Theranos: A Failure in Care

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Elena Lensink

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On my honor as a University student, I have neither given nor received unauthorized aid on this
assignment as defined by the Honor Guidelines for Thesis-Related Assignments.

Signed: _____Elena Lensink_____

Approved: _____ Date _____
Benjamin J. Laugelli, Assistant Professor, Department of Engineering and Society

Introduction:

Theranos was a failed Silicon Valley unicorn that promised more than it could deliver in terms of redefining blood tests. In doing so, they lost investors billions of dollars, and put patients' lives at risk. Current scholarly articles discussing the failure of Theranos, focus on the failing characteristics of leader, Elizabeth Holmes, as well as the processes in place within the company that barred transparency, and thus innovation. What these explorations leave out, is the responsibility of Care necessary in creating technology, and specifically medical technology. Without understanding the importance of ethics through relationships, the ethical implications of the failure of Theranos are limited, as they do not incorporate the power of the company and the leader. I will be analyzing the actions of Elizabeth Holmes, in terms of her power as a leader, engineer, and voice within the medical space, through the lens of Care Ethics. Care Ethics is an ethical framework that focuses on the relationships between the actor and those people and technologies affected by the actor (van de Poel 2011). I will be evaluating Holmes's actions throughout the book "Bad Blood" by John Carreyrou (2018), which documents the growth and decline of the company, as well as a case chapter by Neil Winter (2021) about the failure of Theranos.

Using Care ethics, I will demonstrate that Elizabeth Holmes acted in a morally irresponsible way, given her responsibilities as a leader, engineer and voice in the medical space. Holmes had power over her employees as a leader, and created a culture of intimidation. Holmes had power over her technology as an entrepreneur in engineering, and created a space where innovation and perfection of her technology was impossible. Holmes had power over what the public believed about her medical technology, and misled the public about the medical

capabilities of the technology. Thus, I argue that Holmes acted unethically in her relationships with the public and her own company.

Background:

The socio-technical case study that I have decided to focus on is the rise and fall of the infamous Theranos company (O'brien 2021). Theranos was a medical technology company created by Elizabeth Holmes. The company created medical technology, and became a start-up unicorn in Silicon Valley that had a value of 9 billion dollars at its peak (Bilton 2016). The main attraction, or promise of the company, was the idea that it could create a blood testing machine that could only use a finger prick of blood. This was a big selling point as most blood testing machines required a needle to get enough blood to test. The problem with Theranos was that it did not have the technology that it advertised (Bilton 2016). The company kept this under wraps for a long time, continuing to take money from investors, but an article from John Carreyrou, exposed the company, driving it to failure.

Literature Review:

The failure of Theranos has been widely studied given its ethical and cultural implications. Theranos shined a light on the problems involved with searching for the next greatest invention in Silicon Valley Unicorns, as well as the moral questions involved in the bioeconomy. I researched the current ethical evaluations of Theranos to discover where scholars think the cause of Theranos's moral failure comes from.

Much of the current research into the failure of Theranos points to Elizabeth Holmes and her failure as a leader. In *"The Good, the Bad, the Ugly": Leadership Lessons From two Companies - Amgen and Theranos,* Arthure Boni and Stephen Sammut (2019) discuss the leadership differences between Theranos and Amgen, another biotech company. This

article lays out qualities of creating an innovative company that meets market needs. These qualities are people, problems and processes. The people include the leadership, ethics and culture of the company. The problem refers to unsolved challenges, and the processes to the teams, and operations that those teams undergo to add value to the company (Boni et al 2019). The article goes onto mention that the problem addressed, easier access to blood testing, was important, but the people and the processes within the company were not created to support its mission. The culture was one of intimidation, and processes devalued communication between teams. Holmes, the leader, lacked important virtues described by the authors like moral integrity (Boni et all 2019). This culture of intimidation was created by having employees sign non-disclosure agreements and threatening lawsuits to potential whistleblowers (Carryraou 2018). One aspect of this culture that was not promoted by Theranos itself, was the existing whistleblower protection. There were employees that wished to expose Theranos's wrongdoings, but because of difficulties getting legal aid, these employees delayed goings forth to the public (Rogel 2021). Thus, Boni and Sammut show how the lack of moral virtues displayed by Holmes, and the processes and rules set in within Theranos, lead to the failure of Theranos.

