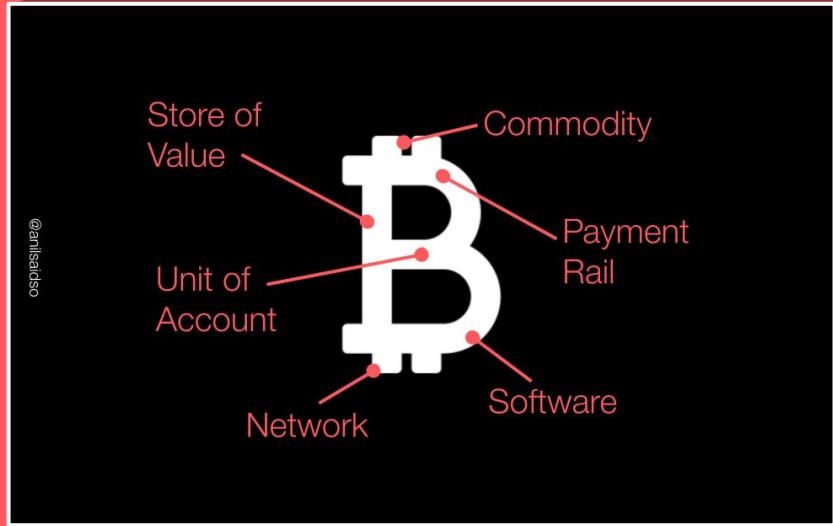
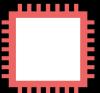
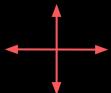


The Bitcoin Handbook

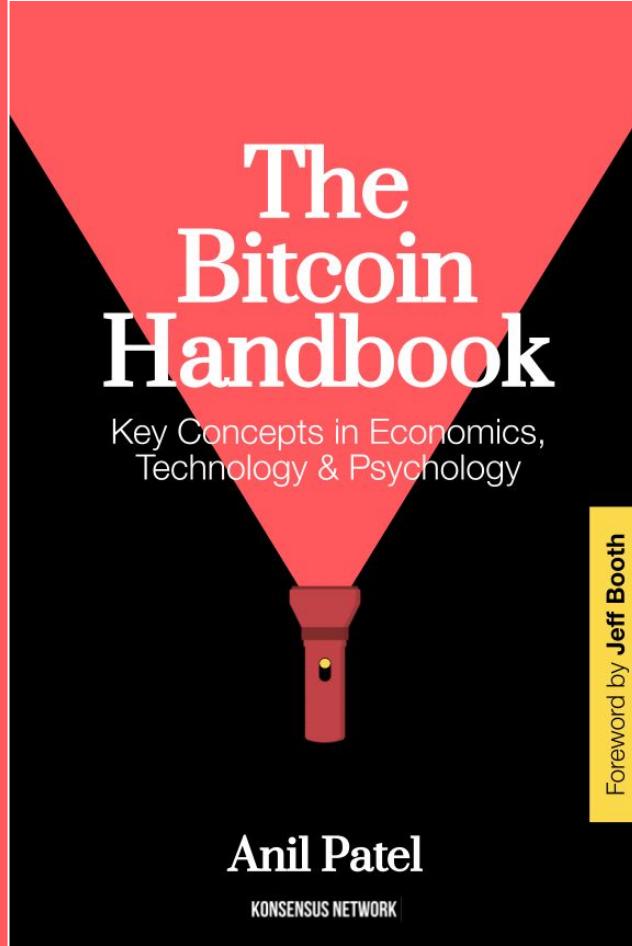
*PRES***ESENTATION DECK**



Anil Patel



This deck is adapted from the book:



Anil
@anilsaidso 

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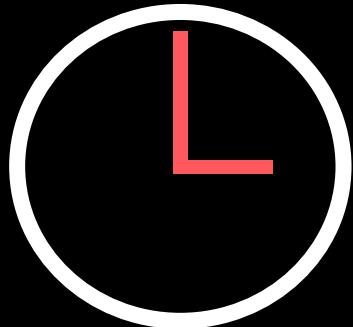
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Economics

SCARCITY

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Bitcoin
Handbook



*How limited resources
are allocated and
competed for*

@anilisaidso

US M2 MONEY SUPPLY *1960-2022*



\$21.3T

0

BITCOIN SUPPLY SCHEDULE *2009-2140*

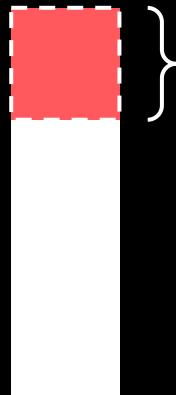


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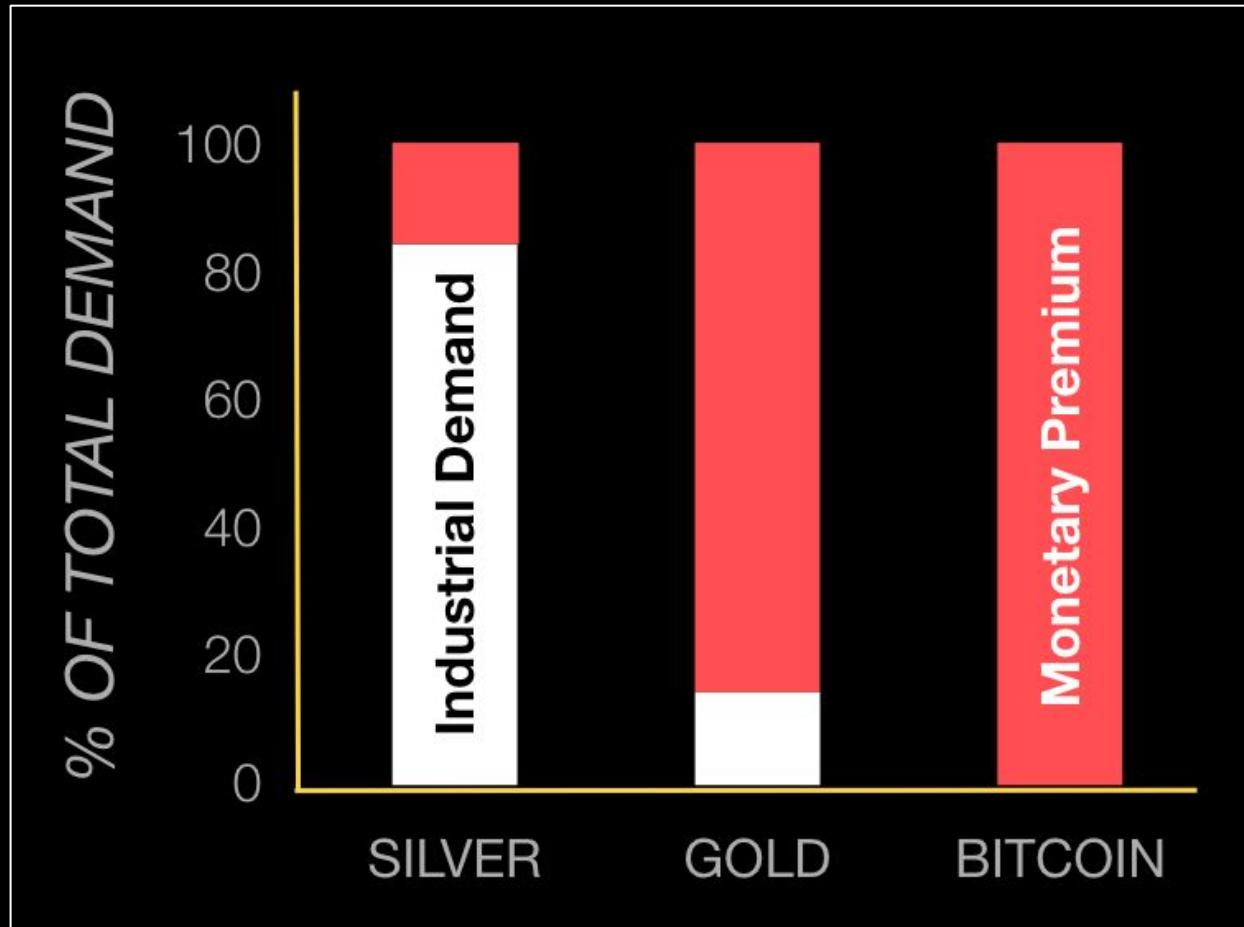
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MONETARY PREMIUM

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Bitcoin
Handbook



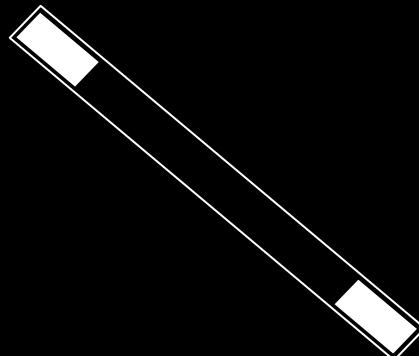
Purchasing power of a monetary good in excess of its use-value alone



source: '*The Bullish Case for Bitcoin*' by Vijay Boyapati

GRESHAM'S LAW

The
Bitcoin
Handbook



When two forms of commodity money are decreed with equivalent face value, the more valuable commodity will be saved—disappearing from circulation.

1526



1545



1546



Silver content of the Penny

More valuable



Less valuable

THIER'S LAW

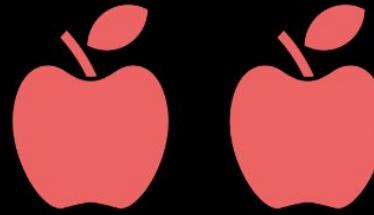
The
Bitcoin
Handbook



Absent legal tender laws, money that cannot be relied upon to preserve value will be rejected in favor of superior forms.



=



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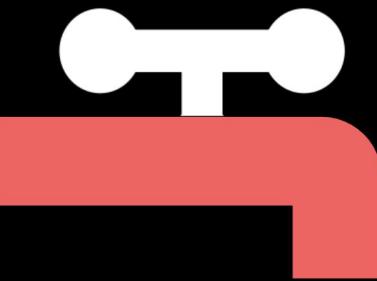


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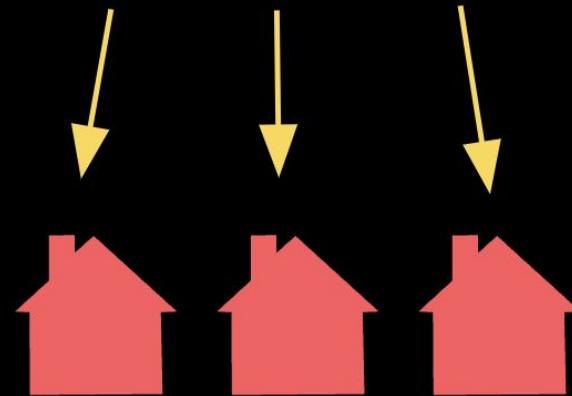
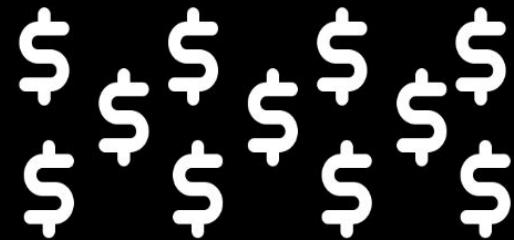


CANTILLON EFFECT

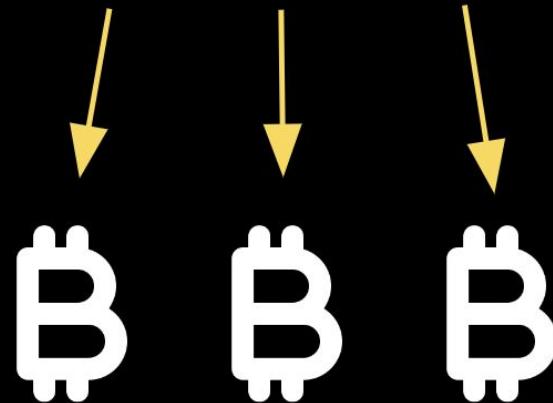
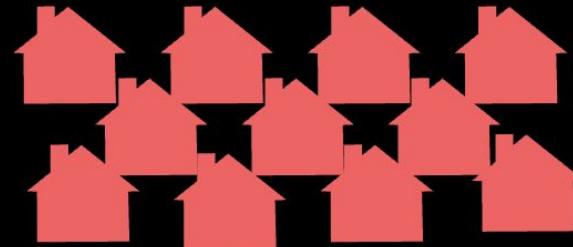
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New units of money create disproportionate price inflation when added into an economy based on the path they travel



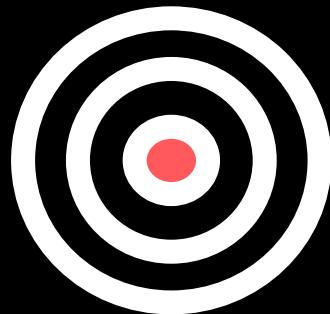
*Abundant money
chases scarce assets.*



*Abundant assets
chase scarce money.*

SCHELLING POINT

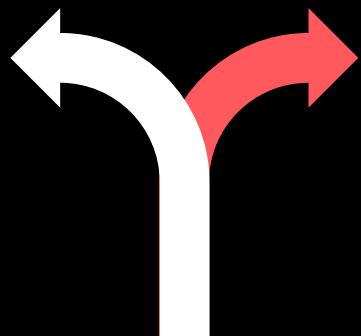
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Handbook



A solution that people tend to choose, by default, in the absence of communication

OPPORTUNITY COST

The
Bitcoin
Handbook



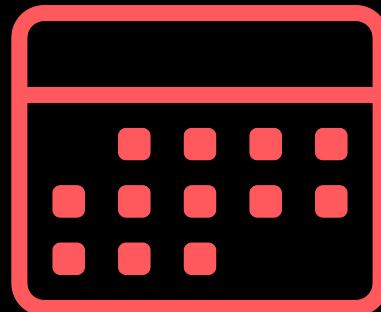
*When doing one thing comes
at the cost of not being able
to do something else*

“When money is hard and can appreciate, individuals are likely to be very discerning about what they spend it on, as the opportunity cost appreciates over time.”

—SAIFEDEAN AMMOUS

TIME PREFERENCE

The
Bitcoin
Handbook



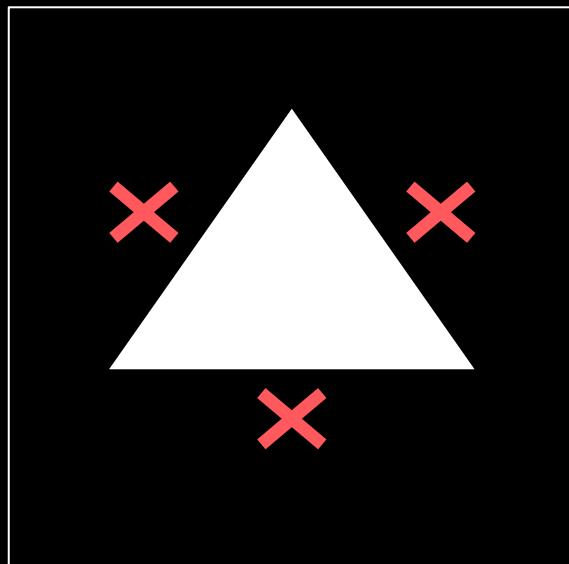
The degree to which someone values the present relative to the future

TIME PREFERENCE SPECTRUM



IMPOSSIBLE TRINITY

The
Bitcoin
Handbook



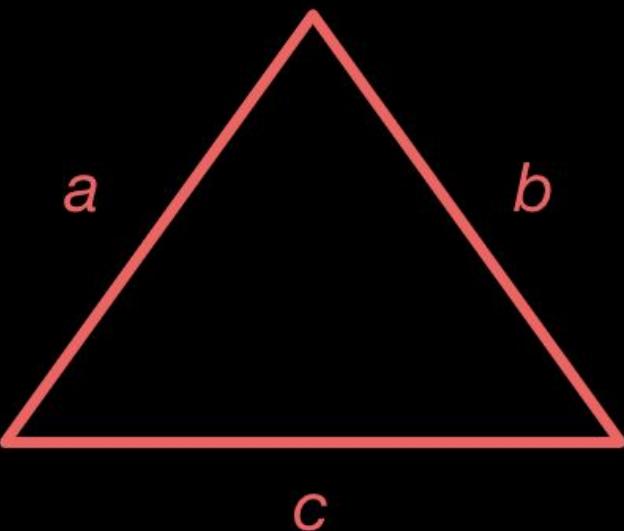
A sovereign nation cannot simultaneously have free capital flows, independent monetary policy and a fixed exchange rate

