

FROM UNICORN TO JAILBIRD?

Review by Edward Abrahams

These are not happy days in Silicon Valley, a place that exists both in the mind and south of San Francisco that promotes innovation through disruption and displacement, at least in the tech world. Recently, Facebook executives have been hauled before Congressional committees to explain why they shared data consumers thought was private and protected. Grassroots action in New York City forced Amazon to pull up stakes after the city won a highly sought-after new headquarters for the anti-union company. And the European Union has just fined Google \$1.7 billion for anti-competitive business practices. >

Into this political backlash against Silicon Valley, sometimes referred to as “tech-lash,” comes a new, best-selling book by John Carreyrou, an investigative reporter for the *Wall Street Journal*. *Bad Blood: Secrets and Lies in a Silicon Valley Startup* chronicles the story of a young entrepreneur, Elizabeth Holmes, who claimed that she was ready, despite having almost no higher education, willing, despite having no management experience, and able, despite having not an inkling of how to move a medical product from conception to the market, to turn health care upside down. Many will view Carreyrou’s book as the latest example of the Silicon Valley dream gone bad.

2 But they would be wrong to do so, and thereby make the same mistake that Elizabeth Holmes, and anyone who listened to her, made in not understanding that medicine is different, and that it marches to the beat of a different drummer than its tech cousins.

Had Elizabeth Holmes wanted to be health care’s version of Steve Jobs, which she did, she probably should not have dropped out of Stanford in her sophomore year. And had she, say, gotten a medical degree as well as some understanding of the intricacies of the business of health care, including its ethics, laws and regulations, she may have, given her ambition and gumption, had a half a chance to contribute to the progress in modern medicine, which is usually incremental, always evidence-based, and often painfully slow. She may have also been taken seriously by *health care* investors and others who understand that health care begs to become more efficient and less expensive through technological advancement that will benefit both patients and health systems smart enough to adopt new approaches and adapt to the latest science and technology.

Hers is the business story of our era. And it is told extremely well by John Carreyrou, who, in keeping with the persona of the

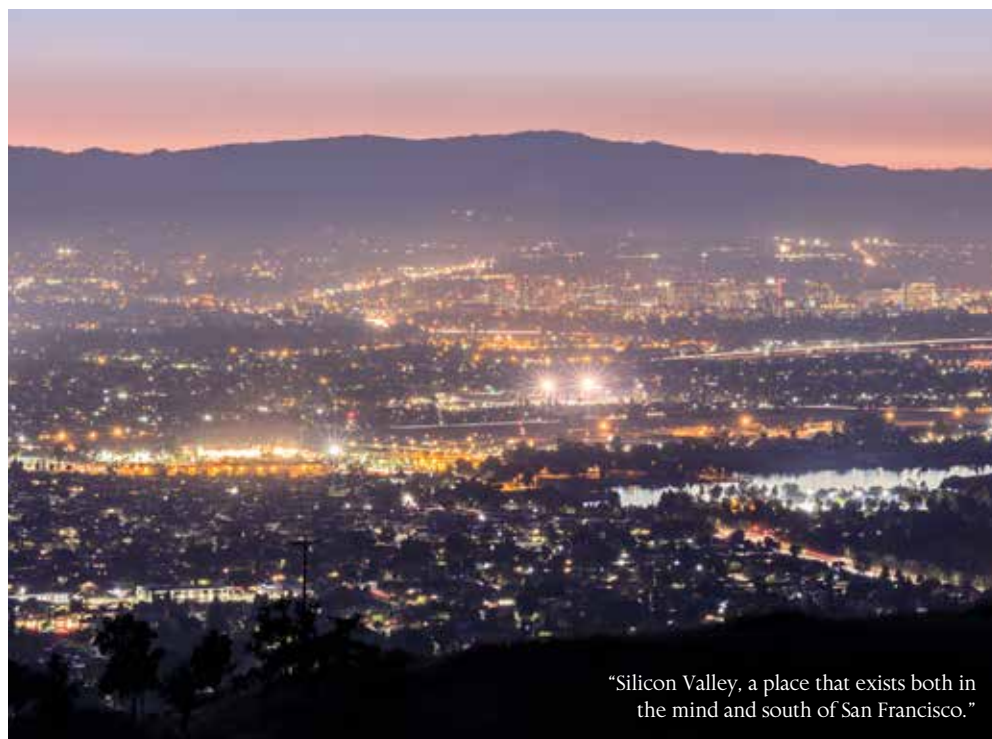
investigative journalist as muckraker, is the hero of his own book. He describes peeling away the layers of lies and deception against powerful forces that did not want him to tell the story of how a young woman had hoodwinked investors, regulators, and, most importantly, patients who believed her advertisements for herself. Not since *All the President’s Men* has a journalist looked so good, fighting the good fight on behalf of the little guy.