In *Designing a dangerous unicorn: Lessons from the Theranos case*, Straker et al (2021) researched further into the processes that lead to the Theranos failure. Straker et al (2021) use the Design Innovation framework to understand the failings of Theranos, and how a better design methodology could have saved the company. The Design Innovation (DI) framework outlines a cyclical approach to design that evaluates design decisions based on user needs, business requirements, and technological viability (Straker et al 2021). The framework aims to sustain innovation while keeping good business practices. Straker et al (2021) hypothesize that under this framework, factors that led to the failure of Theranos could have been mitigated. A large

reason why Theranos continued for so long without the data to back up the products was because the company processes were often kept secret, and divisions within the company were not allowed to communicate with each other because of this secret technology. Thus, no one knew the extent of the company's failure until it was too late. (Carryrou 2018) Using the DI framework could have limited these factors by creating clear planning for a feasible product, as well as open channels for internal communication. Thus, like Boni and Sammut, Straker et al (2021) show that having better processes, or moral rules to create innovation, could have prevented Theranos's failure.

Research into issues with Silicon Valley culture, specifically regarding the bioeconomy, provides insight into cultural context for the failure of Theranos. Another company, 23andme shows the relationship between "promissory capitalism" and the value of hope and truth in a Silicon start-up (Hogarth 2017). In his article, *Valley of the unicorns: Consumer genomics, venture capital and digital disruption,* Hogarth explains that to be successful in Silicon Valley a company must embed hope of a disruptive technology to gain funding for research and development, while also balancing the trust of the stakeholders. This article provides interesting insight into a successful Silicon Valley start-up that balanced the hope and trust necessary to be successful, while Theranos provide mostly hope, but no data to validate and give reason to trust their technology. This article adds to the discussion of Theranos's moral failures by discussing their values as a company, and thus the virtues of the leader. Holmes embedded the company with the virtue of hope but lacked the virtue of honesty and transparency, leading to the failure of the company.

The articles on the topic of Theranos explore various reasons that Theranos was a failure. These articles viewed the failure through the lens of virtue ethics and describing virtues of a

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good leader, as well as through duty ethics, and providing processes or actions to follow to create a successful startup. While virtue ethics and duty ethics provide a good basis for analysis, I felt as though the moral motivation was missing within these frameworks. Within the medical field specifically, a failure of technology not only causes investors to lose capital, but peoples health and lives to be at risk. This paper will provide descriptions of the moral failings within the Theranos downfall, but will also use Care ethics as a framework to describe how relationships between engineers and users within the medical field should develop from similar principles of those between a doctor and a patient.

Conceptual Framework:

Care Ethics:

Care ethics focuses on the importance of relationships in developing morals, and not just the moral principles (van de Poel 2011). Morality in care ethics focuses on relationships between people of various roles, where some are more vulnerable than others. This care can show from observance of outcomes, actions, and attitude and thus incorporates multiple parts of various ethical frameworks. The main difference of care ethics is that it includes the balance of power in different relationships, rather than assuming an independent actor is making the decision. (van de Poel 2011)

Care ethics in practice involves attentiveness, responsibility, competence and responsiveness (Tronto 1998). Thus, as an engineer, or person in power, one must be aware of the needs of others within relationships. One must take responsibility for those needs, and execute solutions competently. People receiving care should be responsive to that care. Within this section I will explain the difference between Care ethics and Virtue ethics, and take a closer look at Care ethics in Health Care.

Care Ethics vs. Virtue Ethics:

Within the literature review, scholars examined the shortcomings of Holmes as a leader based on lack of virtues like moral integrity. These articles focused on specific capacities of a leader of a Silicon Valley startup. Within the framework of Care ethics, I will look at the actions of Elizabeth Holmes in the context of the specific virtue of care in her relationship with her employees, investors and the general public.

