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Even surgeons can be superstitious.

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In the old days when many phenomena that are now readily explicable on natural grounds were incapable of explanation, theories were invented, such as those of ghosts and witches, and these were supposed to afford the desired reasons for things which the human mind is always so prone to seek. Most of these beliefs have disappeared in the progress of modern science and of education, yet there are some people who still continue to be ruled or at least influenced by the survival of the old theories, that is, by superstitions.

— Journal of the American Medical Association, Editorial, 1906

Very early on in medical school, my classmates and I wrote answers to four questions about our health beliefs—things we "just knew" about our own health, superstitions, things that weren't based in scientific fact. This was intended to enhance our ability to connect with patients who, for various reasons, might have convictions that contravened the Western medical canon we were starting to learn. I struggled with the assignment, which seemed loaded, like it wanted us to admit something embarrassing about our premedical knowledge, something we could all laugh at together once we were in the club. I found that I didn't really have anything I could categorize as a superstition. I believed that medicine worked, and that even if it wasn't perfect it was probably the best way forward for a sick person. I know that this belief came from my father.

1. Does your family use home remedies for certain illnesses? If yes, describe.

My father's confidence in the reductionist power of medicine borders on the fanatical. To him, everything can and will be explained, we just need to keep crunching the numbers. He got that way without a medical degree, though he did study biochemistry and worked as a pharmaceutical lab chemist to put himself through business school. His commitment to science is so strong he once nearly poisoned himself by adding potassium chloride salt to his drinking water to correct what he perceived to be a low value on his yearly blood panel; he'd gone so far as to calculate the exact millimolar concentration he would need, but, crucially, missed a decimal point.

Photo illustration by MARGEAUX WALTER

When you ask him how his morning swim was, he will tell you how far he swam and how long it took him; he can tell you how many kilocalories of energy he burned and what he's planning to consume to make up for it. He is less willing to articulate how the swim felt, or why he returns to the water day after day, dismissing these concerns with a self-effacing "Blah, blah, blah."

As soon as at-home genetic testing became commercially available, he sent a saliva swab to California and mailed me a kit, eager to know the available truth, sending follow-up emails about the familial underpinning of our adult-onset lactose intolerance.

My becoming a physician only strengthened his belief in the medical system. He started to diagnose his acquaintances and categorize them by their maladies, the way medical students are now taught not to do (not "the diabetic" but "the patient with diabetes"). He would pepper me with—not questions, precisely, but requests for confirmation of things he had read, or assumptions he'd made about his own and his friends' medical care. He sent his primary care physician detailed emails replete with links to medical journals and references to my training, once persuading his doctor to order a myocardial perfusion scan to evaluate his coronary arteries. That he had no coronary symptoms and was training for a ten-mile foot race did nothing to dissuade him from getting the test. The study was an ordeal: He had to show up in advance to get a radioactive tracer injected into his veins; the hospital mistimed the injection and the test ended up taking all day. He, of course, called me to bemoan the inefficiency of American health care. "You know why this happened, right?" I said to him, rolling my eyes. "It's because the test was unnecessary, and you got it by browbeating Dr. Min."

On my walk to the hospital one day during fellowship I saw a flash at the top of an electrical pole a few yards in front of me. This was accompanied by a loud bang, like a gunshot, and something falling from the sky to the pavement below. Approaching cautiously, I found a dead squirrel on the asphalt, limbs curled tight, mouth caught in a grimace, smelling of burnt hair. It was just after dawn. There was no one else on the street. Unnerved, needing a witness, I called my sister. "Is someone trying to tell me not to operate today?" I asked her, only half-joking.

"Yikes," she replied, "I don't know."

2. When someone falls ill, does your family believe that there is a specific cause of illness?

I got very touchy during residency about using the word *quiet* when I was on call. If, during sign-out, someone even hinted at wishing me well, I would admonish them not to use the *q* word. I wasn't embarrassed by my superstition—I came by it honestly. The nights I particularly needed a silent pager seemed to be the busiest nights I had. Once during my third year, my co-residents tried to convince me to eat dinner with them at a restaurant half a block from the hospital. The list of patients under my care was short, there was nobody waiting to be seen in the emergency room; everyone was "tucked in." I hemmed and hawed and said I would think about it, and the moment I had made up my mind that I would go—what was the worst that could happen?—the code bell rang and I sprinted upstairs to find a patient, seven days out from his operation and by all accounts healing well, exsanguinating from an artery that had suddenly burst in his neck. After that, I refused to leave the hospital during a call night for any reason, even though leaving wasn't prohibited. I was convinced that if I even thought about stepping outside, someone would die.

