expose Spiritualist hoaxes by giving educational lectures and by writing a tell-all book entitled *A Magician Among the Spirits*.



As a leading authority on Spiritualism, Houdini was invited to participate in a 1920s investigation sponsored by the magazine *Scientific American*. It was, at that point, the most serious study of psychics ever attempted. The investigation took the form of a contest with a cash prize for the first person to demonstrate genuine psychic powers.

All the mediums were thoroughly searched and monitored. The first medium tested was quickly exposed as a fake by a clever use of technology. Before the séance, an electrician (secretly!) wired up the medium's chair so that a light bulb hidden in the neighboring room would glow for as long as the medium remained seated. If the medium left the chair, the bulb would turn off.

The séance began, and amazing things happened in the darkened room: strange voices were heard, and people felt someone touch their knees. A trumpet even flew overhead playing a tune. But the light bulb hidden in the next room alerted the scientists every time the medium snuck out of his chair to play a phony supernatural trick.

Another famous woman medium was such a smooth operator that she convinced some of the investigators that she was the real deal. But Houdini soon caught her cheating. During one séance she rang a bell with her foot. In another séance she was searched and restrained in a box—but Houdini caught her secretly reaching for a folding ruler she'd smuggled into the box. The ruler enabled her to secretly reach out and move things outside the box.

HOUDINI'S LEGACY

Houdini continued to debunk Spiritualism for the rest of his life. He gave lectures to the public, infiltrated séances undercover, wrote letters to newspapers, urged politicians to pass laws against phony mediums, and even offered a ten thousand dollar reward to any medium who could present a supernatural manifestation that he could not replicate through conventional means. (This challenge is the grandfather to magician James Randi's longstanding Million Dollar Challenge for anyone who can perform any paranormal ability under laboratory conditions.)

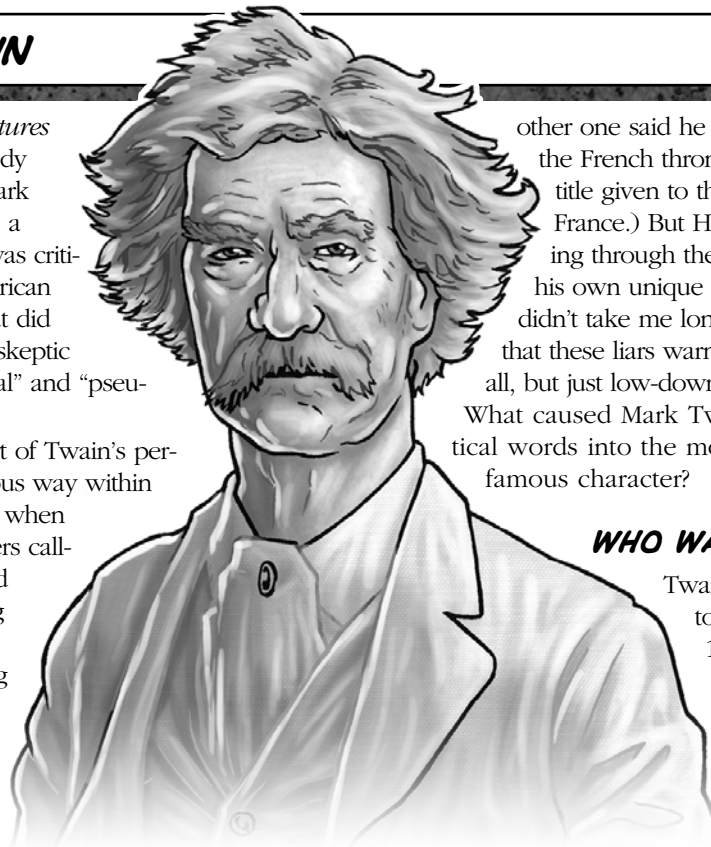
Sadly, the old scam of pretending to talk to the dead continues even today. But, thanks to Houdini's tireless efforts, this fraud is challenged much more often than it was in his lifetime.

Houdini hated fraudulent mediums, but he did believe in an afterlife. While he suspected it was impossible for the dead to communicate with the living (and he was sure that he had never met an authentic medium), he decided to launch one final investigation into the matter just to be sure. Houdini promised his wife Bess that he would try to contact her after he passed away. When he died following a freak accident in Montreal in the 1920s, she had the opportunity to put this ultimate test into effect. Every year Bess held a séance and waited to receive some contact from Houdini. She continued this sad ritual for ten years before giving up.

