

KNOPF Q & A



A conversation with

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BAD BLOOD: Secrets and Lies in a Silicon Valley Startup

Q: How did you first come to the Theranos story?

A: This is one of the many revelations in the book. Until now, I've never fully explained how I stumbled onto this story. The short answer is a pathologist in the Midwest who had been a helpful source for a previous, unrelated article posted a brief, skeptical item about Theranos on his blog in December 2014 after reading a magazine feature on Elizabeth Holmes. A person who had his own reasons to doubt the company's bold claims saw the blog item and called him. It so happened that this person had just made contact with a recently-departed Theranos employee who had confirmed his suspicions. The pathologist passed on this third-hand tip to me and I eventually made contact with the ex employee myself.

Q: As an investigative reporter, you get a lot of tips. How do you know when a tip has merit?

A: First of all, you have to explore all of them because investigative reporting is in many ways a numbers game. Most tips don't lead to big stories but, if you don't bother to check them all out, you'll miss the big, career-making one. So I always take the time to listen when tipsters approach me. Usually, it doesn't take more than a phone call to ascertain whether a tip has value and is worth pursuing further. Occasionally, it will require several days and sometimes even several weeks. I've had tips not pan out after several weeks of reporting. I don't see it as wasted work. You have to kick the tires every time if you want to strike gold once. Also, one important factor in whether a tip has merit is who the tipster is: The closer he or she is to the information he or she is passing on, the better. With Theranos, my first

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point of contact was twice removed from a primary source of information. But the fact that I knew there was a primary source out there that I could try to make contact with myself got my attention.

Q: What was the first sign that something was amiss at Theranos?

A: To my mind, the most obvious signs were, one, that Elizabeth Holmes presented herself as a self-taught scientist and, two, the fact that she refused to do what everyone else in medicine does: undergo the scrutiny of peer review. Legend has it that Mark Zuckerberg taught himself how to code at age 10 on his dad's computer. That's perfectly credible. Bill Gates basically did the same thing 30 years earlier. All you need is a programming manual, a computer and to put in a lot of hours at the keyboard (being smart probably helps a little too). You can't do that in medicine. To add value in medicine, you need years of formal training and to do decades more of research. Why do you think most Nobel laureates in medicine are in their 60s when their achievements are recognized? The notion that a 19-year-old had dropped out of Stanford after a year and reinvented the field of blood testing immediately struck me as fishy. When you added to that that she refused to publish in peer-reviewed scientific journals in the name of protecting her "trade secrets," I smelled a rat.

Q: So the machine didn't work as advertised at the outset. What is the harm in that? Isn't that SOP in Silicon Valley – iterate and iterate until something works?

A: Iterating is fine when you're talking about software or a social media smartphone app. Twitter was famously glitchy in its early years. There would be outages that would last entire days. It caused a lot of frustration for its users, but no one got hurt. When your product is in the realm of medicine, that approach no longer works. You can't go live with a medical product that's not ready and doesn't work well, otherwise you endanger people's lives. I would point out that this isn't true only of medicine. One of the big crazes right now in Silicon Valley is self-driving car technology. Last month, a woman got run over by a self-driving car being tested by Uber in Arizona. I guess the software had bugs. But, unlike the bugs that disabled Twitter for hours on end in its early days, in this instance someone got killed. Are we willing to let Silicon Valley run giant live experiments in which we essentially become guinea pigs in the name of buzzwords like "disruption" and "innovation"?

Q: Did any of the machines ever work?

A: The short answer is no. The longer answer is Theranos went through three iterations of its technology over the course of a dozen years. The first was a microfluidic system. Holmes abandoned it in late 2007 and pivoted to a machine she christened the Edison that was essentially a converted glue robot. Then, in late 2010, Theranos started developing the miniLab, which is the product it's still working on today. When it went live with its blood tests in Walgreens stores in the fall of 2013, the miniLab was a malfunctioning prototype that was years from being commercially ready. So Theranos went live with a

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combination of the Edison—which was limited in its capabilities and unreliable—and modified Siemens machines. The company only performed 12 of the tests on its 250-test menu with the Edison. The rest were performed on commercial analyzers, mainly made by Siemens.

Q: You describe a culture of secrecy at the company. How many employees knew that the technology wasn't working, and what happened to them when they surfaced concerns about it?

