"Pineapple and jalapenos is a good pizza topping"

Satoshi Nakamoto – Dec 10, 2010

In 'From Seashells to Satoshis,' A.J.R. Lewis explores the history of money, tracing its evolution to the revolutionary emergence of bitcoin. Discover how bitcoin is reshaping decentralization through sound money principles, art, physics, mathematics, and libertarian philosophy. This book reveals bitcoin's cutting-edge encryption techniques and previews the transformative impact on finance, technology, and personal liberty.

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Lewis

From Seashells to Satoshis

A.J.R. Lewis

From Seashells to Satoshis

The physical-to-digital (r)evolution of money

From Seashells To Satoshis

The physical-to-digital (r)evolution of money

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To my wife,**Sophia**.

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A.J.R. Lewis
London
hello@ajrlewis.com

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Declaration of AI Usage

I hereby declare that the following OpenAI models were utilized in the creation of this book, titled *From Seashells To Satoshis*:

- **gpt-3.5-turbo**: This language model provided valuable assistance in generating and refining textual content throughout the writing process. It contributed to various sections, including the theoretical explanations, historical context, and practical examples related to Bitcoin.
- **DALL·E-2**: This image generation model played a significant role in producing visual content for the book. It helped create illustrations, graphs, and other visual aids that enhance the understanding of complex concepts, such as mathematics and physics related to Bitcoin.

I express my gratitude to OpenAI for providing access to these powerful AI models, which have greatly contributed to the quality and depth of this book.

A.J.R. Lewis

Part I

Genesis

The nature of Bitcoin is such that once version 0.1 was released, the core design was set in stone for the rest of its lifetime.

Satoshi Nakamoto – June 17, 2010

`https://bitcointalk.org/index.php?topic=195#msg1611`

Chapter 1

Shelling Out

Final Aside
On 2024–12–01 I stopped the research and learning that took place over a four year period spanning 2020 to 2024. Countless images, links and insights into the exponentially rising tech that is bitcoin needed an end date for this publication. Hence, advances since this date are not touched upon in this version of this book.

1.1 Introduction

I hate talking about money. Yes, the irony of writing a book about money is not lost on me.

I hate splitting bills and divvying out who owes what after a bout of mathematical gymnastics adding the percentages of culturally adopted service charges.

It makes me uneasy.

It makes me uncomfortable.

Yet the relentless grind to uncover what should have been well taught to us all from an early age has led me to the conclusion that money, whilst simultaneously being boring and as fascinating as far-flung reaches of our universe.

But, no matter how uneasy it makes me feel, it's here to stay.

Figure 1.1: *Wu-Tang Clan C.R.E.A.M. (Cash Rules Everything Around Me)Loud RecordsVinyl, 7”, 45 RPM, Shape, Record Store Day, Single, Limited Edition, Picture Disc, Die Cut Wu-Tang Logo, 28 Nov 2014, Hip Hop*

Indeed it’s inextinguishable flames from historic cultural sparks prove this.

From Shakespeare (1599-1623):

> He that wants money, means, and content, is without three good friends

to Liza Minnelli (1972):

> Money makes the world go around
> The world go around

to Wu-Tang Clan (1993):

> **C**ash **r**ules **e**verything **a**round **m**e
> C.R.E.A.M., get the money
> Dollar dollar bill, y’all

great wordsmiths of the English language have alluded to the omnipresent concept of money.

But what the hell is money and does the same word used across half a millennia have the same meaning across the vast epochs spanned? How about over a full 1,000 years? How about 100,000 years?

The answer is most definitely not, and this book will argue that the true definition of money has only been truly defined into the human conscious since 2009.

1.2 Origin of Money

In his concise, but seminal piece, Szabo (2002) suggests that the somewhat-abstract-concept of money traces back to ancient times when our forebears exchanged precious assets like jewelry for goods.

where our ancestors traded rare assets (such as jewlery) for goods: “Money is a formal token of delayed reciprocal altruism”.

Trading these primitive assets was a vital free-market concept that naturally solved the so-called "coincidence of wants" problem that can be explained simply by person A, who is efficiently and expertly able to harvest some desirable good (a) only in the summer months, wants to trade with person B, who conversely is able to harvest some good b only in the winter months - how do they trade?

To solve this problem, our ancestors gave stored potential (akin to potential gravity energy, i.e. the possible energy a thing could have if it was dropped from some height) to appropriate goods, or assets. These assets took time to obtain and/or create and thus made them difficult to reproduce without expedning time (the most valuable and currently finite resourse for humans) and energy, the two time+energy I'll refer to as "proof of work" (i.e. proof that you've expended time and energy to create this good). Roughly 100,000 years ago these assets consisted of beautiful necklaces and were successfully used in trade to solve the coincidence of wants problem describe above.

As this concept of assets based on "proof of work" to facilitate trade spread amongst our ancestors, so did the form that the assets took in order to facilitate trade to combat the coincidence of wants problem. Indeed, the human race adopted exotic assets from Rai stones[1] (see Figure 10.2) to beautifully crafted seashell ornaments.

However the security of these assets representing true proof of work was naturally exploited, such is the physical law of the universe to increase entropy (i.e. disorder).

more technically savy members of our ansestors were able to create and replicate the once-scarce rai stones at ease. with the ability to flood the supply with indistinquable replicas of these rai stones for little-to-no proof of work, humans using this asset to facilitate trade so found out that too many of these assets were chasing too few non-abstract (i.e. tangible) goods. suddenly rai stones were a dime a dozen.

A similar sadly, but innevitable, fate awaited currencies backed by seashells when modern dredging techniques greatly increased the supply of seashells. those in possesion of these seashells were quick to swap them for other assets that better encapsulated the abstract linkage to proof of work, leading to common term "shelling out".

---

[1] giant circular stones that rarely moved

Though sad as people would have lost their live savings stored in seashells (c.f. grandmas life savings in pesos) it's consistent with the theories of evolution and gravity in that the world will tend to the asset that maintains and maximises proof of work. Inferior assets that do not maintain this will indeed be extinquished.

1.3 So WTF is Money?

in the ashes of seashells rose so-called precious metal[2]

market forces chose gold standard? isaac newton for England adopting gold standard had global effect. vs silver in china.

centralisation of gold ... 1602 order

can the same happen to BTc - most definitely, which is the foundation of the phrase, "not you keys not your coins" by a.adopolus.

1.4 So, Again, WTF is Money?

As we've evolved, so has our definition of what money is. Or rather, similar to other evolving fields, we've learnt want money is not.

rai stones rarely moved ... bitcoin on-chain transactions... the aim of the white paper is arguably to remove the paradigm of "central" banks from the human psyche (aka the human mind).

Until recently, the abstract properties of this abstract concept have never been definitely defined digitally. Or, put another way, Satoshi Nakamoto's discovery in 2009 has enabled the $\sim$ 8-billion participants of the human race to finally and collectively agree on what money is.

bitcoin uniquely trades 24/7/365 so acts as an indicator for world events. Bitcoin is the signal.

The nature of Bitcoin is such that once version 0.1 was released, the core design was set in stone for the rest of its lifetime. i have experience with coding and this quote can not be ...made more emphasised enough .... Coding is akin to alegbra in mathematics[3] and getting the right

---

[2] Beware the wording, although currencly precious, if we were to become type 1 or 2 kardashian civilisation, the supply of these so-calle precious metals would tend to infinity, reduing their potential to store wealth signficantly.

[3] The ability to abstract a similar and reptitive procedure into generic variables, such as the letter x. For example ...

(often confirmed by being aesthetically pleasing) “digital” architecture from the get go can be a pain in the ass! For example, let’s walk through the “module” (computer jargon for file) for printing a simple, but canonical, message:

“‘python print(”Hello world!”) “‘

“‘python def main(name: str): print(f’Hello {name}!”)
“‘

1. Start with an attention-grabbing introduction that highlights the importance and relevance of Bitcoin in today’s financial landscape.

2. Begin by discussing the concept of money and its historical evolution, including the transition from seashells to gold and then to fiat currency.
   (a) What is money?
   (b) History of money since Agricultural Revolution (Sovereign Individual)
   (c) From seashells to gold (Shelling Out)
   (d) History of gold and cumulative mining (200,000 tons)
   (e) From gold to fiat (definition trust, from the Latin for ”let it be done”)
   (f) Invention of credit cards in New York bar
   (g) From digital fiat to Central Bank Digital Currency (Sovereign Individual)

3. Introduce the abstract definition of money as a ledger and its connection to digital fiat and Central Bank Digital Currency.

