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Chapter 1

The Bitcoin Narratives

This book offers the beginnings of a new theory of economic change that introduces an important new element to the usual list of economic factors driving the economy: contagious popular stories that spread through word of mouth, the news media, and social media. Popular thinking often drives decisions that ultimately affect decisions, such as how and where to invest, how much to spend or save, and whether to go to college or take a certain job. *Narrative economics,* the study of the viral spread of popular narratives that affect economic behavior, can improve our ability to anticipate and prepare for economic events. It can also help us structure economic institutions and policy.

To get a feel for where we are going, let's begin by considering one such popular narrative, recently in full swing. Bitcoin, the first of thousands of privately issued cryptocurrencies—including Litecoin, Ripple, Ethereum, and Libra—has generated enormous levels of talk, enthusiasm, and entrepreneurial activity. These narratives surrounding Bitcoin, the most remarkable cryptocurrency in history as judged by the speculative enthusiasm for it and its market price rather than its actual use in commerce, provide an intuitive basis for discussing the basic epidemiology of narrative economics (which we explore in detail in chapter 3).

An *economic narrative* is a contagious story that has the potential to change how people make economic decisions, such as the decision to hire a worker or to wait for better times, to stick one's neck out or to be cautious in business, to launch a business venture, or to invest in a volatile speculative asset. Economic narratives are usually not the most prominent narratives circulating, and to identify them we have to look at their potential to change economic behavior. The Bitcoin story is an example of a successful economic narrative because it has been highly contagious and has resulted in substantial economic changes over much of the world. Not only has it brought forth real entrepreneurial zeal; it also stimulated business confidence, at least for a time.

Of Bitcoin and Bubbles

The Bitcoin narrative involves stories about inspired cosmopolitan young people, contrasting with uninspired bureaucrats; a story of riches, inequality, advanced information technology, and involving mysterious impenetrable jargon. The Bitcoin epidemic has progressed as a cascading sequence of surprises for most people. Bitcoin surprised when it was first announced, and then it surprised again and again as the world's attention continued to grow by leaps and bounds. At one point, the total value of Bitcoin exceeded US $300 billion. But Bitcoin has no value unless people think it has value, as its proponents readily admit. How did Bitcoin's value go from $0 to $300 billion in just a few years?

The beginnings of Bitcoin date to 2008, when a paper titled "Bitcoin: A Peer-to-Peer Electronic Cash System," signed by Satoshi Nakamoto, was distributed to a mailing list. In 2009, the first cryptocurrency, called Bitcoin, was launched based on ideas in that paper. *Cryptocurrencies* are computer-managed public ledger entries that can function as money, so long as people value these entries as money and use them for purchases and sales. There is an impressive mathematical theory underlying cryptocurrencies, but the theory does not identify what might cause people to value them or to believe that other people will also think they have value.

Often, detractors describe the valuation of Bitcoin as nothing more than a speculative bubble. Legendary investor Warren Buffett said, "It's a gambling device."[1] Critics find its story similar to the famous tulip mania narrative in the Netherlands in the 1630s, when speculators drove up the price of tulip bulbs to such heights that one bulb was worth about as much as a house. That is, Bitcoins have value today because of public excitement. For Bitcoin to achieve its spectacular success, people had to become excited enough by the Bitcoin phenomenon to take action to seek out unusual exchanges to buy them.

For Bitcoin's advocates, labeling Bitcoin as a speculative bubble is the ultimate insult. Bitcoin's supporters often point out that public support for Bitcoin is not fundamentally different from public support for many other things. For example, gold has held tremendous value in the public mind for thousands of years, but the public could just as well have accorded it little value if people had started using something else for money. People value gold primarily because they perceive that other people value gold. In addition, Peter Garber, in his book *Famous First Bubbles* (2000), points out that bubbles can last a long time. Long after the seventeenth-century tulip mania, rare and beautiful tulips continued to be highly valued, though not to such extremes. To some extent, tulip mania continues even today, in a diminished form. The same might happen to Bitcoin.

Nonetheless, the value of Bitcoin is very unstable. At one point, according to a headline in the *Wall Street Journal*, the US dollar price of Bitcoin rose 40% in forty hours[2] on no clear news. Such volatility is evidence of the epidemic quality of economic narratives that may lead to an erratic jostling of prices.

I will make no attempt here to explain the technology of Bitcoin, except to note that it is the result of decades of research. Few people who trade Bitcoins understand this technology. When I encounter Bitcoin enthusiasts, I often ask them to explain some of its underlying concepts and theories, such as the Merkle tree or the Elliptic Curve Digital Signature Algorithm, or to describe Bitcoin as an equilibrium of a congestion-queuing game with limited throughput.[3] Typically the response is a blank stare. So, at the very least, the theory is not central to the narrative, except for the basic understanding that some very smart mathematicians or computer scientists came up with the idea.

Narrative economics often reveals surprising associations. Reaching back into history, we see the beginnings of the emotions behind the Bitcoin epidemic in the origins of the growth of anarchism in the nineteenth century.