PICK ANY TWO

INDEPENDENT
MONETARY
POLICY

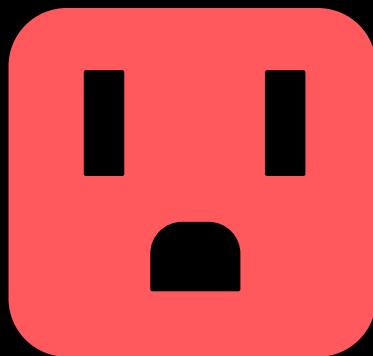
FREE CAPITAL
FLOWS

FIXED
EXCHANGE
RATE



JEVONS PARADOX

The
Bitcoin
Handbook



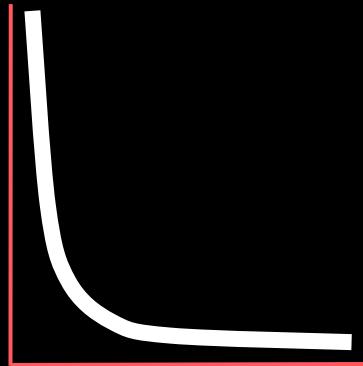
The observation that consumption of a resource increases when efficiency gains are achieved through its use

DEMAND CURVE OF RESOURCE X

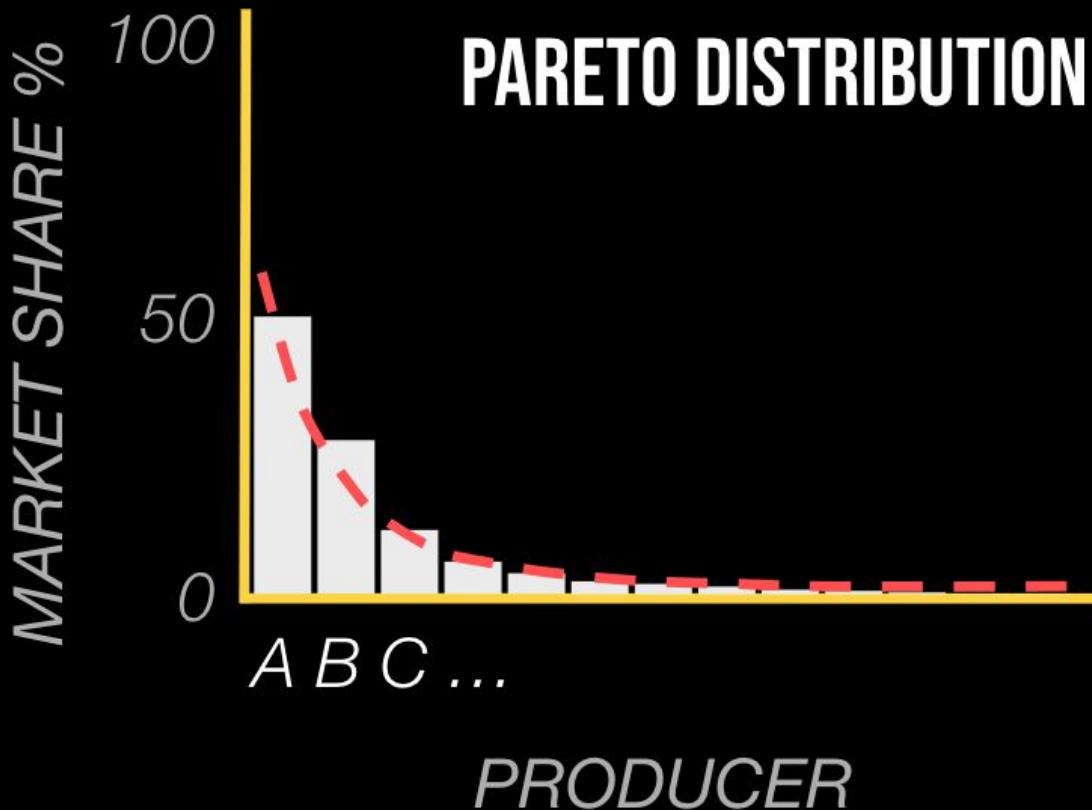


POWER LAWS

The
Bitcoin
Handbook



Relationships between two quantities, where changes to one leads to a proportional relative change to the other.

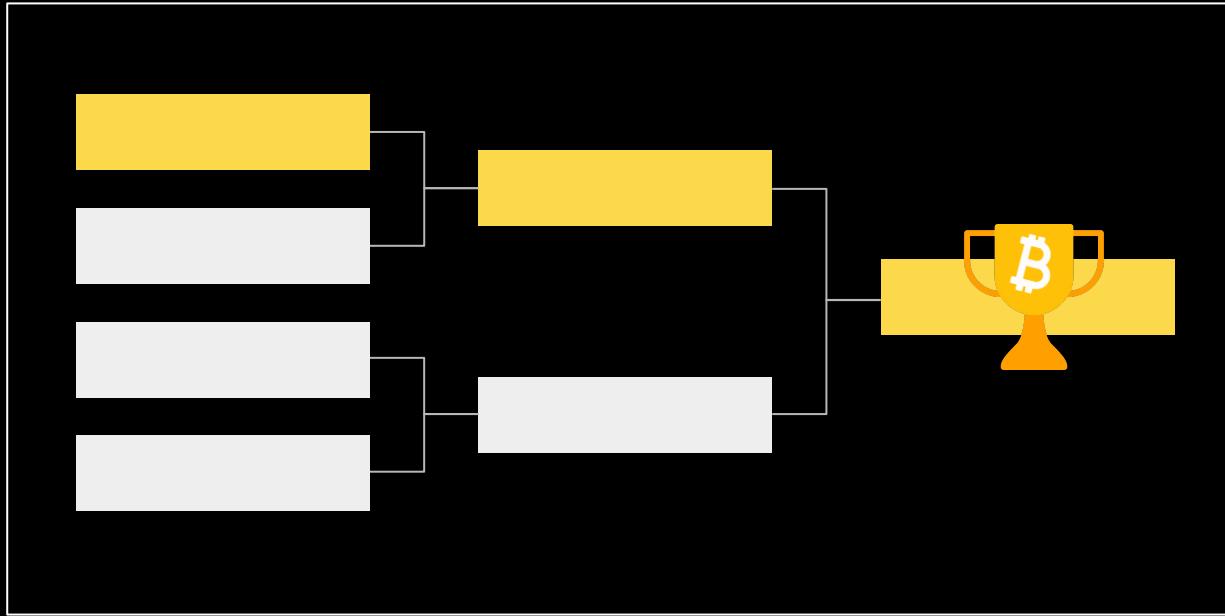


WINNER-TAKE-ALL MARKETS

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Handbook



Competitions where the single best performer captures the entire reward on offer

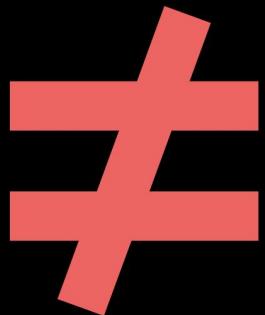


*“Money is a network.
Some networks are singular
(i.e., winner-takes-all).
Money is such a network.”*

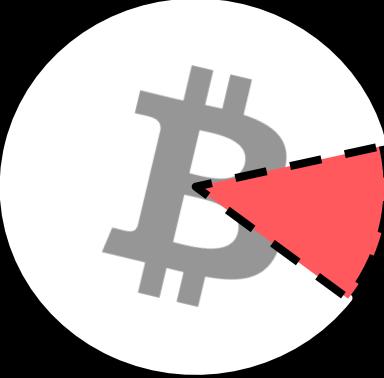
—GIGI

UNIT BIAS

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Handbook



The faulty reasoning that a single unit must be the appropriate amount from which to make assessments and comparisons

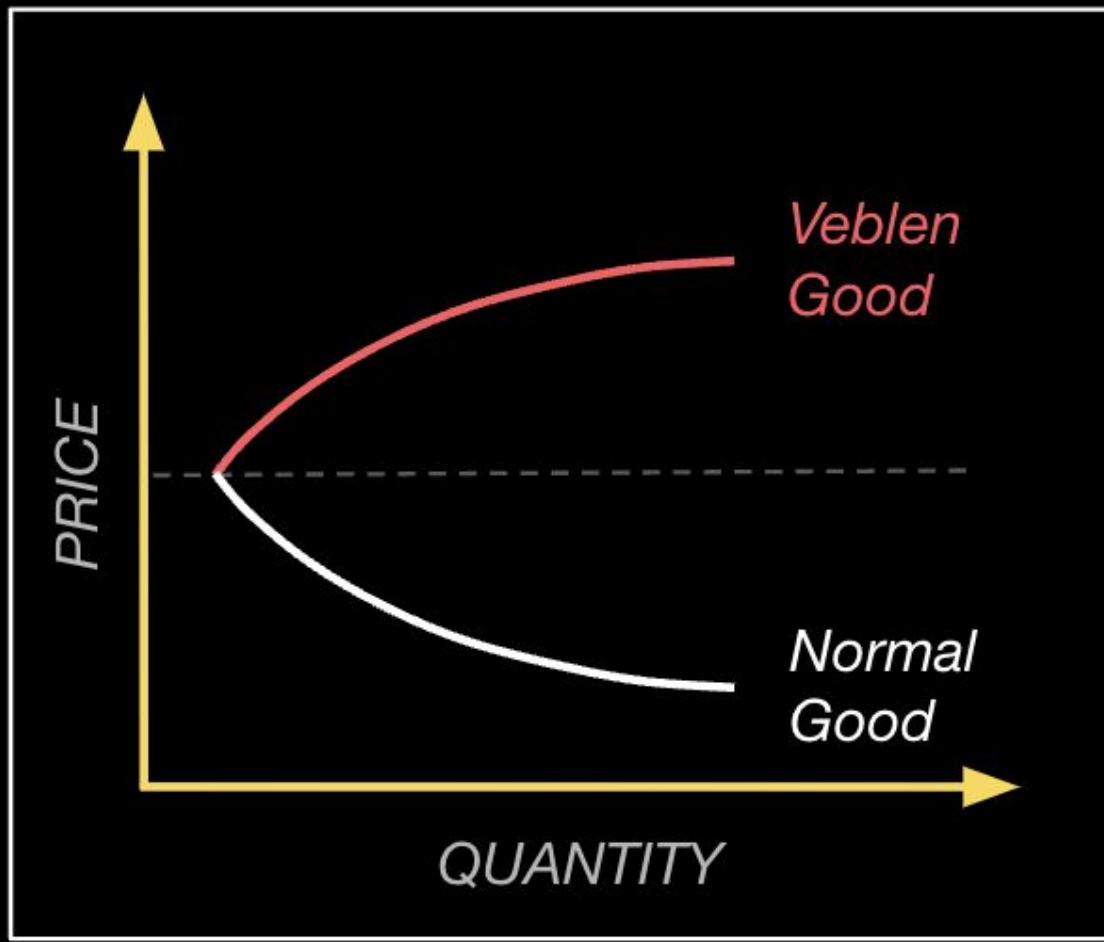
YOU CAN
BUY A  FRACTION
OF A BITCOIN

VEBLEN GOOD

The
Bitcoin
Handbook

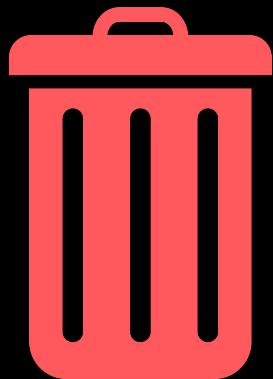


Types of goods where the quantity demanded increases as the price increases

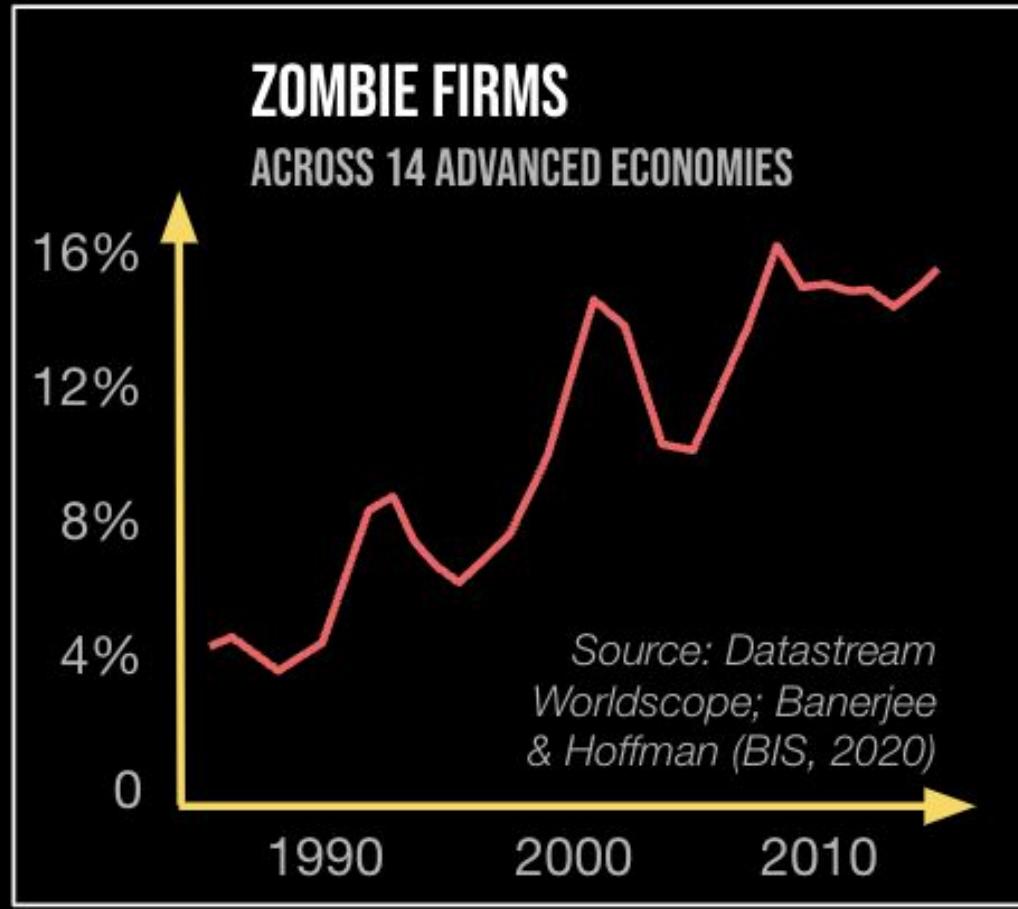


MALINVESTMENT

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Bitcoin
Handbook



Distorted price signals cause a misallocation of capital towards less productive uses than would otherwise be chosen under a free market



ASYMMETRIC PAYOFF

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Bitcoin
Handbook



*Investment decisions where
the potential upside is
disproportionately greater
than the downside risk*

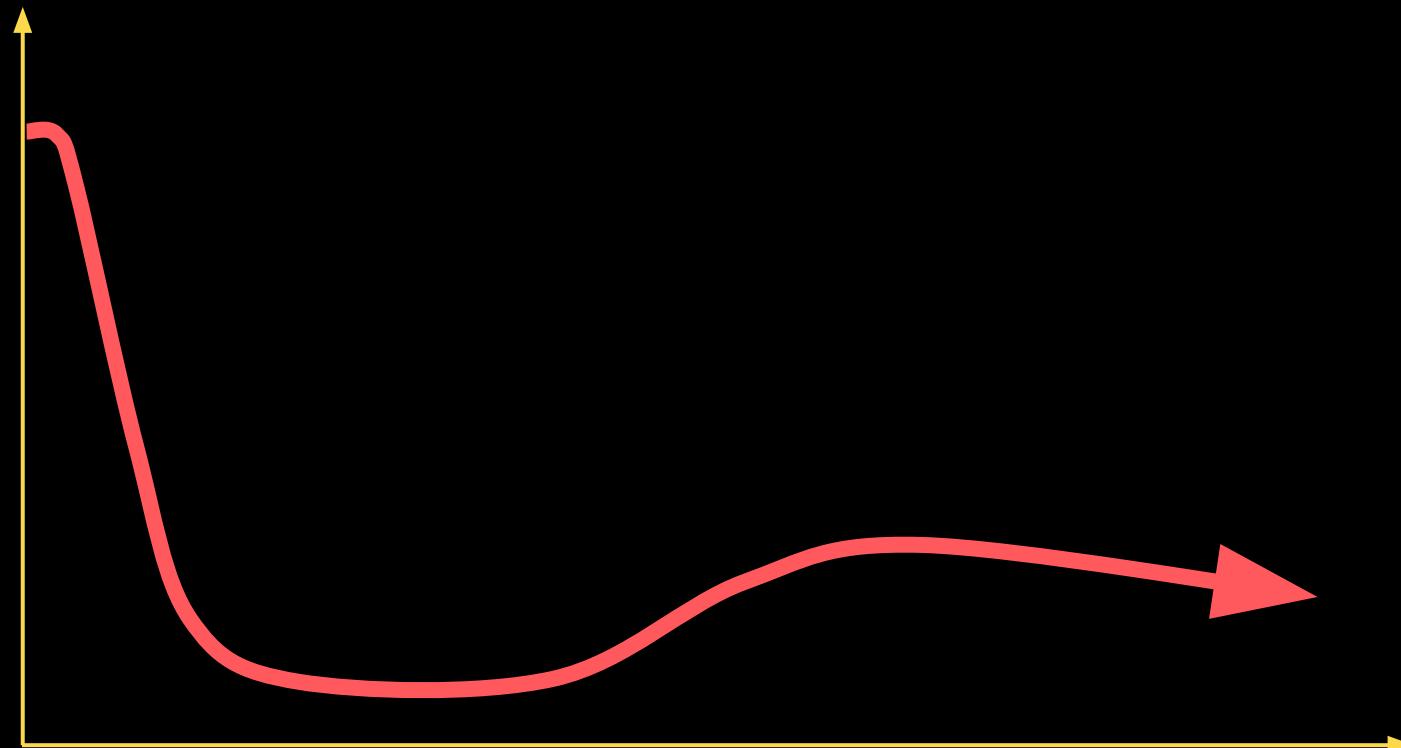
*“We can debate whether or not bitcoin is
going to be a big deal in the future.*

