

## In Defense of, But Not Advocate for, the Biotech/Pharmaceutical Industry

By Benjamin Li

After reading *Dark Tide* by Stephen Puleo, what immediately jumps out at the reader are the many parallels that can be drawn between USIA of the early twentieth century and the Biotech/Pharmaceutical companies of modern day (hereby referred to as pharma<sup>1</sup> companies). These parallels usually focus on the relationship between labor and big business, but there is also a great deal of similarities among the public perception of these companies and their management. In this paper, I will be applying the themes of *Dark Tide*, specifically that of the relationship between labor and big business, to the present, and explaining why the current outlook of the American public does not accurately reflect the pharmaceutical industry as a whole. If you look at the healthcare headlines from 2015 to present, there will be a plethora about rising drug costs, Pharma companies getting sued, and CEO's making millions of dollars. I am here not to advocate for the problems within Pharma, but rather to provide reasoning behind them, and thus hopefully give insight into the relationships occurring within, and without, the Pharmaceutical industry.

To start off, I think it would be fair to make all my biases and leanings apparent. My parents work for large pharmaceutical companies: Genzyme/Sanofi-Aventis and Bristol-Myers Squibb. This means that a lot of my opinions stem from what they think, but it also means that I have a more inclusive view of the industry than other people. While this shouldn't be an argument to completely invalidate this paper, it is enough to let you, the reader, be aware of any subjective misinterpretations. A lot of what I will be saying also comes from interviews and presentations that I have seen on YouTube, presentations made during press releases, and online forums that can be argued are biased towards the industry being "good". I will try to get all of my information from trustworthy sources, but just as a disclaimer, that will not always be possible.

Public perception of the molasses tank wasn't filled with admiration or accomplishment. Instead, the tank was a giant ugly structure that obscured the view of the harbor and was a detriment to the value of the area. Martin Clougherty, the owner of the Pen and Pencil Club, expressed his disdain, saying that "prior to the tank's completion [...] [he] could look out the kitchen window and glimpse patches of ocean between the support girders of the overhead train trestle. Now, when he looked out that same window, he had a full-frontal view of the gray molasses tank" (Puleo 25). Even within the business district of Commercial Street, the tank still stood out as a colossal that didn't belong. Stemming from the thoughts about the tank, USIA additionally become affected by their own externality. Early on, Puleo makes evident that Isaac Gonzales, a laborer and someone who has inside knowledge and experience within the company, does not think very highly of management. After "he had warned his superiors about the tank's condition, and they had responded with a paint job" (Puleo 71), Isaac Gonzales was so dissatisfied with his superiors that he decided to "quit his job with United States Industrial

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<sup>1</sup> Pharma/Pharmaceuticals is going to be used in this paper to refer to all underlying industries that focus on producing healthcare products, including but not limited to biotech, biopharma, pharma, etc.

Alcohol” (Puleo 71). On the inside, things weren’t looking very good. The usual metric for company performance is to look at what upper management is doing. However, understanding the motivations behind the actions of the laborers gives an even better forecast into the morale of the workers.

A POLITICO-Harvard poll in September 2016 showed that drug companies were the first to blame for rising healthcare costs in the U.S.<sup>2</sup> While not being completely analogous to the industrial alcohol industry, the impression of these two sectors are similar. U.S.I.A is flawed, and so is Pharma. The important thing to note is that this impression is just an impression. It does not take other influences into account. The workers and surrounding environment blame U.S.I.A. for the flood, and the American people blame the Pharma industry for a higher healthcare bill. A deeper analysis into Pharmaceuticals reveals two areas of focus: individual company actions and industrial trends.