Bitcoin and Anarchism

The anarchist movement, which opposes any government at all, began around 1880 and followed a slow growth path, according to a search for *anarchist* or *anarchism* on Google Ngrams. But the term itself dates back decades earlier, to the work of philosopher Pierre-Joseph Proudhon and others. Proudhon described anarchism in 1840 as follows:

> To be GOVERNED is to be watched, inspected, spied upon, directed, law-driven, numbered, regulated, enrolled, indoctrinated, preached at, controlled, checked, estimated, valued, censured, commanded, by creatures who have neither the right nor the wisdom nor the virtue to do so.[4]

Proudhon's words clearly appeal to people who feel frustrated by authority or blame authority for their lack of personal fulfillment. It took about forty years for anarchism to reach epidemic proportions, but it has shown immense staying power, even to this day. Indeed, the Bitcoin.org website carries a passage by anarchist Sterlin Lujan, dated 2016:

> Bitcoin is the catalyst for peaceful anarchy and freedom. It was built as a reaction against corrupt governments and financial institutions. It was not solely created for the sake of improving financial technology. But some people adulterate this truth. In reality, Bitcoin was meant to function as a monetary weapon, as a cryptocurrency poised to undermine authority.[5]

Most Bitcoin enthusiasts might not describe their enthusiasm in such extreme terms, but this passage seems to capture a central element of their narrative. Both cryptocurrencies and *blockchains* (the accounting systems for the cryptocurrencies, which are by design maintained democratically and anonymously by large numbers of individuals and supposedly beyond the regulation of any government) seem to have great emotional appeal for some people, kindling deep feelings about their position and role in society. The Bitcoin story is especially resonant because it provides a counternarrative to the older antianarchist narratives depicting anarchists as bomb-throwing lunatics whose vision for society can lead only to chaos and violence. Bitcoin is a contagious counternarrative because it exemplifies the impressive inventions that a free, anarchist society would eventually develop.

The term *hacker ethic* is another modern embodiment of such anarchism. Before the widespread availability of the World Wide Web, sociologist Andrew Ross wrote, in 1991,

> The hacker ethic, first articulated in the 1950s among the famous MIT students who developed multiple-access user systems, is libertarian and crypto-anarchist in its right-to-know principles and its advocacy of decentralized technology.[6]

In his 2001 book *The Hacker Ethic and the Spirit of the Information Age*, Pekka Himanen wrote about the ethic of the "passionate programmers."[7] In the Internet age, people's willingness and ability to work together with new technology—in new frameworks that do not rely on government, on conventional profit, or on lawyers—have surprised many of us. For example, wikis, notably Wikipedia, encourage cooperation among large numbers of anonymous people to produce amazing information repositories. Another success story is the Linux operating system, which is open-source and distributed for free.

But among the many examples of viral economic narratives, Bitcoin stands supreme. It is a narrative that is well crafted for contagion, effectively capturing the anarchist spirit; and, of course, that is why most of us have heard of it. It is part bubble story, part mystery story. It allows nonexperts and everyday people to participate in the narrative, allowing them to feel involved with and even build their identity around Bitcoin. Equally appealing, the narrative generates stories of untold riches.

Bitcoin as a Human-Interest Narrative

The Bitcoin narrative is a motivating narrative for the cosmopolitan class around the world, for people who aspire to join that class, and for those who identify with advanced technology. And like many economic narratives, Bitcoin has its celebrity hero, Satoshi Nakamoto, who is a central human-interest story for Bitcoin. Adding to the romance of the Bitcoin narrative is a mystery story, for Satoshi Nakamoto has never been seen by anyone who will testify to having seen him. One early Bitcoin codeveloper said that Satoshi communicated only by email and that the two had never met in person.[8] On its website, Bitcoin.org says only, "Satoshi left the project in late 2010 without revealing much about himself."

People love mystery stories and love to unravel the mystery, so much so that there is a rich genre of mystery literature. Bitcoin's mystery story has been repeated many times, especially when intrepid detectives have identified a person who may be Nakamoto. The repeated publicity for an intriguing mystery made the contagion rate of the Bitcoin narrative higher than it would have been otherwise.

Bitcoin and the Fear of Inequality

In addition to tapping into anarchist sentiment and the mystery of Satoshi Nakamoto, the Bitcoin story is a story of the desire for economic empowerment. During the twenty-first century, as economic inequality in advanced countries has increased rapidly, many people feel helpless, and they desire greater control over their economic lives. Bitcoin prices first took off around the time of the 2011 Occupy Wall Street / "We are the 99%" protests. Adbusters, a social activist organization that wanted its message to go viral, launched these protests in the United States, and Occupy protests occurred in many other countries too. It is no coincidence that the Bitcoin narrative is one of individual empowerment, because, according to the narrative, the coins are anonymous and free of government control, management, and reach.