*But I don’t think we can debate that if it is
it’s going to have an enormous right tail.”*

—ROSS STEVENS

Probability

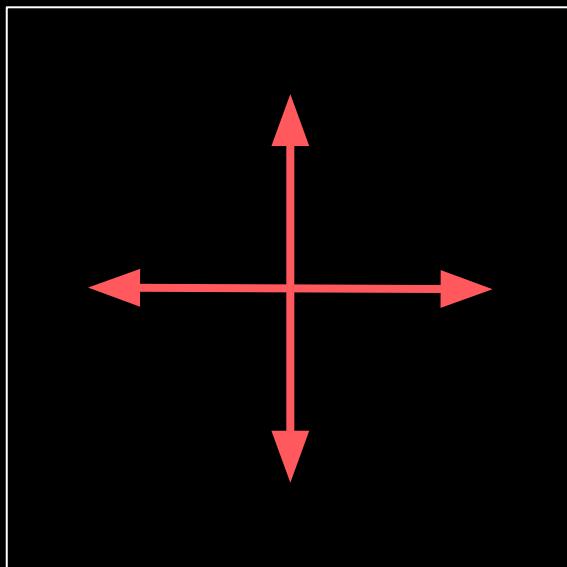
Probability



Price (\$)

ANSOFF MATRIX

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Handbook



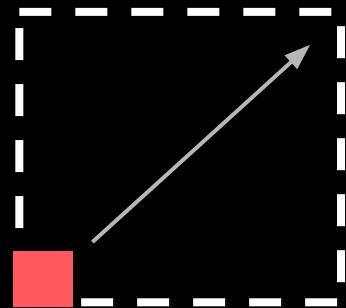
*A strategic framework for
growth opportunities of a
product across lines and
markets*



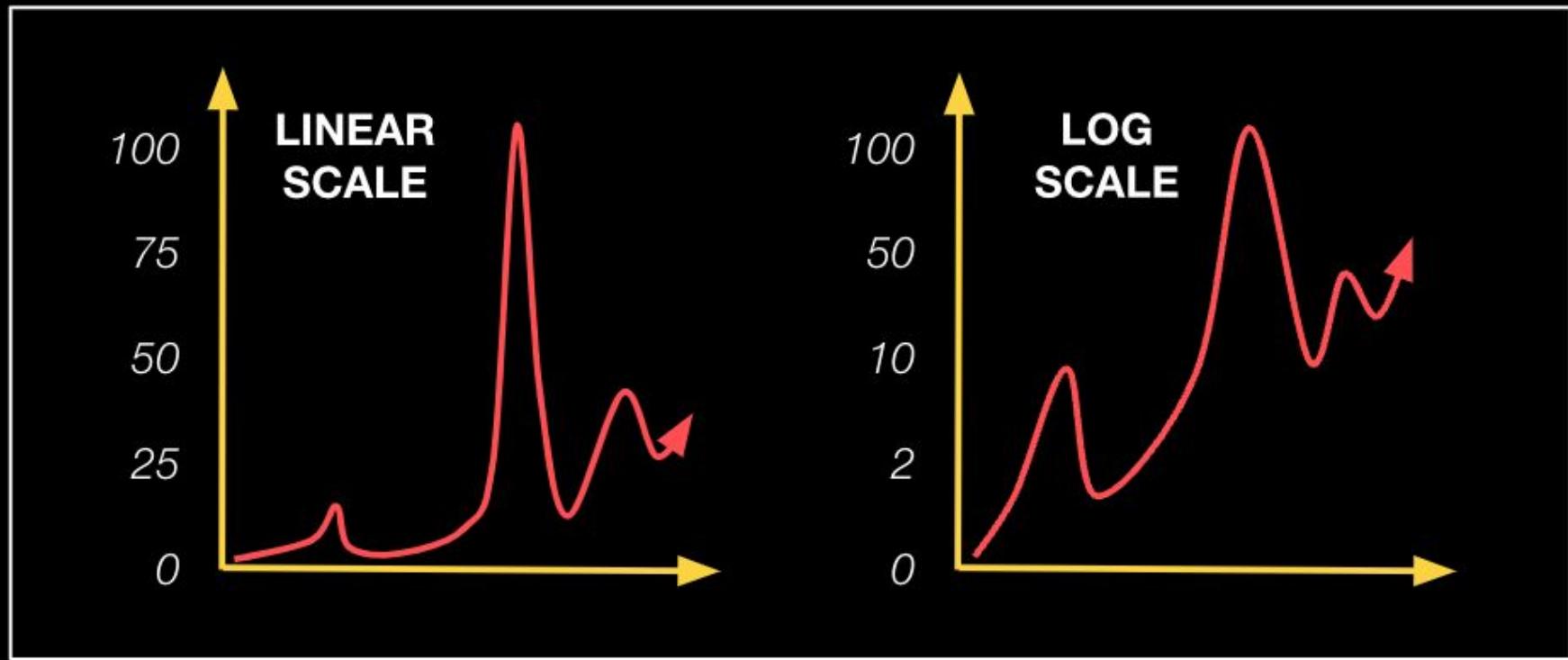
Technology & Systems

ORDERS OF MAGNITUDE

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Bitcoin
Handbook

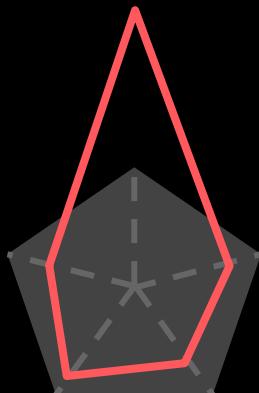


When comparing two measurements in linear terms in infeasible, multiples of ten can provide a more intuitive scale



10X IMPROVEMENT RULE

BITCOIN
ESSENTIAL
CONCEPTS



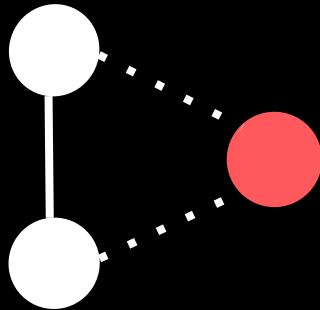
New technologies must offer a benefit ten times greater than a predecessor or substitutes to gain widespread adoption

*“As a good rule of thumb, proprietary technology must be **at least 10 times better** than its closest substitute in some important dimension to lead to a real monopolistic advantage.”*

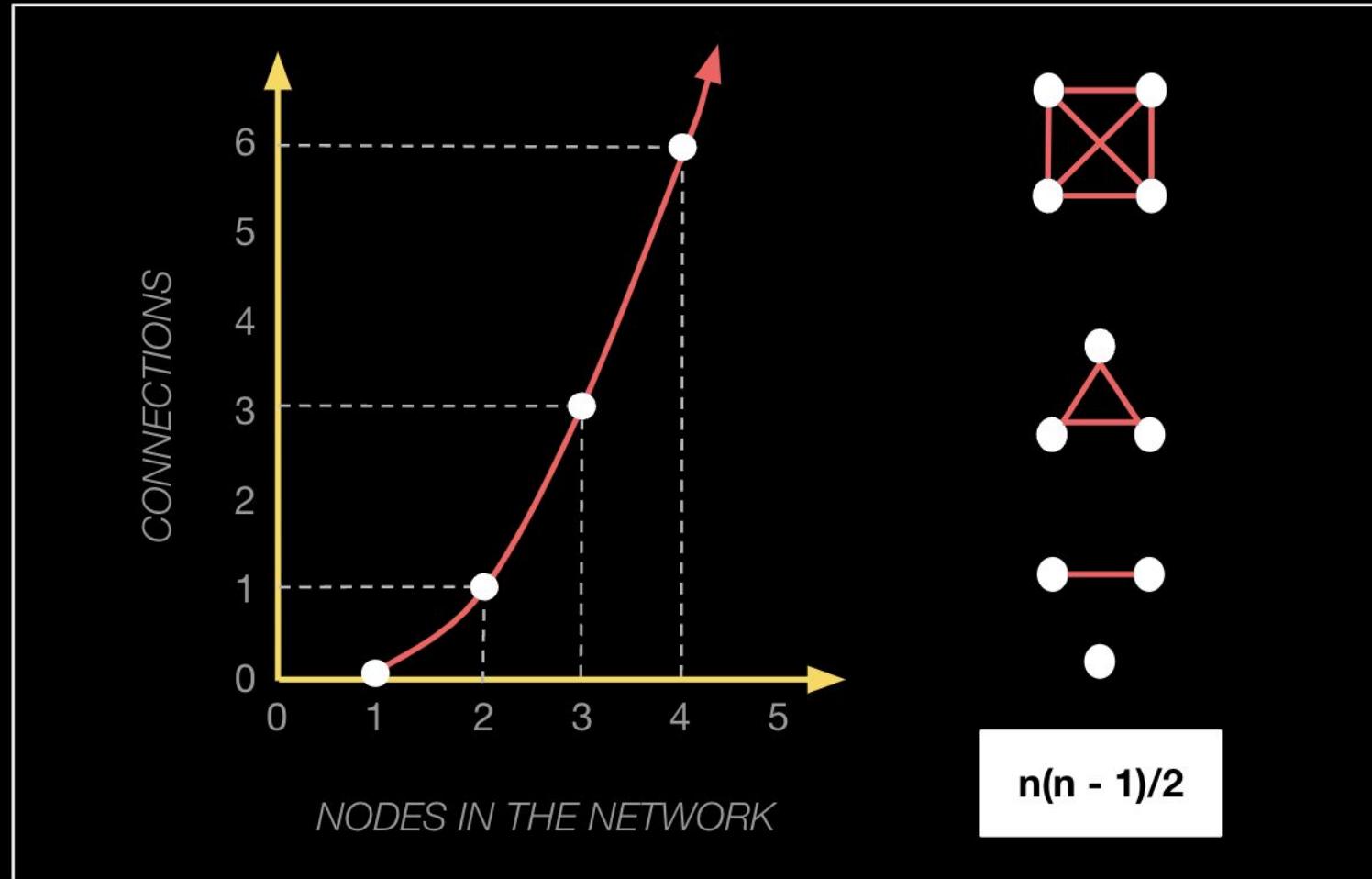
—PETER THIEL

NETWORK EFFECTS

The
Bitcoin
Handbook



The phenomena whereby each additional user to a network adds disproportionately more value and utility



CHURN

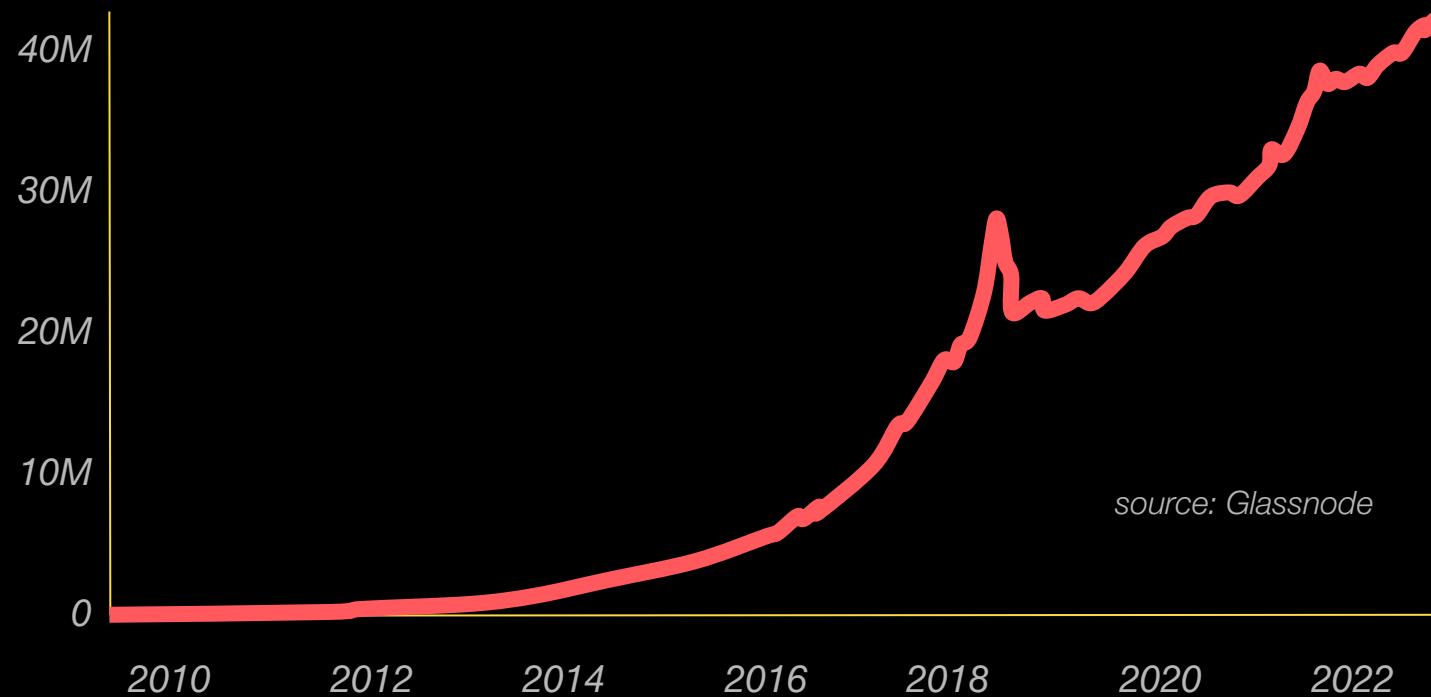
The
Bitcoin
Handbook



*The rate of user attrition,
often expressed as a
percentage*

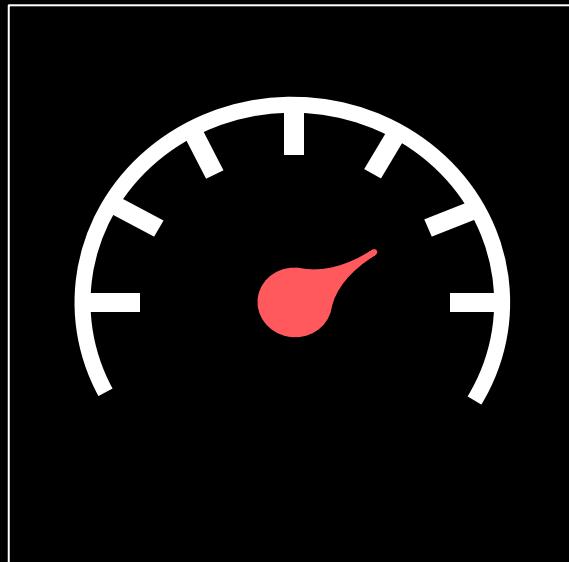
NON-ZERO BITCOIN ADDRESSES

@anilsaidso



ACCELERATING RETURNS

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Handbook



The rate of technological change is exponential, resulting in ever-increasing innovation and disruption

