

Cornell University, Ithaca, NY

**21 Million Tools For the 21st Century**

**Research Proposal for:**  
COLLS 3001: College Scholar Seminar

**Presented to:**  
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### Abstract

Money is a tool to shape reality. Economics and by extension, money “is the foundation layer that gives rise to everything else” (Booth). We live in a world with a dishonest ledger, with a dishonest reality. Bitcoin is more than just money, but it is the best form of money we’ve ever had. We need a world that operates on an honest ledger and reflects an honest reality. Bitcoin is society’s tool to undergo this transition. **bitcoin** is a cryptographically secured currency. **Bitcoin**, the network, is an empowering technology with the potential to fundamentally transform civilization, sitting at the intersection of math, physics, computer science, philosophy, biology, game theory, engineering, monetary theory, economics, finance, morality, etc. Furthermore, most people, given “coin” in the name, diminish Bitcoin to only a monetary asset. They never consider it a technology, a liberating, freedom and privacy-protecting, digital energy savings technology. The 21,000,000 bitcoin are society's tools for the 21st century. However, the majority of humanity, reinforced by conventional information sources, does not think so and does not have bitcoin in their toolkit. Why? Answering this question will be the focus of my study through the lenses of economics, energy, and linguistics. **Economic:** Bitcoin is the sound money solution to a broken money standard. **Energy:** A tool needs to be rigid, yet multi-purpose and accessible to all. **Linguistics:** Bitcoin is a language. An operating system of preferences and value that all 8 billion people can natively speak without friction. Bitcoin, a neutral, decentralized, borderless, permissionless, secure, and energy-preserving language and monetary operating system, freely available to all eight billion people, offers itself as a simple and equitable rules-based solution to the breakdown in money, to a breakdown in reality.

**Keywords:** Bitcoin, Energy, Economics, Linguistics

## Introduction

### If Nothing Else, Know

Bitcoin is a tool for human freedom.

Most criticism for bitcoin comes from people thinking that it has no use, no benefit to society. I held this view. I humbly invite you to do what I initially did not do and consider that benefit could add a greater than marginal benefit to your life and your future generations' lives.

### A Peer-to-Peer Electronic Cash System

Communication, words, language, are like a safe. Until you've gained the passcode, the literal and hidden meanings are locked. This section's sub-heading is full of more than what meets the eye, and through this thesis, we are going to begin opening the safe.

Bitcoin: A Peer-to-Peer Electronic Cash System.

Everything you need to know about bitcoin is contained in that one sentence, but, it will only make sense, the meaning will only resonate with you and be unlocked once we go on this learning journey together.

### No One Understands Bitcoin

In stark contrast to what the previous section might suggest, no one understands Bitcoin. And, here enters our first analogy. Do you know all the use-cases for the number 0? I imagine not. I invite you to consider that the same might be true for Bitcoin.

The above phrase was coined by Jameson Lopp, and it speaks to his statement that bitcoin is “the result of a melting pot of contributions” ([source](#)). In the article, Lopp goes on to include that Satoshi Nakamoto wrote: *“Writing a description for this thing for general audiences is bloody hard. There's nothing to relate it to.”* – Satoshi, July 5, 2010

In 2016, Ferdinando Ametrano wrote the following: “Why Bitcoin is Hard to Understand:

A the crossroads of:

- Game theory
- Cryptography
- Computer networking and data transmission
- Economic and monetary theory

Mainly not a technology, a cultural paradigm shift instead.”

Lowercase “b” bitcoin refers to the monetary protocol. Uppercase “B” Bitcoin refers to the network. Just like it is possible to understand TCP/IP, it is possible to learn and understand the code that makes up bitcoin, but as is said, software is never finished, so the learning is never done. It's impossible to understand everything the internet touches, and it is impossible to know everything about Bitcoin. Even

more impossible than the internet because Bitcoin is Money + Time + Information + Energy (h/t Jack Mallers).