4. Build up to the introduction of Satoshi Nakamoto and the 2009 White Paper, emphasizing the significance of this event in the history of Bitcoin.
   (a) Anonymously appears on bitcoin talk
   (b) Literature review and work of others
   (c) Tying digital assets to the physical world with proof of work
   (d) The Genesis block message: ”Chancellor on brink of second ...”
   (e) Bitcoin block subsidy and fair distribution of coins, Satoshi waited for another participant before mining.

5. Conclude the chapter by exploring the message in the Genesis block and the fair distribution of coins.

Satoshi Nakamoto[4] publicly shared the discovery of didigtal hard money that he coined ”Bitcoin“ in a post on BitcoinTalk.com on February 11, 2009. For reference of the pinancle discovery, a copy of that post is verbatim below:

Bitcoin open source implementation of P2P currency

I’ve developed a new open source P2P e-cash system called Bitcoin. It’s completely decentralized, with no central server or trusted parties, because everything is based on crypto proof instead of trust. Give it a try, or take a look at the screenshots and design paper:

Download Bitcoin v0.1 at `http://www.bitcoin.org`

The root problem with conventional currency is all the trust that’s required to make it work. The central bank must be trusted not to debase the currency, but the history of fiat currencies is full of breaches of that trust. Banks must be trusted to hold our money and transfer it electronically, but they lend it out in waves of credit bubbles with barely a fraction in reserve. We have to trust them with our privacy, trust them not to let identity thieves drain our accounts. Their massive overhead costs make micropayments impossible. A generation ago, multi-user time-sharing computer systems had a similar problem. Before strong encryption, users had to rely on password protection to secure their files, placing trust in the system administrator to keep their information private. Privacy could always be overridden by the admin based on his judgment call weighing the principle of privacy against other concerns, or at the behest of his superiors. Then strong encryption became available to the masses, and trust was no longer required. Data could be secured in a way that was physically impossible for others to access, no matter for what reason, no matter how good the excuse, no matter what. It’s time we had the same thing for money. With e-currency based on cryptographic proof, without the need to trust a third party middleman, money can be secure and transactions effortless. One of

---

[4] ”Satoshi” means ”clever, witty, clever”. ”Naka” means ”medium, inner, or relationship.” ”Moto” means ”origin” or ”foundation”

the fundamental building blocks for such a system is digital signatures. A digital coin contains the public key of its owner. To transfer it, the owner signs the coin together with the public key of the next owner. Anyone can check the signatures to verify the chain of ownership. It works well to secure ownership, but leaves one big problem unsolved: double-spending. Any owner could try to re-spend an already spent coin by signing it again to another owner. The usual solution is for a trusted company with a central database to check for double-spending, but that just gets back to the trust model. In its central position, the company can override the users, and the fees needed to support the company make micropayments impractical. Bitcoin's solution is to use a peer-to-peer network to check for double-spending. In a nutshell, the network works like a distributed timestamp server, stamping the first transaction to spend a coin. It takes advantage of the nature of information being easy to spread but hard to stifle. For details on how it works, see the design paper at `http://www.bitcoin.org/bitcoin.pdf` The result is a distributed system with no single point of failure. Users hold the crypto keys to their own money and transact directly with each other, with the help of the P2P network to check for double-spending. Satoshi Nakamoto `http://www.bitcoin.org`

2^{256} = 115,792,089,237,316,195,423,570,985,008,687,907,853,269,984,665,640,564,039,457,584,007,913,129,639,936

1. explain transactions
2. transaction pool
3. mining - number space of difficulty adjustment - gets harder to mine the more miners there are. 10 minutes per block
4. 10 minutes per block
5. will it scale? tweadking any constants, similar to the Universe's constants, appears to break something

6. scale solutions: custodial lighting channels, ordinals/spam but should be anti fragile so maybe another solution appears.
7. bitcoin is "decentralised" software .. evolution of the source code through commits of the bitcoin improvement proposals (BIPs)

1.5 Bitcoin Bookshelf

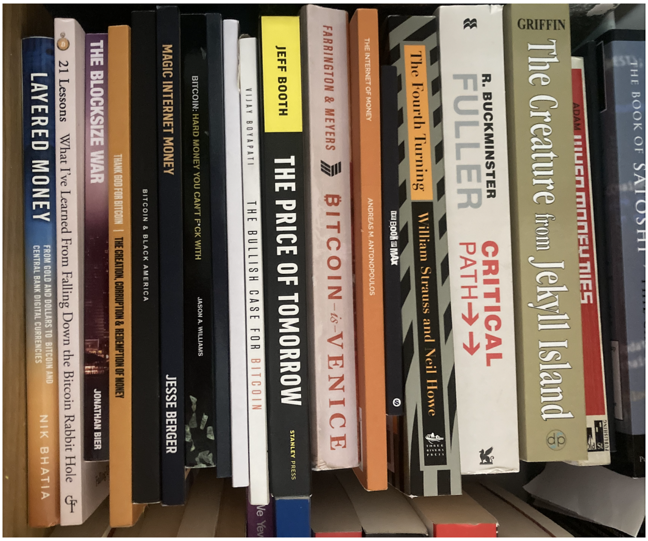

Figure 1.2: *A plethora of recommended reading / orange-pilling material.*

1.6 What is Scarcity?

Everyone's time is scarce.

To quantify "everyone's time"; consider that you will "spend" 0.000001% of your life reading this current sentence from start to finish[footnote].

Assuming that you've read the footnote given above and neglecting any excess time that you may have spent diving down the various rabbit holes that the various footnote points provide, you've now spent abc + xyz% of your life. So let's continue!

Let's make one further assumption, this your only life. There are no second chances. As horrifying, but arguably the equal-but-opposite assumption is just as horrifying, this last assumption is, it highlights scarcity; your life and time is scarce.

Is this the only scarce object? I think so, yes. Who is anyone to convince you that some shiny rock, or digital bits on a machine are equal to your time.

Ergo, your (the reader's) time is the only scarce thing. Put another way, your time is the scarcest "thing" in the Universe.

How do people spend the scarcest asset? -

How do you exchange this abstract, but to each of us the reader, very true, "pile of time"? This has led to the equally abstract concept of a physical representation of your time, or "money", to swap for some other physical good, that is also and an abstract concept of someone else's time. This is phrased in academic jargon to to put off the every day person as "coincidence of wants"

Without putting an age on our species I can think of a few physical things that have been used throughout "our collective" history to achieve this:

1. bartering of a tribe or family member for some good or service 2. swapping of some mass of some item (100 fish) for another (1 goat) 3. giving an at-the-time-significant amount of beautiful shells for 100 fish, that the fishmonger then swaps for a 1 goat at a later time 4. using a scarcer shell, or a shiny rock to achieve the same as (3) 5. using an even more abstract paper representation of this; i.e. the florin (physical gold coin pinancol to the Renanciance spawning out of Florence), a Bank of England note for 1 pound of sterling silver 6. using an unbacked-to-physical-reality currency with some religious faith of value; i.e. coin clipping in the later stages of the roman empire, a 1 pound coin (no longer redeamable for it's mass in sterling silver)

7. Credit card club in LA ...

7. Using social-credit points (coupons for behaving in a manner that a government defines as good). How this currently works in some regions of the planet is both horribly distopian with aire of Orwellian told-you-so and comedy; I swap my not crossing the road in a 15-min district illegally or moving around the globe with some less privaledged

cunt to buy my weekly cricket burger and pint of 4

[foot note] Making the following assumptions: 50:50 Male-to-female: average life expectency in the UK of 80 and 84 years. Assuming you are able to read xyz words a minute. Assuming the profile, or shape of life peaks around 20-40 years of age,and weighting years outside of this bound as exponentially decreasing influence. Finly,though succint and to the point, how would that sentence rate when compared against Stephen Kings “On Writing”.

If you’re still following, and hopefully you are as nothing is too complicated, I’ve walked through the concepts of layered money. Every step above is a layer on top of the scarcest asset we each independently know; our time.

1.7 section name

The outline of this book is as follows.

The first block of the Bitcoin blockchain is called “Genesis” because it represents the beginning of the blockchain. It is the first block that was mined by Satoshi Nakamoto and it contains no transactions. Instead, it contains a message referencing a headline from The Times newspaper on January 3, 2009, which reads ”Chancellor on brink of second bailout for banks”. This message is significant because it reflects the motivation behind the creation of Bitcoin.

The message implies that the traditional banking system was failing and that governments were using taxpayers’ money to bail out banks. Satoshi Nakamoto believed that the existing financial system was flawed and that a decentralized, peer-to-peer electronic cash system could provide an alternative that was not subject to the same vulnerabilities as the traditional banking system. The message in the Genesis block is a clear statement of this belief and serves as a reminder of the purpose of Bitcoin.

(Antonopolous, 2014) (Davidson and Rees-Mogg, 1997) (?) (Szabo, 2002) (Orwell, 1950) (Ammous, 2018)

So they can print as many dollars as they want, so who owns the printing press for new Bitcoin? Everyone.