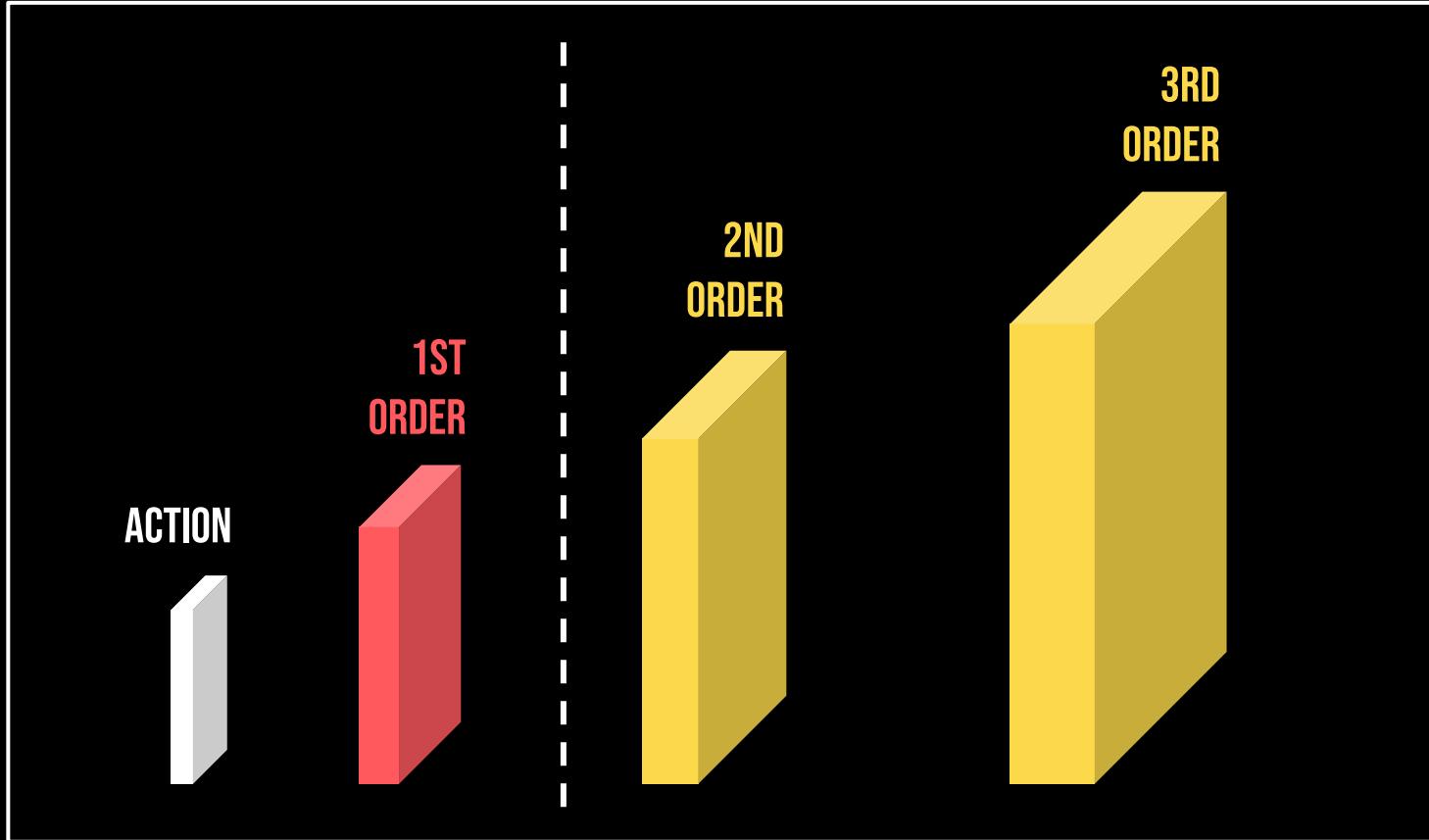


HIGHER-ORDER EFFECTS

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Handbook



*Actions have consequences.
And those consequences
have consequences.*

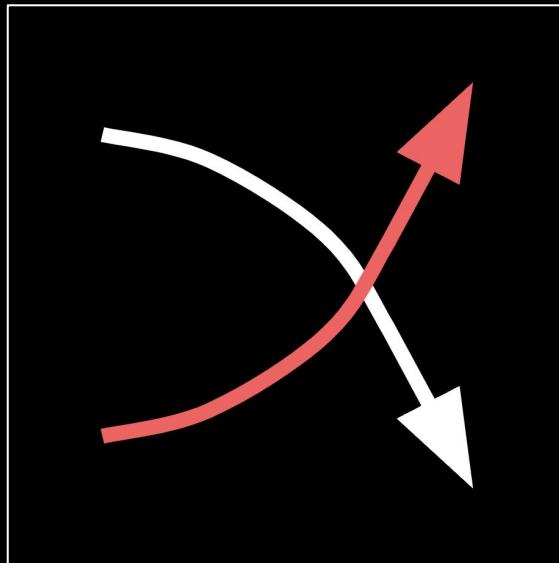


“Many people look at first order effects, thinking in the short term. Conversely, not spending time considering the 2nd and 3rd order effects of actions—which leads them to put too much trust in a system that will ultimately fail.”

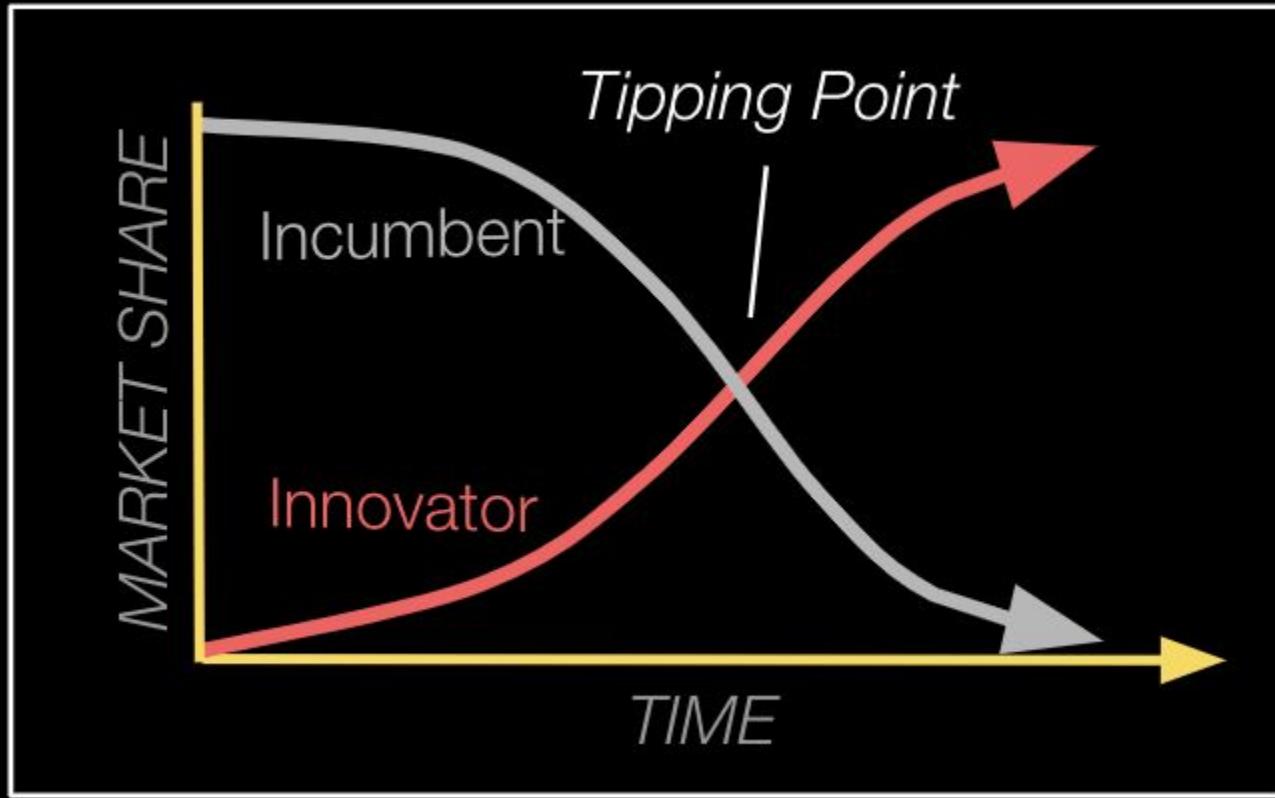
—JEFF BOOTH

CREATIVE DESTRUCTION

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Handbook

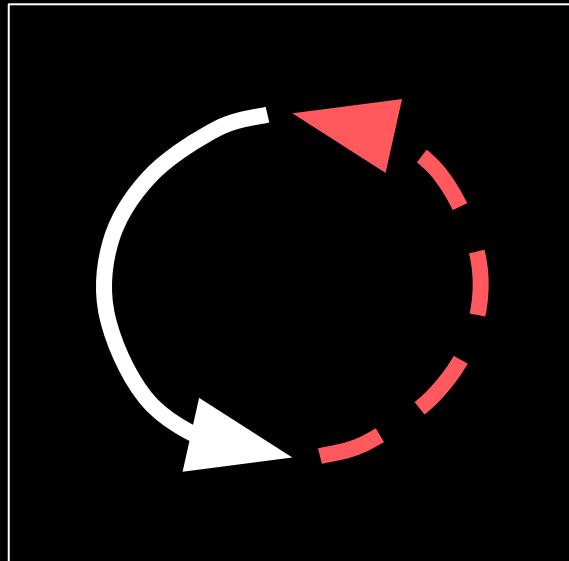


*The cycle of entrepreneurs
out-innovating and obsoleting
incumbents, under a free-market*



FEEDBACK LOOPS

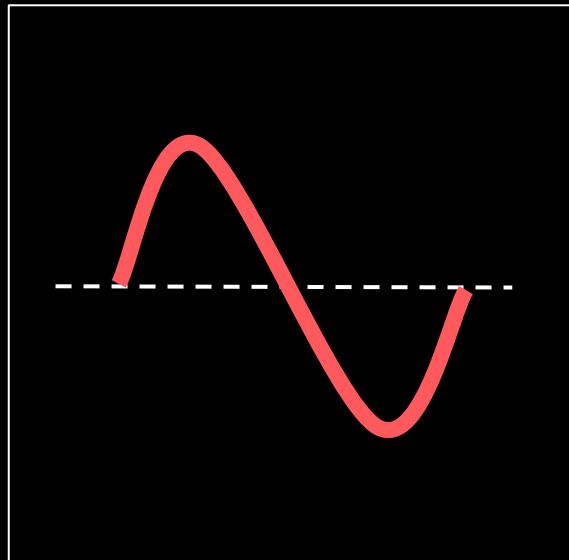
The
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Handbook



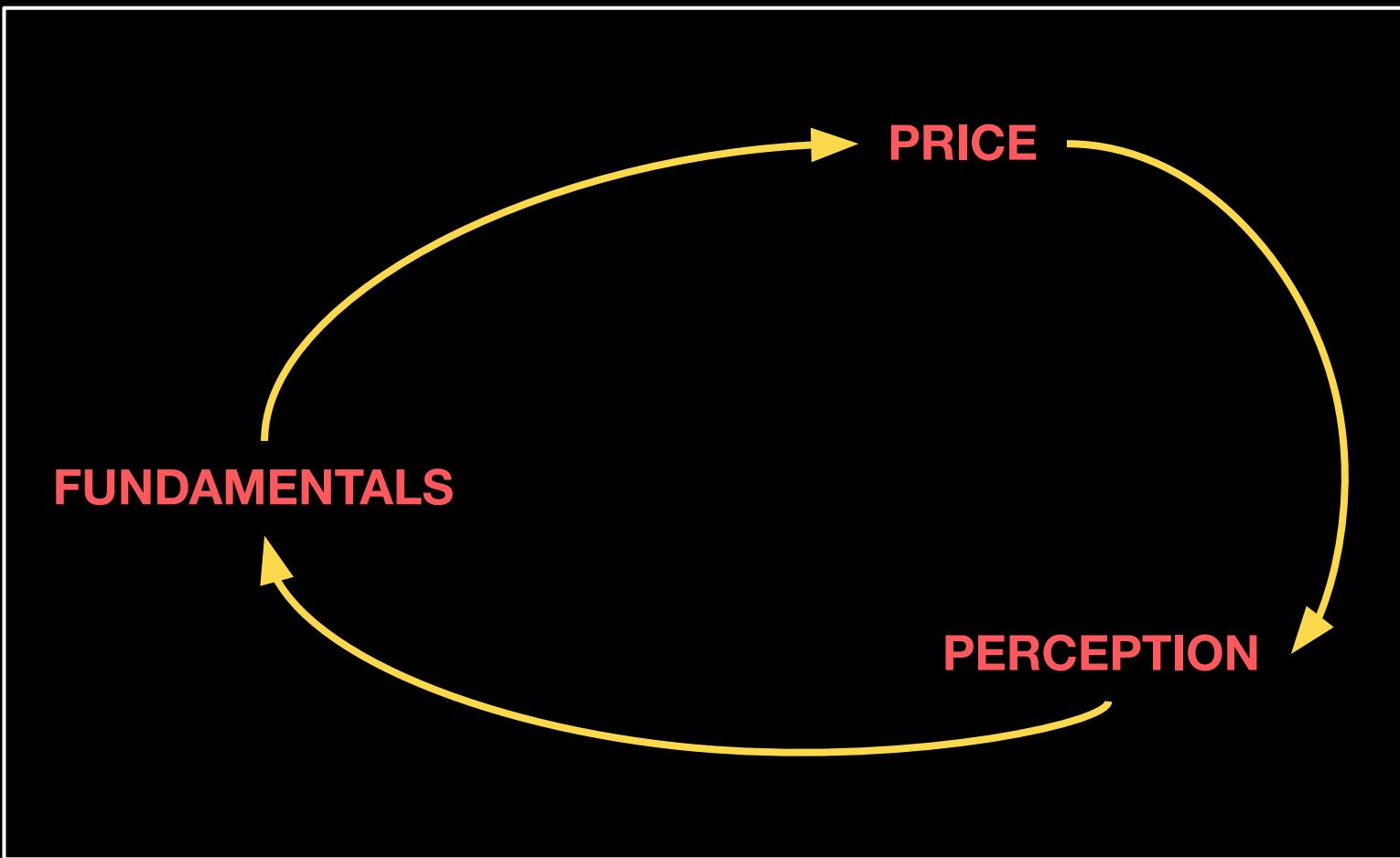
A system that reacts to its environment and the resultant output gets re-incorporated as an input

REFLEXIVITY

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Handbook



*The circular relationship
between market participants
and market sentiment, whereby
attributing the respective
impact of either is difficult*

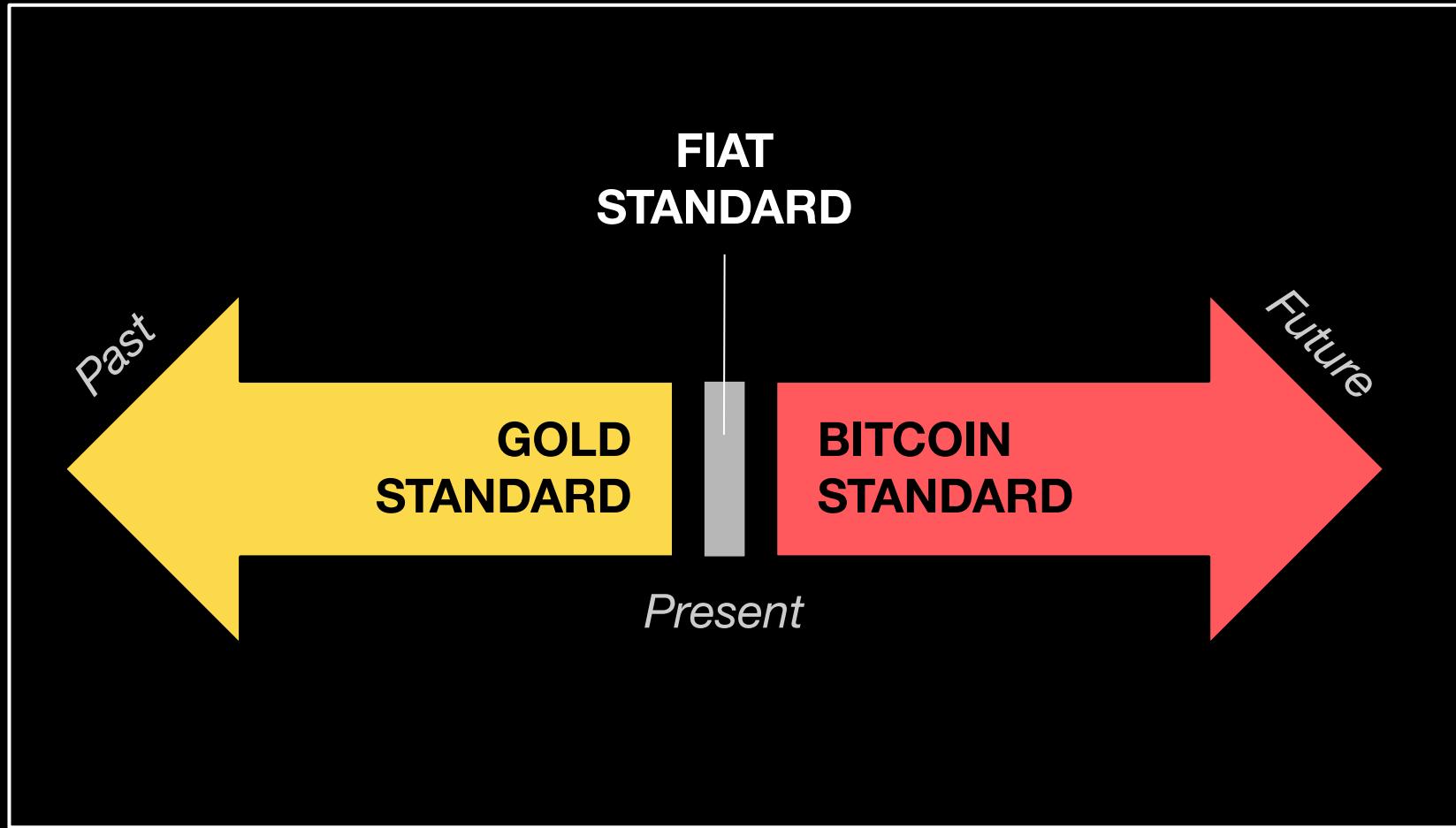


RELATIVITY

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Bitcoin
Handbook



When you're a part of a system, it can be difficult to zoom out to gain perspective



