

## Searching for Steve Jobs: Theranos, Elizabeth Holmes, and the Dangers of the Origin Story

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### Abstract

The short-lived success of \$9 billion fraudulent biotechnology startup Theranos is often blamed on little more than technological hype surrounding the company's finger prick blood tests. But such a limited accusation fails to account for the influence of the cult of personality created by Theranos' CEO, Elizabeth Holmes, and the comparisons she drew to the late Steve Jobs, in both style and personality. This paper argues that the Theranos fraud was ultimately enabled, not just by technological hype, but also by a more personal variant of hype, manifested in the public's trust in Holmes' self-constructed image as Steve Jobs' successor. The source of this trust is described using the proposed new model of "protective ignorance," an application of rational ignorance in the defense of the cultural capital associated with Jobs' image. The power of protective ignorance is explored in the context of the Theranos case, and suggestions are provided to limit its negative impact in the future without restricting its more positive applications.

## Introduction

On October 16, 2015, with the publication of a single article in the *Wall Street Journal*, John Carreyrou initiated the unraveling of a \$9 billion Silicon Valley biotechnology startup. Carreyrou's *Journal* article alleged that the startup, Theranos, which had promised to revolutionize blood-testing, had failed to produce a working product, and had been secretly running its tests using competitors' equipment (Carreyrou, 2015). Later investigations by the federal Centers for Medicare & Medicaid Services led to the closure of one of Theranos' labs, the banning of Holmes from blood-testing for two years, and the collapse of Theranos' one-time partnership with the pharmacy giant, Walgreens (Bilton, 2016). In the year-and-a-half since the *Journal* first published its expose, public attitude toward Theranos and Holmes has swung from adoration and awe to condemnation and pessimism. Roger Parloff, a *Fortune* writer who had once declared Theranos "a potentially highly disruptive upstart" (Parloff, 2014), published another article titled "How Theranos Misled Me" (Parloff, 2015). *Forbes* updated its valuation for Theranos from a sky-high \$9 billion to a relatively paltry \$800 million, essentially just the capital it had raised (Herper, 2016). Holmes, who Channing Robertson, a prominent Stanford professor, had once called "a Steve Jobs or a Bill Gates" (Parloff, 2014), became the object of scorn and ridicule.

A slate of articles denouncing hype and entrepreneurship soon followed, including Steve Tobak's *Fortune* piece, which pronounced that "the entrepreneurial culture in America couldn't be more overhyped" (Tobak, 2016). Similarly, Cade Metz's *Wired* article called 2016 "the year the hype became too much to bear" and claimed that Theranos "buckled under the weight of it all" (Metz, 2017). Many offered blanket criticisms of the public for believing Theranos' lies—but few offered actual suggestions to prevent a repeat occurrence. Tobak, for one, after decrying people's obsession with "popular fads and utopian fluff," unhelpfully suggested that "business leaders must always deliver," positing that "Theranos' dire situation stems from ... failing to deliver on the hype" (Tobak, 2016). The underlying assumption appears to be that Theranos was a product of excess technological hype, and that the company's failure to deliver on the hype of its blood tests was the main problem.

But I contend that, while there is certainly a danger to excess hype surrounding a technology, hype was largely a secondary factor in the Theranos case. Rather, it was the image that Elizabeth Holmes projected of herself, not of her company, that made Theranos so successful. The cult of personality that she created—and the comparisons she evoked to the late Steve Jobs—are what gave Theranos its power in the public eye. The Theranos fraud was ultimately enabled, not by any ordinary technological hype, but by the public's assumption that Holmes' and Jobs' parallel origin stories guaranteed that Holmes was destined for Jobs' level of success. This assumption, in turn, is a much more personal form of hype, one that stems from the use of rational ignorance to protect Jobs' image,

an application described with the proposed new model of “protective ignorance.”