A: Elizabeth and her partner, Sunny Balwani, divided the company into silos and discouraged them from communicating. So information was always very compartmentalized at Theranos and only Elizabeth and Sunny had the full picture of what was going on. The engineers and chemists working on the miniLab knew it was years from being ready, but they had no idea what Sunny and Elizabeth were up to in the clinical lab, where patient samples were being tested. Only the people working in the clinical lab had a fuller understanding of their shenanigans.

Q: You broke the Theranos story in *The Wall Street Journal*. Did you experience any roadblocks during your reporting? If so, what, or who, were they?

A: This was the most difficult story I've had to report. The amount of resistance the company put up was unprecedented in my 20 years of experience as a journalist. My confidential sources were placed under surveillance and threatened. Doctors in Arizona who had spoken to me on the record were intimidated and asked to recant what they had told me. Theranos threatened me and the *Journal* repeatedly with litigation and, I suspect, had me under surveillance too. David Boies, the company's outside counsel, twice came to the *Journal*'s midtown Manhattan newsroom to try to prevent publication. It was a scorched-earth campaign, there's no other way to put it.

Q: Rupert Murdoch owns *The Wall Street Journal* and was also one of the investors in Theranos. Did that ever complicate your reporting? Did anyone ever reach out to him directly to try to kill your story?

A: I didn't know Rupert was an investor. I only got confirmation that he had invested in Theranos later, nearly a year after my first story was published. When I went on leave from the paper to work on this book, I learned that Holmes had tried to get him to kill that first story. She met with him four times before it was published, including once in his office in the News Corporation building (three floors above where I sit) two weeks before publication.

Q: Elizabeth Holmes attracted many other high-profile investors – Tim Draper, Larry Ellison, Henry Kissinger, George Shultz, etc. How?

A: She was an amazing pitchwoman. Her idol was Steve Jobs and she shared one crucial quality with

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him: She emitted a reality distortion field that forced people to suspend disbelief. More importantly, she lied to investors, board members and the public about the state of her technology and they believed her.

Q: How were you able to see what they weren't?

A: I guess I have a good bullshit detector. I'm sort of wired that way. It's a trait you need if you're going to be an investigative reporter. You have to question everything and be able to read people. But it doesn't all come down to instinct: You have to get the goods to prove your hunches. That means cultivating sources, talking to a lot of people, triangulating, getting your hands on documents, etc. In the investing world, they call this due diligence. Theranos investors did not do their due diligence.

Q: What did Theranos initially promise investors?

A: At first, back in 2004, Holmes promised them a device you could wear on your wrist that would simultaneously diagnose ailments and cure them by administering drugs. That was basically sci-fi, so she later pivoted to the concept of a semi-portable device you could place in your home that would run every test known to man on just a drop or two of blood pricked from your finger. A wireless mechanism on the device would beam your results to your doctor and alert him or her if your results were abnormal. This too proved to be mostly science fiction.

Q: How did Theranos construct a positive narrative about what they were doing?

A: Holmes was masterful at charming and surrounding herself with distinguished people who gave her a stamp of legitimacy. These people included her old Stanford professor Channing Robertson, the venture capitalist Donald L. Lucas, the software billionaire Larry Ellison, the former Secretaries of State George Shultz and Henry Kissinger, the current secretary of defense James Mattis, and the famous lawyer David Boies. Most, if not all, of these people didn't realize she was lying to them and manipulating them.

Q: Theranos has been referred to the biggest corporate fraud since Enron. In the Enron story, many people lost their life savings. Who were the victims here?

A: There are two groups of victims in the Theranos scandal. The first is the wealthy investors she duped out of hundreds of millions of dollars. No one is crying for them; they'll be fine. The real victims are the patients who received false blood-test results. Theranos ended up correcting or voiding nearly one million tests. Some of the patients suffered from missed diagnoses or had unnecessary medical treatments. The chances that some would have died would have risen exponentially if the company had expanded to the whole country as it was on the cusp of doing when I started digging into this story in 2015.

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Q: What does the Theranos saga say about Silicon Valley?

A: It tells us that, while there's real innovation taking place in Silicon Valley, there's also a huge amount of hubris and pretending going on there. The staggering amount of money that has poured into the Valley's startup ecosystem over the past decade has given rise to arrogance, excess and outright fraud. Moreover, these companies are staying private much longer than they used to, which makes it harder to pierce their veils of secrecy and expose their problems. As a capitalistic society, we tend to lionize tech entrepreneurs. This tale is a reminder that the reality is often more complicated and less glossy than the myths we're fed by Silicon Valley's PR machine.

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