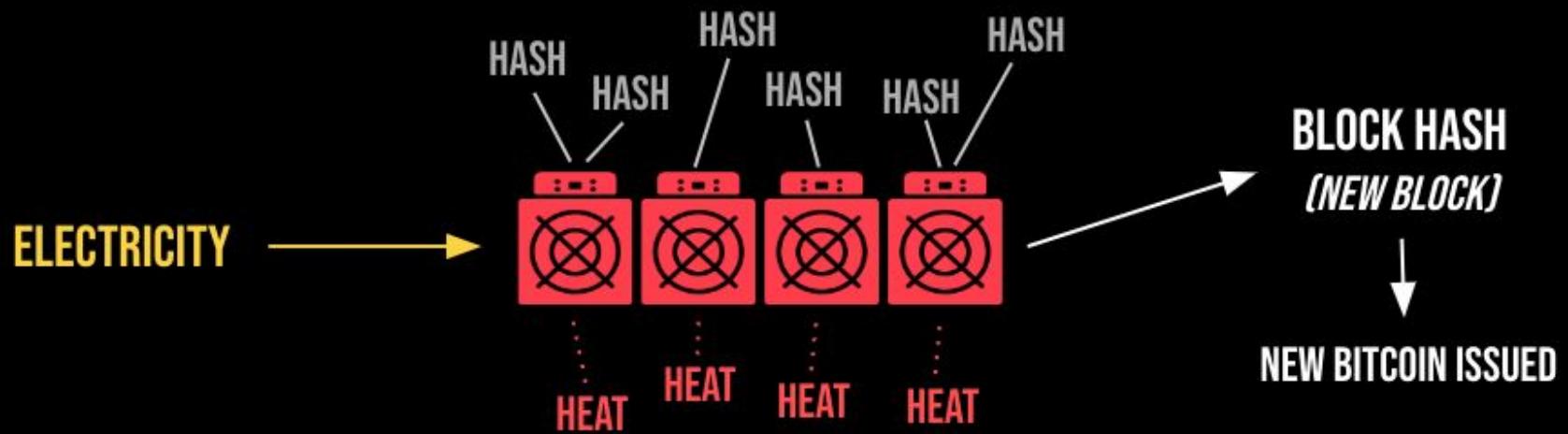
THERMODYNAMICS

1ST LAW

The
Bitcoin
Handbook

000000000000
000000592A974
B1B9F087CB776
28BB4A097D5C2
C11B3476A58E

*Energy cannot be created nor
destroyed in isolated systems.
It can only be transformed*



THERMODYNAMICS

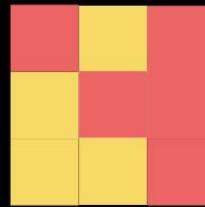
2ND LAW

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Bitcoin
Handbook

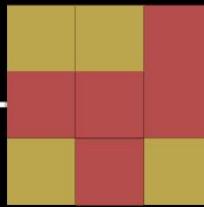


*The entropy of the universe
always increases with time.*

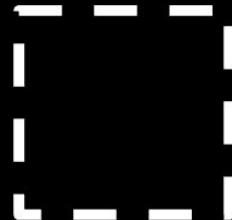
Past



Present



Future



*More
Certain*

*Less
Certain*

Unknown

ARROW OF TIME

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Handbook



*Establishing the one-way
direction of time by distinguishing
past from present.*

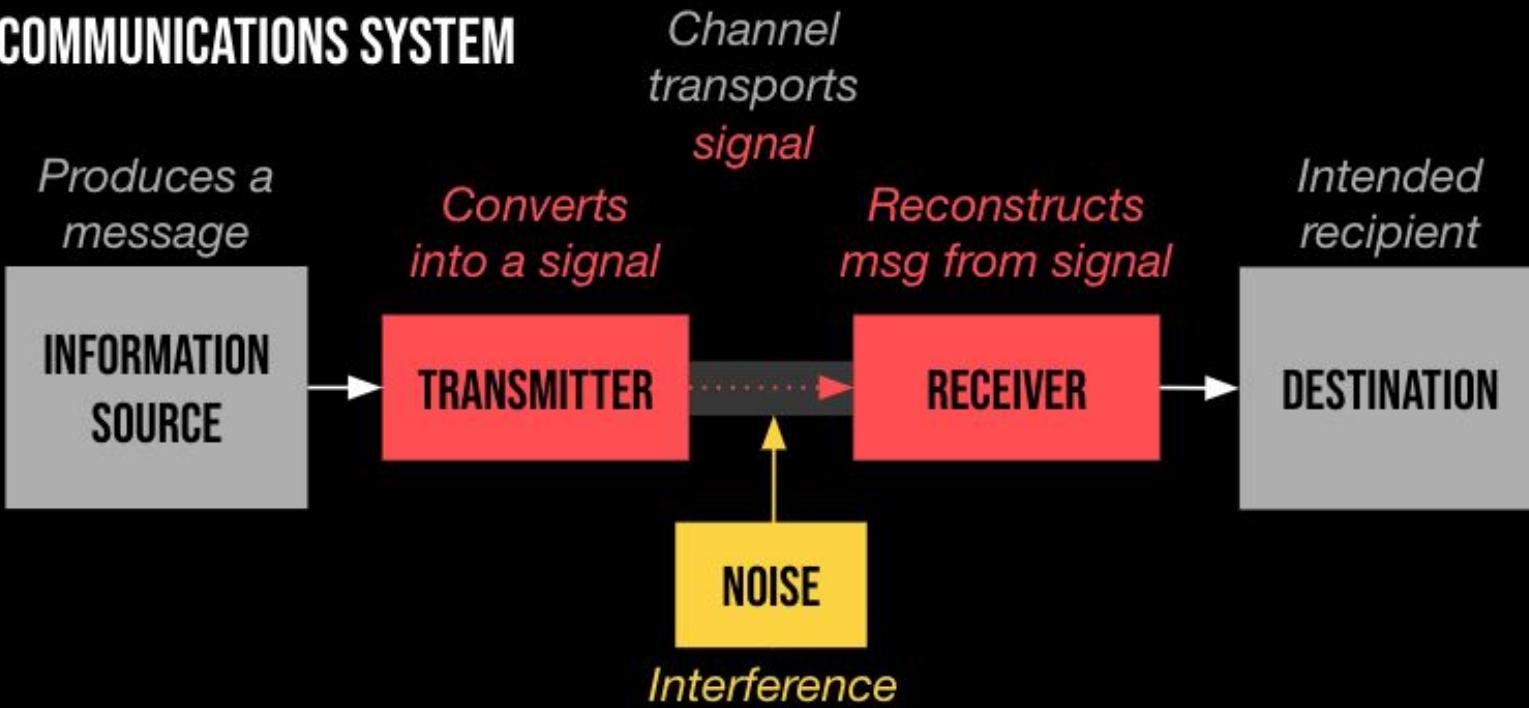
INFORMATION THEORY

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Bitcoin
Handbook



*How digital information is
communicated, stored,
and quantified.*

COMMUNICATIONS SYSTEM



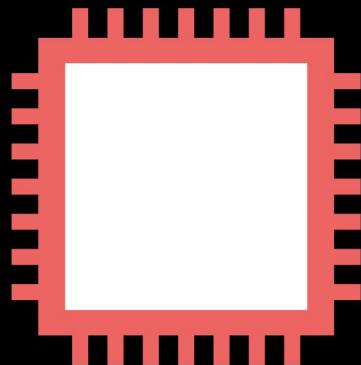
Adapted from *A Mathematical Theory of Communication* by Claude Shannon (1949).

"The fundamental problem of communication is that of reproducing at one point, either exactly or approximately, a message selected at another point."

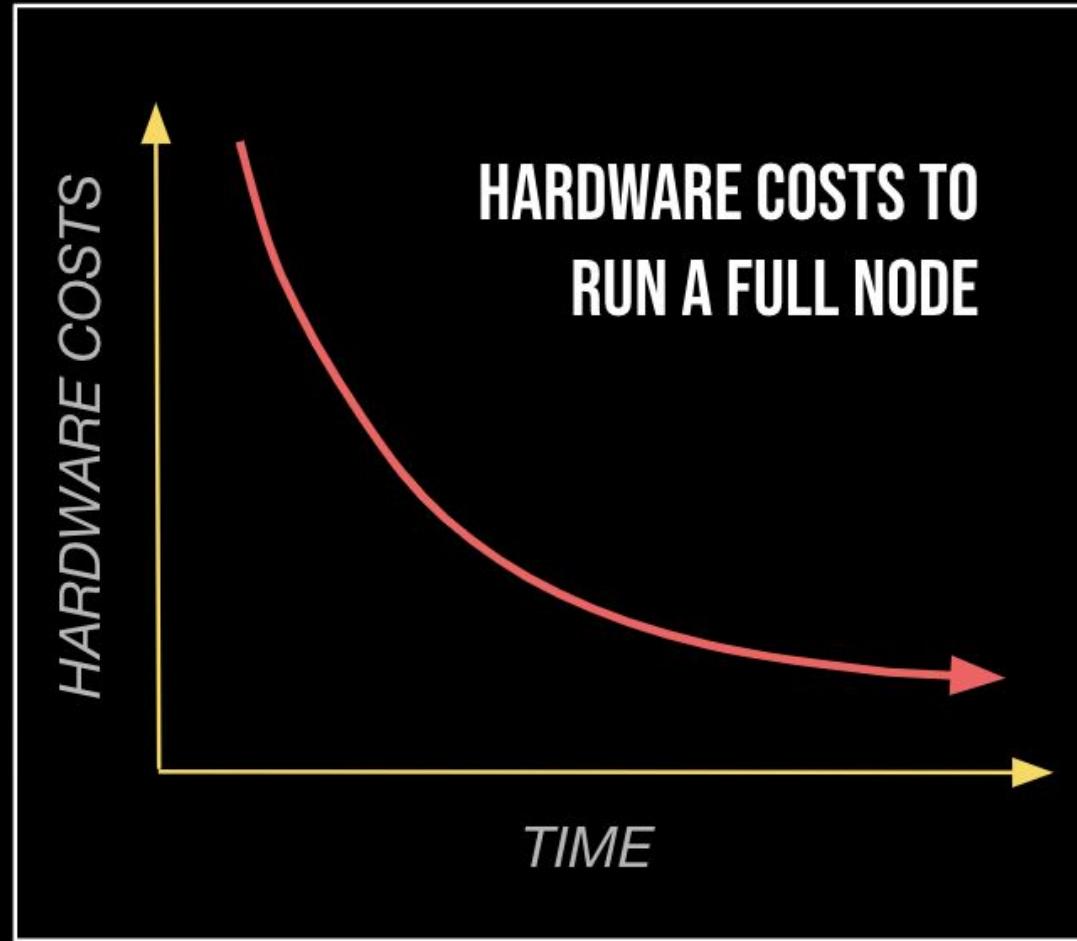
—CLAUDE SHANNON

MOORE'S LAW

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The observation that the number of transistors on a computer chip doubles approximately every two years

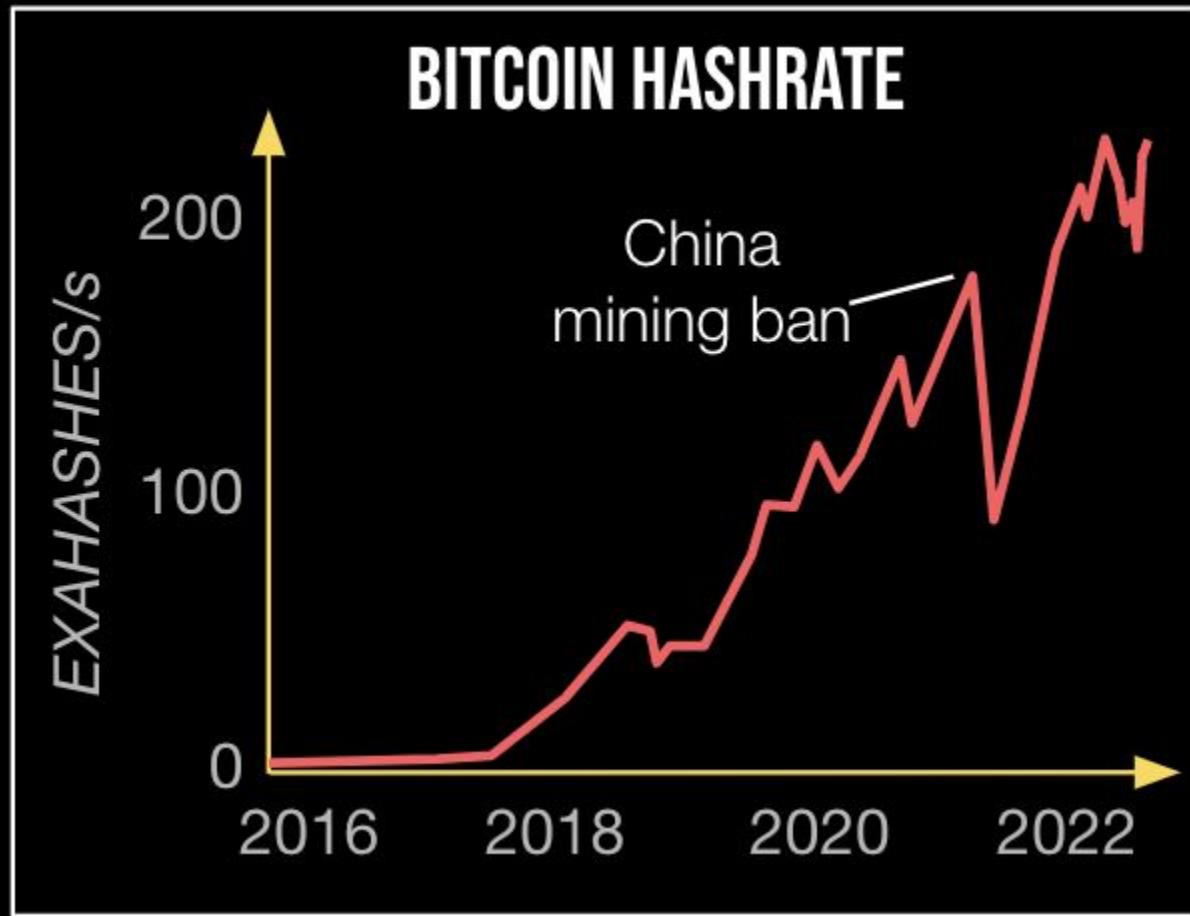


ANTIFRAGILITY

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Bitcoin
Handbook



Things that actively gain from volatility and unpredictability by using rapid feedback loops to evolve



GALL'S LAW

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Bitcoin
Handbook



Incremental improvements made to a functional system is a superior strategy to building a complex system from scratch

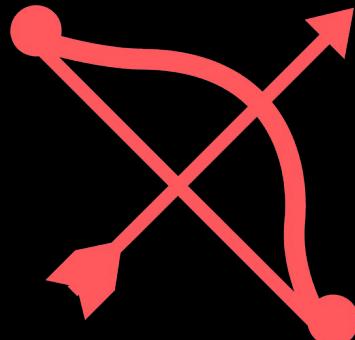
*“Bitcoin is too important to follow the Silicon Valley mantra of move fast and break things. Instead, it’s move slowly and don’t break **anything**.*

If a global financial system is to be built on a decentralized monetary system, the foundation must be protected at all cost.”

