

Magical Thinking

Psychology Today (<https://www.psychologytoday.com/intl/articles/200803/magical-thinking>)



Years after his death, John Lennon went on tour. He visited, among other locations, Oklahoma City, Waco, New Orleans, and Virginia Tech, spreading a message of peace and love at the sites of tragic events. You may not have recognized him, though, covered in scars and cigarette burns. But to hear him, there would have been no mistaking his presence.

On this journey, Lennon assumed the form of a piano, specifically the one on which he composed *Imagine*. "It gives off his spirit, and what he believed in, and what he preached for many years," says Caroline True, the tour director and a colleague of the Steinway's current owner, singer George Michael. Free of velvet ropes, it could be touched or played by anyone. According to Libra LaGrone, whose home was destroyed by Hurricane Katrina, "It was like sleeping (<https://www.psychologytoday.com/intl/basics/sleep>) in your grandpa's sweatshirt at night. Familiar, beautiful, and personal."

"I never went anywhere saying this is a magic piano and it's going to cure your ills," True says. But she consistently saw even the most skeptical hearts warm to the experience—even in Virginia, where the piano landed just a month after the massacre. "I had no idea an inanimate object could give people so much."

Maybe you're not a Beatles fan. Maybe you even hate peace and love. But you are wired to find meaning in the world, a predisposition that leaves you with less control over your beliefs than you may think. Even if you're a hard-core atheist who walks under ladders and pronounces "new age" like "sewage," you believe in magic.

Magical thinking (<https://www.psychologytoday.com/intl/basics/magical-thinking>) springs up everywhere. Some irrational beliefs (Santa Claus?) are passed on to us. But others we find on our own. Survival requires recognizing patterns—night follows day, berries that color will make you ill. And because missing the obvious often hurts more than seeing the imaginary, our skills at inferring connections are overtuned. No one told Wade Boggs that eating chicken before every single game would help his batting average; he decided that on his own, and no one can argue with his success. We look for patterns because we hate surprises and because we love being in control.

Emotional stress (<https://www.psychologytoday.com/intl/basics/stress>) and events of personal significance push us strongly toward magical meaning-making. Lancaster University psychologist Eugene Subbotsky relates an exemplary tale. "I was in Moscow walking with my little son down a long empty

block," he recalls. Suddenly a parked car started moving on its own, then swerved toward them, and finally struck an iron gate just centimeters away. "We escaped death very narrowly, and I keep thinking magically about this episode. Although I'm a rational man, I'm a scientist, I'm studying this phenomenon, there are some events in your life that you cannot explain rationally. Under certain circumstances I really feel like someone or something is guiding my life and helping me." (Personally I would have felt like something was trying to kill me and needed to work on its aim.)



"There are many layers of belief," psychologist Carol Nemeroff says. "And the answer for many people, especially with regard to magic, is, 'Most of me doesn't believe but some of me does.'" People will often acknowledge their gut reaction and say it makes no sense to act on it—but do it anyway. Other times, they'll incorporate superstition into their worldview alongside other explanations. "For example," says Susan Gelman, a psychologist at the University of Michigan, "God puts you in the path of an HIV-positive lover, but biology causes you to contract the virus from his semen."

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Often we don't even register our wacky beliefs. Seeing causality in coincidence can happen even before we have a chance to think about it; the misfiring is sometimes perceptual rather than rational. "Consider what happens when you honk your horn, and just at that moment a streetlight goes out," observes Brian Scholl, director of Yale's Perception and Cognition (<https://www.psychologytoday.com/intl/basics/cognition>) Laboratory. "You may never for a moment believe that your honk caused the light to go out, but you will irresistibly perceive that causal relation. The fact remains that our visual systems refuse to believe in coincidences." Our overeager eyes, in effect, lay the groundwork for more detailed superstitious ideation. And it turns out that no matter how rational people consider themselves, if they place a high value on hunches they are hard-pressed to hit a baby's photo on a dartboard. On some level they're equating image with reality. Even our aim falls prey to intuition (<https://www.psychologytoday.com/intl/basics/intuition>).

1. Anything can be sacred.

To some, John Lennon's piano is sacred. Most married people consider their wedding rings sacred. Kids with no notion of sanctity will bust a lung wailing over their lost blanky. Personal investment in inanimate objects might delicately be called sentimentality, but what else is it if not magical thinking? There's some invisible meaning attached to these things: an essence. A wedding ring or a childhood (<https://www.psychologytoday.com/intl/basics/child-development>) blanket could be replaced by identical or near-identical ones, but those impostors just wouldn't be the same.