### Parallel Images

The physical image that Holmes cultivated is the clearest source of possible comparisons. According to his biographer, Walter Isaacson, Steve Jobs’ “signature style” (Isaacson, 2011) was the black turtleneck, which Holmes appropriated—along with “black slacks with a wide, pale pinstripe; and black low-heel shoes” (Parloff, 2014). Her hair was, without fail, “[pinned] into an unruly bun” (Parloff, 2014). Holmes even had a snippet of Jobs’ Apple biography hanging above her desk (Parloff, 2014). In most media accounts, Holmes and Jobs are even depicted similarly: both Figures 1 and 2 show Jobs and Holmes in identical outfits, staring directly at the camera with the same cryptic expressions, captured with the same color scheme.



FIGURE 1. Elizabeth Holmes holding a blood testing vial (*Forbes*, 2014).

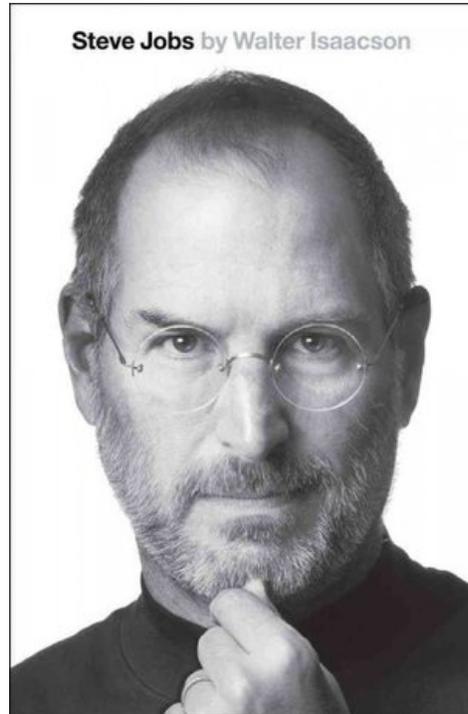


FIGURE 2. Steve Jobs, as photographed for his biography cover (Isaacson, 2011).

Holmes' and Jobs' parallel stories extend beyond mere clothing, however. Steve Jobs was renowned for his quirks and his differences: according to Isaacson, "He ... [spent] years practicing the tenets of Zen Buddhism" (Isaacson, 2011). He smoked marijuana and dropped acid in college, before dropping out. He regularly undertook vegetable purges, nearly turning "orange from eating so many carrots" at one point (Isaacson, 2011). He even delayed treatment for the pancreatic cancer that would ultimately kill him, simply because he was uncomfortable having his body cut open. When Isaacson asked Jobs about how he viewed himself as a child, Jobs replied, "I've always felt special" (Isaacson, 2011).

Just like Steve Jobs, Elizabeth Holmes was quirky. She was fluent in Mandarin (Auletta, 2014). She ran "seven miles a day" (Arrillaga-Andreessen, 2015). She drank cucumber juice (Auletta, 2014). She dropped out of college. She went out of her way to remind others that she was different—that she, too, was special. None of these esoteric bits of information—which were often more discussed than her actual technology—had any bearing whatsoever on the efficacy of the her product or on her ability to actually change the world; indeed, without Steve Jobs as context, they would mean nothing at all. The fruit juice habits of a test's inventor do not affect the quality of the test itself. The morning runs of a technology's discoverer do not affect the value of the

discovery. Mentioning them is relevant only to draw the comparison to Steve Jobs—and it does that one task very well. This comparison is, in a sense, a form of hype. Not technological hype, as Tobak and Metz pointed towards—but personal hype. Even though Holmes and Jobs displayed relatively superficial similarities (exercise habits and clothing styles), the comparison between the two was assumed to reach far deeper. Holmes’ style gave her the outward appearance of similarity to Jobs; her peculiarities solidified the message with her personality. Theranos was not the product of excess hype—Holmes herself was.