MARK TWAIN

If you've ever read *The Adventures of Huckleberry Finn*, you already know a thing or two about Mark Twain. You know that he was a very funny man and that he was critical of many things about American society—especially slavery. But did you know that he was also a skeptic about many of the “paranormal” and “pseudoscientific” claims of his day?

This not-so-well-known part of Twain's personality is revealed in a hilarious way within the story of *Huckleberry Finn*, when Huck encounters two characters calling themselves the “Duke” and the “Dauphin.” These traveling hustlers make their living through every kind of cheating and lying imaginable, including mesmerism, phrenology, faith healing, and fortune telling. One claimed to be a European noble and the



other one said he was the long lost heir to the French throne! (“Dauphin” was the title given to the crown prince of France.) But Huck has no problem seeing through their lies. As he puts it in his own unique and memorable way, “It didn't take me long to make up my mind that these liars warn't no kings nor dukes at all, but just low-down humbugs and frauds.” What caused Mark Twain to put these skeptical words into the mouth of his most famous character?

WHO WAS MARK TWAIN?

Twain was born in small-town Missouri in the 1830s. His real name was Samuel Clemens. (“Mark Twain” was a pen-name.) He lived an exciting life and eventually grew into one of America's most

YOUNG MARK TWAIN PARTICIPATED IN A PARANORMAL SCAM. LATER HE WAS ASHAMED OF HIS ROLE IN WHAT HE CALLED "A LIE AND A SWINDLE."



beloved authors. Over the years, he worked a number of jobs, including printer, riverboat pilot, prospector, reporter, travel writer, and, of course, novelist. But as he traveled the world and wrote humorous articles and books about the things he witnessed, he was always struck by how gullible people were. It seemed people would swallow just about any fantastic claim if it was written in a book or presented in a convincing manner.

Twain knew that it was always better to take wild claims with a grain of salt. One childhood experience, in particular, changed the way he looked at the world and transformed him into a lifelong skeptic.

THE HYPNOTIST

Mark Twain grew up when the state of Missouri was still considered the far western frontier of the United States. He actually had many of the kinds of adventures he later depicted through the characters of Tom Sawyer and Huckleberry Finn. The riverboats that chugged up and down the mighty Mississippi were filled with travelers of every stripe. Some of these were real life versions of the "Duke" and "Dauphin" characters: hucksters who promised to perform incredible feats—but always for a fee! When Twain was around fifteen years old, one such fellow left an impression Twain never forgot.

This man, a "mesmerizer" (or stage hypnotist), put on a nightly show in which he appeared to put volunteers from the audience into a trance and cause them to do silly things for the

crowd's amusement. Everyone in town flocked to his show.

Young Twain saw how the audience cheered for the hypnotized volunteers, and wanted that attention for himself. For three nights in a row, he sat on stage with other potential subjects and stared into the hypnotist's "magic disk" (a prop which was supposed to put people into a trance). But no matter how hard he tried to let himself be hypnotized, it never worked. By the fourth night, his jealousy was so intense he decided he'd fake it!

He pretended to drift off into a trance. Sure enough, the hypnotist came right over and began to give Twain commands. For the rest of the night, Twain entertained the audience by doing whatever the hypnotist instructed him to do. He ran away from imaginary snakes, kissed imaginary girls, and fished from the stage with an imaginary rod. He was happy to be getting attention, but also "ashamed and miserable" for his dishonesty. He felt sure that the hypnotist would expose him as an impostor.

Twain soon discovered, though, that he wasn't the only one faking it—the hypnotist was the biggest fraud of all!

What brought him to this skeptical realization? In addition to asking people to act out spoken instructions, the hypnotist also sometimes stood behind his volunteers to silently "drive a mental suggestion" into their minds. Twain knew he couldn't understand instructions he couldn't hear, and he definitely didn't have a special psychic connection with the hypnotist.

But Twain *could* see the faces of the audience, and he could tell from their reactions when the hypnotist was behind

him “willing” him to act out silent psychic commands. What was he going to do? Now he was sure to get caught!

Twain decided to bluff. He outright pretended to receive a psychic command. He jumped up, grabbed an old gun that was lying onstage, and chased after a kid from the audience (who just happened to be the school bully).