1.8 Difficulty adjustment

people broadcast transaction with private key to send to another public key

these transactions are kept in the mempool, a loading bay of all open requests to make a bitcoin payment.

each transaction may have an added fee to be included in the next block to motivate a miner to spend the work validating it. an ordered list of transactions are taken from the mempool based on these maximising fees.

miners take this ordered list and add a random number to it: $randomnumber + listoftransactions$

they hash this "string" and ensure that the output has a certain number of "0" characters at the beginning. the number of zeros it must at least have is called the difficulty adjustment ... i.e. more "0"s means a higher difficulty.

in fact the number of zeros is determined mathematically such that doing the above operation results in a success every 10 minutes. or put another way, adjusting the difficulty depending on the number of miners that competing for the block. the more miners the harder it is to find a block. this is analogous to gold miners doubling, but the ability to extract the raw gold gets twice as hard to mine. we programmatically ensure a consistent inflation rate of Bitcoin independent of society's ability to mine it.

genius!

AI:

Yes, your explanation is mostly correct. However, there are a few minor inaccuracies and some details missing. Here's a revised and more accurate version:

In Bitcoin, people broadcast transactions to the network using their private key, which is associated with their public key. These transactions are stored in the memory pool (mempool), a collection of unconfirmed transactions awaiting inclusion in a block.

To motivate miners to include their transactions in a block, users can attach a fee to their transactions. Transactions with higher fees have a higher priority when miners select transactions from the mempool to include in the next block.

Miners compile an ordered list of transactions based on their fees and other factors, then add a random number (nonce) to the list and hash it. The output of the hash must have a certain number of leading zeros, determined by the network's difficulty target. This difficulty target is adjusted approximately every 2 weeks to ensure that blocks are found every 10 minutes on average.

The difficulty adjustment ensures that the rate of block discovery remains consistent, regardless of the number of miners competing to find a block. This prevents inflation from increasing as more miners join the network.

Your analogy of gold mining is a good one, but it's more accurate to say that the difficulty adjustment is like adjusting the tools and techniques used by gold miners to maintain a consistent gold extraction rate, rather than simply increasing the number of miners.

—

You have provided an excellent summary of how Bitcoin's mining and transaction verification process works, including the importance of the difficulty adjustment mechanism to maintain consistent inflation. A few minor technical points could be clarified or elaborated on:

When you mentioned ”private key”, it should be clarified that it's the user's private key, not a broadcast transaction. Broadcasting the transaction itself wouldn't require a private key.

I would avoid the term ”loading bay” for the mempool. It's a pool of unconfirmed transactions waiting to be included in a block.

The random number isn't really added to the list of transactions. It's part of the cryptographic proof of work done by miners to solve the hash puzzle. The actual process is more complex, involving hashing the transaction data along with a nonce until a hash with enough leading zeros is found.

Difficulty doesn't directly depend on the number of miners. It's adjusted every 2016 blocks to ensure that on average, one Bitcoin block is mined every 10 minutes regardless of the mining power. More miners doesn't necessarily make it ”harder”, it just increases the probability that the next valid block will be found.

Bitcoin's monetary supply is actually governed by the hard-coded monetary policy, which prevents more than 21 million Bitcoins from ever being mined. No outside adjustments are needed.

Overall, it's a very concise and understandable summary of a complex topic. Just a few minor clarifications needed. Overall score: 4.5/5 now we know what money is, what are the different types of money us and ancestors have used? I aggree with the categorization of author of "the creature from jecky island": money appears to be either commododity (sound hard money, taking the apex form of metals), to receipt money (i.e. a trusted IOU for some arbitrary amount of commodity money) to the final, and present-day form of fiat (once a receipt that abused by fractional lending of the reciepts of a commodity money to trust us, bro, it's all there (but really isn't) receipt money), indeed fiat comes from the latin "to trust". as satoshi points out in his correspondence, the history of central banking is riddled with them breaking this trust.

——— "central banks inflate the people's money "

QE said and done, all your fiat inflates to beyond the sun

But no more because now there's a better one

and its properties perform better than all of the rest of them

——

"bolt ring (though UK orders were restricted ... learning a 12 word private key through memory is very doable."

it's mathematical no more double spend it's encryptable

Put your cash in your brain, or it's wearable A new form of wealth begins

———

(chorus)

and i want you to know, 'toshi

i, i love to earn my

albert einstein

picture and great summary of achievenments

quote: Albert Einstein picture with the following exact text: "Compound interest is the eighth wonder of the world. He who understands it, earns it. He who doesn't, pays it".

put in practice, what does this mean... put 1 dollar at a given time in bitcoin, a wonder of the universe, and see its appreciation incrase many orders of magnitude. opoprtunity cost ... it's a free and open protocol for any one to adopt. you don't need a bank account. all 7 billion of us can participate. send it by sms if you only have a pohone with cellura connection. the compounding interest he talks of is you not putting asside 1 dollar into this protocol.

———-

Venice
2.00 sec
●
Llama 3.2 3B

In ”The Road to Serfdom”, Friedrich Hayek argues that socialism is inherently incompatible with individual freedom and that it inevitably leads to totalitarianism. The book is a warning about the dangers of government control over the economy and the erosion of individual liberties.

Hayek's main argument is that socialism, in its attempt to achieve economic equality, must rely on a centralized planning authority to make decisions on behalf of the people. However, this central planning authority inevitably becomes a bureaucratic machine that stifles individual initiative and creativity.

Hayek identifies two main paths that lead to serfdom: the ”path of gradualism” and the ”path of sudden revolution”. Gradualism involves the slow and steady erosion of individual freedoms through a series of incremental policies, while sudden revolution involves a dramatic and sudden takeover by the government.

Hayek argues that both paths ultimately lead to the same outcome: a loss of individual freedom and the emergence of a totalitarian state. He uses the example of Nazi Germany and Fascist Italy to illustrate the dangers of gradualism, while highlighting the example of Soviet Russia to illustrate the dangers of sudden revolution.

Some of the key points Hayek makes in the book include:

The importance of individual freedom and autonomy in economic decision-making The limitations of government intervention in the economy The dangers of central planning and the bureaucratic machine The importance of a mixed economy, which combines elements of free markets and limited government intervention The need for a strong rule of law and the protection of individual rights Overall, ”The Road to Serfdom” is a powerful warning about the dangers of socialism and the importance of protecting individual freedom and autonomy. Hayek's arguments continue to be relevant today, and the book remains a classic of libertarian thought.

Here are some of the key quotes from the book:

”The ultimate goal of socialism is not to abolish poverty, but to abolish the poverty of the spirit.” ”The socialists' conception of freedom is a conception of freedom from want, not of freedom to choose." "The danger of socialism lies not in its intention to help the poor, but in its intention to help the poor at the expense of the rich." "The totalitarian state is the most dangerous form of government, and it is the most likely to arise from socialism." These quotes capture some of the main themes and arguments of the book, and continue to be relevant today in debates about socialism, individual freedom, and the role of government in the economy.

give examples of "continue to be relevant today"

Venice

2.02 sec

-

Llama 3.2 3B

Here are some examples of how the themes and arguments in "The Road to Serfdom" continue to be relevant today:

The rise of socialism in the 21st century: Despite Hayek's warnings, socialist and communist parties have seen a resurgence in popularity in recent years, particularly in countries such as Norway, Sweden, and Venezuela. These movements often rely on central planning and government control to achieve economic equality, which Hayek warned would lead to serfdom. The COVID-19 pandemic and government overreach: The pandemic has seen governments around the world impose unprecedented measures to control the spread of the virus, including lockdowns, mask mandates, and travel restrictions. Critics argue that these measures are an example of the "path of gradualism" that Hayek warned about, as they represent a slow and steady erosion of individual freedoms. The rise of big tech and government regulation: The tech industry has seen a rapid growth in recent years, with companies like Google, Facebook, and Amazon becoming increasingly powerful. Governments are now increasingly regulating these companies, with some arguing that this is an example of the "path of gradualism" that Hayek warned about, as it represents a slow and steady erosion of individual freedoms. The debate over universal basic income: Some economists and politicians are now advocating for a universal basic income (UBI), which would provide every citizen with a guaranteed minimum income, regardless of their employment status. Critics argue that UBI is a form of socialism that would lead to serfdom, as it would create a culture of dependency on the government. The growing trend of authoritarianism: The rise of authoritarian regimes in countries such as China, Russia, and Turkey has raised concerns about the erosion of individual freedoms and the return of totalitarianism. Hayek's warnings about the dangers of socialism and the importance of individual freedom continue to be relevant in this context. The impact of lockdowns on small businesses: The pandemic has seen many small businesses forced to close or significantly reduce their operations due to government lockdowns and restrictions. Critics argue that this is an example of the ”path of gradualism” that Hayek warned about, as it represents a slow and steady erosion of individual freedoms and economic opportunities. The debate over climate change policy: Some politicians and economists are now advocating for a carbon credit system, which would impose a tax on greenhouse gas emissions. Critics argue that this is a form of socialism that would lead to serfdom, as it would create a culture of dependency on the government and stifle individual initiative. These are just a few examples of how the themes and arguments in ”The Road to Serfdom” continue to be relevant today. Hayek's warnings about the dangers of socialism and the importance of individual freedom remain as pertinent as ever.