Having built her image to mirror Steve Jobs, Holmes could then turn, without too much questioning, to leverage one of Jobs’ more notorious tendencies: his obsession with secrecy. Jobs once “designed a secret program to switch the CPU in a computer, completely seamlessly and on time” (Isaacson, 2011). No one knew of the program’s existence until it was already finished. He would randomly reassign people, keep ideas within tiny groups, and restrict information as much as possible. This control of information allowed Apple to maximize public excitement leading up to its product launches—and to keep other companies from beating it to market (Isaacson, 2011).

Theranos, from an outsider’s perspective, at least, appeared to behave similarly. It manufactured all of its machines “at an unmarked facility” to “protect trade secrets” (Parloff, 2014). The most Holmes has ever said about her actual technology is that “a chemistry is performed so that a chemical reaction occurs and generates a signal from the chemical interaction with the sample, with is translated into a result, which is then reviewed by certified laboratory personnel” (Auletta, 2014). This description is so broad as to apply to nearly every molecular biology experimental method developed in the past fifty years. Even though Theranos developed medical tests, which could potentially put the public at risk, and Apple developed computers, which could not, few members of the media seemed to mind the secrecy, and those who were skeptical of Theranos’ methodology were largely dismissed.

Ken Auletta, writing for the *New Yorker*, admitted that “some observers are troubled by Theranos’ secrecy; its blood tests may well turn out to be groundbreaking, but the company has published little data in peer-reviewed journals describing how its devices work or attesting to the quality of the results” (Auletta, 2014). However, Auletta immediately continued to more discussion of Holmes’ personal traits (how she “can quote Jane Austen by heart” and “is a vegan”), dismissing the concern with Holmes’ assertion that “Theranos is only trying to protect itself from competitors while it tries to do something unique” (Auletta, 2014). This dismissal of concerns is now often blamed as naïve: many detractors argue that Silicon Valley’s secrecy does little more than cloak deeply flawed technologies in an aura of success and promise (Metz, 2017; Tobak, 2016). But such an assertion fails to recognize *why* people put so much faith in secrecy. Theranos’ secrecy was largely seen as an *asset*, not a

risk—because, at Apple under Steve Jobs, secrecy had worked before. The fact that Theranos was hiding something meant that it had something good to hide.

In the medical field, of course, a lack of publications is an instant alarm bell. Indeed, in one of the few medical papers published analyzing Theranos' tests, the overriding feeling is one of skepticism and doubt, owing to the lack of publicized results. The paper goes as far as to state, “[Theranos’] claims of superiority over current systems and practices are speculative, at best” (Diamandis, 2015). Diamandis also expresses concern with the number of former government officials and lack of medical professionals on Theranos’ board—a fear that most accounts intended for public consumption gloss over. When Holmes’ hyped personal image was left out of the conversation, and the discussion turned purely to her company’s technical merits, her own superficial similarities to Steve Jobs did little to persuade others of a deeper technological value in her company. In the healthcare industry, at least, Theranos’ secrecy was met with the expected skepticism—but that skepticism never made its way into mainstream conversation.

The whole appeal of Holmes’ approach was that she was bringing Jobs’ model of revolution and rapid change to an industry that—to outsiders, at least—seemed reluctant to take bold steps. She could bill her secrecy as merely an extension of his secrecy—not just as a necessary part of the process, but as an indication that it was going *well*. Jobs had already done the legwork: Apple’s iPhone was cloaked in secrecy up until the moment of its release—after which it was a spectacular success (Lewis, 2007). Apple’s secrecy was, of course, fundamentally different than Theranos’: while both companies kept technological details closely guarded, Theranos advertised and pitched its blood-testing technology before its widespread release in a way that Apple never did with its own products. But, to the public, the differences in the companies’ implementations of secrecy mattered far less than secrecy’s existence. The comparison between Holmes and Jobs was already so strong that Holmes’ veil of secrecy seemed perfectly acceptable, completely unsurprising, to those outside the healthcare industry. It had worked before; why, for such a similar person, shouldn’t it work again? Secrecy, in any form, already implied novelty. To the average journalist and the average reader, Holmes’ secrecy thus became simply more evidence that she was destined to be the next Steve Jobs.