Individual company action is a micro viewpoint. Instead of looking at the industry as a whole, we can delve pretty deep into specific firms to target the problems that are identified. For example, if we take a look at the very top of the ladder, a pattern emerges; Pharma CEO’s tend to be lawyers and businessmen instead of scientists and engineers. This doesn’t only apply to the CEO’s. Most of the board is filled with these types of non-STEM people. This is one of the big criticisms about Pharma companies, and is always a talking point whenever price gouging enters the debate. Why are the leaders of these companies businessmen and lawyers instead of scientists and engineers? Surely it would make more sense for them to have an advanced scientific understanding of the product they are developing. In the tech industry, for example, the CEO’s are usually always CS grads. There is a reasoning behind this, however, and that is the different climate within different sectors. Tech companies focus on a single product, usually developed by the founder, that becomes the “baby”. Thus, in order for the tech to model what the founder wants it to be, it is easiest for him/her to take over as the leader.<sup>3</sup> In the world of Pharma, that usually isn’t the case. The CEO isn’t the one creating the many drugs and testing them. All of that is done by the workers. The job of the CEO in this case is to create the most profit possible for the shareholders. This strikes at the core fundamental for the relationship between labor, the public, and “Big Pharma”. The businessman CEO’s main focus is profit, not the product, which trickles down into a cause for blame. The title of this paper is *In Defense of, But Not Advocate for, the Biotech/Pharmaceutical Industry*. My stance on the subject is that there is reasoning behind the problems within the industry, but these problems are not to be ignored. What this paper aims to achieve is to provide reasoning for what the industry does, but not advocate for them. It would be great if all the Pharma CEO’s got replaced by scientists and engineers, but unfortunately, that is not possible for the current outlook of the industry.

Another factor that induces a negative response from the public is the amount of money paid to Pharma executives. For fiscal year (FY) 2015, Leonard Schleifer of Regeneron reported

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<sup>2</sup> <https://www.politico.com/story/2016/09/americans-blame-drug-companies-for-rising-health-cost-poll-228866>

<sup>3</sup> This does happen in Pharma sometimes. For example, Elizabeth Holmes of Theranos was the founder of the product that Theranos became based upon and took the CEO position.

total compensation upwards of \$40 million.<sup>4</sup> After a score of negative press chanting that executive pay was far too high and didn't match the overall size of the company, the reasons behind his big pay package came to light. Regeneron was founded in 1988 by Leonard Schleifer and George Yancopoulos, but the name only started being noticed a little after 2014. This is because up until then, Regeneron was a company with nothing to its name. No products, no capital. And then, in November 2012, after more than a decade of R&D, Regeneron's degenerative eye disease drug, Eylea, was approved by the FDA.<sup>5</sup> Eylea became a blockbuster drug and quickly recouped most of its more than a billion dollars development cost. Schleifer turned a minute local pharmaceutical company into an overnight success, and so the shareholders decided it would be appropriate to provide him with increased compensation. Additionally, there is another, albeit smaller reason, for his high salary. From 2011 to 2015, Regeneron's stock returned over 400%.<sup>6</sup> A portion of the total compensation is taken up by stock options, and an increase in stock options and stock price adds to the value of that total.

So, on an individual level, there is reasoning behind the seemingly negative press. Newspaper headlines don't reveal the details of themselves, and this creates a negative perception of the pharmaceutical industry. The inaccuracy I'm trying to dispel is a product of this misinterpretation. If reasoning was given behind every unfavorable action, then I have no doubt public sentiment would be better.

The holistic interpretation of the industry hits at the crux of the relationship between Big Pharma and the public. It's no secret that the Pharmaceutical industry is an oligopoly, and in America, most people would say that they are leaning on monopoly. And the most straightforward indication of this is price hikes. First, let's tackle the HHI of pharmaceuticals. The United States considers an HHI of 1500 points to be moderately concentrated. According to a paper from Duke's school of Law, "it appears that overall concentration in the industry is both low and relatively stable [at 500-700 points]" (Mitchell, Richman, Shulman, Vidal 794-795).<sup>7</sup> The numbers show that the industry isn't even moderately concentrated, much less bordering on monopolistic. So why do people think of it as such? It's because the standard practice for the industry is to gain a patent on a medicine, and keep that patent for as long as possible. Big names such as Pfizer, Biogen, AbbVie, Amgen, etc. have a lot of drugs under patent, and they're mentioned in the news all the time. There are, however, many smaller companies that have a few drugs under commercialization, so overall saturation is high. Once again, it is a lack of understanding that causes these opinions to form. Next up is the seemingly constant price hikes. Every year, over 100 drugs are given a ~5% price raise, and there is always one or two that get raised by much more. The usual explanation goes something like this: R&D is expensive, and drugs need to have a high price to recoup those costs and cover lack of innovation in the