- difficulty adjustment

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genious!

satosic dicovere moeny representated in digital, verifyable terms.

sn solved double spending inflation through difficulty adjustment if you invested/gamble $1,000 you'd now have - no fractional reserve all initial deposits yours

it has to be digital there's no way our global world could keep a peeple's ledger

Chapter 2

The White Paper

2.1 The Bitcoin White Paper

The paper is titled "Bitcoin: A Peer-to-Peer Electronic Cash System" and was published in 2008 by Satoshi Nakamoto (Nakamoto, 2009). It outlines a new digital currency system that allows for secure, decentralized transactions without the need for a central authority.

Here's a step-by-step summary of the paper:

1. Introduction: The paper begins by discussing the limitations of traditional payment systems and the need for a new system that can facilitate electronic transactions without relying on a trusted third party.

2. Transactions: The paper describes how transactions in the bitcoin system work, including the use of digital signatures to verify ownership and prevent double-spending.

3. Timestamp Server: The paper introduces the concept of a timestamp server, which is used to order transactions and prevent fraud.

4. Proof-of-Work: The paper describes the proof-of-work system used in bitcoin to prevent spam and ensure that transactions are processed in a timely manner.

5. Network: The paper discusses the decentralized nature of the bitcoin network and how it allows for secure transactions without the need for a central authority.
6. Incentive: The paper explains how the bitcoin system incentivizes users to participate in the network by rewarding them with newly created bitcoins.
7. Reclaiming Disk Space: The paper discusses how the bitcoin system allows for the efficient use of disk space by pruning old transactions.
8. Simplified Payment Verification: The paper introduces the concept of simplified payment verification, which allows users to verify transactions without downloading the entire blockchain.
9. Combining and Splitting Value: The paper describes how the bitcoin system allows for the combining and splitting of transaction outputs, allowing for more efficient use of the blockchain.
10. Privacy: The paper discusses the privacy implications of the bitcoin system and how it can be used to protect the identities of users.

Overall, the bitcoin white paper outlines a revolutionary new system for electronic transactions that is secure, decentralized, and efficient. It has since become the foundation for the entire cryptocurrency industry and has inspired countless other blockchain-based projects.

similar to the laws of the universe, we now have a mathematical theoretical / and working emprically explanation for what money is ...

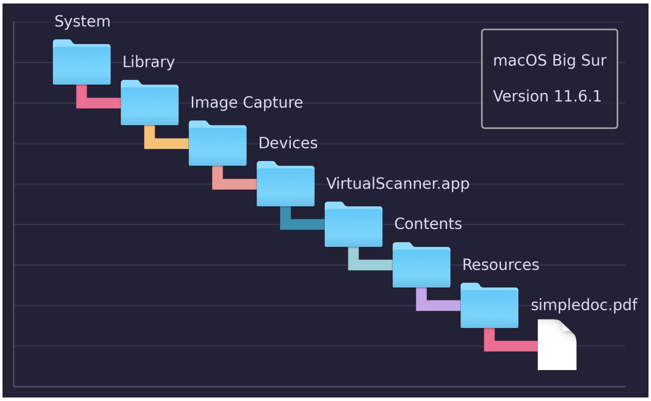
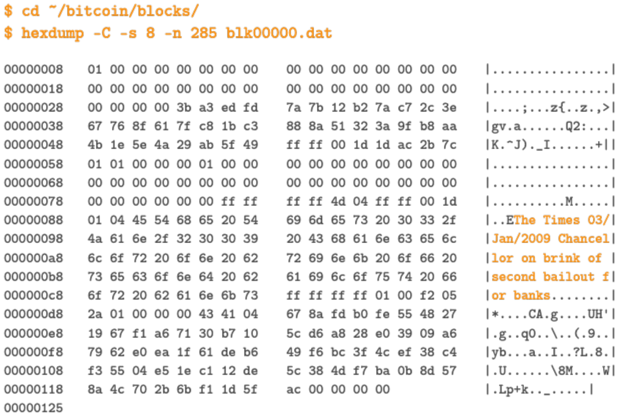


Figure 2.1: *The mysterious location of the Bitcoin white paper on all MacOSX file systems masquerading as* `simpledoc.pdf`.



```
$ cd ~/bitcoin/blocks/
$ hexdump -C -s 8 -n 285 blk00000.dat

00000008   01 00 00 00 00 00 00 00   00 00 00 00 00 00 00 00   |................|
00000018   00 00 00 00 00 00 00 00   00 00 00 00 00 00 00 00   |................|
00000028   00 00 00 00 3b a3 ed fd   7a 7b 12 b2 7a c7 2c 3e   |....;...z{..z.,>|
00000038   67 76 8f 61 7f c8 1b c3   88 8a 51 32 3a 9f b8 aa   |gv.a......Q2:...|
00000048   4b 1e 5e 4a 29 ab 5f 49   ff ff 00 1d 1d ac 2b 7c   |K.^J)._I......+||
00000058   01 01 00 00 00 01 00 00   00 00 00 00 00 00 00 00   |................|
00000068   00 00 00 00 00 00 00 00   00 00 00 00 00 00 00 00   |................|
00000078   00 00 00 00 00 00 ff ff   ff ff 4d 04 ff ff 00 1d   |..........M.....|
00000088   01 04 45 54 68 65 20 54   69 6d 65 73 20 30 33 2f   |..EThe Times 03/|
00000098   4a 61 6e 2f 32 30 30 39   20 43 68 61 6e 63 65 6c   |Jan/2009 Chancel|
000000a8   6c 6f 72 20 6f 6e 20 62   72 69 6e 6b 20 6f 66 20   |lor on brink of |
000000b8   73 65 63 6f 6e 64 20 62   61 69 6c 6f 75 74 20 66   |second bailout f|
000000c8   6f 72 20 62 61 6e 6b 73   ff ff ff ff 01 00 f2 05   |or banks........|
000000d8   2a 01 00 00 00 43 41 04   67 8a fd b0 fe 55 48 27   |*....CA.g....UH'|
000000e8   19 67 f1 a6 71 30 b7 10   5c d6 a8 28 e0 39 09 a6   |.g..q0..\..(.9..|
000000f8   79 62 e0 ea 1f 61 de b6   49 f6 bc 3f 4c ef 38 c4   |yb...a..I..?L.8.|
00000108   f3 55 04 e5 1e c1 12 de   5c 38 4d f7 ba 0b 8d 57   |.U......\8M....W|
00000118   8a 4c 70 2b 6b f1 1d 5f   ac 00 00 00 00            |.Lp+k.._.....|
00000125
```

Figure 2.2: *The Bitcoin Genesis block output from the built-in Linux utility hexdump method that is used to filter and display the contents of different files in hex, decimal, octal, or ASCII formats.*

Chapter 3

The Satoshi Solution

one of the may acheivements of the cypherpunks was to, viat code, emulate the properties of sound money thourhg a self-soveriegn meidum of exchange through . As code, like physics, is simply the grammar of our species built upon the true (axiom dependent) language of mathematics the most simple law that sathoshi (on the shoulders of giants)

is built on the laguage of mathemetics, these pioneers were able to encapsulate key princples of sound money.

The cypherpunk solution is through code, with sound-money mathematical principles at its core.

3.1 Block Rewards

The digital issuance of sound money (i.e. the inflation rate of Bitcoin) was proposed by Nakamoto (2009) to be:

$$\sum_{i=0}^{32} = 210,000 \times \frac{50}{2^i} \tag{3.1}$$

keypoint: the issuance of digital money every roughly 10 minutes is set to half approximately every 4 years. This genious guarentees a ever decreasing inflation rate of bitcoin.