What makes something sacred is not its material makeup but its unique history. And whatever causes us to value essence over appearance becomes apparent at an early age. Psychologists Bruce Hood at Bristol University and Paul Bloom at Yale convinced kids ages 3 to 6 that they'd constructed a "copying machine." The kids were fine taking home a copy of a piece of precious metal produced by the machine, but not so with a clone of one of Queen Elizabeth II's spoons—they wanted the original.

In many cases the value of an object comes from who owned it or used it or touched it, an example of "magical contagion." In one study, 80 percent of college students said there was at least a 10 percent chance that donning one of Mr. Rogers' sweaters, even without knowing it was his, would endow wearers with some of his "essence"—improve their mood and make them friendlier. Gloria Steinem once related a tale from before she was famous. Another girl had seen her touch members of the Beatles. In turn, the girl asked Steinem for her autograph.

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Paul Rozin at the University of Pennsylvania and Nemeroff contend that magical contagion may emerge from our evolved fear of germs, which, like essences, are invisible, easily transmissible, and have far-reaching consequences. Well before humans had any concept of germ theory, we quarantined the ill and avoided touching dead bodies. The deep intuition that moral or psychological qualities can pass between people, or that an object carries its history with it, could just be an extension of the adaptive tendency to pay close attention to the pathways of illness.

But that doesn't mean we're good at evaluating sources of contagion. Nemeroff found that people draw the germs of their lovers as less scary-looking than those of enemies, and they say those germs would make them less ill. She also found that undergrads base condom usage on how emotionally safe they feel with a partner more than on objective risk factors for catching STDs.

2. Anything can be cursed.

Essences are not always good. In fact, people show stronger reactions to negative taint than to positive. Mother Teresa cannot fully neutralize the evil in a sweater worn by Hitler, a fact that fits the germ theory of moral contagion: A drop of sewage does more to a bucket of clean water than a drop of clean water does to a bucket of sewage. Traditional cleaning can't erase bad vibes either. Studies by Rozin and colleagues show that people have a strong aversion to wearing laundered clothes that have been worn by a murderer or even by someone who's lost a leg in an accident.

Magical contagion can also flow in reverse. Many people wouldn't want an AIDS patient taking over a hospital bed that they had just left, and about a third of undergrads would feel uncomfortable if an enemy possessed their used

hairbrush. "This rests on the assumption that there is no separation of space and time," Nemeroff says. "The hairbrush and I were in contact, we merged. At that mystical level where all is one, acting on it is acting on me."

3. Mind rules over matter.

Wishing is probably the most ubiquitous kind of magical spell around, the unreasonable expectation that your thoughts have force and energy to act on the world. Who has not resisted certain thoughts for fear of jinxing oneself? Made a wish while blowing out birthday candles? Tried to push a field goal fair mid-flight using nothing but hope and concentration

(<https://www.psychologytoday.com/intl/basics/attention>)?

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Emily Pronin and colleagues at Princeton and Harvard convinced undergrads in a study that they had put voodoo curses on fellow subjects. While targeting their thoughts on the other students, hexers pushed pins into voodoo dolls and the "victims" feigned headaches. Some victims had been instructed to behave like jackasses during the study (the "Stupid People Shouldn't Breed" T-shirt was a nice touch), eliciting ill will from pin pushers. Those who dealt with the jerks felt much more responsible for the headaches than the control group did. If you think it, and it happens, then you did it, right? Pronin describes the results as a particular form of seeing causality in coincidence, where the "cause" is especially conspicuous because it's hard to miss what's going on in your own head.

4. Rituals bring good luck.

Whenever I fly, I place my hands on the fuselage as I step onto the plane. The habit began when I was a kid innocently in awe of flying machines, but over the years as I continued to touch the plane and continued to not die horribly, my brain decided I was keeping the apparatus aloft, and now I do it for peace of mind.

To witness the mindless repetition of actions with no proven causal effect, there's no better laboratory than the athletic

(<https://www.psychologytoday.com/intl/basics/sport-and-competition>) field.

The anthropologist George Gmelch of Union College in Schenectady has paid close attention to the elaborate dances players do during baseball games. Because performance while hitting and pitching is so unpredictable (compared to fielding), most behavioral tics occur on the mound or at the plate. Mike Hargrove was nicknamed "the human rain delay" because of his obsessive shenanigans while at bat. B.F. Skinner (<https://www.psychologytoday.com/intl/basics/behaviorism>) famously showed "superstition" in pigeons by locking them in a box, feeding them at regular intervals, and watching them associate random behaviors with

food rewards, eventually building up intricate routines of behavior. When you combine kicking dirt and readjusting your helmet with strikes and home runs, you can see how the batter's box would quickly become an open-air Skinner box.