Another part of the underlying narrative that has spurred Bitcoin's and other cryptocurrencies' high contagion rate is the story of computers taking greater and greater control of people's lives. In the twenty-first century, people have access to automated assistants, such as Amazon's Alexa, Apple's Siri, and Alibaba's Tmall Genie, that understand human speech and respond knowledgeably and intelligently to questions with a simulated human voice. In addition, driverless cars, trucks, trains, and ships seem likely in the near future, raising the specter of mass unemployment among truck drivers and other people who drive or navigate for a living. The "technology is taking over our lives" narrative is the most recent incarnation of a labor-saving-machinery narrative that has scared people since the Industrial Revolution.

The insistent fear in this Luddite narrative (to which we will return in chapter 13) is that machines will replace jobs. The fear is not that you will show up for work one day and be told that the company is purchasing a new computer that will do your job. Rather, the changes are more gradual, inevitable, and cosmic. More likely, as computers automate more tasks, you may find that your employer seems increasingly indifferent to your presence, fails to offer pay raises, does not encourage you to stay with the company, and doesn't hire others like you, and eventually no longer even remembers you. Fear about your future is more an existential fear about not being needed.

In such an environment, options are eliminated. Computers can be educated to perform new tasks many orders of magnitude faster than human beings can. Calls for government expenditures on education of people to offset the job loss created by computers seem justified, but it is hard to imagine that people can win in the long run. Millions of students around the world question whether their education is preparing them for success, creating an anxiety that indirectly feeds the contagion of technologically driven cryptocurrencies such as Bitcoin, which seem at least superficially to offer some imaginable hope of mastering the computers.

Bitcoin and the Future

The digital signature algorithm that underlies Bitcoin, that defines a Bitcoin's individual owner, and that makes it prohibitively difficult for thieves to steal Bitcoin has received some attention since the early 1990s, but coverage of that narrative epidemic cannot compare with coverage of Bitcoin itself. ProQuest News & Newspapers finds only one article with the words *elliptic curve digital signature algorithm* in its entire database. It finds only five articles that use the phrase *digital signature algorithm*. The RSA algorithm, the original cryptography algorithm that may have started the Bitcoin revolution, dates back to 1977. ProQuest lists twenty-six articles that mention the RSA algorithm. But that number doesn't begin to compare with the fifteen thousand–plus articles that mention the word *Bitcoin*.

The difference must result from the contagiousness of the larger Bitcoin narrative. The phrase *digital signature algorithm* sounds like something a student would be trying to memorize for an exam: technical, painful, boring. There is so much more to the Bitcoin story. Notably, it is a story about how Bitcoin investors have become rich simply by being aware of new things on the cutting edge. Bitcoin is about the "future." That sound bite is easily remembered, a topic to bring up with enthusiasm in conversation at a social gathering. In short, Bitcoin is a gem of a story.

People often buy Bitcoin because they want to be part of something exciting and new, and they want to learn from the experience. This motivation is particularly strong because of the underlying story, the narrative that computers are poised to replace many of our jobs. But computers can't replace *all* of our jobs. Somebody has to control those computers, and there is a narrative today that the people in charge of the new technology will be the winners. Very few people feel secure that they will be on the winning end of this curve. Even taking a degree in computer science doesn't seem to be a sure path to success today, because it may lead to a humdrum job as a low-level programmer, or even to no job at all. A desire to be on the finance side of the tech business, where Bitcoin sits, is popular because there are so many stories illustrating that financiers take control of things. Bitcoin enthusiasts may think that experimenting with Bitcoin will put them in touch with the people who are going to be winners in the new world, will give them insight about how to stay in (or gain) control. It is easy to jump-start one's connection to this new reality by buying some Bitcoin. Best of all, one doesn't have to understand Bitcoin to buy it. Vending machines at convenience stores now sell Bitcoins and other cryptocurrencies. This "Be a part of the future" narrative, enhanced by regular news of exciting fluctuations in the price of Bitcoins, gives them value. It generates fluctuations in Bitcoin prices in terms of national currencies, and these fluctuations thrive on and produce contagious narratives.

Bitcoin as a Membership Token in the World Economy

We are living in a peculiar transition period in human history, in which many of the world's most successful people see themselves as part of a broader cosmopolitan culture. Our nation-states sometimes seem increasingly irrelevant to our ambitions. Bitcoin has no nationality, giving it a democratic and international appeal. Inherent in its pan-national narrative is the idea that no government can control it or stop it. In contrast, old-fashioned paper money, typically with historical engravings of famous men in a country's history, suggests an obsolete nationalism, something for losers. Paper currency resembles little national flags in a way; it is a symbol of one's nationality. Having a Bitcoin wallet makes the owner a citizen of the world and in some sense psychologically independent of traditional affiliations.

How, then, do we summarize the popularity of Bitcoin? In the end, people are interested in Bitcoin precisely because so many other people are interested in it. They are interested in new stories about Bitcoin because they believe that other people will be interested in them too.

The surprising success of Bitcoin is not really so surprising when we consider the basic principles of narratives discovered by intellectuals who have thought about the human mind, about history, and about mathematical models of feedback. We discuss these great thinkers and their contributions in the next chapter. Most of these thinkers were not economists by training or profession.

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