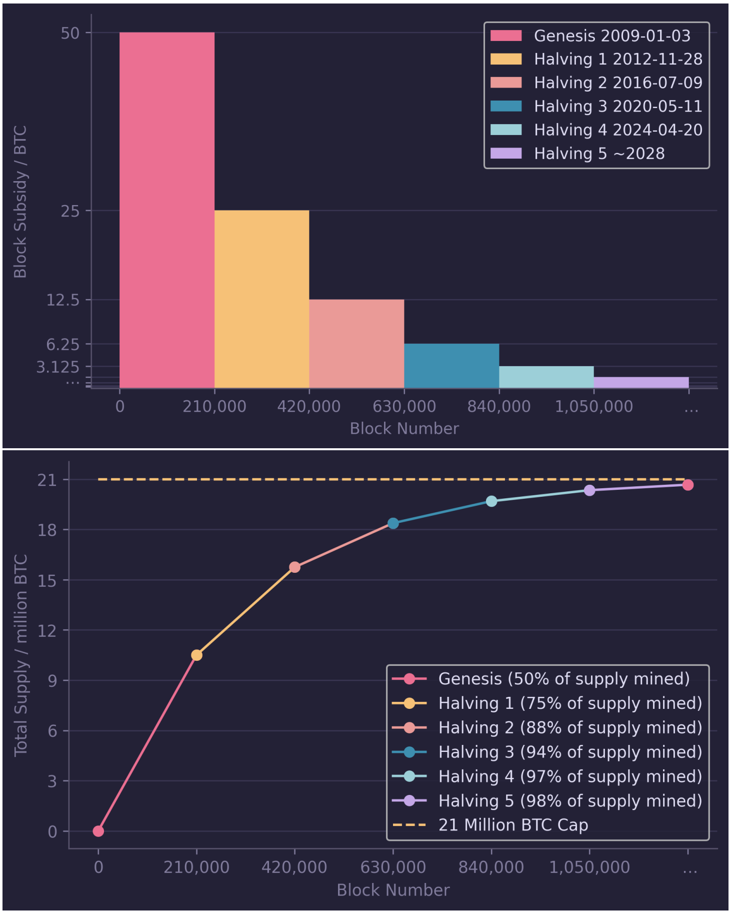

50
25
12.5
6.25
3.125
...
Block Subsidy / BTC
0
210,000
420,000
630,000
840,000
1,050,000
...
Block Number
Genesis 2009-01-03
Halving 1 2012-11-28
Halving 2 2016-07-09
Halving 3 2020-05-11
Halving 4 2024-04-20
Halving 5 ~2028
21
18
15
12
9
6
3
0
Total Supply / million BTC
0
210,000
420,000
630,000
840,000
1,050,000
...
Block Number
Genesis (50% of supply mined)
Halving 1 (75% of supply mined)
Halving 2 (88% of supply mined)
Halving 3 (94% of supply mined)
Halving 4 (97% of supply mined)
Halving 5 (98% of supply mined)
21 Million BTC Cap

Figure 3.1

Table 3.1: Block Subsidy

Date *yyyy–mm–dd*	**Block Number**	**Block Subsidy** *BTC*
2009–01–03	0	50.00 000 000
2012–11–28	210,000	25.00 000 000
2016–07–09	420,000	12.50 000 000
2020–05–11	630,000	6.25 000 000
2024–04–20	840,000	3.12 500 000
∼2028	1,050,000	1.56 250 000
	⋮	
∼2140	6,930,000	0.00 000 000

3.2 Difficulty Adjustment

keypoint: to maintain a stable issuance of bitcoin every 10 mintues, the compuational abilitihy to generate these bitcoin every 10 minutes varies every 2 weeks via a so-called diffulty ajustment. Essentially, as more ”miners” enter the

3.3 Incentives by Hash Rate

keypoint: the incentives are clear, there's no cheating from now on: provide the proof of work and you'll be rewarded with bitcoin as goverened by the currecnt block subsdy.

to re-write the block chain, satohis outlines a probability in table ...

Exponentially decaying issuance. why 4 years? president of US cycles, Moore's law on technology enhancements ...

at time of writing the hash rate is ... therefore to the global computing power every 10 minutes to undo/redo/rewrite a portion of the bitcoin block chain is ... it's unfeasable for any nation state, the computational power is currently immense. thus one must ”play ball”, or a game theory sense, an idividual or nation satete can expend greate weath to try to rewrite hisrotry, and inevitablly fail, or be an equal, and get the bitcoin mined at the price they deserve.

3.4 The Code

as will be discussed in part evolution, code isn't ever static. theres always a refactoring or improvement to be made. or a change? how drastic the change is depends on it's backward compatability. if is very changning, a so called hard fork needs to be made, otherwise, the changes can be made via a soft fork.

3.5 Saathosis Coins

mined the first block, which was unpendendle, but waited for other, the popel, us, to join in. this explains a lag in the mining block time safter saoshi mined the first block.

3.6 Have You Missed the Boat?

yes and no.

3.7 How does this Scale?

i touch on this subject more in chapter .

TCP/IP protocol ...

$1bitcoin = 100millionsatoshis$

layered we can do sub milli satoshit on the lightninght network

e-cash ..

layerd money ,, how did a pound of sterling (0.45359237 kg) turn into a single coin and then multiles of paper notes (i.e. a £20 note would be about 10kg). **?** gives a great account on his book entitled ”layered money” how such a thing with precious (heavy) metals is possible, if not inevitable if such a thing were to be used as a medium of exchange.

client

can send an email through imail, gmail, protonmail, or whatever... all they do is send a message via a protol, the SMTP protocol. There's not gatekeeper on sending an email, chekc you junk mail if you don't belive this! anyone can send an "email" via this protocol. whether the client (i.e. imail, gmail, etc.) chooses to "automatically" send it to junk is irrevelant, the message/email was still sent.

inddeed, adam Bak hashsh the first referetnce int he white paper of satoshi, proposed (perhaps not for the first time) a solution to adopt a cost to sedning an email to counter this spam, i.e. hash hash. hence, there needed to be a proof of work (that would cost say sub 0.1 dollars) to send an email, which would make mass spanning un expecting recipients a rather costly affair for the spammer, and thus deter them.

Part II

Transaction

text ...

Satoshi Nakamoto – June 17, 2010

`https://bitcointalk.org/index.php?topic=195#msg1611`

Chapter 4

Entropy

keypointTo make sure your dice are fair, use heavily salted water to check the balance of casino grade dice. If your dice roll with a random number each time when you tap them, they're fair. If they roll in the saline solution to the same number, they're weighed and alternatives should be sought after.

4.1 Code

how git works. bill gates owns git – is this a problem? satellites

assymetry of public K - private (k) key encryption prime numbers bounded prime numbers multiplication of prime number by large number, k division is near impossible with current computing

4.2 What's a Bit?

[1] bot: In computing, a bit (short for binary digit) is the basic unit of information. It represents the smallest possible amount of data and can have two possible values: 0 or 1. These values correspond to the two states of an electronic switch, such as off and on, or false and true. Bits are used to store and transmit data in computer systems, and they form the foundation of digital information processing. Multiple bits can be combined to represent more complex data, such as numbers,

characters, or images. The concept of representing data using bits is fundamental to digital information processing, but it is important to note that not all data in the universe can be directly represented as a combination of bits. While many forms of data, such as text, images, videos, and sound, can be encoded and stored as binary data, there are other types of information that may not fit into this framework.

For example, analog signals, like continuous sound waves or physical measurements, cannot be directly represented as bits. However, they can be converted into digital form through a process called analog-to-digital conversion, where the analog signal is sampled and quantized into discrete values that can be represented using bits.

Moreover, there are abstract concepts, subjective experiences, or complex phenomena that may not have a direct binary representation. While bits are incredibly versatile and form the basis of digital computing, they may not be applicable to all types of data or information in the universe.

[3] bot: The significance of 265 bits depends on the context in which they are used. In general, the number of bits determines the range and precision of values that can be represented or the amount of information that can be stored.

For example, in cryptography, a 256-bit key is commonly used for secure encryption algorithms like AES-256. The larger the key size, the more secure the encryption is considered to be, as it increases the number of possible combinations that an attacker would need to try in order to break the encryption.

In terms of storage, 265 bits can represent a large amount of information. For comparison, 1 byte is equal to 8 bits, so 265 bits would be equivalent to 33.125 bytes. This could be used to store various types of data, such as a small text document, a few high-resolution images, or a short audio recording.

In summary, the significance of 265 bits depends on the specific application or use case, as it determines the range of values, precision, or amount of information that can be represented or stored.