So, you might hold the view “Bitcoin is too complicated” and opt-out now. To which I would say, yes, it can be complicated, but it can also be incredibly simple. It’s just money. And, it is *just* money. It is a vehicle for you to save your economic energy across time and space; it is uncensorable, and unconfiscatable money.

You’re never going to understand Bitcoin and that’s okay; no one does and no one will. I am probably the only person to write a thesis and openly admit they do not understand their topic. I recognize this thesis is for my bachelor’s degree and I wouldn’t rather not understand anything else. Studying bitcoin is a bit like studying everything you didn’t know about one topic and combining that with studying everything you didn’t know about 21+ topics. Instead, I’ll share that I am about 6,000 hours down the rabbit hole of studying this topic.

So, now that we know neither of us understands bitcoin, one of us is just a little further into their journey of not understanding less, let’s progress.

## Best Practices

From what I’ve learned explaining bitcoin, teaching people about bitcoin works best when I:

- Use analogies
- Ask “how” not “why” someone holds a certain option
- Make the problem clear before the solution
- Don’t assume common knowledge
- Listen first then speak

Unfortunately, I can’t speak to you individually as you read this, but I will use analogies, provide context, and do my best to illustrate the problems Bitcoin is solving.

## Acknowledgment

- Standing on the shoulders of giants to write this thesis.

## Research Question

*“If you know nothing else about the future, you can rest assured that dramatic changes will be neither welcomed nor advertised by conventional thinkers. If you wish to understand the great transition now under way, you have little choice but to figure it out for yourself” (The Sovereign Individual, 54-55).*

The 21,000,000 bitcoin are society's tools for the 21st century. They ultimately are our society’s tools for transmitting truth, trust, and value. However, the majority of humanity, reinforced by conventional information sources, does not think so and does not have bitcoin in their toolkit. Why? Answering this question will be the focus of my study through the lenses of economics, energy, and linguistics.

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## Context

Why should you care? Why is this thesis important?

You are being stolen from. The quality of your reality and the rights of your personhood are being degraded.

Excuse my bluntness, but I know factually that humans are evolutionarily adapted to be less responsive to logic. From the Wason Card Selection Task, we learn that a cheater detection mechanism solves an adaptive problem, whereas logical conditional analysis solves no adaptive problem (Cogst 1101).

If you care about your future freedom and prosperity, you would be inclined to learn about Bitcoin. Also, I should say that the previous sentence pained me to write. Learning about Bitcoin teaches you to reclaim your agency, your ability to think and make decisions for yourself; to shape your own world view. So, my telling you what to learn and think about drives antithetical to what I believe in.

## Solution to Current Problem

Today, our ability to exchange truth and value, in a trust manner, domestically and world wide, is declining. Bitcoin is the tool for the 21st century. For 21,000,000+ use cases that we know and don't know. With bitcoin, this is the first time that you can not only transfer value but store value and energy, for generations. And, in order to store your energy, you don't have to exert energy. Further, people can have their value realized with no barriers; they don't have to be born in the US, go to an Ivy League university, or live in a dollar dominated country.

Money is on the other side of every transaction. With Bitcoin, the exchange of value can be done fairly and without any friction. The bitcoin time chain records the purest form of the language and preferences and transactions of all 8 billion people; it serves as an immutable and verifiable record of truth.

Language is uniquely human and has contributed to our survival and dominance in the world. But, it is failing us in how we transmit values across cultures. Bitcoin can win the "language game" in ways spoken language cannot.

Tied to nature and incentivizing low-time preference, Bitcoin is an infinite game, allowing cooperation to be induced in ways previously unimaginable. Through Bitcoin, we can communicate with people all around the world, that we've never even met, whose language we don't speak, whose stories we don't know and say "I see you, I hear you, I value you, what you do means something to me — I respect you" in a way that language could never get through. In a way that spoken words would not be able to get through the bottleneck.