This kind of superstition among supposedly scientifically minded medical personnel is common enough to have been investigated over and over again in modern medical literature. In the past twenty years, physicians have published studies in reputable journals examining whether patients born under Leo skies have worse outcomes; whether brain aneurysms are more likely to rupture during a full moon (yes!); whether certain physicians are "black clouds," objectively busier than their counterparts (possibly);

whether surgery on Friday the Thirteenth or during particular phases of the moon is associated with a greater likelihood of postoperative complications (not true following tonsillectomy, thyroid surgery, elective spine surgery, cataract surgery—all independently conducted studies). There have been multiple published randomized controlled trials—the gold standard of medical research, in which a scientific hypothesis is tested rigorously with a test group against a control group, with both groups being randomly selected among eligible participants—assessing whether saying the word *quiet* aloud leads to busier shifts in the microbiology lab or the emergency department. One of these trials required a staff member to use the word *quiet* on certain days and not on others, then assessed the department's overall workload, and how busy her colleagues felt they were. (The authors of the article about this trial carefully noted that "the tone, enthusiasm, and audibility with which the intervention was uttered was at the discretion of the duty member.")

Some of the studies are tongue-in-cheek; some seem determined to exorcise any vestige of superstition from the medical field, a quest that has been ongoing since at least the nineteenth century ("some good physicians…need a thorough shaking up before they will let go old notions and adapt their surgery to the present day," wrote a contributor to the *Journal of the American Medical Association* in 1884). The latter often adopt a scolding, humorless tone toward those that could possibly believe such silly things ("The hypothesis that lunar phases, zodiac signs, and Friday the Thirteenth influence blood loss and emergency operations is not valid and only myth.") Most required legitimate effort—surveying emergency-room workers over consecutive shifts, for example, or reviewing thousands of surgical records, obtaining institutional review board approval to study human subjects.

There are hints of uncertainty, even in the studies that purport to conclusively put a false belief to rest. One suggested that patients with strongly held beliefs about the lunar cycle should be taken seriously, even allowed to reschedule their surgeries for a more auspicious phase, as long as it "doesn't constrict evidence-based treatment regimens." In other words, so long as it isn't demonstrably hurting anyone, we can concede that a patient's icky feeling about a particular moon phase may be important enough to accommodate. One of the numerous "black cloud" studies noted that the residents who reported black clouds felt busier than their white cloud counterparts. A trial about the effect of the *q* word noted that some people felt as though their nights were worse if someone had uttered the word *quiet*, even if, by the numbers, they weren't. The authors of the studies used these pesky findings to argue that physicians ought to rid themselves of the black cloud and *q*-word mythology once and for all, because they have destructive potential even though they've been proven, scientifically, to be false. And maybe that's true—maybe ridding the phrase "black cloud" of any significance would help overworked clinicians feel less busy.

The phrase that comes to my mind, though, is "self-fulfilling prophecy."

3. Are there important memories of illness in your family? Does this influence the way you or other family members think about or react to illness and seeing doctors?

I REMEMBER MY MOTHER saying that lying on my left side would lessen stomach pain, that taking a spoonful of honey would soothe bronchitis, that chamomile tea would help me sleep. I know that my father was hospitalized for meningitis around the time that my younger sister was due, and that my mother sat for hours at the kitchen sink with me on her lap, refusing to let her body go into labor. I remember when my grandfather was hospitalized for what would be the last time, being told that they were going to surgically place a tube that could put food straight into his belly, "because the doctor said he can't feed himself, and it would be like letting a baby starve." During the assignment, I viewed these things neutrally, as things that had happened. When I was away at school with a stomachache, I can't remember ever thinking to lie on my left side.

Learning about diseases, the way they are inherited, the way the body is constructed, the way that drugs bind to their pharmacologic targets, the way the body heals wounds with fibroblasts and white blood cells, and how ACE inhibitors harness an existing pathway to trick your kidneys into lowering your blood pressure—all of it, I would have thought, would make me more concrete, more inclined to explain things rationally. All of it would make me more like my father. Armed with specialized knowledge of how bodies work and how they break down, I would have thought myself primed for a dispassionate way of looking at the world, a binary yes-no, this-that, sick-well. Instead, the opposite has happened. At the end of my training, I find myself more likely to say I don't know why, to leave room for the mysterious or ineffable, to concede that medicine doesn't have all the answers and that the ones it does have are sometimes not the important ones.

