Thinking in BlockChain

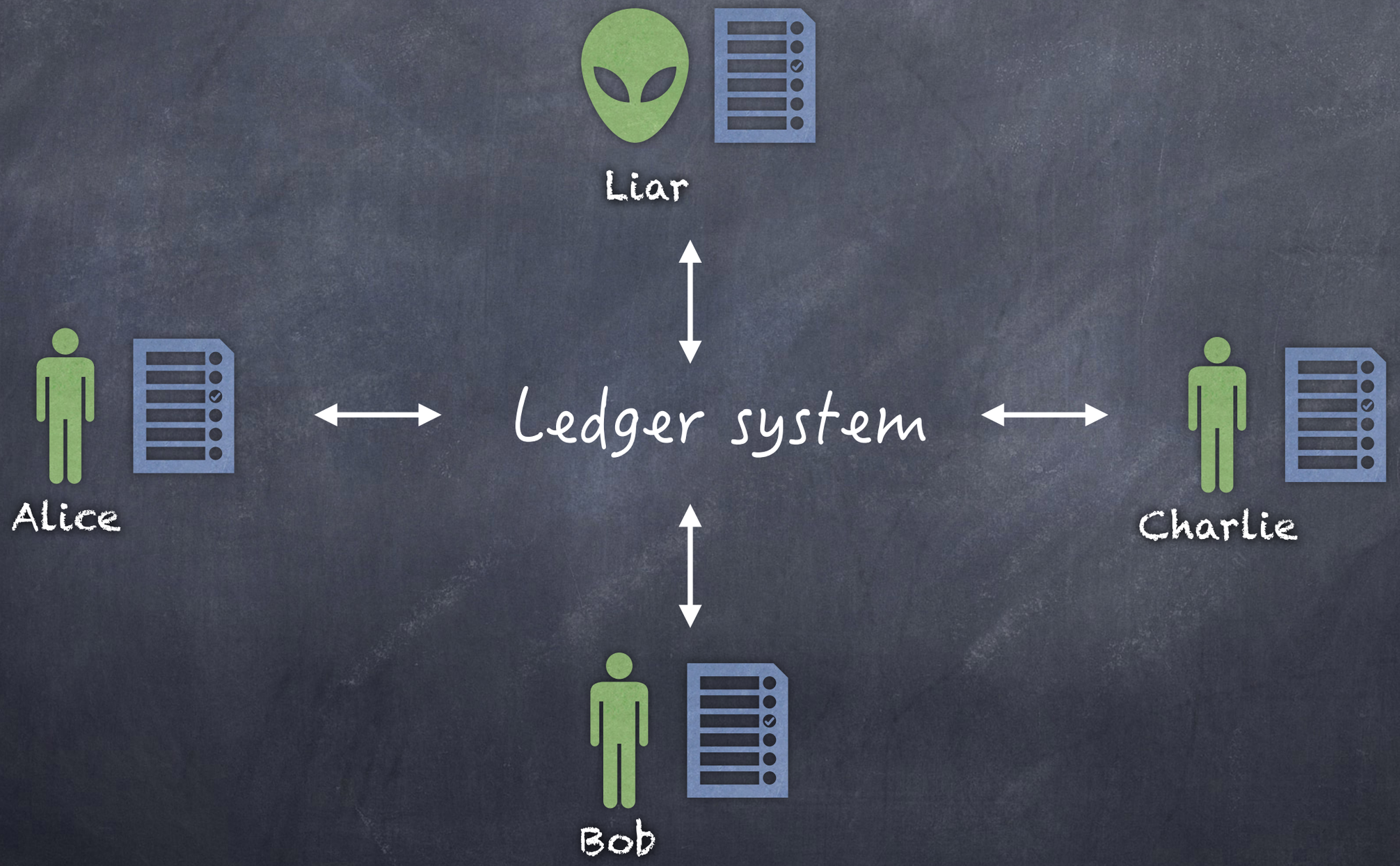
LinkChain Team

Thinking in Blockchain

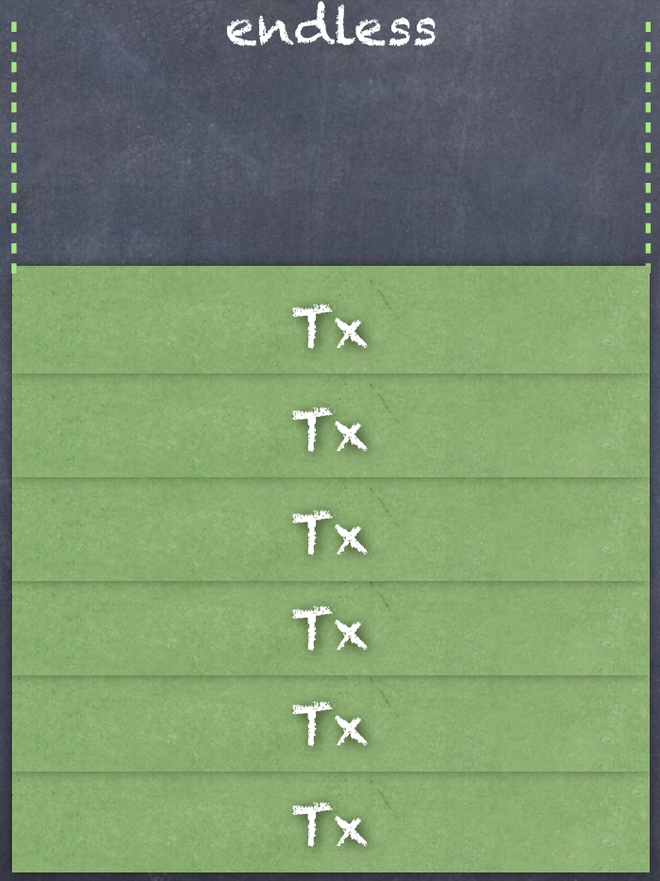
- The known BlockChain
- Different perspectives of BlockChain
- More than blockchain

The Known BlockChain

- BTC



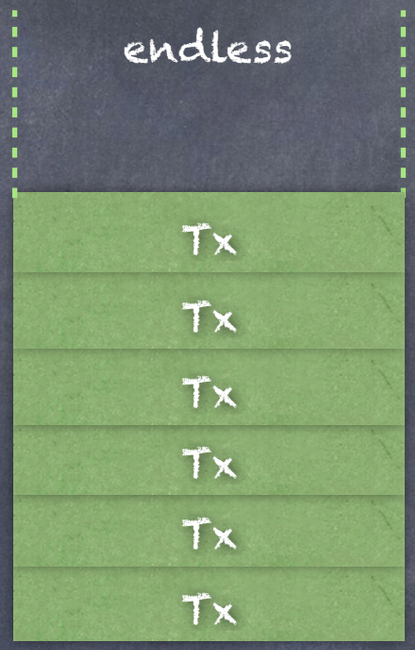
- BTC



Global Ledger

Linear vector?