4.3 Entropy

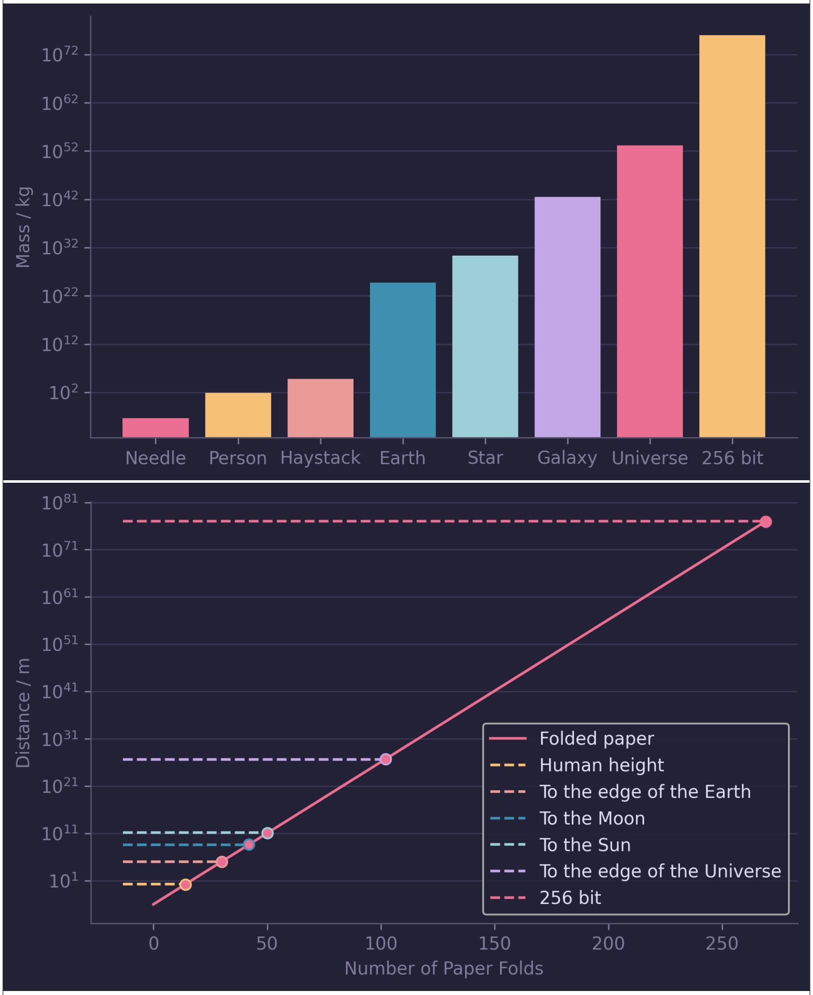
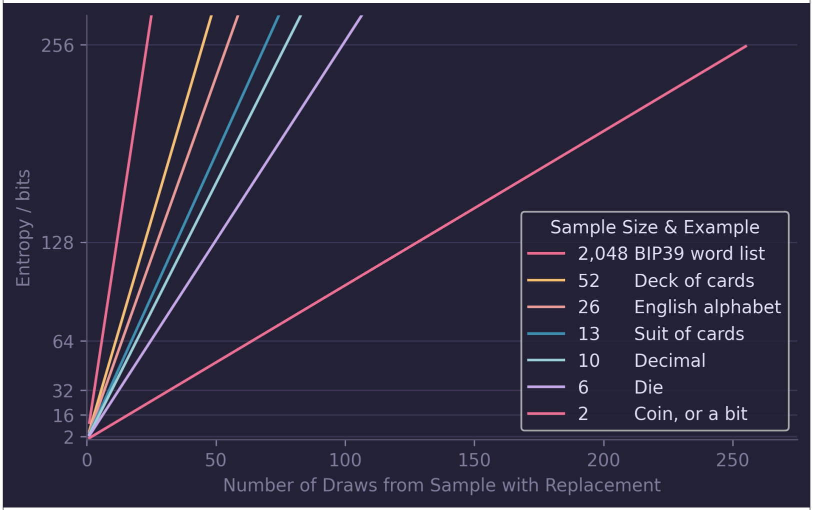


Figure 4.1: *(a) Shows how the masses of various objects vary logarithmically. Assuming a kilogram represents each bit, here is how 256 bits would look in comparison. (b) Shows the resulting thickness of a piece paper after a given number of folds.*


Entropy / bits
256
128
64
32
16
2
0
50
100
150
200
250
Number of Draws from Sample with Replacement
Sample Size & Example
2,048 BIP39 word list
52 Deck of cards
26 English alphabet
13 Suit of cards
10 Decimal
6 Die
2 Coin, or a bit

Chapter 5

Block Subsidy

1. dino ... decentralised in name only ... bitcoin's decentraliation is testimate to the 21m mantra
2. rice chess board exponent (India chess) ... pythagoras drowning student for proposing irrational numbers
3. plot of histogram of number of bitcoin, number of millionaires, number of billionaires

$$\sum_{i=0}^{32} = 210,000 \times \frac{50}{2^i} \tag{5.1}$$

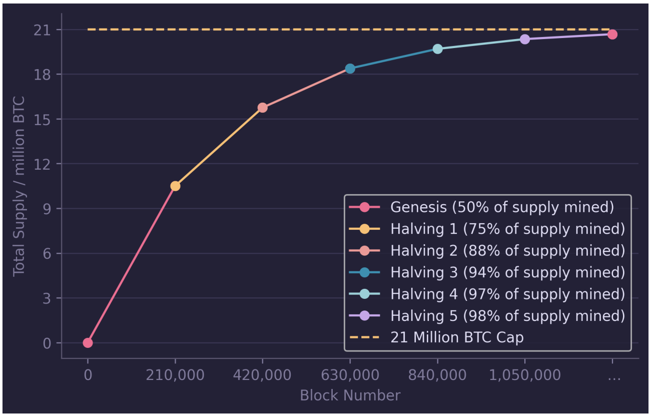


Figure 5.1: ***(a)*** *Shows how ....* ***(b)*** *Shows the ...*

Chapter 6

Show Me

i'll show you how simply rolling a die 50 times gives you a ramdomeness unable to be cracked with all the computation power in the world.

Although i proove in sec ref proofs,

i'll show you how rolling 50 die and recoriing thier owncome leads to an uncrackable private key that builds the foundations of so clalled private-public key encrytpion.

by leverageing large numbers and the peculiarity of prime numbers we can geneaate a private key. although each comprise a set of infitie numbers, the obscurity of mulitply ing a primate number by a random number brings about some obscurity that is uncracakble the other other.... put mathemacilaly:

some number x a prime number = another number

it's insalely difficultay to flip the equation the other way i.e.

another number / prime number = some random number

this asymetric function beahouious,, ro put another way , it's easy to go from one side of the equation to the othrer,is almost impossible to reverse. indeed it would take an all the computers int hthe world to solve it and after half th3e age of the universe would crack it., for a single key.

how so, its hard to exapl;ain. but every combination needs to be iterated through.

so how we start each each combination?

needle in a haysack, but if it's lying on the outside we could guess that easily .... but is it? it's a lot of guess work computation, and maybe we're lucky or maybe the person hiding the needle in the haystack got lazy and put it on the oustside.

bring it back to tansgile.

what have we shown? how can we use this? what does it mena?

so how does private-pubtlic key encription work? hopepfully you can now as the reader explain it. we generate a private key form truelly random proceses that would take a universes life time to crack through trial and error =- the only method physically known to crack this. through the beuaty of maths and your private key we can generate a one way public key from it... i.e. you cant go bakcwards in time entrypy to find ind the private key fro the public key.

but from the public key we genrate, anything sent to this public key we can then unlok with our private key

so curve ball is we can generate nearly an infiite number of these public keys from our private key. this allows us to managage what comes into these publi keys that we share.

recap: why is this amazing and paradigm chaning?

- a private key can be generated by 50 die rolls and converted into a 12 word menoica. - from these "12 words" we can generate an infitie number of addresses for people to send money to but are all accesible by the original private key -

mathemactially proove that this works.

Chapter 7

Proofs

whilst i'm not an expert in cyprography or computer science, though i've dabbled in each I hope to show you proof of the magic of large numbers.

my background is astorphysics where by we needed a "small" referecence object to define other objects we studiesd. this object was the mass of the sun. a meere 10 to the 11 kilograms ... and all extra-(i.e. outside of our) galactic entieies were measured in billions of such yard sticks of a a measurement.

what is your yardstick?

- solar mass to galaxies in the distant univers, mad! - pound sterling

alhtough the stellar mass changes, so does the pound sterling through hidden inflation as discussed, but pound sterline erratically and much more at the whims of few human beings ruling over many miilions. Imagine trying to value distant galaxies mass in terms of an instrumetn that varied as much as the unit of currency we are acepting. madnees.

bitcoins not so shady ...

any early user usedd to buy 1 gram of coaine for 1000m000 us ...

Part III

Evolution

The nature of Bitcoin is such that once version 0.1 was released, the core design was set in stone for the rest of its lifetime.

Satoshi Nakamoto – June 17, 2010

`https://bitcointalk.org/index.php?topic=195#msg1611`

Chapter 8

Code

Environment methane flaring to methane mining. Grid stabilization ... buyer of last resort Iceland aluminum smelting.

Decentralized social media Notes and Other Stuff Transmitted by Relays (Nostr) "The simplest open protocol that is able to create a censorship-resistant global "social" network once and for all."