Perhaps this skepticism arose because I got to peek behind the curtain and see, not that the emperor has no clothes, but that the ones he wears change constantly, and that we sometimes don't even know where he got them, and that how he feels about them can matter as much as whether they exist or not. In medical school, I learned that we don't really know how acetaminophen works to reduce pain, though it is one of the most common medications used today. I learned that compounds without chemical effect—placebos—can work even when people know they aren't real. Even in this so-called golden age of "evidence-based medicine," or "personalized medicine," harnessing the power of science to decode the secrets of our DNA, outcomes are not as reliably predictable as we would like. People get sick. Some people get better, some don't. More often than not, we don't know why.

If instead of health beliefs, the questionnaire had asked me about meaning, that would have been a different story. For as long as I can remember I have experienced significant moments as physical phenomena: a prickling on my skin and behind my eyes, a breeze at the base of my skull. It happened when I noticed my grandfather's breathing change on his deathbed, well before I learned the implication of agonal respiration. It happened when I climbed a mountain in California and felt the whole landscape vibrate before me. When I visited a friend stricken with an inexplicable paralysis in college. During a rainstorm I watched from a front porch in North Carolina. The word I have always applied to it is *duende*—"a mysterious force that everyone feels and no philosopher has explained." A struggle, sometimes bloody, for art to reveal itself. Federico García Lorca, the early-twentieth-century Spanish poet, writes: "The *duende* wounds, and in trying to heal that wound that never heals, lies the strangeness, the inventiveness of a man's work." My respect for the duende comes from my mother, a woman whose worldview is not logical but expansive, who places totems all over the house, who believes in omens, who wears jewelry engraved with the symbol of her Mayan birth sign. In my nonmedical life I respected the significance of that chest-opening, skull-expanding, skin-tingling feeling. So when it happened in the hospital, I knew to pay attention.

Though I had historically eschewed astrology as nonsense, midway through residency I signed up for an iPhone app that gave me a daily personalized horoscope based on my star chart, going so far as to ask my mother for the exact timing of my birth, down to the minute. In retrospect I think I was looking for a different way of seeing the world, more capacious than the way I had learned to see through the lens of medicine. Even the way I knew myself through medicine had become very boring. I was a thirty-something woman with no acute concerns, other than the fact that my existence seemed blurred around the edges and my consciousness had lost color and vibrancy. I felt certain that medicine was not the solution for these psychic rumblings, and thought, my god, there must be another way of knowing. When the app told me, "You are a constellation of sadness," I scoffed and deleted it.

The morning my sister went into labor my mother found a dead baby bunny in her driveway. There were no clues as to how it had died,

Humans are meaning-seekers: We ascribe meaning and narrative and story to the world around us. When things are too big, we seek meaning; when we have no control, we seek meaning. We confabulate, we invent. In that context, perhaps surgical superstitions represent a learned humility, borne of experiencing the unexpected over and over again, watching the randomness of the universe unfold in the body on the operating table.

no tire tracks or evidence of a predator, it was just pristine and limp and perfect and dead. My mother didn't tell me about the bunny until my sister and the baby were home from the hospital, terrified to conjure something awful into being. She told me in such a soft voice it was almost under her breath, though we were in the basement and no one else was home. Even now, sixteen months later, I feel odd writing about it, committing it to the page, like I'm challenging something bad to happen, and then I remember that the day after she told me, right before my sister was readmitted to the hospital with a terrifying complication, I found a broken mirror in the guest room.

In medical school I thought of surgery as a refreshingly concrete enterprise. Surgery was pure cause and effect. You have a lump in your neck that you can feel; I remove that lump and now it's in my hand, now it's out of your body and you can't feel the lump anymore. Medicine and its endless subspecialties held all sorts of uncertainty that my brain refused to parse; surgery was (forgive me) cut and dry. Objective. Scientific. Serious. No room for superstition.

Except when there is.

I have witnessed experienced surgeons who are decades into legendary careers—surgeons I would trust to operate on my loved ones—get surprised during supposedly routine cases, and make mistakes, and be illogically anxious about their work, and insist on doing things a certain way with no scientific basis for it. I've sheepishly excused my own anecdotal evidence, brushing away imagined judgments with phrases like "Well, this is voodoo, but…" or "I just do this to ward off evil spirits." Once, I heard one of my mentors say, "Now we close the wound and pray." Some surgeons claim they aren't superstitious at all, that everything they do has a concrete reason. Some are embarrassed by the idea that superstition could still be a part of surgery. Some note that they have habits or rituals, but deny that they are superstition, just part of being prepared. Others embrace it.