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<sup>4</sup> <https://www.usatoday.com/story/money/markets/2016/08/26/drug-money-pharma-ceos-paid-71-more/89369152/>

<sup>5</sup> <https://en.wikipedia.org/wiki/Regeneron>

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[https://www.google.com/search?q=%24regn&rlz=1C1CHBF\\_enUS704US704&oq=%24regn&aqs=chrome..69i57.784j0j1&sourceid=chrome&ie=UTF-8](https://www.google.com/search?q=%24regn&rlz=1C1CHBF_enUS704US704&oq=%24regn&aqs=chrome..69i57.784j0j1&sourceid=chrome&ie=UTF-8)

<sup>7</sup> Mitchell, Will, et al. "Pharmaceutical M&A Activity; Effects on Prices, Innovation, and Competition." *Loyola University Chicago Law Journal*, pp. 794-795.

industry, the price of a life is worth much more than the price of the drug, etc.<sup>8</sup> What does have a counter is the disdain for these prices. Both the consumers and the laborers (who usually get a discount for working for the company) must pay the price of these drugs. An argument can be made that because the price of these drugs is so high, they raise insurance premiums, causing a higher price paid out of pocket by the those in need of the drug. In reality, drug prices don't have such an effect on the price of insurance. Drugs are a very small part of the \$500 billion healthcare bill in the U.S., only about 20%. What makes up the rest is doctors and hospitals. Because of this small proportion, even the biggest drug cannot affect the premiums.<sup>9</sup> In addition, most of these large payment drugs are what are called "orphan drugs". They are designed for the sole purpose of treating one type of rare disease that typically affects less than 1 million people worldwide. Take Daraprim for example, which gained spotlight in late 2015 after Martin Shkreli (Pharma Bro) bought it and raised the price more than 5000%.<sup>10</sup> This drug is used in the treatment of toxoplasmosis and cystoisosporiasis. Even though Daraprim has an insanely high \$750 per pill price tag, the diseases it treats affects less than 200,000 people worldwide. Thus, even though the full treatment with Daraprim costs over \$600,000 a year<sup>11</sup>, it isn't enough to raise insurance premiums. Those that can't afford it at all are typically given it for free or for a dollar<sup>12</sup>, and this goes for many of the other orphan drugs.

These high prices are the ones reaching the headlines, and you may have seen them recently. When the public outcries against these price raises, they're not seeing that the headlines are cherry picked, and the majority of drugs that are commonly used are priced just fine. The opinions of labor within the industry also backs this up. Even Pfizer, the poster child for corrupt Pharmaceutical companies, and the most influential of all the companies within the PhRMA lobbying group, has good employee reviews.<sup>13</sup> Unlike public sentiment, which tends to gear towards the companies and management as being incompetent or downright evil, the labor working under them have a completely different view point. This is because the engineers and scientists employed by these companies have worked in the field. They have exposure to the inner workings of drug development, and while there are some that certainly feel animosity towards their boss or coworkers, the compensation for those working in Pharmaceuticals is incredibly high. BLS puts the majority of them at over \$100k mean annual wage.<sup>14</sup> Compare this to the events happening during the time of the molasses flood, Puleo writes that "labor unrest was sweeping industry and government from coast to coast [...] it was an ominous sign of discontent among American workers" (Puleo 143). Back in the early 1900s, labor had a very toxic relationship with Big Business. While workers were striking for greater benefits and a higher salary, Big Business was cutting wages. The Pharmaceutical industry, on the other hand,

<sup>8</sup> <https://www.youtube.com/watch?v=1G-up0yRrM4>

<sup>9</sup> <https://www.youtube.com/watch?v=2PCb9mnrU1g>

<sup>10</sup> <https://www.nytimes.com/2015/09/21/business/a-huge-overnight-increase-in-a-drugs-price-raises-protests.html>

<sup>11</sup> <http://www.politifact.com/punditfact/statements/2015/sep/24/martin-shkreli/fact-checking-martin-shkrelis-claim-daraprim-under/>

<sup>12</sup> <https://www.newyorker.com/culture/cultural-comment/everyone-hates-martin-shkreli-everyone-is-missing-the-point>

<sup>13</sup> <https://www.indeed.com/cmp/Pfizer-Inc./reviews>

<sup>14</sup> <https://www.bls.gov/oes/current/oes172041.htm>

experiences a higher than ever salary for their labor. While this high salary can certainly skew the morale of labor, it also shows that they are being compensated well for their work.