Care ethics in health care:

Care ethics is specifically important in the realm of health care, as the relationship between the doctor and patient holds a great deal of power. This relationship has been discussed within health care since early Greek philosophy. The Hippocratic oath was created in the 5th century, and is sworn today by modern doctors as a promise to act in the patient's interest (Chaney 2018). This oath embodies the ideas of care ethics within the realm of health care, caring for a patient as a whole person. The oath contains a list of rules to follow as a medical professional, showing the elements of care through action. Thus, there is historical backing for the importance of the relationships between medical professionals and patients within the field of health care, that I will view as a part of the technological field of health care as it has a similar responsibility of putting patients first.

Since Holmes, as the leader of Theranos, holds a unique position as the leader of a medical technology company, she has responsibilities to the public and her employees as a leader, and engineer in the medical space. This position offers an interesting situation to apply the values of Care ethics, as I can analyze each type of relationship in terms of attentiveness and responsiveness from Holmes, and how her actions within these relationships impacted Theranos.

Analysis:

I will be analyzing the failures of Theranos through the framework of Care Ethics. Theranos had many failings coming from issues with the company culture. Holmes created a culture of intimidation where people were afraid to communicate with each other and the public about company failures. She was also dishonest with the public, stakeholders and partners about the capabilities of the product, leading to medical implications for patients, and loss of revenue for stakeholders and partners. Using Care ethics, I will analyze each of these relationships to understand how Elizabeth Holmes, as a leader of a modern health care technology company, could have acted if valuing care in relationships and avoided company failure.

Care in Leadership:

Holmes, as a leader of a large company, had a responsibility to care for her employees because of the power involved in the employer/employee relationship. As a leader of an organization, one must balance attentiveness towards the needs of the public, as well as the needs of employees and the company. In this context, Holmes, as a leader, prioritized attentiveness towards the needs of the company in many employee vs company situations. Holmes made employees sign non-disclosure agreements where, once leaving the company, she threatened to sue if employees became whistle-blowers to the company's current state (Carreyrou 2018). Employees did not have the financial backing of the company, and felt unsafe because of this culture of intimidation. Thus, Holmes prioritized what she thought of as the needs of the company — secrecy — over the needs of employees – the need to feel safe in the workplace.

When employees came to Holmes expressing needs and concerns for the company, they were fired, showing that Holmes did not develop a culture of care. An example of this is when chief financial officer, Henry Mosley, came to Holmes with questions about the ability of

Theranos' blood testing technology, the Edison machine. After coming to Holmes, he was fired for not being a "team player" (Tucker 2021). This implies that Holmes wanted to develop a culture where all employees were working towards her mission for the company, but when issues with that mission were brought up, Holmes did not take responsibility and reply competently. Responding to issues competently is a marker of good care. By firing employees, those within her care, Holmes was not receptive to feedback and created a culture where employees jobs were on the line for questioning her abilities as a leader.

Thus, Holmes showed lack of care for her employees as a leader because she prioritized maintaining secrecy of her company's product over the wellbeing of her employees. Some might argue that this secrecy showed care for her employees by promoting the success of the company, and thus continuation of their jobs. If they gave away the secrets of the company then the company would lose stock and value as other companies could make copies of their ideas. This viewpoint has issues for multiple reasons. Firstly, it takes a consequentialist approach putting the mission of the company over the well being of its employees. Given a care ethics viewpoint, Holmes, as a leader, has a relationship with her employees, and thus putting the ends before the means devalues that relationship. Furthermore, the company did not actually have the technology that it claimed. Thus, even as an act of potential care towards the public, in wanting to complete the technology quickly, this act of intimidation towards employees fails as the technology did not actually exist.

If Holmes had acted through care ethics when being a leader, she would start with being receptive towards care provided by employees – constructive feedback. She would also be attentive towards employee's needs, who were unhappy with the culture of intimidation, and taken responsibility as a leader, creating clearer lines for communication between divisions.

