

BAD BLOOD: SECRETS AND LIES IN A SILICON VALLEY STARTUP

(JOHN CARREYROU)

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While pretty much everyone in this book who is rich and powerful comes off looking bad, it is less a tale of typical fraud, like a Ponzi scheme, and more a tale of human foibles. These were expertly played on by Elizabeth Holmes, a very young woman of little productive talent and no particular evident intelligence, but with a natural gift for sales and embodying the icy manipulative abilities of the sociopath. Fascinating stuff, all of it, and worth reading just to make sure that you don't fall into a similar trap in your life. And, more broadly, the arc of Theranos has much to say about supposedly imminent advances in technology, from artificial intelligence to flying autonomous cars.

I will not tell the tale itself, because it is now well known, and easy to look up if you don't know the details (although this outstanding book is by far the best way to get the details). None of this would have come to light if it had not been for the author, John Carreyrou, a *Wall Street Journal* reporter who persevered in the face of threats from the company's legion of rabid lawyers, whose main mode of action against all opponents was not to have any real claim, but to point out that they could bankrupt anyone by bringing bogus lawsuits (which, by the way, shows the need for the "English Rule," that losers in lawsuits pay the winner's legal fees). At this point, I am waiting to see if Holmes goes to jail—so far, she has been treated with kid gloves, in a way different from other fraudsters. But my guess is that is temporary.

Now, as an entrepreneur myself, even if I'm a few billion shy of the paper billions Holmes once had (although I bet I made more money last month than she did), I understand the difficulties and challenges involved. Just like Holmes, in my early years I always said "yes" when asked by a potential customer if I could do something, on the belief that I could figure it out later. But unlike Holmes, I'm not in the medical field, where lives and health are at stake, and I didn't promise to spin straw into gold. The challenges I accepted were in light manufacturing; Holmes's were in creating and implementing technology that scores of companies and hundreds of scientists had been working on for decades.

Those are very different hills to climb. Nobody would have been hurt if it turned out that I was wrong, and I could not, in fact, manufacture a particular product. So while Holmes faced the same challenges as all entrepreneurs, that is not an excuse.

And what were her responses to those challenges, other than simply lying and then layering more lies on top, as Carreyrou documents exhaustively? Holmes's main response was to come up with a clever strategy, that deflected questions, raised money, and opened doors, all at the same time. That was to find old and powerful white men who would fawn over her and whose aura would benefit her. That's not a strategy available to most entrepreneurs. Obviously it's not available to male entrepreneurs (except, I suppose, in a few industries), and most female entrepreneurs object to trading on their sex. But men in general are susceptible to flattery, and old and powerful men by young blonde women most of all. This was the core strategy of Theranos.

It started early; one of Holmes's first backers was an elderly Stanford professor, Channing Robertson, who had taught a freshman class at Stanford that Holmes took. Holmes dropped out of Stanford when she was nineteen, but persuaded Robertson to back her idea, which was originally a patch for drug delivery (only later did automated blood testing from a pinprick become the focus). One of the amusing parts of reading this book is you can easily look on the internet to see what people used to say about Holmes and Theranos. For example, in 2014 Robertson offered this cringe-worthy quote: "I knew she was different. The novelty of how she would view a complex technical problem—it was unique in my experience." The only thing unique was that Holmes got the famous Robertson to pay attention to her and delude himself that she was unique. And as the company became more prominent, most of the board of directors was ancient, but extremely prominent, men, such as Henry Kissinger, George Shultz, and Sam Nunn. Others were older men still in active government or related service, such as William Perry and General James "Mad Dog" Mattis. (No women, and no people of color, were ever permitted on the board—women, in particular, would have been likely to see the empress had no clothes, and to ask unwanted questions, such as "what the hell are you talking about?") There is no implication of any sexual overtones; it appears that these men joined after being flattered and cosseted by Holmes.

They were told they could still contribute to society and could make lots of money to boot. Several of them appear to have treated her as a surrogate daughter, sending her gifts, throwing her birthday parties, and trying to set her up on dates (she concealed from the board her long-term sexual relationship with her dumb and greasy “executive vice chairman,” in other words the number two person in the company, Ramesh “Sunny” Balwani, two decades older than Holmes, who, if such a thing is possible, comes off worse in this book than Holmes). Then, the critical point, Holmes used the reputations of these men to deflect questions and to raise money—a smart and plausible strategy, in some ways, though in context slippery and used to further dishonest ends. Similarly, in the Walgreens and Safeway partnerships, the point man for those companies was an aging man about to retire, equally susceptible to flattery. (The Safeway CEO spent \$350 million retrofitting stores merely in anticipation of putting in Theranos machines, without any due diligence at all.) In all her dealings, none of the people Holmes had a close relationship with were anything else but old, rich, white men.