### Her Own Addition

Not all of Holmes’ personality, however, can be explained via Steve Jobs alone—indeed, some of the most heavily reported elements of Holmes’ origin story are unique to her. In the years before Carreyrou’s exposé, every discussion of Theranos’ medical technology was largely a discussion of Elizabeth Holmes’ childhood writings. In one interview, she described how, at the age of nine, she had written a note: “what I really

want out of life is to discover something new, something that mankind didn't know was possible to do" (Parloff, 2014). The motivation for starting Theranos, she would recount, was nothing more than a childhood fear of needles. Her company's goal, described by philanthropist Laura Arrillaga-Andreessen as an attempt to "democratize health care" and to "change the health care paradigm as we know it" (Arrillaga-Andreessen, 2015) was selfless; her own personal motivation was pure. As journalist Nick Bilton commented following Holmes' downfall, "In a technology sector populated by innumerable food-delivery apps, her quixotic ambition was applauded" (Bilton, 2016). While Steve Jobs talked of revolutionizing the world through better computers and smarter phones, Holmes talked of truly *improving* it—through greater access to medical diagnostics for all. She presented herself, not just as the next Steve Jobs, but as an improved Steve Jobs, a Steve Jobs with a more humanitarian, selfless tilt.

Another element of Holmes' origin story appears relatively simple but deserves expansion: She was accepted to Stanford—and then dropped out. There is a belief, an incredibly popular belief among many in Silicon Valley, that choosing to do something (generally starting a company) *immediately* instead of waiting to finish college indicates a sort of commitment and personal brilliance that formal education cannot provide. For example, The Thiel Fellowship, whose acceptance rate is generally around 1%, promises "\$100,000 to young people who want to build new things instead of sitting in a classroom" (Thiel Foundation, 2015). Holmes' perception in the public eye relied on this Silicon Valley status symbol, on her membership in the dropout club. Steve Jobs was certainly a member of this club—but only a single member. Mark Zuckerberg dropped out of college. Bill Gates dropped out of college. Michael Dell dropped out of college. There is a long history in Silicon Valley of hugely successful companies being started by college dropouts—a history that Holmes used to further her own status, turning an observation of prior successful dropouts into an expectation of a future successful one.

Instead of raising questions about her formal training and ability to run a medical device company, her lack of education thus greatly increased her credibility. It made her more similar to the greats; it indicated her confidence, her willingness to dump everything into her company—her parents even allowed her to use her college tuition money to help start Theranos (Crane, 2014). It was unimportant that Holmes cast herself as a technical expert yet had little technical experience; the public assumed that she had simply learned all she needed on her own, and that further education would simply be a waste of her time.

Holmes, thus, did not just copy the Jobs story—she improved upon it. Jobs dropped out of Reed College (Isaacson, 2011). Holmes dropped out of Stanford. Jobs was quirky because he smoked weed. Holmes was quirky because she read *Moby-Dick* at age nine (Auletta, 2014). Jobs made better computers. Holmes wanted to save people's lives. Holmes became, not just Jobs' mimic, but his even greater successor.

### A Proposed Causal Factor

Having established the strength of Holmes' enhanced Jobsian image, I will now shift my approach, borrowing the language of sociology to propose a combination of cultural capital and rational ignorance—that I have dubbed “protective ignorance”—as the source of the public's trust in that image. Cases of large-scale, image-inspired technological fraud are somewhat infrequent, thus requiring an application of models from other fields that address more chronic issues. The cultural capital model, first developed by Pierre Bourdieu and Jean-Claude Passeron, has been used frequently to explain the influence of class backgrounds on social mobility, but can be easily adapted to this case. Although the various uses of the model have somewhat muddled its direct meaning over the years, cultural capital can generally be thought of as the prestige derived from an individual's education, accent, ways of thinking, and ways of behaving (Lamont and Lareau, 1988). Those with “upper class” characteristics have more cultural capital than those with “lower class” characteristics. As explained by Lamont and Lareau, “examples of cultural capital as high status ... would be ... thinking that knowing what a good wine is important” (Lamont and Lareau, 1988). The knowledge of wine types has no *direct* bearing on a person's success—but, since society grants a higher status to those with this understanding, such knowledge has great *indirect* influence, in the form of associating the individual with that status's accompanying material success. In a traditional analysis, applying the model to explain class barriers, such influence would be cited as a causal factor in the increased success of someone raised in an upper-class household (Lamont and Lareau, 1988).

