SUMMARY

THE RULES OF CONTAGION

ADAM KUCHARSKI

QuickRead

FREE BOOK SUMMARIES

Summary of “The Rules of Contagion” by Adam Kucharski

Written by Alyssa Burnette

Unpack the science behind the spread of disease.

Introduction

Adam Kucharski's timely study of contagion was penned before the COVID-19 outbreak, but its principles are no less relevant. Because although the coronavirus remains a mystery to us at the moment, at the core, it is still a virus-- one that we can ultimately dissect and understand just as we have done with such contagious diseases as measles, the flu, and the Zika virus. But what makes Kucharski's analysis especially unique is the fact that it does not attempt to confine itself to the realm of medical discourse. Instead, The Rules of Contagion stands as an inclusive study which examines contagion in its many various forms, including social media fads and viral videos. So, over the course of this study, we'll examine the intriguing commonalities between dangerous diseases and funny cat videos.

How to Study Contagion

Although we cannot answer every question that arises, the evolution of modern science and technology have opened doors that our ancestors would never have imagined. This means that in addition to finding cures for a variety of diseases, we have also evolved to discover new ways of studying medical mysteries. In fact, the advent of vaccines and experimental therapies have ensured that diseases which formerly plagued the world-- just think of smallpox, polio, or the Spanish Flu-- are now considered relics of the past. Today, we have the luxury of reading about these things in our history books rather than experiencing their terror firsthand. And as science continues to grow and evolve, the same will one day be true of viruses like COVID-19! But how did we arrive at this new plane of understanding? And how can we advance our studies?

The author observes that our current scientific models would not be possible without early pioneers in the fields of science and mathematics. Indeed, without the brave early scientists who kept asking questions, kept conducting experiments, and above all, kept wondering "Why?" we would possess little scientific knowledge at all. For example, the author cites the story of British scientist and physician Ronald Ross who practiced in the late 1800s. Today, we know that mosquitoes are carriers of disease. We know that they bite us because they want to feed off our blood and we know that their bite can inject us with harmful toxins and parasites that the mosquitoes have picked up. We also know that mosquitoes are notorious for congregating around stagnant bodies of water. That's why we arm ourselves with bug spray and mosquito repellent and think twice before buying property on a swamp.

But in Ross' day, none of this was common knowledge at all. Indeed, Ross was baffled when-- while working in India-- he encountered an overwhelming population of mosquitoes and a wave of unexpected illness. Ross sensed there must be a correlation, so he kept asking the local people questions and observed the behavior of the mosquitoes. After a significant

period of observation, Ross concluded that mosquitoes were more active near pools of stagnant water and concluded that whenever there was a sizable mosquito population, disease would quickly follow. What he couldn't understand was why, so he kept studying. He wanted to know how mosquitoes were transmitting disease and what could be done to stop them. To further his understanding, he consulted a friend and fellow physician who had been practicing medicine in China. His colleague reported that he had also seen spikes in disease whenever mosquitoes were present.

He also theorized that, because mosquitoes were connoisseurs of blood, they would be sampling from a variety of populations; animals and humans alike provided a veritable smorgasbord for mosquitoes to enjoy. The two doctors then hypothesized that if mosquitoes were sampling so many different types of blood, it stood to reason that they would eventually hit upon a victim who was infected with some disease or another. If the mosquito drank this infected blood and bit somebody else, the doctors argued that the mosquitoes were therefore acting as carriers of disease and passing a host of foreign parasites onto their unsuspecting victims. This theory laid the groundwork for our understanding of the spread of infectious disease. But it also unlocked the secret to controlling and preventing malaria, which is most commonly spread by mosquitoes. The author points out that this example demonstrates the power of a curious scientific mind. Without these doctors and their desire to know more, we might be decades behind in our understanding of contagious diseases! And because an inquiring mind and a desire to help others is at the heart of all medical discoveries, the author argues that all future scientific discoveries have followed a similar pattern. So, as you can see through this example, our current scientific models haven't evolved overnight in a flash of brilliance; rather, they are the result of a few dedicated researchers asking questions and building research frameworks that have influenced our scientific discoveries for decades.

The Rules of Contagion

So, thanks to the discoveries of early researchers like Ronald Ross, we now understand some of the basic principles of infectious disease. Put simply, we know that diseases are spread when one infected person has contact with another, whether that involves eating or drinking after each other or communicating parasites through the transmission of bodily fluids like those found in sneezes and coughs. (And, unless you're a mosquito, that transmission hopefully doesn't happen by biting someone else and drinking their blood!) This insight has also enabled us to develop a framework that helps us understand the life cycle of infectious diseases and their effect on human hosts. And this knowledge comes to us courtesy of something called the SIR model. Founded on Ross' early theory about mosquitoes and malaria, the SIR model serves as a definitive foundation for examining the spread of disease. That's because SIR is an acronym for Susceptible, Infectious, and Recovered.

Here's how it works: for example, in the case of COVID-19, we understand that some people are more susceptible to contracting the disease than others. People in this category include the very old, the very young, and those with underlying health conditions like asthma, diabetes, and immune deficiencies. As a result of these conditions, some people are always going to be more at risk than others. But for the most part, every otherwise healthy person is at the same risk of susceptibility. However, if you contract the disease-- thereby temporarily becoming Infectious-- you've entered a different category, which allows you to transition to the third and final stage: Recovered. And once you've recovered, you're no longer susceptible to contracting or spreading the disease again. This means that the number of susceptible people will eventually grow fewer and fewer until there's no one left to infect. This is what's known as "herd immunity" and it can sometimes kill a virus naturally because a virus can't thrive if it can't infect a new host.