Encouraged by Channing Robertson, a charismatic chemical engineering professor, Holmes quit Stanford in 2004 to start

business by replacing their blood tests with a single inexpensive finger prick. Holmes also proposed bringing on the dawn of a new age when no one, as she put it, would die too soon.

By the end of her first year in business, Holmes had raised \$6 million, mostly from friends and family, unsophisticated investors who were taken in by the young woman’s ability to channel Silicon Valley’s ethos of using seemingly disruptive technology to upend established but inefficient practices.

But the person who really put Elizabeth Holmes on the map, in Carreyrou’s telling, was



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a company called Real-Time Cures. She later renamed the company Theranos, a word she coined to combine therapy and diagnosis. From a patent application for an arm patch that would simultaneously diagnose and treat medical conditions, her dream evolved into a vision of predicting and preventing illness from a single drop of blood, the holy grail of personalized medicine. It was not enough that she wanted to put LabCorp and Quest out of

Larry Ellison, the multi-billionaire founder of Oracle. As would become clearer later in her career, Holmes had an uncanny ability to meet older, very wealthy men and get them to invest lots of money without asking too many – or indeed any – questions. One can only surmise what Ellison saw in her, but it was probably the same thing George Shultz, Henry Kissinger, James Mattis, David Boies, Rupert Murdoch and many other “wise men” later saw in the young woman: charm, youth, vision, ambition, and

a chance to make a few dollars while helping Holmes break into a male-dominated world. Thanks to them, she became the youngest and first self-made female billionaire.

But, as Carreyrou writes, even if Ellison was one of the richest people in the world, “he wasn’t necessarily the ideal role model. In Oracle’s early years, he had famously exaggerated his database software’s capabilities and shipped versions of it crawling with bugs. That’s not something you could do with a medical device,” he sardonically adds, foreshadowing what could go wrong as Holmes put in place a Silicon Valley business model of “fake it ‘til you make it.”

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Apparently, she did not know that you can’t do that in health care, where Hippocrates’ exhortation, “Do no harm,” is taken very seriously.

Hers is a true story that even Hollywood could not make up – but that undoubtedly it will exploit. It is reported that a full-length feature starring Jennifer Lawrence is in the works.

Holmes developed a high opinion of herself. But when I met with her in 2005 in her Menlo Park office to introduce the Personalized Medicine Coalition, the quote from a press puff piece that inspired her – “You start to realize you are looking in the eyes of

another Bill Gates, or Steve Jobs” – was not yet on her desk. Nor was her voice unusual. What I noticed, though, were her eyes. I did not observe that they did not blink, as many later remarked, nor, suffice it to say, did I see another Bill Gates or Steve Jobs. What I saw was fear and arrogance that, in retrospect, undoubtedly fired her will to power, including her willingness to punch through any obstacle, including human, ethical and legal ones, rather than fail. Facebook’s motto, “Move fast and break things,” clearly seemed to appeal to her.

How could Theranos rise so far so fast only to crash and burn in the end? The company, once valued at \$9 billion, half of it controlled

by Holmes, is today worthless. And Holmes herself faces a possible long prison term, having been charged with nine counts of wire fraud.

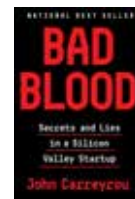
Carreyrou’s narrative answers this question. He shows persuasively how the power of a story, in this case one pioneered by people like Ellison, Gates, Jobs, and others, who did successfully upend the way we organize our lives, can distort perceptions of reality and make seemingly smart people do stupid things.

But because, like Holmes, Carreyrou conflates Silicon Valley’s tech and health care cultures,

he does not appreciate how safeguards built into the system, even if they sometimes slow progress, also protect both patients and the health care system itself. Elizabeth Holmes never had a chance, which the smart money knew – because, among other things, she made claims without publishing results.

There are, in addition to Carreyrou, many heroes in his book. First and foremost are Tyler Shultz and Erika Cheung, two former Theranos employees who blew the whistle on the company at great personal and financial costs to themselves. In what makes chilling reading, Holmes and her lawyer, David Boies, who was also an investor in the company, stopped at nothing to destroy their lives for “revealing trade secrets.” Second was Lieutenant Colonel David Shoemaker who, rather than authorize putting a black box on the battlefield to assay blood without FDA approval, went head to head with General James Mattis, whom Holmes had persuaded that it was a good idea. Mattis, to his credit, backed down. And, finally, worth noting is that Rupert Murdoch, Theranos investor and owner of the *Wall Street Journal*, let the story play out in his paper, even after Holmes asked him to kill it.

From this sorry saga we have learned that, at least in medicine, innovation demands public confidence, which, in turn, relies on precision, reliability, and the reproducibility of data, not to mention, putting the patient’s interest first. Those form the bedrock on which progress in health care will rest. ■



John Carreyrou, “*Bad Blood: Secrets and Lies in a Silicon Valley Startup*,” Knopf, 2018, 339 pages, \$27.95

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