Such a course of action is not available to men, as I say, leaving the field wide open for Holmes to play this game. I had assumed, before reading this book, that much of Theranos’s “success” was due to the widespread and desperate desire for one, just one, ultra-successful entrepreneurial company to be started and run by a woman, thereby disproving the simple and unarguable fact that men are much more likely to have the characteristics, good and bad, to drive such success. While Carreyrou does advert to that desire, it’s pretty obvious that wasn’t a big driving factor in people lending Holmes their names and giving her their money. It was a contributing factor to people not asking questions, and in getting Holmes positive publicity, but as far as getting money and prominent people on board, flattery by Holmes was the key.

Another thing that helped hoodwink the business world was Holmes expertly playing on the desire not to be left out of a big score, a human desire played on by con men since the days of the cavemen. It is telling in this regard that no knowledgeable person was fooled or lost money (or pride). Big drug companies like Pfizer all rejected what Theranos had to offer; a few tested it and found her “technology” totally lacking, so terminated talks at a very early stage. (Holmes solved this little problem by lying that she had many partnerships with drug companies—you

can't review them, though, peasant, because "the documents are under legal review.") Similarly, private equity with a health-care focus declined to invest (I would have liked to see some thoughts in this book from firms that declined to invest, but they have no incentive to talk). No board member ever had any biotechnical or medical knowledge. Few employees had any such expertise, even, except in narrow areas. Thus, the targeted rubes were all non-experts wanting to invest in, or work for, the new Facebook, which would also save lives, not just allow us to stalk people.

Yet another part of the reason Holmes was able to deceive so many smart, but not knowledgeable, people was the commonly held and obsessive belief, which is practically a religion in Silicon Valley, that anything technology-related must be some combination of desirable, inevitable, and world-changing. Holmes played on this, such as by designing the (fake) interface of her (fake) blood testing machines to resemble iPhones, and by claiming, in public, that Theranos was the most important thing humanity has ever done. Some of this is, as I say, wanting to profit from the perceived "digital future" (where "digital" is a meaningless term, used generally as a signifier of supposed awesomeness). But much of it is a desire to be part of something bigger than oneself, something that will change the world for the better, and again, Holmes identified that, perhaps only implicitly, and took advantage of it.

An element of the story interesting to me more than most people is that all the lawyers involved were apparently incompetent or venal. The lawyer who comes off worst is David Boies, who, like the sores of certain social diseases, keeps turning up where and when least desired by society. Here, he alternated between a form of (unfortunately legal) extortion, threatening everyone in sight, from kids just out of college to wealthy patent holders, with crippling legal bills if they didn't knuckle under to his demands, and dipping his beak in the Theranos pot, taking compensation in stock and accepting a seat on the board of directors (neither of which is illegal or regarded as unethical, but which certainly was aggressively tying himself to the success of the company in a way that probably clouded his judgment). On a more technical level, the lawyers for Theranos seemed unconcerned that the board exercised, at most, an advisory role, not a corporate governance role. Nobody seemed to object when Holmes required a change that gave her a hundred votes

for every one she had had previously—and she already had more than 51% of the voting power before that. Sure, she could have forced it, by replacing the board, but really? That’s the sort of thing any competent lawyer would question. And where were the lawyers for the investors? All the lawyers I know, and knew when I was practicing, would regard themselves as disgraced if they didn’t insist on basic due diligence, and asking the very obvious questions Theranos’s practices raised. Maybe they were all just overruled; Carreyrou’s book isn’t about the nuts and bolts of law. But it’s still disturbing. (Another thing that’s disturbing, though irrelevant, is the name “Theranos.” It was coined to combine “therapy” and “diagnosis,” but I always thought it was far too close to “Thanatos,” the Greek personification of Death.)

OK, so here we are. Rupert Murdoch is out \$125 million, others are collectively out hundreds of millions more, and blood testing continues its incremental advance, unaffected, plus or minus, by Theranos. What does all this say about the world of technology and technology entrepreneurs? Quite a lot, actually. It buttresses my contention that the vast majority of touted advances, or rather advances that are supposedly just around the corner, are lies. They may be “lies breathed through silver,” as Tolkein said, meant well, but they are still delusions.