So, because we know that most contagious diseases are spread in the ways listed above, we also know a lot about how to prevent and treat them. But the author acknowledges that this framework has also offered us the opportunity to expand our understanding by examining the spread of other contagious properties like ideas or videos. And if you guessed that Ronald Ross invented this idea too, congratulations-- you guessed right! Because although he couldn't yet know that his idea would one day be applicable to social media and viral videos, he did understand that when a lot of people all get excited about the same thing, that idea can spread in the same way as a virus. Ross called contagious ideas "happenings" and he put them into two categories: "independent and dependent happenings."

An independent happening, for example, might be something like a car crash. The circumstances of that event are most likely unique to you and that specific moment; maybe a car pulled out in front of you too quickly. Maybe you happened to be on the road at the same time as a drunk driver. The specific circumstances surrounding them may vary, but what characterizes an independent happening is the level of risk it poses. In other words, the risk of any given independent happening is relative to the circumstances of each individual.

Dependent happenings, by contrast, are communicable in the same way as a disease and they can be spread through certain factors. Religion, for example, can be categorized as an independent happening because religious ideology is spread through person-to-person communication. For example, let's say you discover a new belief system and feel that it brings you comfort and peace. You're excited about it, so you tell me. I decide it sounds awesome and I want to subscribe to this faith too. And because I've now caught the religion bug, I go tell somebody else. This is a dependent happening because it's dependent on the idea being spread through a specific set of easily reproducible circumstances.

The Rule of Viral Videos

Now that we've examined the rules of contagion and their relationship with ideas, let's take a look at some other ways that contagious ideas can spread. As you might imagine, the internet is a great way for contagion researchers to gather data. In fact, it can sometimes be easier and more accurate than documenting the spread of contagious diseases. That's because documenting the spread of something like the coronavirus requires mass amounts of data from multiple hospitals and patients. It requires consistency and accuracy and many fine nuances that are easily mishandled due to human error. But by tracking shares, views, likes, and clicks on social media, we can easily and accurately see just how "contagious," a video, idea, or meme is. So, what classifies content as viral? And what conditions are required for an idea to spread?

When we begin thinking about viral content in relation to the internet, it might seem like it's everywhere. After all, we've all had the experience of seeing a meme on your friend's Instagram feed one day, only to wake up the next day and realize that 200 of your friends have shared the same meme. As a result, we might classify that meme as "viral content," but the author argues that that's not necessarily the case. According to viral content creator Jonah Peretti-- the mind behind BuzzFeed and The Huffington Post-- most truly viral content is generated by internet users who can be classified as "superspreaders." Superspreaders can be considered influencers, social media personalities, or celebrities with a vast following. But although the name implies an unlimited amount of viral potential, Peretti observes that superspreaders are actually just defined by their ability to spread ideas to 11 people instead of 2, which is the range most of us have. And when you think about it that way, that's not really a lot of people!

In fact, Peretti's research indicates that truly viral content-- ideas, memes, or videos that achieve international acclaim-- is extremely rare. And the meme that 200 of your friends shared really isn't viral at all; it's just

popular among your social circle at the moment. However, certain factors can influence content's shareability and classify it as a "dependent happening." Memes are a perfect example of dependent happenings because their potential for contagion depends on others sharing them. But they're also uniquely contagious because they can mutate in the same way as a virus. Most memes, for example, are just a relatable picture or a funny image with a caption. Even if the image remains the same, the caption is customizable, and that's why people share it. However, once somebody changes that caption to fit their own purposes, it's no longer really the same meme. And as a result, it's ultimately not as viral as you might think it is!

The author concludes that this has resulted in a lot of misperceptions about viral online content. Ideas and images may indeed be contagious, but because they are dependent by nature, the circumstances required for making them contagious are too variable for us to predict their virality with infallible certainty. However, as is the case with our study of contagious diseases, the evolution of technology can help us further our understanding. As a result, it is entirely possible that within a few years, we will be able to definitively predict popular online content or even create a guaranteed formula for doing so! One thing, however, is certain: collecting data online will almost always be easier and data giants such as Google and Facebook are invaluable databases!

Final Summary

Science and technology have come a long way since the 1800s, when we first began to understand the spread of infectious disease. But thanks to the efforts of early pioneers like Ronald Ross, we have been able to develop scientific models like SIR, which can help us predict the cycle of diseases with a relative degree of accuracy. Ross' theories have also enabled us to understand that ideas can spread between people in the same way as a virus; we can classify infectious content in terms of "dependent" or "independent happenings."

Religions, memes, and viral internet videos are prime examples of dependent happenings because they are spread from person to person like a virus. However, we are limited in the degree of accuracy with which we can predict and analyze viral content. We also have a long way to go when it comes to studying and preventing contagious diseases like the coronavirus. As a result, the author has concluded that new advances in technology are needed to further our studies. But on the bright side, we can be certain that, just as Ross' once-revolutionary discoveries are common knowledge to us today, we will one day find answers to the medical mysteries that baffle the scientists of today.