How did the hypnotist react to this surprising turn of events? Did he expose Twain as a fake?

Nope. The hypnotist *took credit for the whole thing!* He was a fraud who was happy to play along with Twain’s fake trance. From then on, Twain just did what he’d done the first time: “Whenever I perceived that I was being willed to do something I got up and did something—*anything that occurred to me*—and the magician, not being a fool, always ratified it.” In other words, Twain would pretend that he received a psychic communication from the hypnotist (even though he hadn’t), and the *hypnotist would pretend that he had sent one* (even though he hadn’t).

As a result, Twain soon became the hypnotist’s only subject and the star of the town. He even made believers out of the local skeptics. As Twain later put it, there was only “one person in the village who did not believe in mesmerism and I was the one. All the others were converted but I was to remain an implacable and unpersuadable disbeliever in mesmerism and hypnotism for close upon fifty years.”

TWAIN vs. PHRENOLOGY

The skeptical lessons Mark Twain learned in his youth stuck with him. Much later he had the opportunity to apply them to a weird pseudoscience of the day called “phrenology.” Phrenologists claimed they could “read” a person’s personality by measuring the shape of that person’s skull.

According to phrenologists, personality traits like “Benevolence,” “Destructiveness,” and “Caution” were found in distinct, specific parts of the brain. If a person had a well-developed trait, that was supposed to mean that the size of that section of their brain would be large—which was supposed to create a bump in that spot on their skull. If a phrenologist found, for example, a bump on a certain “Benevolence” spot on somebody’s skull, that person was supposed to be kind and generous. If another person had a dent in that same spot, that person was stingy and mean.

As a kid, Mark Twain first learned about this “science” from a traveling phrenologist who would often visit Twain’s small town. For a fee, the phrenologist would measure the bumps on people’s skulls and afterwards give them a “character-chart” that was supposed to describe their personality. Young Twain thought there was something very suspicious about these charts: no matter who was getting their personality measured, the phrenologist would always flat-

ter the heck out of them! As Twain mischievously put it, *everybody* received a character-chart “that would compare favorably with George Washington’s.”

These flattering readings should have set off people’s skeptical alarm bells, but Twain later recalled that “the voice of the doubter was not heard in the land.” People liked what they were hearing too much to question it.

Twain knew better, though, and later in life he came up with a way to put phrenology to the test. Twain’s small phrenology experiment took place in London when he was about 40 years old. He decided to get two readings from the same famous phrenologist: he’d show up once as a regular guy using a made-up name, and once as the world-famous writer and humorist Mark Twain! If it were really true that phrenologists could “read” a person’s character from the bumps on his or her skull, then Twain’s two readings should have been more or less the same. Were they?

No. The two character readings were *totally* different! Twain’s first reading was so broad that it could have applied to anyone—except for one important detail. The phrenologist claimed Twain had a cavity in the part of the skull where “Humor” was measured, which meant Twain had *no sense of humor whatsoever*. (Don’t forget that Mark Twain is often considered one of the funniest writers of all time!)

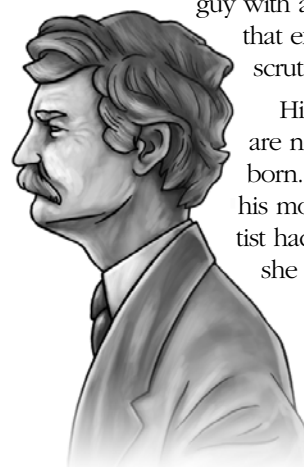
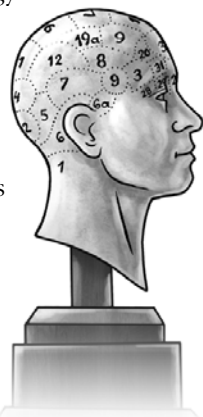
Months later, after the phrenologist had forgotten his face, Twain returned for a second reading. This time he introduced himself as Mark Twain, the world famous humorist—and sure enough, his new reading totally contradicted the old one. Twain recalled, “Once more he made a striking discovery—the cavity was gone, and in its place was a Mount Everest—figuratively speaking—31,000 feet high, the loftiest bump of humor he had ever encountered in his life-long experience!” Twain concluded that his childhood suspicions about phrenology were right all along: phrenology was a bunch of baloney!