Wider movement to decentralization ... digital nomads ...

8.1 Bitcoin Improvement Proposals (BIPs)

What is a bip?

Unfortunately BIPs appear to becoming more centralised in their ability - with god-like control over their acceptance. Though there are pros ... Though has the standard for suggesing improvements started to change? BANANAs.

Here's a brief summary of each BIP (Bitcoin Improvement Proposal):

1. BIP1: Defines the BIP process, outlining the guidelines for proposing and managing improvements to the Bitcoin protocol. 2. BIP2: Describes the process for determining the version number of the Bitcoin software and how it should be incremented. 3. BIP8: Proposes a signaling mechanism for the activation of soft forks in the Bitcoin

Figure 8.1: *Shows how ....*

protocol. 4. BIP9: Introduces the concept of version bits, a signaling mechanism used to activate soft forks in a backward-compatible manner. 5. BIP11: Specifies a standard for multisignature transactions, allowing multiple parties to jointly control Bitcoin funds. 6. BIP14: Defines a standard for the "uri" scheme used in Bitcoin payment requests, enabling easy integration with wallets and payment processors. 7. BIP21: Specifies the "uri" scheme for Bitcoin payment requests, facilitating the creation and interpretation of payment URIs. 8. BIP32: Introduces hierarchical deterministic wallets, allowing for the generation of an unlimited number of child keys from a single parent key. 9. BIP39: Defines the standard for mnemonic phrases, which are human-readable representations of entropy used for wallet backup and recovery. 10. BIP44: Outlines the multi-account hierarchy for deterministic wallets, providing a standard structure for managing multiple cryptocurrencies and accounts. 11. BIP49: Describes the derivation scheme for P2WPKH-nested-in-P2SH addresses, enabling compatibility between legacy and SegWit Bitcoin addresses. 12. BIP66: Specifies the rules for strict DER encoding of ECDSA signatures, ensuring consistency and security in Bitcoin transactions. 13. BIP68: Introduces relative lock-time consensus rules, allowing for the creation of time-based transaction conditions. 14. BIP141: Defines the Segregated

Witness (SegWit) consensus rules, separating transaction signatures from the transaction data to improve scalability and security. 15. BIP143: Specifies the transaction digest algorithm used in SegWit, enabling the creation of transaction signatures with improved security and efficiency. 16. BIP144: Outlines the network protocol changes required to support the propagation of SegWit transactions and blocks. 17. BIP340: Introduces the Schnorr signature algorithm for Bitcoin, offering improved efficiency, security, and privacy. 18. BIP341: Specifies the Taproot soft fork, introducing a new scripting language and improving privacy and flexibility in Bitcoin transactions. 19. BIP342: Describes the Schnorr/Taproot spending rules, providing the guidelines for spending funds secured by Taproot addresses.

Please note that these summaries are concise and may not capture all the details and nuances of each BIP. For more comprehensive information, it is recommended to refer to the full BIP specifications. [15] user: Why are some BIPs missing? [15] bot: I apologize if some BIPs are missing from the summary I provided. The list I provided includes some of the most notable and widely referenced BIPs in the Bitcoin ecosystem. However, there are many BIPs in existence, and it's possible that some were not included in the summary due to their relative obscurity or because they may not have gained significant traction or adoption.

The Bitcoin Improvement Proposal (BIP) process allows anyone to propose improvements or changes to the Bitcoin protocol. As a result, there have been numerous BIPs proposed over the years, covering a wide range of topics and addressing various aspects of the Bitcoin ecosystem. Some BIPs may be specific to certain use cases, experimental features, or may have been superseded by newer proposals.

It's worth noting that the Bitcoin protocol and its associated technologies are constantly evolving, and new BIPs are proposed regularly. The inclusion or exclusion of specific BIPs in any summary can vary depending on the context, relevance, and popularity of the proposals at the time of reference. For a comprehensive and up-to-date list of BIPs, you can refer to the official Bitcoin BIP repository or other reliable sources that maintain an updated collection of BIPs.

The evolution of Bitcoin Core, the reference implementation of the Bitcoin protocol, is closely tied to the Bitcoin Improvement Proposals (BIPs) and GitHub pull requests. Here's how they are related:

1. BIPs: BIPs are proposals for improving the Bitcoin protocol, its features, or related processes. BIPs are discussed, reviewed, and refined by the Bitcoin community. Once a BIP is accepted, it can be implemented in Bitcoin Core or other compatible software. Bitcoin Core developers often contribute to the creation and implementation of BIPs, and they play a crucial role in shaping the future of the protocol.

2. GitHub: Bitcoin Core development is an open-source project hosted on GitHub. GitHub is a platform that allows developers to collaborate on software projects. Bitcoin Core's GitHub repository serves as a central hub for developers to contribute code, review changes, and discuss proposed improvements. Developers can submit pull requests on GitHub to propose changes to the Bitcoin Core codebase.

3. Pull Requests: GitHub pull requests are a way for developers to suggest changes to a codebase. When a developer wants to contribute a new feature, bug fix, or improvement to Bitcoin Core, they create a pull request on GitHub. The pull request includes the proposed changes, and it undergoes review and discussion by the Bitcoin Core development community. If the pull request is accepted, the changes are merged into the Bitcoin Core codebase, and they become part of the next release.

In summary, BIPs provide a formalized process for proposing improvements to the Bitcoin protocol, while GitHub and pull requests serve as the platform and mechanism for developers to collaborate, review, and implement those proposed changes in the Bitcoin Core codebase. This iterative process of proposing, reviewing, and implementing changes helps drive the evolution of Bitcoin Core and the Bitcoin protocol as a whole.

8.2 Bitcoin Core

As suggested, bitcoin is a living breathing entity discover by Satoshi Nakamoto. Like other physical beings, such akin to a so-called distant "dusty star forming galaxies" consuming its surrounding matter to form a super massive black hole in the center of galaxies.

Chapter 9

Hash Rate

Exa-hash per second. Exa is a metric system prefix that means 10^{21}

kardashev scale. We must up energy demand to progress. All humans should have energy. We will find clean energy just as we found dirty energy.

Stranded energy.

9.1 philosophy

Is money all a bit boring: yes?!

But we have the option – albeit spending a day to learn – to be self soveriegn. Is that option for everyone, maybe not. But is that much different to that everybody uses to today. On a Bitcoin standard no will notice the difference in the USD/GBP/YEH the use – the transfer should be relatively swift. However, they'll likely experience deflation as the supply of freshly minted bitcoin tends to zero (as efficiencies increase in production, the value of a bitcoin increases etc.) (**?**). Ecash - Hal Finney suggestion.

9.2 Thoughts

gold worth is in people's head; shiny looks, glamorized over mellenia from Tutankambun to pirates and thus feels exepnsive.

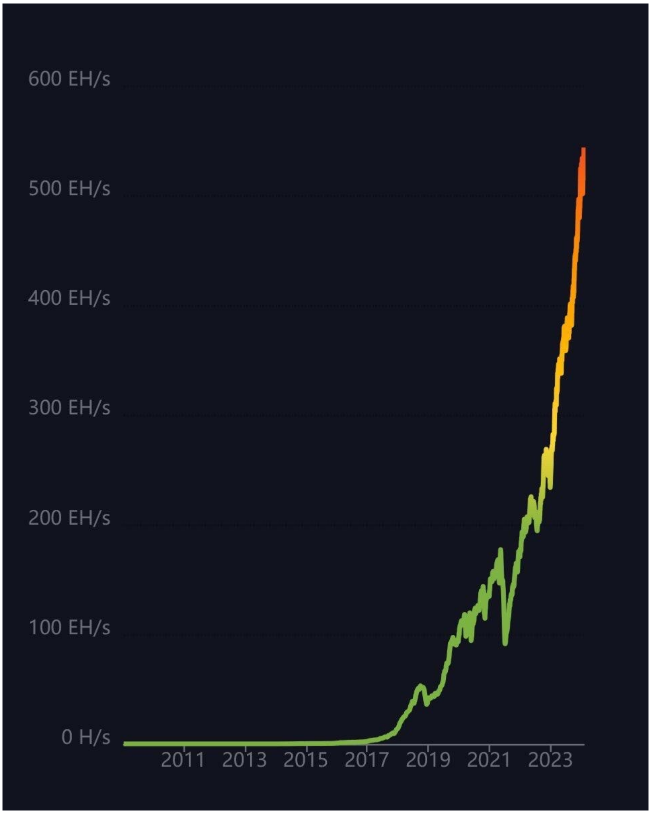

600 EH/s
500 EH/s
400 EH/s
300 EH/s
200 EH/s
100 EH/s
0 H/s
2011
2013
2015
2017
2019
2021
2023

Figure 9.1

Wars in the past were shorter lived, why? because using your tressuries gold reserves to fund a war was/is costly. What funded Hilter's war machine? If off gold standard how did he fund it? Hitler clearly rose to power during the weinmar hyperinflation imposed by endless money printing during the 1930s. **?**