Bitcoin embeds us with values of low time preference, trust, truth, empathy, inclusion, humility, gratitude, honesty, peace, and hope. The world is dynamic, a reaction to human action. We can't plan out the future

precisely. All we can do is when approached with a decision, make a decision aligned with the values we want to guide our lives by.

- Money is supposed to allow you to live your life as you want it — to store your energy, but we’ve never had money that actually allows us to store our energy.
- Language is supposed to allow you to collaborate and interact with others, but we’ve never had a language that allows us to communicate to our full desire and intent.

With **bitcoin**, we have a money that allows us to store our energy for generations and pursue what brings us joy. With **Bitcoin** we can communicate in ways never seen before and live a life aligned to the values we strive for.

## History

## On Protocols

## Functionalism

## Emergent Properties

## Money, Truth, & Value

## Background Literature

At the time of this writing, bitcoin is 15 years old.

Given the incredible amount of topic areas Bitcoin addresses, to say there is a shortcoming of existing literature is an understatement. However, this thesis is largely going to be about utility. There are many debates on “what scales bitcoin?” and “how will we reach ‘hyperbitcoinization?’” What drives adoption? Some people say “education.” Others say “utility.”

Our high time preference society, a result of our degrading money, has a declining lack of a default willingness to learn. Education alone will not scale Bitcoin.

Case in point the US dollar. If a majority of the world had ever thought about the question “What is money?” Let alone the answer, I am fairly certain we would not have the monetary environment we have today.

Bitcoin has to be useful to you. It has to solve a problem that you face. You will only make a change when you feel pain. Utility is how we will scale Bitcoin.

No American selected the US dollar by choice. The government made it illegal to hold gold, gave citizens 1 month to hand in their gold, and then required the use of dollars solely.

Tools must be useful. To answer this thesis's research question, the only way bitcoin will show up in your toolkit is if it serves a purpose in your life.

To do anything in this world requires an exchange (with yourself or others), requires energy, and requires communication. Bitcoin embodies these characteristics, allowing the 21,000,000 bitcoin to serve as tools. Bitcoin is like a Swiss army knife. Except for its borderless, a-political, and does not cut or divide, but unify.

Further, this thesis will briefly, succinctly and sufficiently address why bitcoin is not blockchain, why it is not crypto, and why it is an entirely separate topic in the literature.

### Project Information: Plan, Timeline, Expected Findings & Implications

This project will never be complete. But, for the sake of deadlines and this thesis, the thesis will be written over the next year and it will be a compilation of 4 years of study on everything from math, physics, computer science, philosophy, biology, game theory, engineering, monetary theory, economics, finance, linguistics, history, morality, etc.

Sources will include everything from textbooks to blog posts to tweets to books to podcasts, videos, and interviews/ conversations. Additionally, I expect I will find it valuable to include insights from my work with Dr. Sarah Kreps in the Cornell Brooks Tech Policy Institute in conjunction with Gallup and the Human Rights Foundation investigating the use of bitcoin in 12 authoritarian countries.

Ultimately, this thesis will show that bitcoin *does* have use. It will do so not out of the author's bias, which she recognizes is present, but out of a careful evaluation of history, facts, and nature.

It will present a fact-based argument for bitcoin despite an inferior monetary system never having to do the same. However, this is core to the bitcoin ethos and it's how bitcoin came to be: Honest and Trusted Proof of Work. Bitcoin is an idea whose time has come and this thesis will show the idea, the discovery, in action for all 8 billion people.

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## Objections

Bitcoin is Too Complicated

Bitcoin Is A Cult

Blockchain Is the True Innovation

Bitcoin is Too Volatile

Bitcoin Has No Intrinsic Value

There Could Be More Than 21,000,000

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## Economics

Trust

What is Money?