TWAIN’S EXAMPLE

Mark Twain remained a skeptic throughout his life and left an inspiring example for us all. Twain wasn’t an expert in science or magic like Benjamin Franklin or Houdini—just a guy with a sharp mind and a firm belief that extraordinary claims should be scrutinized.

His experiences taught him people are not only gullible but also stubborn. Late in his life he confessed to his mother that his act with the hypnotist had been “a lie and a swindle.” But she refused to listen!

As Twain later reflected, “How easy it is to make people believe a lie and how hard it is to undo that work again!”



JOHNNY CARSON

Many TV fans know comedian Jay Leno as the long-time host of *The Tonight Show*. Yet, even after 16 years, Leno is still the new kid compared with the previous host: skeptic Johnny Carson.

For a full three decades, Carson was the undisputed king of late-night television. Whole generations grew up with Carson—and modern skepticism grew up with his support.

It was Johnny Carson who brought young Carl Sagan into the living rooms of millions of Americans, making the great skeptic and astronomer into a household name. Sagan went on *The Tonight Show* a whopping 26 times over the years (not counting spoof appearances when Carson imitated Sagan). What other entertainment show would go so far out of its way to share the wonder and mystery of science?

Carson also hosted many appearances by the magician James Randi (one of the most active and important skeptics of all time). These appearances grew into a lifelong friendship and skeptical collaboration between Randi and Carson—and led to two of the most stunning moments in skeptical history....

CARSON vs A PSYCHIC SPOON-BENDER

During the 1970s, the reigning superstar of the psychic world was a guy named Uri Geller (who has recently re-emerged on American TV). Geller was at that time, as magician James Randi explained, “the most famous psychic in the world” as a result of his skill at bending spoons using (apparently) psychic powers.

When *The Tonight Show* booked Geller for a demonstration of his supernatural powers, the show took a simple precaution: they asked magician James Randi to use his expertise to help them prevent Uri Geller from using any sort of trickery. (Just as in Houdini’s time, magicians are still the best experts for detecting whether self-proclaimed psychics are using the techniques of stage magic.)

Randi’s advice? Don’t let Geller bring his own test objects or props from home, and don’t let him or his people anywhere near the show’s test items before the interview.

On the show, Geller attempted one of his standard tricks: using his claimed psychic powers to detect the contents of sealed canisters. Waving his hands over the containers pro-

vided by *The Tonight Show*, Geller said, “We’ll start eliminating the ones that do not have the water.” Johnny spoke up sharply, saying, “Without touching them!” Geller laughed nervously, saying, “He is really suspicious, y’know? I’m having a hard time with you.”

Geller certainly did have a hard time! The video of this interview is easily found on YouTube and the website of the James Randi Educational Foundation (JREF), and it’s pretty painful to watch. Geller floundered about awkwardly for what seemed like ages, with no opportunity to cheat... and with no sign of psychic ability. Finally the show cut to commercial. After the break, Johnny announced that Uri said he didn’t “feel strong” enough to use his psychic abilities. Geller complained that Johnny was pressuring him to do a demonstration of his powers.

“I thought that was the idea,” Johnny said, reasonably. “I’m not trying to put you down.”

It was a disaster for Geller—the world’s most famous “psychic” bombed completely, in front of millions of viewers, frustrated by Johnny Carson’s open-minded but sensible precautions.

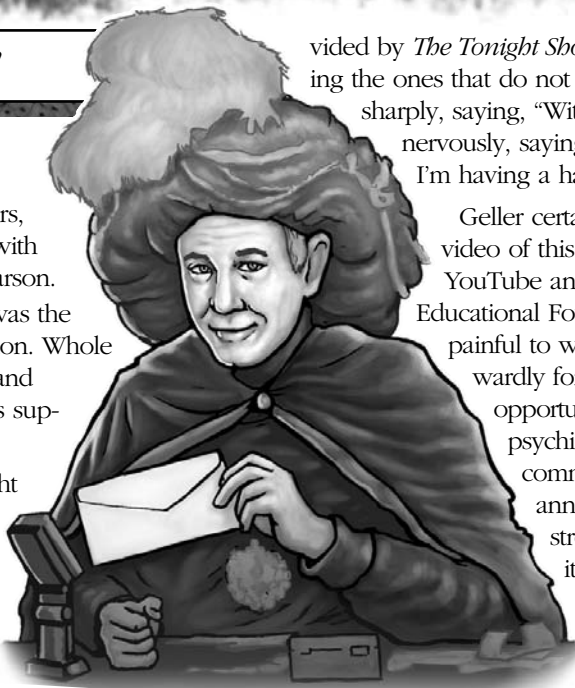
CARSON vs A FAITH HEALER

Today, Geller’s trainwreck of an appearance on *The Tonight Show* is remembered as one of the funniest moments in the history of skeptical investigations. Yet it’s overshadowed by an even more stunning event: the caught-red-handed debunking of a “faith healer” named Peter Popoff.