—PARKER LEWIS

ATTACK SURFACE

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The sum of all potential vulnerabilities from all potential access points

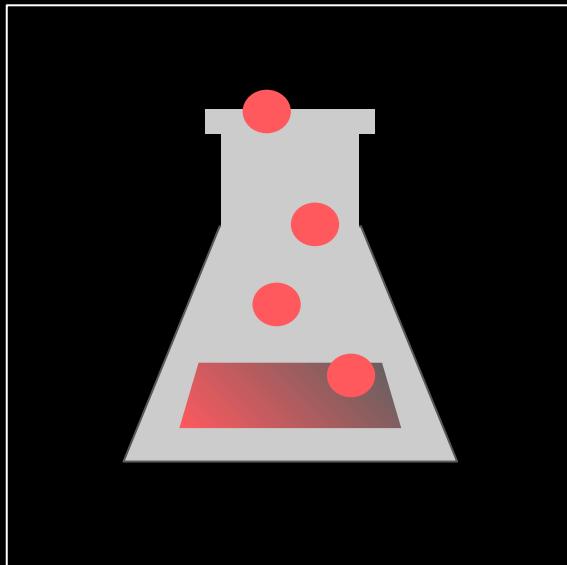
```
CAmount GetBlockSubsidy(int nHeight, const  
Consensus::Params& consensusParams)  
{  
    int halvings = nHeight /  
consensusParams.nSubsidyHalvingInterval;  
    // Force block reward to zero when right shift is  
    // undefined.  
    if (halvings >= 64)  
        return 0;  
  
    CAmount nSubsidy = 50 * COIN;  
    // Subsidy is cut in half every 210,000 blocks which  
    // will occur approximately every 4 years.  
    nSubsidy >>= halvings;  
    return nSubsidy;  
}
```

“Being open source means anyone can independently review the code. If it was closed source, nobody could verify the security.”

—SATOSHI NAKAMOTO

CATALYSTS

The
Bitcoin
Handbook



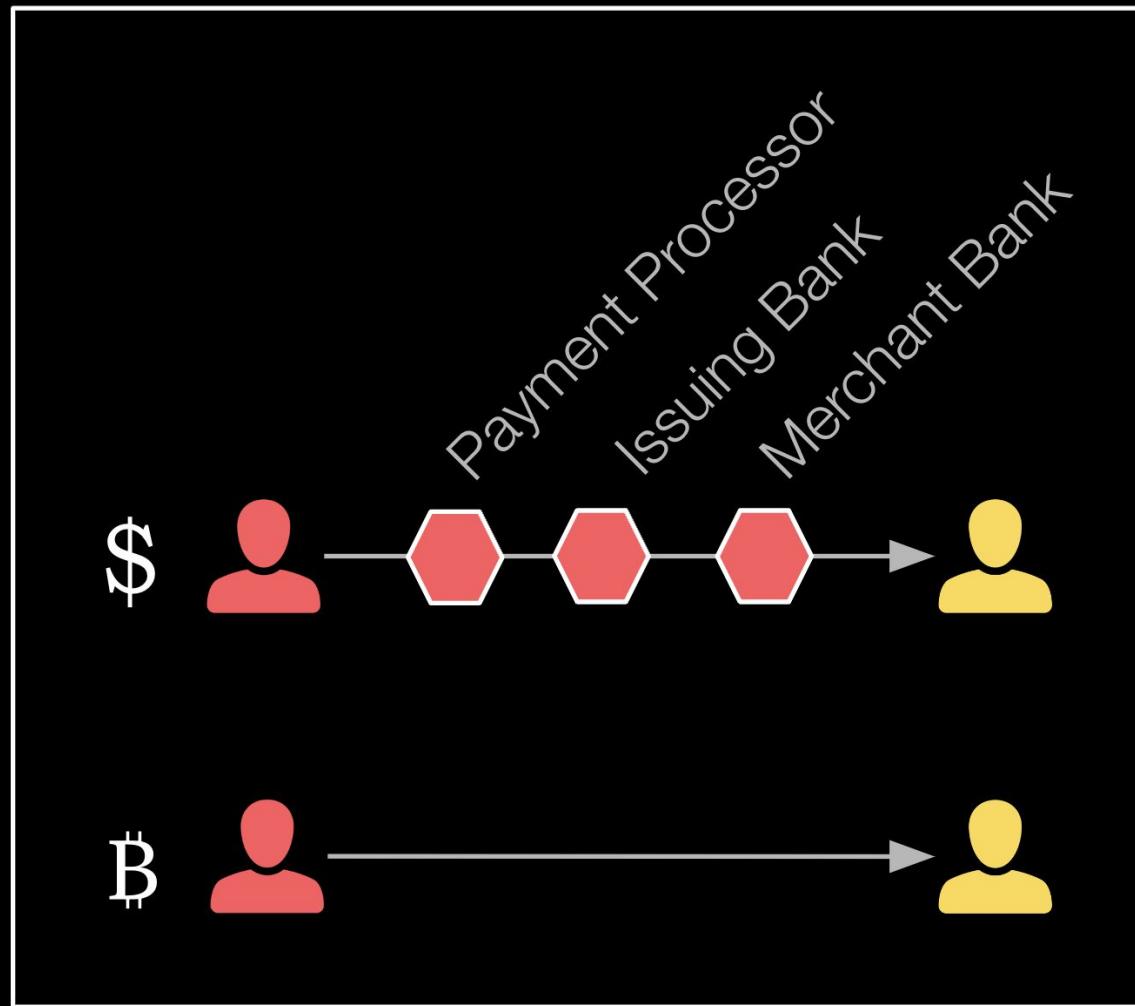
*Kick-starts a reaction
but isn't itself a reactant*

FRICITION

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Bitcoin
Handbook



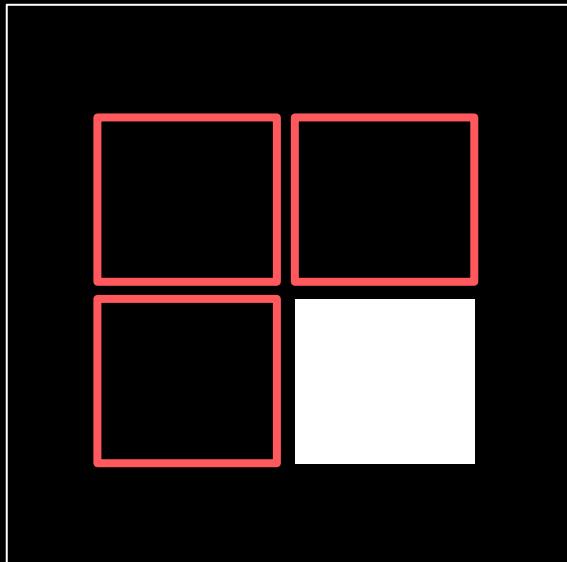
A force that opposes the relative movement of something



Psychology

PRISONER'S DILEMMA

The
Bitcoin
Handbook



Using math to determine if it's better to cooperate or compete in multiplayer games

“If bitcoin adoption increases, the countries that secure some bitcoin today will be better off competitively than their peers. Therefore, even if other countries do not believe in the investment thesis.., they will be forced to acquire some as a form of insurance.”

—CHRIS KUIPER & JACK NEUREUTER

JURISDICTIONAL ARBITRAGE

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Bitcoin
Handbook



*Taking advantage of
discrepancies between
competing legal jurisdictions*

SOCIAL PROOF

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Bitcoin
Handbook



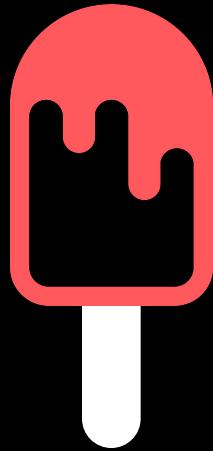
In uncertain situations we look to those we deem knowledgeable or competent for guidance

“Paul Tudor Jones validates it for other hedge fund managers, hedge fund managers validate it for sovereign-wealth funds, sovereign-wealth funds will validate it for central banks.”

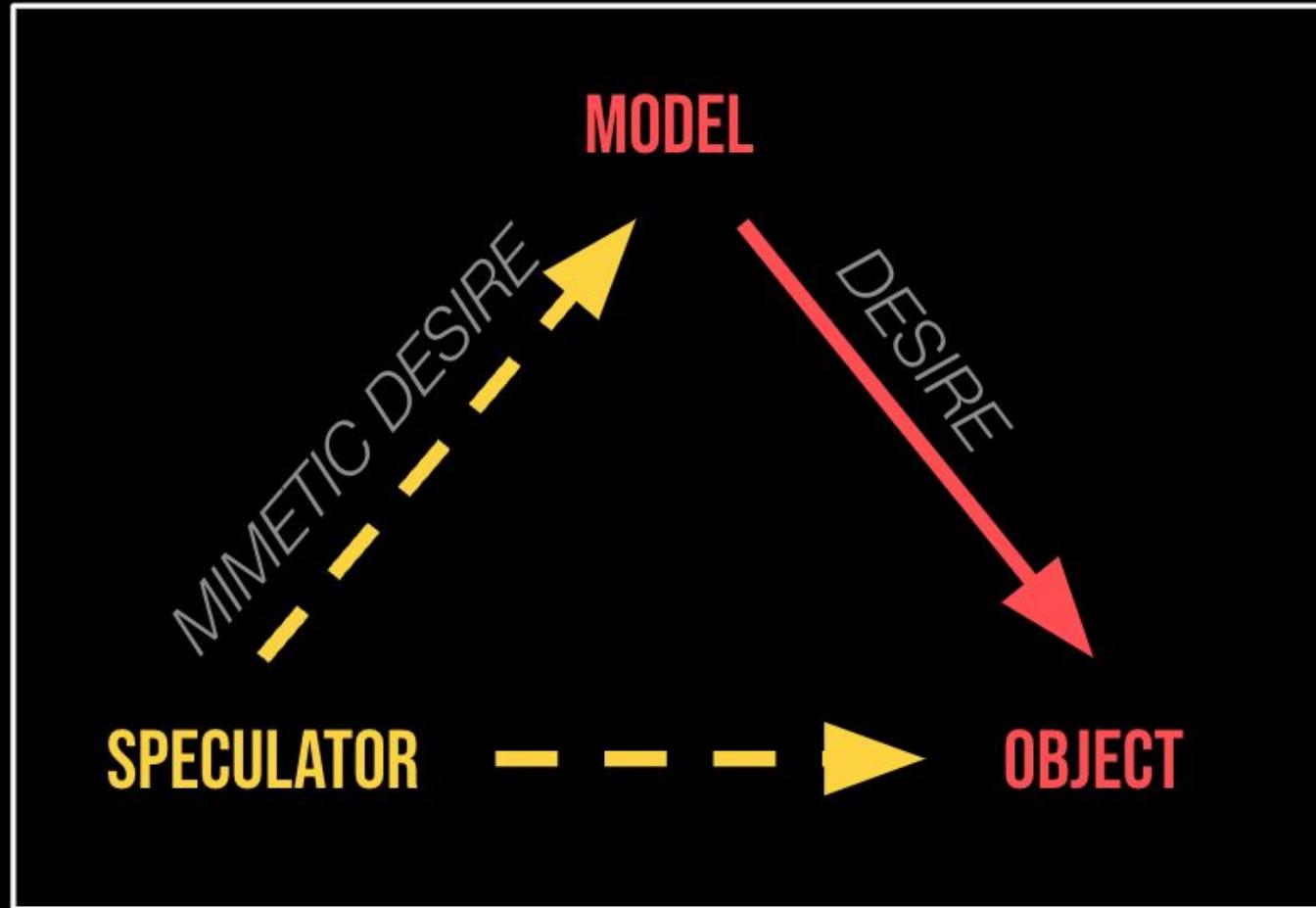
—NAVAL RAVIKANT

MIMETIC THEORY

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Bitcoin
Handbook

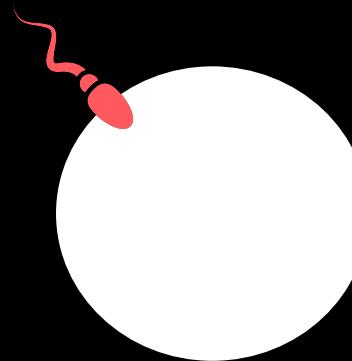


*Our desires are not intrinsic,
but derived from the desires
of others that we seek to
imitate*



FIRST CONCLUSION BIAS

The
Bitcoin
Handbook



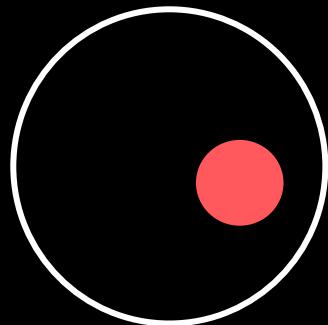
The tendency to accept the first answer offered, regardless of correctness, shutting out any further inquiry or debate

*“The mind works a bit like a sperm and egg:
the first idea gets in and then the mind shuts...
leads us to accept many erroneous results.”*

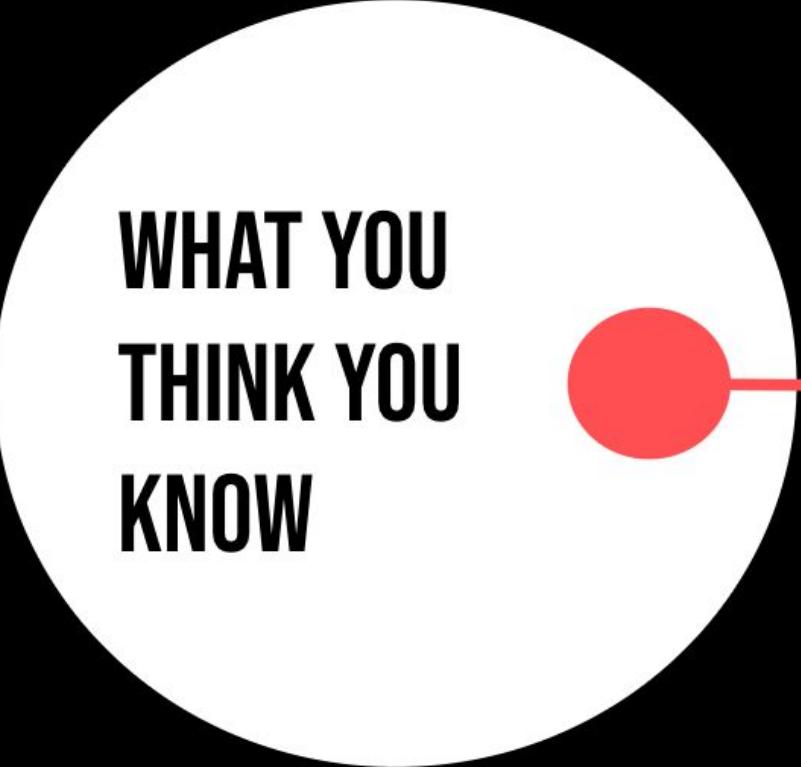
—CHARLIE MUNGER

CIRCLE OF COMPETENCE

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Understanding where your knowledge is lacking will illuminate where you're vulnerable