Elizabeth Holmes derived her cultural capital, not from wine tastings or country clubs, but from her similarities to Steve Jobs and from her own personal improvements to his image. Steve Jobs passed away on October 5, 2011, just as Holmes was gaining prominence. While the world was mourning his loss, along came a woman who promised to fill the void—and then some. Holmes had the same quirks, the same style, the same image, the same secrecy. She personified the young entrepreneur, the socially conscious entrepreneur, the college dropout entrepreneur, the Jobsian mimic entrepreneur. She could leverage his cultural capital, in effect gaining his status by acting as his surrogate, recalling memories of the grand change he evoked and attaching the cultural weight of those memories to herself. From the moment she appropriated his styles of dress, she began to appropriate his cultural capital. Wearing Jobs' sweaters commanded his prestige. Drinking his fruit juices conveyed his status. Speaking of secrets recalled his success. Silicon Valley culture may shun traditional workplace rules and encourage disruption and innovation—but, just like any other culture, Silicon Valley culture still has its own checkbox list of requirements, codes that signify who belongs to the elite and who does not. The culture and its codes are interwoven with the

personalities of the individuals who created the industry, and linking to them is an easy way to gain their prestige, to amass their cultural capital.

This siphoning of cultural capital from the industry's icons is usually benign, and often beneficial: Zuckerberg was frequently compared to Gates—and gained status in the process—without any major negative repercussions (Vogelstein, 2007). The danger, I would argue, is not in the status that cultural capital siphoning grants up-and-coming innovators, but in the fear it gives journalists—and the public at large—of opposing them. Jobs' status as a cultural icon has granted him a sort of immunity in the public eye: Most people tend to overlook Jobs' refusal to accept the paternity test results of a child he fathered with his high school sweetheart, and tend to ignore Apple's dark days in the 1980s and 1990s, when Jobs was forcibly kicked out of the company and Apple's stock dipped lower every year (Isaacson, 2011). Marks on Jobs' record in the past have had little impact on his status in the present. But when Holmes drew so directly off his cultural capital, drew the parallel so closely and so well, she created a new connection, a two-way connection in the present day, between herself and Jobs, one that had the potential to modify public perceptions of Jobs on the basis of Holmes' success. Raising doubts about “the next Steve Jobs” would have raised doubts about the original Steve Jobs in a way that clashed with his pre-existing prestige.

It was easiest for journalists and for the public to dismiss these doubts, to protect the image of Steve Jobs the innovator, by turning to rational ignorance. Rational ignorance has been used to describe people's willingness not to search for information when the cost of acquiring that information exceeds its potential benefits (Downs, 1957). Most often, it is invoked to explain why so few voters actually inform themselves: the costs of doing so (time and effort) exceed the possible benefits (one informed vote in one hundred million). The public reaction to Theranos' meteoric rise exhibited an application of rational ignorance in the defense of cultural capital—a usage that I will refer to as “protective ignorance.” Protective ignorance suggests that there is a *benefit*, not just a lack of cost, to remaining uninformed. The “change the world” promise associated with Steve Jobs and his cultural capital has an intrinsic value, a value that is weighed when making a decision. The potential benefits from protecting Jobs' cultural capital—by way of protecting Holmes' cultural capital—outweighed the potential benefits of fully educating oneself about Theranos' technical work. The assumption of truthfulness, while it may in retrospect appear naïve, was both rational and protective at the time. Taking an agreeable story at face value was not just easier—it also protected the story, allowed the cultural capital it leveraged to continue to shine, allowed the public to continue to bask in its glow.