Popoff is flashy and theatrical preacher who claimed he could perform miraculous healings and other supernatural feats on stage. He was popular, as you’d expect—after all, who couldn’t use a miracle or two? According to his declared income, the preacher’s act pulled in millions of dollars a year.

A key aspect of Popoff’s show was that he had seemingly psychic or divine knowledge about people in the audience that he had never met. Incredibly, he knew intimate details about complete strangers, such as their names, street addresses, and medical conditions. To his fans, this was proof that he was performing real miracles.

However, an investigation by James Randi discovered something very different. Popoff’s miraculous knowledge actually came from tiny a radio receiver hidden in his ear! Before the show, his staff would appear to be chatting casually with people while secretly collecting personal information about them. During the show, Popoff’s wife would secretly radio these details to him, and he would work that information into his act.



JOHNNY CARSON’S COMEDY OFTEN HAD A SKEPTICAL FLAVOR. HE FREQUENTLY PRETENDED TO BE ASTRONOMER CARL SAGAN. HE ALSO DID A COMEDY ROUTINE BASED ON AN OLD MIND-READING TRICK IN WHICH A PSYCHIC PRETENDS TO READ THE CONTENTS OF SEALED ENVELOPES.

UNDER JOHNNY CARSON'S WATCHFUL EYE, URI GELLER BOMBED ON THE TONIGHT SHOW. GELLER FAILED TO SHOW ANY PSYCHIC ABILITIES AT ALL.

LIKEWISE, THE EXPOSÉ OF PETER POPOFF WAS AN EYE-OPENER FOR MILLIONS OF VIEWERS AT HOME.

SEE FOR YOURSELF! THESE EPISODES OF *THE TONIGHT SHOW* ARE QUITE EASY TO FIND ONLINE. THE *JAMES RANDI*

EDUCATIONAL FOUNDATION

PUBLISHES MANY OF THEM ON YOUTUBE AND AT WWW.RANDI.ORG



Randi used a radio scanner to listen to and record these secret radio messages. Then, he took those recordings to *The Tonight Show*, and played them for the world.

During the interview, Randi first showed Johnny Carson a video of a typical performance by Popoff, in which the preacher somehow knew an elderly couple's names and medical problems. Then, Randi played the same tape again—but *this time with the secret radio messages Popoff heard added to the soundtrack*. The result, played for millions of TV viewers, was simply jaw-dropping: line for line, the hidden radio fed Popoff information about a poor sick old man and his wife, and Popoff repeated it out loud as though it were a miracle. Popoff was caught red-handed.

Carson did not know in advance what this video would show, and he was visibly shaken by what he saw. "That's a disturbing thing you've shown there," he said to Randi, adding that there is a lot of money in this kind of business.

Sadly, yes. Though Popoff was soon bankrupt, he's now back in operation. In 2007, he brought in *a million bucks more than he did the year Randi and Carson exposed him!* How can this be? As Mark Twain observed so long ago, it's much easier to fool people than it is to convince them they've been fooled.

CARSON AND THE JREF

After 30 years, Johnny Carson handed *The Tonight Show* over to fellow comedian Jay Leno. Yet, retirement did not stop Carson from supporting skepticism and the important work of James Randi.

Luckily, decades as the star of one of the most popular TV shows on Earth made Carson a wealthy man. He was able to throw his fortune into various good causes. One of these was the James Randi Educational Foundation (JREF), the non-profit organization James Randi created to promote science. Carson's generous support of the JREF amounted to hundreds of thousands of dollars. (Even after Carson passed away, his estate has continued to help the JREF.)

With a warm heart and a sharp mind, Johnny Carson brought skepticism to millions. Randi paid him this tribute: "John, I will miss you, as will so many millions here and around the world, but your legacy lives on."

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