

Pages 3 through 11 of *On Immunity*:

THE FIRST STORY I EVER HEARD about immunity was told to me by my father, a doctor, when I was very young. It was the myth of Achilles, whose mother tried to make him immortal. She burned away his mortality with fire, in one version of the story, and Achilles was left impervious to injury everywhere except the back of his heel, where a poisoned arrow would eventually wound and kill him. In another version, the infant Achilles was immersed in the River Styx, the river that divides the world from the underworld. His mother held her baby by his heel to dip him in the water, leaving, again, one fatal vulnerability.

When Rubens painted the life of Achilles, the River Styx is where he began. Bats fly across the sky of that painting and the dead ride a ferry in the distance. Achilles dangles from his mother's hand by one plump leg, with his head and shoulders entirely underwater. This is clearly no ordinary bath. The three-headed hound who guards the underworld lies curled at the base of the painting where the baby's body meets the river, as if the baby is being plunged into the beast. Conferring immunity, the painting suggests, is a perilous task.

To prepare her children for the hazards of life, my own mother read Grimm's fairy tales aloud to us every night before bed. I do not remember the brutality for which those tales are famous as vividly as I remember their magic—the golden pears growing in the castle garden, the boy no bigger than a thumb, the twelve brothers who became twelve swans. But it did not escape my notice, as a child, that the parents in those Grimm's tales have a maddening habit of getting tricked into making bad gambles with their children's lives.

In one story, a man agrees to trade with the devil whatever is standing beyond his mill. He thinks he is giving away his apple tree, but to his dismay he finds his daughter standing beyond the mill. In another story, a woman who has been longing for a child becomes pregnant and craves a plant called Rapunzel that grows in the garden of a wicked enchantress. The woman sends her husband to steal the plant and, when caught,

he promises their future child to the enchantress, who locks the girl away in a tall tower with no door. But maidens locked in towers will let down their hair.

And so it was in the Greek myths my mother read to me later. A king who had heard an ominous prophesy could not keep his daughter childless by locking her in a tower. Zeus visited her in the form of a shower of gold that left her pregnant with a child who later killed the king. When the infant Oedipus, left on a mountainside to die, was saved by a shepherd, he was not saved from the prophecy that foretold he would kill his father and marry his mother. And Thetis, Achilles's mother, could neither burn nor drown his mortality.

A child cannot be kept from his fate, though this does not stop the gods themselves from trying. Achilles's mother, a goddess who married a mortal, heard a prophesy that her son would "end his days in the first flowering of his youth." She made every effort to defy this prophesy, including dressing Achilles as a girl during the Trojan War. After he took up a sword and was discovered to be a boy, his mother asked the god of fire to make a shield for him. This shield was emblazoned with the sun and moon, the earth and ocean, cities at war and peace, fields plowed and reaped—the universe, with all its dualities, was Achilles's shield.

The story my father told me when I was young was not the myth of Achilles, he reminds me now, but another ancient story. As my father relates the plot, I understand why I confused the two. The hero of this story is made immune to injury by bathing in the blood of a dragon. But a leaf clings to his body while he bathes, leaving a small spot on his back where he is unprotected. After having been victorious in many battles, he is killed by one blow to that spot. Like Achilles, he is betrayed by a minor weakness, a fatal flaw.

Immunity is a myth, these stories suggest, and no mortal can ever be made invulnerable. The truth of this was much easier for me to grasp before I became a mother. My son's birth brought with it an exaggerated sense of both my own power and my own powerlessness. I found myself bargaining with fate so frequently that my husband and I made a game of it, asking each other what disease we would give our child for prevention against another—a parody of the impossible decisions of parenthood.

When my son was an infant, I would hear many variations of the phrase, “All that matters is that he is safe.” I would wonder whether that was, indeed, all that mattered nearly as often as I would wonder if I could keep him safe. I was certain that I did not have the power to protect him from his fate, whatever it might be. But I was determined nonetheless to avoid the bad gambles of the Grimm’s tales. I would not let my child be cursed by my own carelessness or cupidity, I thought. I would not accidentally say to the Devil, *You may have what is beyond the mill*, only to discover that what is standing beyond the mill is my child.

THE DAY BEFORE MY SON WAS BORN was the first warm day of spring. In labor, I walked out to the end of the pier, where the morning sun was breaking up the ice floes on Lake Michigan. My husband held up a video camera and asked me to speak to the future, but the sound did not record, so whatever I said has been lost to the past. What remains evident on my face is that I was not afraid. During the long labor that followed that sunlit moment I imagined myself swimming in the lake, which became, against my will, a lake of darkness and then a lake of fire and then a lake without a horizon. By the time my son was born late the next day a cold rain was falling and I had crossed over into a new realm in which I was no longer fearless.

That spring, a novel strain of influenza would begin spreading from Mexico to the United States to the rest of the world. I did not register those early reports, as I was too busy listening to my son breathe at night. During the day, I was entirely preoccupied by how much he did or did not nurse, and how much he did or did not sleep. I cannot now decipher the entries I made in a notebook then—long lists of times, some of them only minutes apart. Obscure notations next to the times indicate, I think, waking, sleeping, nursing, and crying. I was searching for a pattern, trying to determine what made my baby cry inconsolably. What made him cry, I would learn much later, was an intolerance to cow's milk. The milk I drank passed through my milk to him—a possibility that had not occurred to me.