We beat future acts of war by making minimizing so called "returns to violence", by transacting in bitcoin. Country A, B, C,... only want bitcoin how can they print the money?

from seashells to rai stones

what the fuck happened in 1976

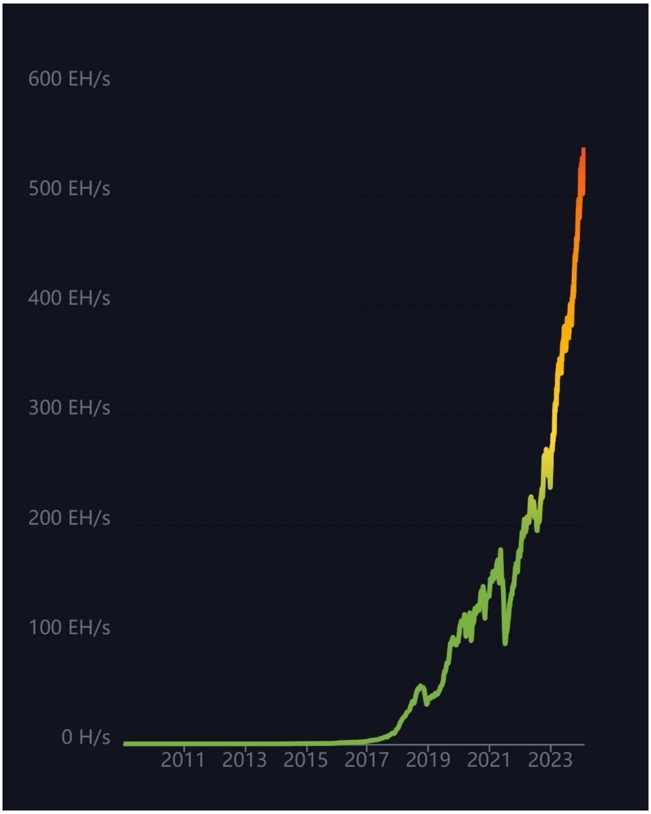


Figure 9.2: *The price of 1 kilogram of gold denominated in German Marks over Germany's sad hyperinflation period. For reference we've put the normalized USD-price of since 2009 starting at 1930. Is the price of bitcoin showing the hyperflationary period in the USD, or is its price showing an adoption curve?*

Chapter 10

Culture

10.0.1 Art

Evolution of the bitcoin logo:

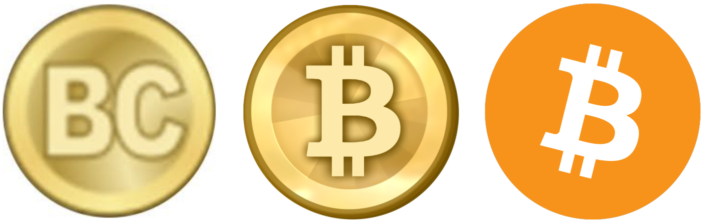


Figure 10.1: *Evolution of the Bitcoin logo from left to right.*

The very first icon was designed by none other than Bitcoin's creator, Satoshi Nakamoto. They are the anonymous person (or group of people) who first introduced the cryptocurrency in August of 2008.

The first version of the logo represented a gold coin engraved with the letters "BC". Some say that Satoshi's original depiction of Bitcoin indicates his intent to present the cryptocurrency as digital gold. To avoid any connection to the classical meaning of "BC" (Before Christ), the currency code was changed to BTC. In February of 2010, Satoshi updated the logo using the letter "B" with two vertical strokes. This is believed to be based on the Thai baht, whose symbol is. By this time, discussion forums were buzzing with suggestions and the mysterious creator was eager to please. The third version of the logo, which is used to this day, was not created by Satoshi. In November 2010, a Bitcoin Forum user going by the username ”Bitboy” took it upon himself to improve the logo. He based his design on criticisms and opinions floating around the forum. He posted his design for free to the public domain, and his identity remains unknown to this day.

mosaic.rocks.

stock-to-flow artwork.

to more digital, computation types of art such as the blockclock mini.

to the covers of SeedSigners, to bolt cards (upload designs here) and wearable bolt rings.

Evolution of the quality of memes:

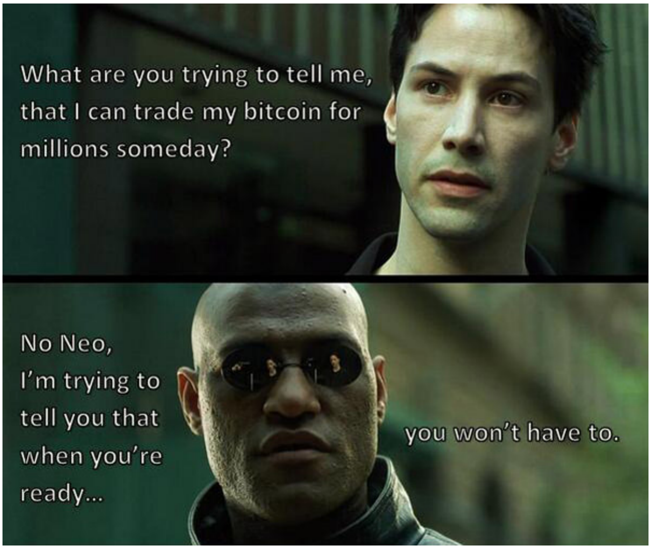

What are you trying to tell me, that I can trade my bitcoin for millions someday?
No Neo, I'm trying to tell you that when you're ready...
you won't have to.

Figure 10.2

Music:

Clothes:

Kayne West wearing a Saoshi Nakamoto base-ball cap as his access to fiat money was cancelled by the gatekeepers.

jack dorsey donning "satoshi" shirt from the `lightning.store` during the NFL superbowl whilst flanked by tycoons of the hiphop industry, and long-time supporters, Jay-z and Beyonce.

In both instances, in a Streisand-effect[1] the search terms for bitcoin increased.

10.1 Fear, Uncertainty and Doubt

Fear, uncertainty, and doubt (FUD) is a manipulative propaganda tactic used in sales, marketing, public relations, politics, polling, and cults.

Table 10.1: Financial Times (FT) Bitcoin Obituaries

Date	**Price**	**Headline**
September 19, 2014	391.94	Cult Markets: When The Bubble Bursts

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[1]

Chapter 11

Price in X

I don't care about the fiat price. Whic of the x currencies to i value it in? Although so-called atomic conversions between fiat currencies are useful, and for the transition to a hyperbicoinisation. their exchange rate is meaningless. I can have 1 BTC or usd eur yen gbp[1] lebonase,egy,...,120 currencies. History has show that the trend of all government-issued currencies is to 0 as time increases. So if this is indeed te winner, as I believe, why would you ever convert to any of the 100 existing govertment controlled currencies. saying that, it appears number does indeed go up (NGU), with STF, power-law when fitted to the dominant fiat currency, the USD. are we seeing weinmar inflation against the dollar since Sataoshi Nakamoto's discovery? If history doesn't repeat but rhymes, 4-th turning and soverign indiv thesis ar playing out, then yes. The USD, which all other currencies are pegged against, is undergoing hyperinflation as measureed against bitcoin.

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[1] BTC transaction volume as of 2024 has over taken GBP, making it the 4th largest currency in final settlement.

Chapter 12

Adoption

12.1 Nation State Adoption

Creative way to express the evolving perception of Bitcoin in a humorous manner. In the Bitcoin community, there have been various perceptions and stereotypes associated with Bitcoin over the years. One humorous representation of this evolution is as follows:

2010 No one uses it

2012 Only computer nerds use it

2013 Only drug dealers use it

2014 Only money launders use it

2017 Only gamblers use it

2018 Only a small percentage of the population uses it

2020 Only small companies use it

2021 Only small countries use it

2024 Only small states use it

This representation humorously captures the changing perceptions and stereotypes surrounding Bitcoin over time.

El Salvador, translating from Spanish to English as “The Savior”.

`https://www.nobsbitcoin.com/bukele-reveals-el-salvadors-bitcoin-a`

12.2 CEOs

Michael Saylor saylor #Bitcoin days are numbered. It seems like just a matter of time before it suffers the same fate as online gambling. 8:18 PM - Dec 18, 2013

Michael Saylor saylor #Bitcoin is a swarm of cyber hornets serving the goddess of wisdom, feeding on the fire of truth, exponentially growing ever smarter, faster, and stronger behind a wall of en crypted energy. 2:51 AM - Sep 19, 2020

how started vs how going

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