Money is Broken

On Currency

On Capital

On Asset

On Utility

On Incentives: The First Infinite Game



## **Energy**

Time

Bitcoin Timechain

Bitcoin is a Pioneer Species

Energy for Humanity

Economic Energy

Proof of Work

Thermodynamics of Money and Resonance Frequency of Currencies

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## **Linguistics**

The Language Game

Universal Languages: Money & Math

Keys to the Universe: 3,6 & 9

Language & Power

Bitcoin's Grammar & Vocabulary

Human Rights

Freedom of Speech

Freedom of Assembly

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## Roadblocks

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## Transitions

This Transition

Past Transitions

Thinking Styles of “Bitcoiners”

Exiting The State of Nature

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## 21 Million Tools

*Game theory of adoption & lenses to look at Bitcoin through.*

1. Wealth Preservation
2. Privacy & Security
3. Peace
4. Digital Property vs. Capital vs. Currency
5. Pension & Sovereign Wealth Funds
6. Decentralized Media / Creator Economy & Communication
7. Artificial Intelligence & High Performance Computing

8. Energy
  9. Corporations & Institutions
  10. Healthcare
  11. Insurance
  12. Nation States & Politics
  13. International Organizations
  14. Trade
  15. Applications Requiring a Monetary Protocol
  16. Agriculture
  17. Entrepreneurship
  18. Law
  19. Education & Critical Thinking
  20. Freedom & Agency
  21. Purpose
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## Conclusion

Bitcoin is a tool for freedom. Bitcoin is a tool for your freedom.

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by C. Jason Maier

***Bitcoin is Venice: Essays on the Past and Future of Capitalism*** by Allen Farrington and Sacha Meyers

***Bitcoin: Everything Divided by 21 Million*** by Knut Svanholm

***Broken Money: Why Our Financial System is Failing Us and How We Can Make it Better*** by Lyn Alden

***Check Your Financial Privilege*** by Alex Gladstein

***Cryptosovereignty: The Encrypted Political Philosophy of Bitcoin*** by Erik Cason

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***Hidden Repression: How The World Bank and IMF Sell Exploitation as Development*** by Alex Gladstein

***Layered Money*** by Nik Bhatia

***Principles of Economics*** by Saifedean Ammous

***Resistance Money: A Philosophical Case for Bitcoin*** by Andrew M. Bailey, Bradley Rettler, Craig Warmke

***Softwar*** by Jason Lowery

***The Bitcoin Standard*** by Saifedean Ammous

***The Bullish Case for Bitcoin*** by Vijay Boyapati

***The Fiat Standard*** by Saifedean Ammous

***The Founders: The Story of Paypal and the Entrepreneurs Who Shaped Silicon Valley*** by Jimmy Soni

***The Grid: The Fraying Wires Between Americans and Our Energy Future*** by Gretchen Bakke

***The Price of Tomorrow*** by Jeff Booth

***The Psychology of Money: Timeless lessons on wealth, greed, and happiness*** by Morgan Housel

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***Zero to One: Notes on Startups, or How to Build the Future*** by Peter Thiel & Blake Masters

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## Articles / Thought Leaders

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[The Bitcoin Times](#)

## Podcasts

Coin Stories with Natalie Brunell  
What Bitcoin Did with Peter McCormack  
The Investors Podcast Network: Bitcoin Fundamentals with Preston Pysh  
The Bitcoin Frontier  
The Bitcoin Layer  
The “What is Money?” Show  
TFTC: A Bitcoin Podcast

## The Freedom Footprint Show

### Future Reading List

***Mastering Bitcoin*** by Andreas M. Antonopoulos  
***Programming Bitcoin*** by Jimmy Song  
***Praxeology*** by Knut Svanholm  
***The Book of Satoshi*** by Phil Champagne  
***Human Action*** by Ludwig Von Mises  
***Liberty and Property*** by Ludwig Von Mises  
***Planning for Freedom; and Twelve other Essays and Addresses*** by Ludwig Von Mises  
***The Theory of Money and Credit*** by Ludwig Von Mises  
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