The latter half of *Dark Tide* is mostly a walkthrough of *Dorr, Trustee, V. United States Industrial Alcohol Company*. The prosecutor of the case, Damon Hall, provided one key argument that most likely won him the case: Arthur Jell's "blatant admissions that no qualified person oversaw the development for the tank's plans or its construction, and worse, that safety had been compromised so egregiously for the sake of time and money" (Puleo 206). This quote perfectly analogizes the majority of the lawsuits filed against Pharma companies in the past decade. In fact, Pfizer's corporate rap sheet is full of management sacrificing safety for the sake of cutting corners. Their biggest scandal involved some heart valves that led to the death of more than a hundred people. This only happened because management decided it was a good idea to lie about the defects in the heart valve when applying for approval.<sup>15</sup> This embodies the core of "Big Pharma": upper management making decisions without seeking approval from those that are qualified in order to save money and time. In the century between the molasses flood and the scandals occurring today (a lot of pharmaceutical companies have departments in the Boston Cambridge area by the way)<sup>16</sup> not much has changed. Big companies are sacrificing safety and efficacy in order to cut down on time and money, and the people making these decisions are ignoring the protests of those who have the experience and knowledge to make better decisions. This leads to numerous lawsuits and fines for the companies, which only encourages them to take more unethical actions to recoup those losses. Once the public gets wind of this, they turn on these companies and the negative feedback loop slowly starts up. Add lobbying into the mix, and it starts to make sense why seemingly everyone hates the industry. PhRMA (Pharmaceutical Research and Manufacturers of America) is the major pharmaceutical lobbying group, spending over \$25 million in 2017.<sup>17</sup> They're composed of the vast majority of the distasteful<sup>18</sup> pharma companies: AbbVie, Allergan, Amgen, AstraZeneca, Biogen, Merck, Pfizer, and Sanofi.<sup>19</sup> Every industry has a group like this, but Pharma's get hits with the biggest backlash because of their positioning as a necessity for the health of a developing and developed country.

Not every pharmaceutical company is like these giants though. There are a handful of smaller lesser known ones that are actually quite blatant about their activities and have a focus on being ethical and environmentally friendly. Some of the giants are also tame in comparison. For example, Eli Lilly, which has a department in Cambridge, has an overall pretty clean record: their only recent blemish being the underhandedness of a past CEO.<sup>20</sup> The smaller companies that come to mind are Avexis, which is working on getting FDA approval for a gene therapy agent for SMA, Regeneron, which was the blockbuster company run by a CEO who is very open

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<sup>15</sup> <https://www.corp-research.org/pfizer>

<sup>16</sup> Sanofi, Shire, Eli Lilly, Vertex, BMS, and a handful of smaller ones.

<sup>17</sup> <https://www.fiercepharma.com/pharma/under-fire-for-pricing-and-more-pharma-boosts-lobby-spend-by-29-2017>

<sup>18</sup> Combined, they have countless cases of price hiking, price fixing, environmental disasters, lobbying, and lying to the FDA.

<sup>19</sup> <https://www.phrma.org/about/members>

<sup>20</sup> [https://en.wikipedia.org/wiki/Eli\\_Lilly\\_and\\_Company](https://en.wikipedia.org/wiki/Eli_Lilly_and_Company)

about his negative views on the Pharma industry<sup>21</sup>, and Shire, which is focused solely on treating rare diseases.

Big Pharma is a part of Big Business, but I don't think it has to be. Pharmaceutical executives need to work on reshaping their image and the industry as a whole should reevaluate its priorities so that the relationship between the American people and the Pharmaceutical industry won't continue to be a parallel to that of U.S.I.A in *Dark Tide*.

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<sup>21</sup> <https://www.youtube.com/watch?v=1G-up0yRrM4>