"I stopped taking pictures of my free flaps," one head and neck surgeon I know told me, describing a particularly finicky type of reconstructive surgery, which involves sewing arteries together with suture thinner than a human hair. She explained: "I'm convinced if I revel in how nice it looks, the flap will surely die later." "Pride goeth before a fall," a thyroid surgeon in Atlanta wrote to me, "so I practice humility before the Gods of Surgery, the Gods of Airway, and the Gods of Bleeding. They hate arrogance in the OR and will punish you." A breast oncologic surgeon agreed: "The gods of surgery are vengeful and the day you don't prep and drape the arm for an ax dissection is the day that touchprep comes back positive. The day you don't prep and drape both sides of the neck for a port is the day you need to go to plan B." "No high-fives till the drapes are down and the pulses have been checked," wrote a vascular trauma surgeon, wary of undoing a successful outcome by celebrating too soon.

Practicing surgeons were quick to own up to lucky totems: Wonder Woman scrub caps, lucky

necklaces or earrings, auspicious colors, particular types of music. Some refuse to wear red during Labor & Delivery days, or orange anytime, or listen to Pearl Jam ("it kills free flaps"). One sent a picture of her delicate forearm tattoo depicting a manicured hand crossing its fingers, describing it as an "anti-jinx," later hedging—"Really just for fun and to celebrate the uncertainty of surgery. Not 'cause I think it works."

Superstition is built into medicine's foundations: Though there are twenty-six operating rooms in the main hospital where I work, there is no OR 13.

4. When faced with a serious illness, how does your family cope best? Who participates in decision-making? Is anyone restricted from visits, funerals?

My father and I spent my grandfather's final days together. He was dying in a long-term acute-care facility in Las Vegas, and I was in my sophomore year of college, and when my father told me he was close, I insisted on flying out to say goodbye. "There's not much to see," my father had warned me, but I needed to see whatever was left. During the days we sat at his bedside, crying together and counting his breaths. When visiting hours ended my father took me to decadent meals at fancy restaurants on the Strip, restaurants I'd never heard of, restaurants my grandfather, who knew all the waitresses at the budget buffet at Sam's Town, had never been to. We gorged on tasting menus with wine pairings, another first for me, and despite famously tight liquor laws I didn't get carded once. I flew back on a red-eye to North Carolina. As soon as I landed, I got the call that he had died while I was in the air.

In medical school we learned about idiotic things doctors used to do, things that have been proven to be not just unfounded but actively harmful. Things like "twilight sleep" for birthing mothers, bone marrow transplantation for breast cancer, radiation for acne, lobotomies. We counted ourselves fortunate for being on the right side of science, of history. Then some of us asked ourselves what we would regret having accepted as fact twenty years hence, and how many patients we would harm with our misplaced confidence.

The tension in seeing the world as an ultimately scientific and logical place, based on rules that can be explained, and making weighty decisions in that world in the present tense, is a struggle for me. It's difficult to treat a patient with any degree of uncertainty, difficult to admit what I don't know, when I've been conditioned to think that I do know—or should know—for the majority of my professional training. Some things are unknowable because there isn't enough of an impetus to study them. Other things we don't know yet. My crisis isn't existential, it's epistemological. How do we know what we know? How do we know for certain that we know anything at all? Perhaps what I am asking is less *How do I know what I know?* and more *Is it enough that I'm trying to do the right thing?*

Humans are meaning-seekers: We ascribe meaning and narrative and story to the world around us. When things are too big, we seek meaning; when we have no control, we seek meaning. We confabulate, we invent. In that context, perhaps surgical superstitions represent a learned humility, born of experiencing the unexpected over and over again, watching the randomness of the universe unfold in the body on the operating table. "I think whatever you need to do to convince yourself that you have the skills to handle what comes that day is worth it," said another head and neck surgeon. "The sports research says athletes with a lucky charm perform better because they believe in themselves more. So maybe that's it for us too."

Even diehard logical positivists are telling a particular kind of story, a story in which everything is explainable and if it isn't, well, it will be one day, and the onus is on us to figure it out. I think my father feels the duende too, for what it's worth, though he would never describe it that way. He once called to tell me about a piece of classical music he'd heard on the radio. "It was just wonderful," he said. "It took the top of my head right off." I smiled into the phone. I knew exactly what he meant. ◘