<u>Care in Engineering:</u>

Along with care within the realm of leadership, Holmes, as a leader of a technological company had the responsibility to care for the technology that she created. I will analyze Holmes's care as an Engineer through her actions correcting faulty technology, as well as her capabilities to competently address the technological needs of her company.

The main technology that Theranos was trying to create was a machine that ran blood tests with just a poke of the finger. The most widely used technology that Theranos created was the Edison machine (Tucker 2021). This machine was far from effective, however, with employees required to lie about lab results because the machine was faulty and did not give consistent results (Tucker 2021). Because Holmes wanted to create a machine that only needed a drop of blood, the blood needed to be diluted, which gave varied results as there were not enough of the molecules that indicated diseases within each sample for the machine to be effective. Instead of identifying the needs of the technology, as would be required in care ethics, and taking more blood, Holmes made employees lie about test results and pre-record demonstrations (Tucker 2021).

Holmes created the idea for the company Theranos with a very limited education. Holmes had limited experience with the medical technology she was persuading people to invest in as a second-year college dropout (Tucker 2021). She followed in the footsteps of other company founders like Steve Jobs who also dropped out of college, but unlike Jobs, she created a company in the field of biotechnology, where most companies had leaders with graduate level educations (Tucker 2021). Holmes also did not have any people within her management that had PhD level education, who could have assisted in forming the trajectory of the company. Thus, Holmes was

ill-prepared to address any company wide concerns about failing machines, leading to lack of competence in care for the company's technology.

Care in Health Care:

Holmes also provided a lack of care given her responsibilities to patients as a tech creator in the health care field. Holmes has thus far provided lack of care in many aspects of creating and continuing the mission of the company Theranos. There were other technological leaders that misled the public in a similar fashion, however, like Steve Jobs who misled investors demonstrating an iPhone with capabilities that were not yet consistent (Marks 2017). A major difference between these two situations, is the industries that they represent. Steve Jobs was demonstrating a new technology where, if it failed, the largest outcome would be that investors would lose capital. Elizabeth Holmes also misled investors and the public about the capabilities of Theranos technology, but if her technology were to be used while faulty, it could impact the diagnoses of patients and their treatments, thus impacting their health care. Because Holmes was involved in biotechnology, she also had a responsibility of care for the patients of the technology as more than just users. Instead of prioritizing patient health, Holmes again prioritized company progression, allowing faulty technology to be used on over 176,000 people (Tucker 2021). When employees voiced concerns over public use of technology they were told to stand with the company or leave the company, again, prioritizing company image.

Within the framework of Care ethics, Holmes would need to take into account the power imbalance between those providing medical technology and patients, a similar power imbalance as doctors and patients, thus using more care and transparency about the faulty technology.

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Conclusion:

Using Care ethics as a framework we can understand the power dynamics in the relationships that Holmes controlled in the creation of the company. Holmes showed a lack of care in acting towards her employees, by prioritizing the company's mission above the employee's wellbeing. She had a responsibility to her employees given her power as a leader of a company, but was not receptive towards feedback, and did not identify or address the needs of her employees. Holmes also had power as a leader of a technology company as an engineer to care for her technology. Instead of addressing the needs of the technology, she covered up the issues with the technology, allowing it to remain incomplete. Finally, Holmes as a leader of a tech company in the medical field had a responsibility of care for her users as patients. Yet instead of ensuring her users safety, she allowed them to be misdiagnosed by an incomplete technology. Thus, Holmes showed that in all realms of her job as a leader of a medical technology company she did not act with care and take responsibility for her actions, instead acting immorally by the values of care ethics.

It is important to explore the relationships of power that technological companies hold over the public when examining the ethical implications of their technologies. Care ethics is a valuable framework to analyze the actions of Holmes as a leader of a large technology company, because it provides tools to analyze the power that she held. This analysis is helpful in determining where other companies can act differently. (Word count: 3313)

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