Protective ignorance is an unconscious form of ignorance. No reporters *actively* chose to mislead the public to protect Holmes' image. Indeed, once it became clear that Holmes was not, in fact, the next Steve Jobs, those who had praised her turned, almost in unison, to condemn her,

as I have discussed earlier. Protective ignorance is instead subtler, stealthier, more inadvertent. It creeps in in Auletta's hasty, unexpanded admissions of Theranos' lack of data. It sidles into Parloff's extraordinarily brief mention of Holmes' unwillingness to publish. They both dismiss it as Jobsian secrecy, of course—but their choice to decline further investigation, however rational, still exhibits protective ignorance. It is a more palatable story—not just to the writers' audiences—but also to the writers themselves, for the purpose of Holmes' secrecy to be as pure as her motivations for starting her company. Investigating further would require that the writers admit their own doubts about Holmes' story—and, by virtue of her connection to Steve Jobs, admit their own doubts about Jobs' status as well.

Cultural capital and rational ignorance are individually not sufficient to explain the public's trust in Holmes' story. Mimicking one of the greats in order to gain an advantage does not, in and of itself, open the door to deception. Neither does the public's choice to remain uninformed. When the two combined, however—when they resulted in protective ignorance—the resulting potential for misdirection and abuse was sufficient to enable a multi-billion-dollar fraud.

### Conclusion

I do not wish to suggest that drawing and protecting Jobsian parallels is inherently bad. It would be unhelpful and unrealistic just to *combat* protective ignorance, or to simply shame the public for falling victim to it. Such a blanket generalization would fail to account for the value of the “change the world” promise associated with Silicon Valley culture, the entwinement of that culture with individuals, and the positive power of the protective ignorance used to defend it. The Silicon Valley “change the world” promise *has* brought actual revolution—much of it led by CEOs with their own personality cults. The promise has worked before, and as such, it is rational to expect—and to hope for—it to work again. Theranos may have co-opted it once, but that does not instantly disqualify it from future, more socially responsible, use. Cultural capital and protective ignorance are ingrained in Silicon Valley culture, and the best solution is to work with, not against them.

I would thus recommend only a slight modification to the current approach to profiling and publicizing up-and-coming companies: that every discussion of their numerous merits mention at least one of their flaws. Such a mention would still allow rising entrepreneurs to leverage the power of the existing cultural capital but would break the perfection of the image. By reading about founders' weaknesses, not just their brilliance, the public might come to see them not as mythical reincarnations of prior innovators, but as fellow humans. Such a modification would also require an admission of weakness from companies and entrepreneurs—the burden of deeper investigation cannot fall purely on journalists. By re-telling some of their own struggles and

admitting some of their own uncertainty, entrepreneurs could reduce the technological and personal hype to a more manageable level, casting themselves favorably—but realistically. In stories like Holmes', the Jobsian parallel would still exist, and protective ignorance would still be called in to defend it, but the parallel—by virtue of its imperfection—would require less protection. The admission of weakness would entail nothing more than the transition from declaring, “Elizabeth Holmes is the next Steve Jobs,” to observing, “Elizabeth Holmes is similar to Steve Jobs in several ways—but has faced a set of completely different challenges.” Such a broader observation would still allow for the uplifting narrative power of the Jobsian parallel, but, because Holmes and Jobs would no longer be so tightly bound, would allow for Holmes to be questioned without questioning Jobs. Protective ignorance would be minimized without ever having been directly fought. For Theranos, that would have allowed for a quicker discovery of the company’s dysfunctional tests. For companies with a working product, it would allow potential future discoverers to be properly vetted without detracting from the awe of discoverers’ pasts.

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