We use ritual acts most often when there is little cost to them, when an outcome is uncertain or beyond our control, and when the stakes are high—hence my communion with the fuselage. People who truly trust in their rituals exhibit a phenomenon known as "illusion of control," the belief that they have more influence over the world than they actually do. And it's not a bad delusion to have—a sense of control encourages people to work harder than they might otherwise. In fact, a fully accurate assessment of your powers, a state known as "depressive realism," haunts people with clinical depression (<https://www.psychologytoday.com/intl/basics/depression>), who in general show less magical thinking.

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5. To name is to rule.

Just as thoughts and objects have power, so do names. Language's ability to dredge up associations acts as a spell over us. Piaget argued that children often confuse objects with their names, a phenomenon he labeled nominal realism. Rozin and colleagues have demonstrated nominal realism in adults. After watching sugar being poured into two glasses of water and then personally affixing a "sucrose" label to one and a "poison" label to the other, people much prefer to drink from the "sucrose" glass and will even shy (<https://www.psychologytoday.com/intl/basics/shyness>) away from one they label "not poison." (The subconscious (<https://www.psychologytoday.com/intl/basics/unconscious>) doesn't process negatives.) Rozin has also found that people are reluctant to tear up a piece of paper with a loved one's name written on it. Arbitrary symbols carry the essence of what they represent. Along a similar vein, "the name Adolf dropped off very sharply in the 1940s," Rozin points out.

6. Karma's a bitch.

In eighth grade, a conniving kid named Kevin made a sport of getting under my skin, mocking me for everything from my haircut to my shoelaces. I wanted nothing more than to kick him where it counted. But I never had to. On field day he had a little incident with a bicycle handlebar. With his manhood maimed, I couldn't help but feel a sense of justice in the universe. He was asking for it.

Belief in a just world puts our minds at ease: Even if things are beyond our control, they happen for a reason. The idea of arbitrary pain and suffering is just too much for many people to bear, and the need for moral order may help explain the popularity of religion; in fact, just-worlders are more religious than others.

Faith in cosmic jurisprudence starts early. Harvard psychologists showed that kids ages 5 to 7 like a child who found \$5 on the sidewalk more than one whose soccer game got rained out.

But belief in a just universe can also prevent one from fighting for more justice—the blame-the-victim effect. If a test subject is submitted to painful shocks that he can't escape, people think less of him; it's comforting to assume that he must deserve it somehow.

Jinxes—in the form of tempting fate—are closely related to karma. Jesse Bering, a psychologist at Queen's University in Belfast, studies the evolutionary psychology (<https://www.psychologytoday.com/intl/basics/evolutionary-psychology>) of religion. He argues that assuming that an omniscient being can read our minds and strike us down for our immorality keeps us from misbehaving and thus being ousted by our social group. I'm an atheist, but I asked him if fear of targeted lightning bolts might explain why I nevertheless feel the need to knock on wood when I merely think to myself something like, "Gee, I haven't had a cold in months" (a habit that also implicates rules 3 and 4). "We're still thinking that the universe is keeping moralistic tabs on us; if we think we've outsmarted this agency or somehow cheated it—from giving us a cold like everyone else, for example—it will seek to humble us through a sharp dose of reality. The ritual of wood-knocking somehow satisfies or pleases the universe and preempts it from intentionally punishing us."

7. The world is alive.

To believe that the universe is sympathetic to our wishes is to believe that it has a mind or a soul, however rudimentary. We often see inanimate objects as infused with a life force. After watching *The Velveteen Rabbit* as a kid, I desperately wanted my own plush bear to come alive. When I asked my mom if loving something enough can make it real, she said no. It broke my heart. It's not that we think all matter is fully alive—even babies are surprised when inanimate objects appear to move on their own—it's that we feel all matter has that potential. I know intellectually that I can't bring objects to life, but I still feel irrational anger (<https://www.psychologytoday.com/intl/basics/anger>) toward a piece of toast when it drops from my hand—and have been known to stomp on it in retaliation.

Marjaana Lindeman, a psychologist at the University of Helsinki, defines magical thinking as treating the world as if it has mental properties (animism) or expecting the mind to exhibit the properties of the physical world. She found that people who literally endorse phrases such as, "Old furniture knows things about the past," or, "An evil thought is contaminated," also believe in things like feng shui (the idea that the arrangement of furniture can channel life energy) and astrology. They are also more likely to be religious and to believe in paranormal agents.