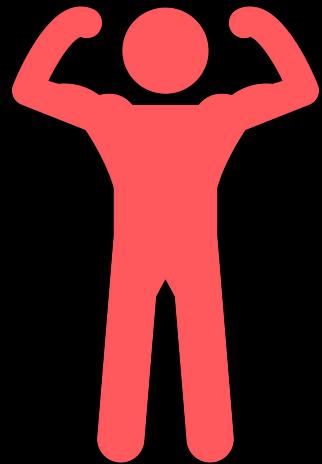


**WHAT YOU
THINK YOU
KNOW**

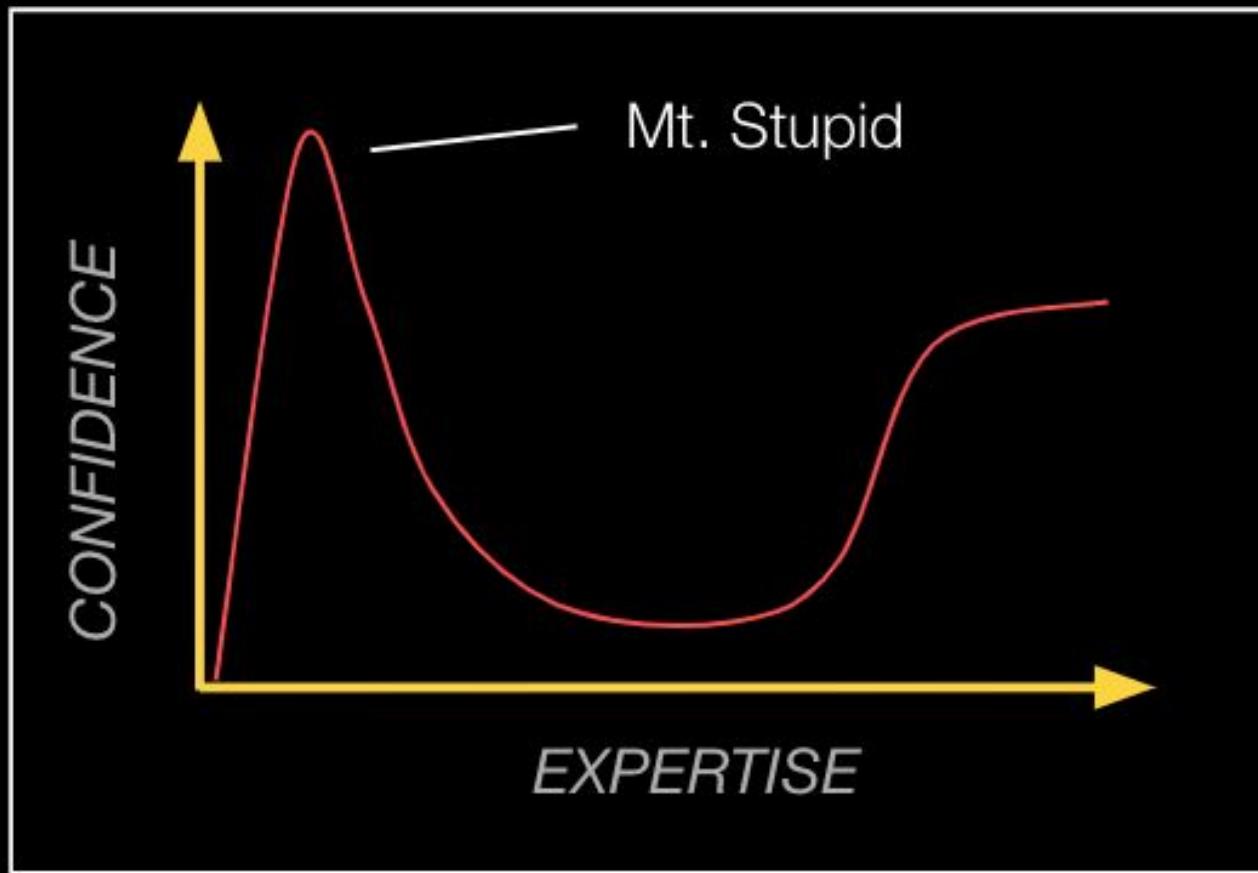
**WHAT YOU
ACTUALLY
KNOW**

DUNNING-KRUGER EFFECT

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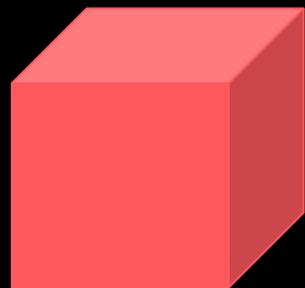


*Overestimating your
knowledge in a specific area
leads to erroneous decisions*

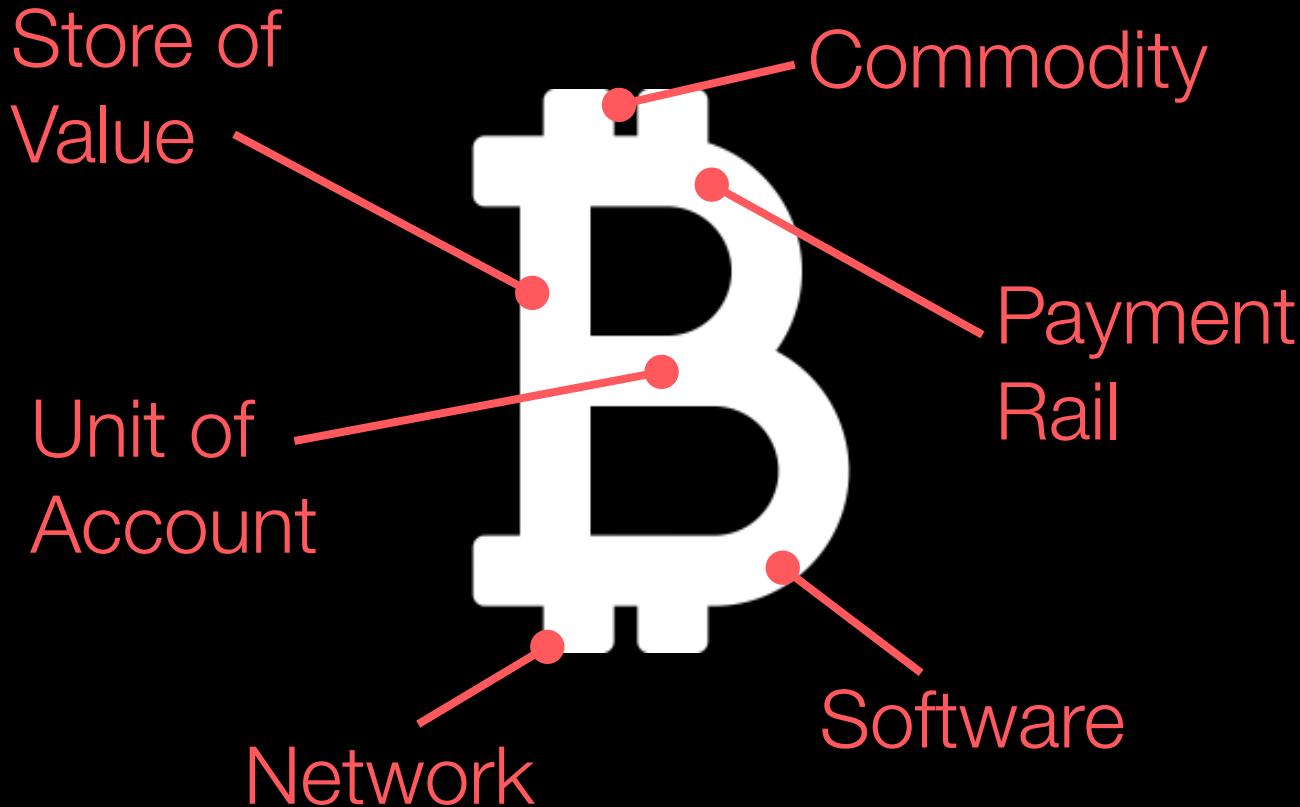


CATEGORY ERROR

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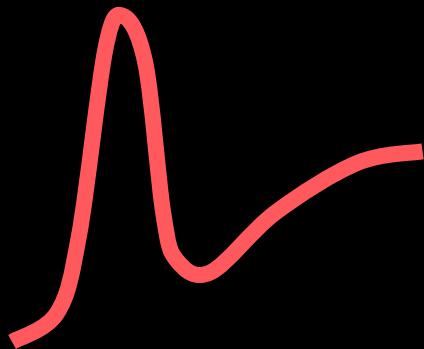


Assuming an individual property of something is representative of its whole, leading to misattribution

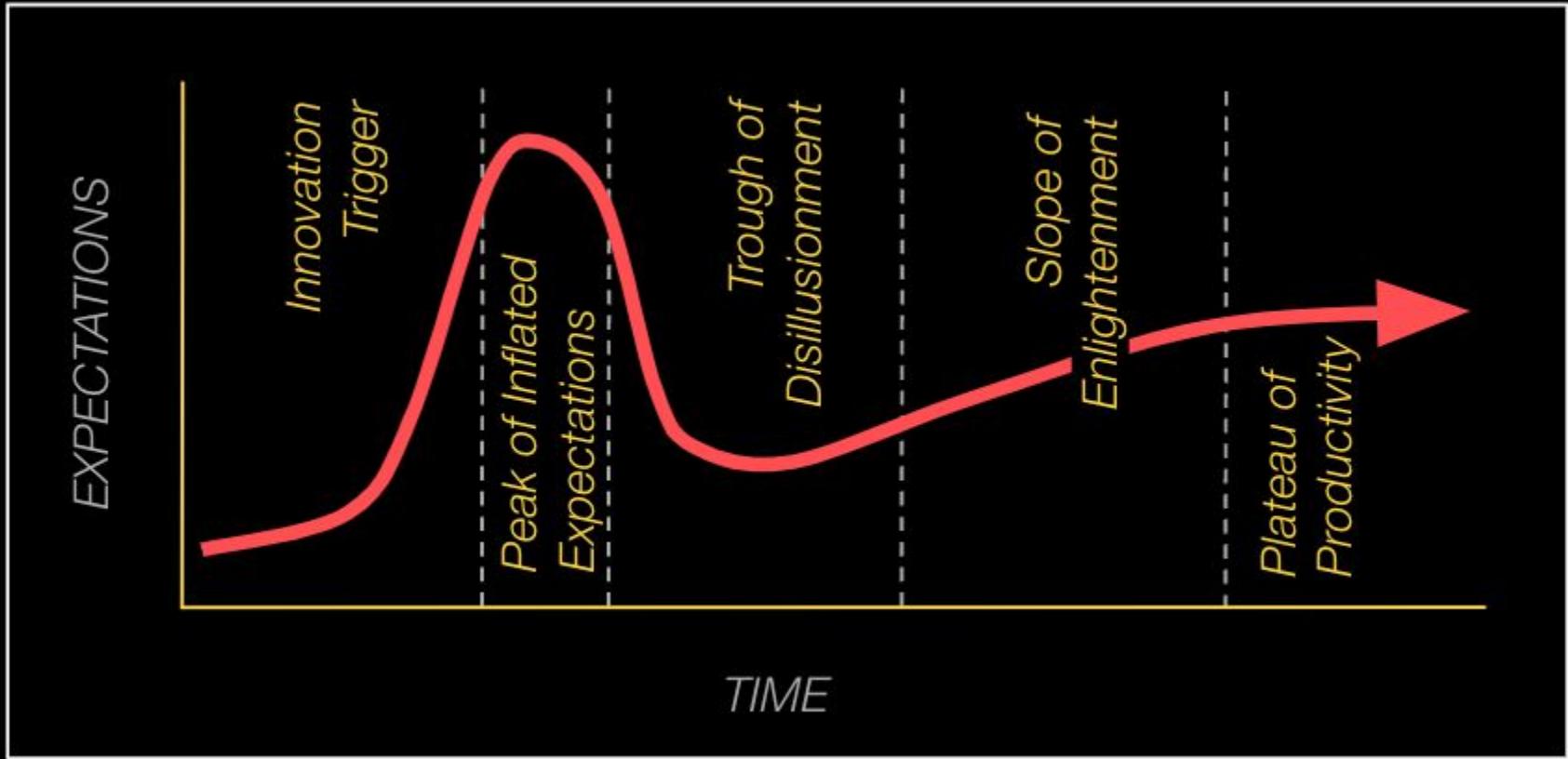


GARTNER HYPE CYCLE

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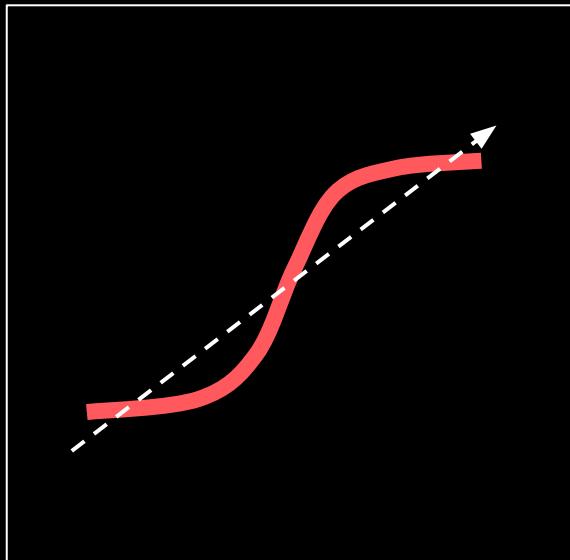


*A methodology for ascertaining
the maturity and adoption of
new technologies and
applications*

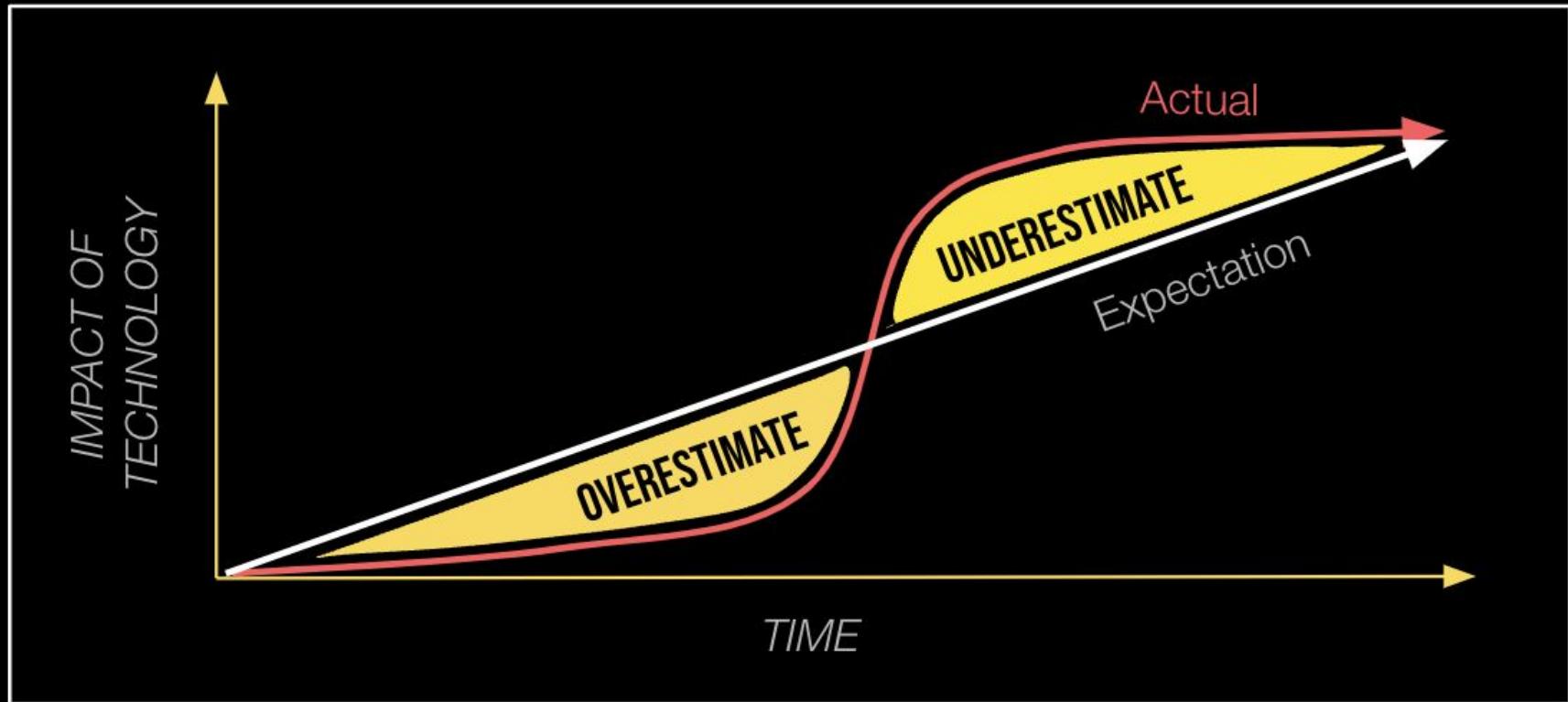


AMARA'S LAW

BITCOIN
ESSENTIAL
CONCEPTS

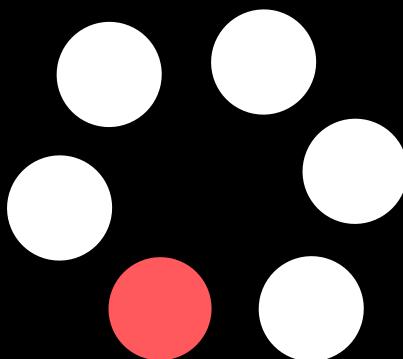


We tend to overestimate the impact of new technologies in the short term and underestimate it in the long term