So, Elon Musk says “I am really quite close, I am very close, to the cutting edge in AI and it scares the hell out of me. It’s capable of vastly more than almost anyone knows and the rate of improvement is exponential.” This is what is known as total bullshit. AI does not exist in any form that has not existed for decades, it has done nothing at all, and there is zero evidence of that changing. Look, I think the world needs people like Musk, who live somewhere in the twilight between con man and genius, selling people a future that will help drive the human race forward. But let’s not forget his only accomplishment is being part of a group that translated existing payment systems to the digital realm, hardly an earthshattering advance, that Tesla is a fraud that only exists because of government subsidies, and that his rockets do no more than we could do in the 1950s. Whatever Musk says, there will never be strong artificial intelligence, and weak artificial intelligence (i.e., data processing) will not make a material difference to people’s lives, our productivity, or our ability to advance. There will never be a Singularity. We will not advance our life spans in any material way. Sorry, Ray Kurzweil.

As with Theranos, the people with knowledge are completely aware of this—just ask a real biologist about uploading brains. But everybody else swallows the lies, through some combination of not wanting to be left out, wanting to be part of something huge, and not wanting to seem like a stupid rube.

What about driverless cars, you say? Also bullshit. Do you know how they tell where a red light is? No? The precise location in space of every stoplight must be pre-programmed, and if the light isn't there, or it's swinging in the wind, the car stops. Autonomous cars are today's Mechanical Turk. That means that there will most definitely never be Uber flying autonomous cars, which are about as likely as there being Uber flying people with organic wings, yet Uber says with a straight face such cars will be commercialized by 2020, and nobody throws rotten tomatoes at them. Whether or not technological progress has ground to an effective halt, as some argue, the flashy things everyone talks about are fiction, and will stay fiction, just as Theranos was fiction. Sure, maybe someday, just like someday anything at all is possible—a more precise statement is the path we are currently on will never lead to truly autonomous cars, or even to cars autonomous enough to be useful to most people. Knowledgeable people are doubtless aware of this, but just like when Theranos was at its peak, you never hear from them. That Uber is now trying to change the conversation to flying cars is a sign of desperation, not confidence, and there is going to be a reckoning soon, unfortunately, where all this optimism crashes back to earth.

I hear the shrieks of rage and laughter. What a Luddite! Doesn't he know that Satya Nadella, the CEO of Microsoft, said yesterday "Digital technology, pervasively, is getting embedded in every place: every thing, every person, every walk of life is being fundamentally shaped by digital technology—it is happening in our homes, our work, our places of entertainment. It's amazing to think of a world as a computer. I think that's the right metaphor for us as we go forward." Yes, I do know. No, it's not the right metaphor. It's a stupid metaphor. Nadella's claims are all false, both currently and prospectively. First, "digital technology" is nothing new; it consists of various clever devices mostly directed at satiating (newly stimulated) consumer impulses and contributes little or nothing to human flourishing. The same things that shape us are the same things that have always shaped us; digital technology is a mere

ancillary tool that carries significant drawbacks, and which most people instead use for Tinder and cat pictures. Second, Nadella's explicit claim is that "embedded" digital technology is somehow going to be like a nice Skynet. But my iPhone can't reliably communicate using open and standard interfaces with my (quite new and very expensive) car, when physically connected by cord. Just because everything is embedded is meaningless; I've been promised this future for thirty years, and it's no closer. Third, Nadella's stupidity shines through in his use of the words "It's amazing to think," which are meant as a substitute for, you know, actually thinking, which usually leads to different conclusions. It's amazing to think of myself as a combination of Alexander the Great and a young Brad Pitt, but it's also false, pointless, and takes us off the track of rationality. (I'm more like an early middle-age, nonsmoking Brad Pitt.)

I like technology (though there is something to be said for analog, too). Technology can make our lives more enjoyable; it can do a lot of good. It is not as necessary as some people think—most of the truly important advances in human history were accomplished long before today's computers. Nor has it made that much of a difference—on a mere nuts and bolts level, technology has increased individual productivity little, if at all, after thirty years (and the benefits have not accrued to most workers, but to a small slice of those at the top). We have an economy of service workers, not tech gods, whatever impression we may get from the news. But still, technology can be useful, and fun. The Theranos story, however, is a self-contained, compelling example of the blindness and groupthink that attends any claimed technological advancement, thereby giving an incentive for lies and for exaggerating advancements. Both buyer and larger society should beware.