By the end of the summer, the evening news was running footage of people wearing white surgical masks in airports. The novel influenza virus was officially pandemic at that point. Churches were serving holy wafers on toothpicks, and airlines were removing pillows and blankets from their flights. What surprises me now is how unremarkable this seemed to me at the time. It all became part of the landscape of new motherhood, where ordinary objects like pillows and blankets have the power to kill a newborn. Colleges were daily sterilizing every “high-touch” surface, while I was nightly boiling every object my child put in his mouth. It was as if the nation had joined me in

the paranoia of infant care. Like many other mothers, I had been informed of a syndrome affecting infants that had no warning signs and no symptoms other than sudden death. Perhaps this is why, despite everything, I do not remember feeling particularly scared of the flu—it was just one concern of many. There was lead paint, I knew, on my walls and hexavalent chromium in my water and the books I was reading were telling me to run a fan while my baby slept because even stagnant air could suffocate him.

When I search now for a synonym for *protect*, my thesaurus suggests, after *shield* and *shelter* and *secure*, one final option: *inoculate*. This was the question, when my son was born—would I inoculate him? As I understood it then, this was not a question of whether I would protect him so much as it was a question of whether inoculation was a risk worth taking. Would I enter into a gamble, like Thetis dipping the infant Achilles into the River Styx?

The mothers I knew began debating whether or not to vaccinate our children against the novel influenza virus long before any vaccine became available to us. We were hearing that what made this particular strain of flu dangerous was that it was new to humans, like the virus that caused the Spanish-flu epidemic of 1918 in which more than fifty million people died. But then we were also hearing that the vaccine had been produced hurriedly and that it might not have been fully tested.

One mother told us that she had miscarried while sick with the seasonal flu and, being wary of any flu now, she planned to vaccinate. Another mother said that her child had screamed frighteningly all night following her first vaccination and she would not risk another vaccination of any kind. Every exchange about the new flu vaccine was an extension of the already existing discussion about immunization, in which all that is known of disease is weighed against all that is unknown about vaccines.

As the virus spread, a mother I knew in Florida reported that her entire family had just had the H1N1 flu and it was not any worse than a bad cold. Another mother in Chicago told me that her friend's healthy nineteen year-old son had suffered a stroke after being hospitalized with the flu. I believed both of these stories, but they told me nothing more than what the CDC already seemed to be trying to tell me—the flu could

be harmless in some cases and serious in others. Under the circumstances, vaccination began to seem prudent. My baby was just over six months old and I had just returned to work at a large university where the majority of my students would be coughing by the last week of classes.

That fall, *The New Yorker* ran an article in which Michael Specter noted that influenza is regularly among the top ten causes of death in this country and that even relatively mild pandemics of influenza have killed in the millions. “And, though this H1N1 virus is novel,” he wrote, “the vaccine is not. It was made and tested in exactly the same way that flu vaccines are always made and tested.” Some of the mothers I knew did not like the tone of this article. They found it insulting for the same reason I found it reassuring—it did not acknowledge any good reason for doubt.

The fact that the press is an unreliable source of information was one of the refrains of my conversations with other mothers, along with the fact that the government is inept, and that big pharmaceutical companies are corrupting medicine. I agreed with all these complaints, but I was disturbed by the world view they suggested: nobody can be trusted. It was not a good season for trust. The country was engaged in two ongoing wars that seemed to be benefiting no one other than military contractors. People were losing their houses and their jobs while the government was bailing out the financial institutions it deemed too big to fail and using taxpayer money to shore up the banks. It did not seem unlikely that our government favored the interests of corporations over the wellbeing of its citizens.

During the initial aftershocks of the economic crash there was talk of “restoring the public’s trust,” though even then the emphasis fell more often than not on consumer confidence. I disliked the term *consumer confidence*, and I bristled every time I was encouraged to trust myself as a mother. I had little confidence, consumer or otherwise, but I tended to believe that confidence was less important than the kind of trust that transcends the self. Even now, years after my son’s birth, I remain interested in the precise meaning of *trust*, particularly in legal and financial terms. A trust—in the sense of a valuable asset placed in the care of someone to whom it does not ultimately belong—captures, more or less, my understanding of what it is to have a child.

By late October, the mothers who were still talking about the flu vaccine were mainly talking about how hard it was to get a child vaccinated. My son had been on a waiting list at his pediatrician's office for over a month. Other mothers were waiting in long lines outside community colleges and public high schools. While we waited, a mother who did not vaccinate her children mentioned that she had heard there was an additive called squalene in the H1N1 vaccine. No, another mother countered, squalene was used in flu vaccines in Europe, but it was not used here. The mother who had originally mentioned squalene was not so sure—the fact that US vaccines did not contain squalene, she said, had been disputed elsewhere. “Where exactly is elsewhere?” one of my friends wondered. *What, I wondered, is squalene?*

The women with whom I debated the merits of the flu vaccine possessed a technical vocabulary that was entirely unfamiliar to me at the time. They used words like *adjuvant* and *conjugate*, and they knew which vaccines were live virus vaccines and which were acellular. They were familiar with the intricacies of the vaccine schedules of other countries, and literate in an array of vaccine additives. Many of them were, like me, writers. And so it is not surprising that I began to hear metaphors behind the technical language and information we traded.

Squalene is found in a great many living things including the human body, where it is manufactured in the liver. It circulates in our blood and is left behind in our fingerprints. Some European flu vaccines do indeed contain squalene from shark liver oil, but squalene has never been added to US-licensed vaccines. Squalene's presence in absence is something like the curious properties of thimerosal, the mercury-based preservative that was removed from every childhood vaccine except multi-dose flu vaccines by 2002. Well over a decade later, fear of mercury in vaccines persists.

My son finally got his flu vaccination in late November. We didn't know it yet, but the worst of the pandemic was already over—cases of H1N1 influenza had peaked in October. I remember asking the nurse if the vaccine my son was receiving contained thimerosal, but I was asking more out of due diligence than true concern. I already suspected that if there was a problem with vaccines it was not thimerosal, and it was not squalene.