Subbotsky says there are benefits to thinking animistically. "It's much more comfortable to think that your fate is written down in a constellation of stars than that you're one of a certain group of intelligent animals who are lost in frozen space forever." And magical thinking doesn't necessarily interfere with practical life, he adds: "You can be a believer in astrology and still be a good astronomer."

—*Matthew Hutson*

Magical thinking can be plotted on a spectrum, with skeptics at one end and schizophrenics at the other. People who endorse magical ideation, ranging from the innocuous (occasional fear of stepping on sidewalk cracks) to the outlandish (TV broadcasters know when you're watching), are more likely to have psychosis (<https://www.psychologytoday.com/intl/basics/psychosis>) or develop it later in their lives. People who suffer from obsessive-compulsive (<https://www.psychologytoday.com/intl/basics/ocd>) disorder also exhibit elevated levels of paranoia (<https://www.psychologytoday.com/intl/basics/fear>), perceptual disturbances, and magical thinking, particularly "thought-action fusion," the belief that your negative thoughts can cause harm. These people are compelled to carry out repetitive tasks to counteract their intrusive thoughts about unlocked doors or loved ones getting cancer. But more magical thinking does not necessarily mean more emotional problems—what counts is whether such thinking interferes with everyday functioning.

You wouldn't want to be at the skeptic end of the spectrum anyway. "To be totally 'unmagical' is very unhealthy," says Peter Brugger, head of neuropsychology at University Hospital Zurich. He has data, for example, strongly linking lack of magical ideation to anhedonia, the inability to experience pleasure. "Students who are 'not magical' don't typically enjoy going to parties and so on," he says. He's also found that there's a key chemical involved in magical thinking. Dopamine (<https://www.psychologytoday.com/intl/basics/dopamine>), a neurotransmitter that the brain uses to tag experiences as meaningful, floods the brains of schizophrenics, who see significance in everything, but merely trickles in many depressives, who struggle to find value in everyday life. In one experiment, paranormal believers (who are high in dopamine) were more prone than nonbelievers to spot nonexistent faces when looking at jumbled images and also were less likely to miss the faces when they really were there. Everyone spotted more faces when given dopamine-boosting drugs. Brugger argues that the ability to see patterns and make loose associations enhances creativity (<https://www.psychologytoday.com/intl/basics/creativity>) and also serves a practical function: "If you're on the grassland, it's always better to assume that a tiger is there."

Primed For The Future

Arthur C. Clarke's assertion, "Any sufficiently advanced technology is indistinguishable from magic," comes to full fruition in cyberspace—a realm of avatars and instant messaging. And magical thinking may help us pluck the fruits of digital technology.

The mystical hunches that don't always make sense in meat-space can make good in the datasphere. Computer viruses act even more like curses than real germs do, taking over computers and making them seem possessed. Icons work as charms that can open windows into new worlds, and simple clicks on buttons or links can have surprising and far-ranging effects. Action at a distance (for instance e-mail) works because everything is connected. In the real world, meaningful coincidences often incite unfounded suspicion about a mystical tinkerer behind the scenes. But with technology, intelligent agents really are pulling the strings—not deities but engineers and programmers. Computer hacks—solutions or tricks that sidestep normal operating procedures—are a form of coding magic. Or, as a geek might say, magic is a form of hacking nature.

Finally, as our technological gadgets become more advanced, our tendency to see agency in them—yelling at your cell phone when it "misbehaves"—may become increasingly adaptive. Inanimate objects will become more responsive, interactive, and intentional, *TechGnosis* author Erik Davis says, "so it will make sense to have a degree of magical thinking just to be able to deal with these devices."

Not So Silly After All

Who are WE to say the dreamers have it wrong? Carol Nemeroff and Paul Rozin point out that many magical beliefs have gained some element of scientific validity:

- **Magical contagion:** Germ theory has shown that we have reason to fear that something invisible and negative can be transmitted by contact. Bacteria are the new curses.
- **Holographic existence:** The idea that the whole is contained in each of its parts is born out by biology. Every cell in your body contains all of the DNA (<https://www.psychologytoday.com/intl/basics/genetics>) needed to create an entire person.
- **Action at a distance:** Can voodoo dolls and magic wands have an impact? Well, gravitational pull works at a distance. So do remote controls, through electromagnetic radiation.
- **Mind over matter:** The placebo effect (<https://www.psychologytoday.com/intl/basics/placebo>) is well-documented. Just thinking that an inert pill will have a medical effect on you makes it so.
- **Mana:** Mana is the Polynesian term for the ubiquitous concept of communicable supernatural power. There is indeed a universally applicable parcel of influence that is abstract and connects us all: money.

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