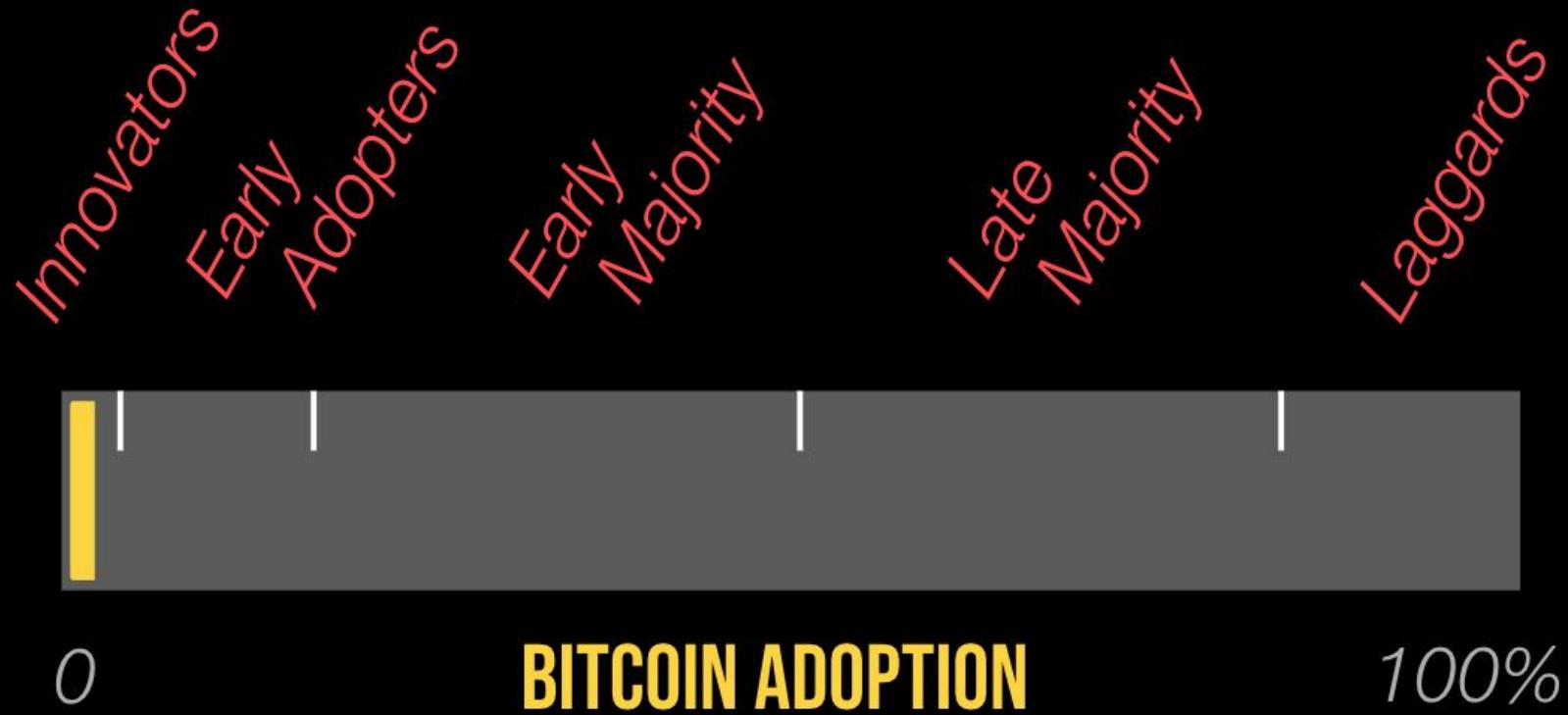


INTRANSIGENT MINORITY

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*When a few individuals shape
the preferences of the majority
by their unwillingness to submit
to the default option*



INEQUIVALENCE THEOREM

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When economic conditions become excessively burdensome, individuals with the capacity will permanently exit a jurisdiction

THE
SOVEREIGN

INDIVIDUAL

“In the Information Age.. the rational person will not respond to the prospect of higher taxes to fund deficits..

Sovereign individuals and other rational people will flee jurisdictions with large unfunded liabilities.”

—JAMES DALE DAVIDSON & WILLIAM REES-MOGG

GELL-MANN AMNESIA

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*Observing errors in reporting of
a topic, yet trusting the same
source in areas where you are
less knowledgeable*

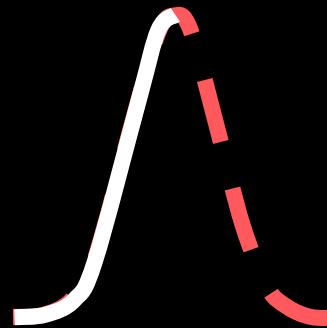
Newsweek

Bitcoin Mining on Track to Consume All of the World's Energy by 2020

ANTHONY CUTHBERTSON 12/11/17

THE LINDY EFFECT

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The theory that the lifespan of non-perishable things are proportional to their current age

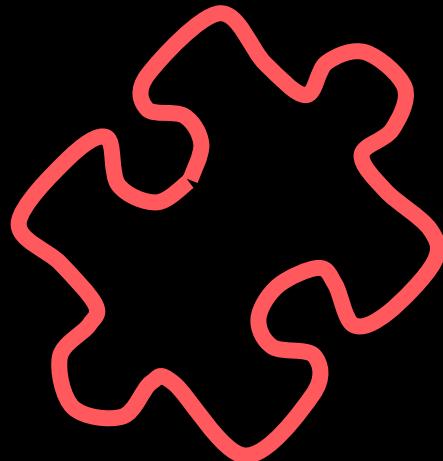
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**DAYS SINCE THE BITCOIN
NETWORK HAS BEEN DOWN**

As of 8 September 2022

EMERGENCE

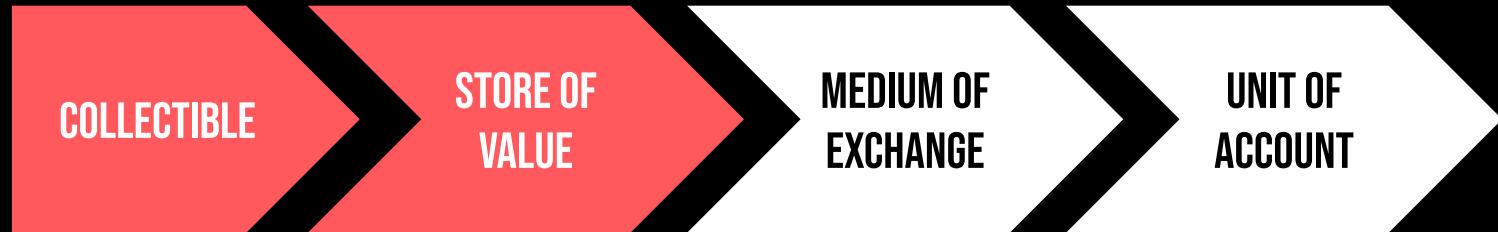
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When novel dynamic structures arise from the interaction of individual components and becomes self-regulating

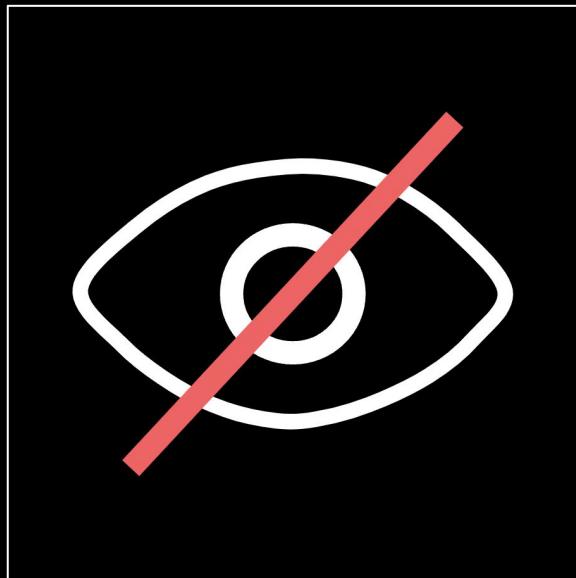
“Bitcoin is currently transitioning from the first stage of monetization to the second stage.. No one alive has seen the real-time monetization of a good (as is taking place with Bitcoin), so there is precious little experience regarding the path this monetization will take.”

—VIJAY BOYAPATI

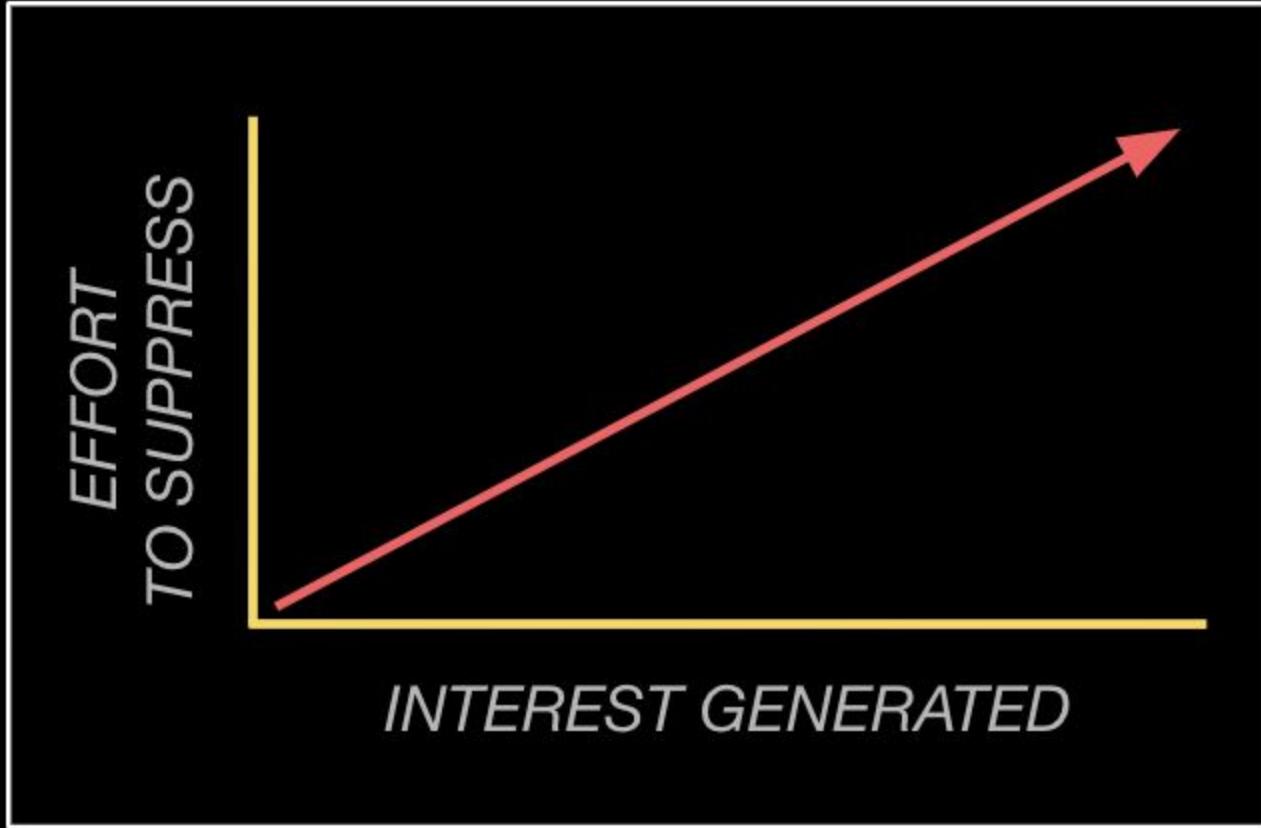


STREISAND EFFECT

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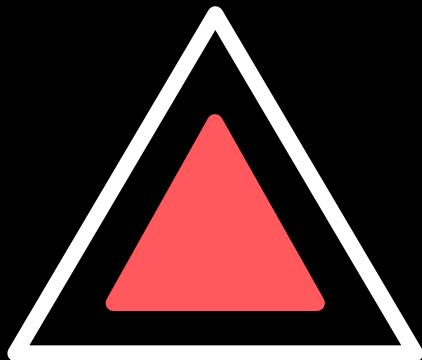


Attempting to hide, remove, or censor something has the unintended consequence of publicizing it more widely



MORAL HAZARD

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When a party has a duty to serve the interests of others, but instead places its own interests first

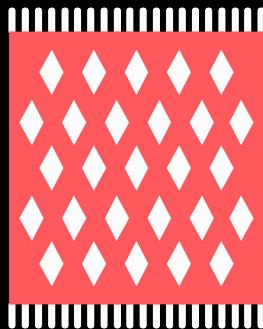


“The root problem with conventional currency is all the trust that’s required to make it work. The central bank must be trusted not to debase the currency, but the history of fiat currencies is full of breaches of that trust.”

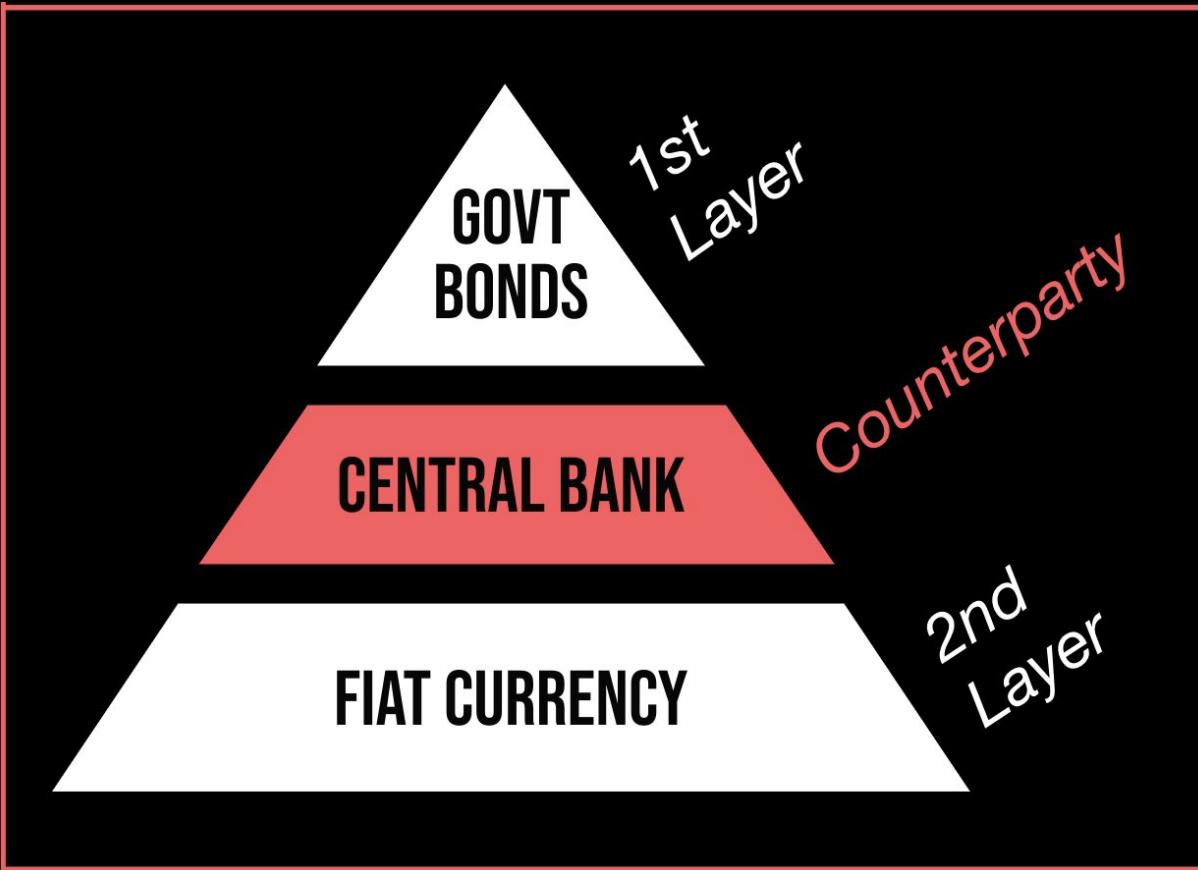
—SATOSHI NAKAMOTO

COUNTERPARTY RISK

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*The likelihood of a party
defaulting on its obligation
in a transaction*



Adapted from *Layered Money* by Nik Bhatia



Anil Patel

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