- Utopia

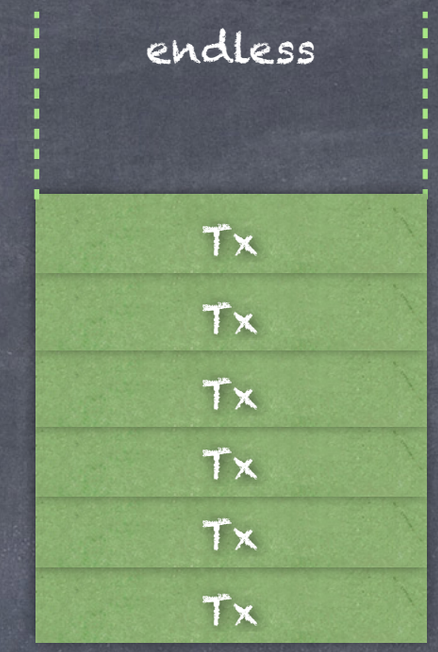


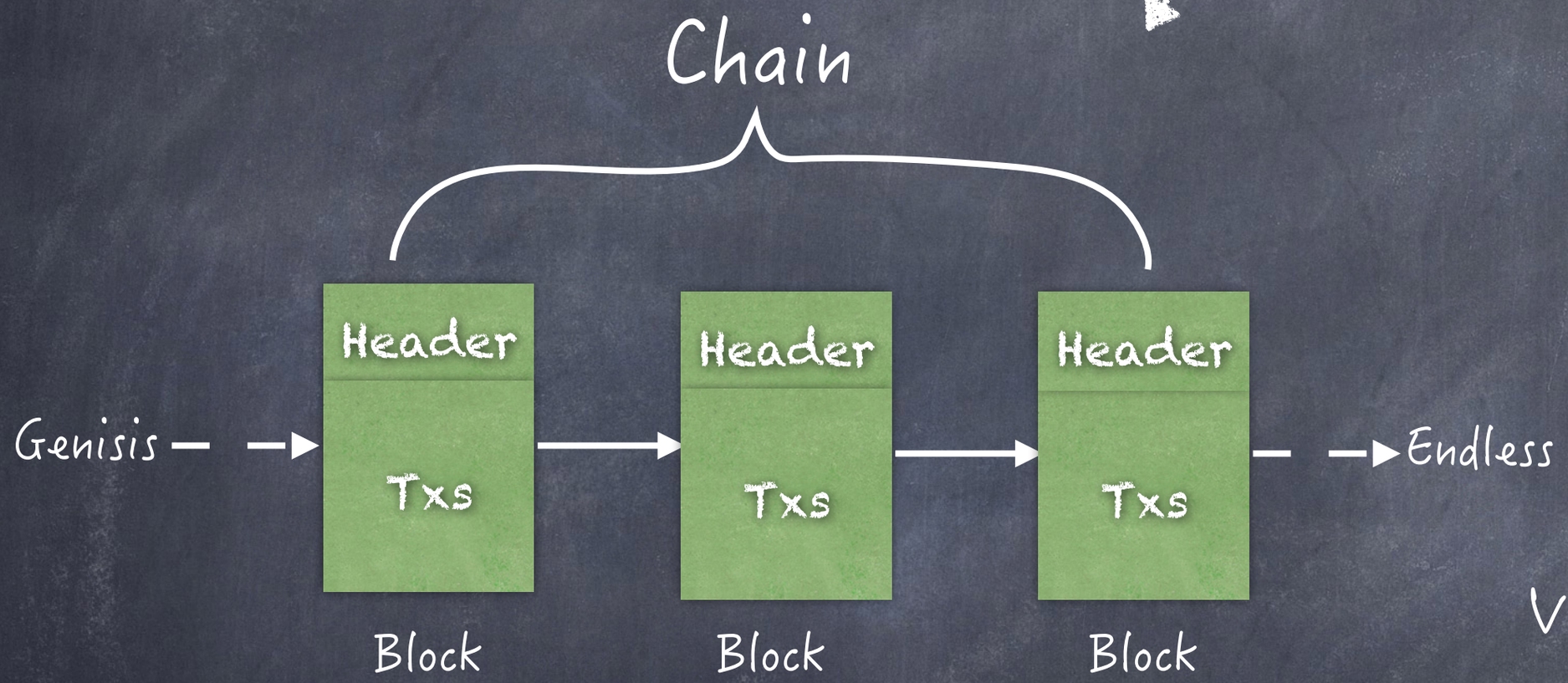
Alice

Charlie

Bob

- BTC ledger





\+ POW

\+ P2P

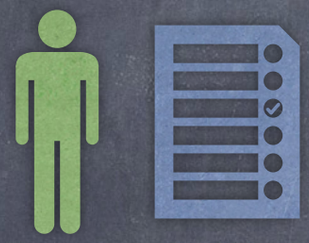
Value:

- transparency
- Security
- Traceability
- Decentralization

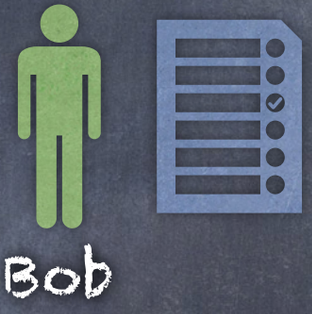
- Value

Liar

Alice



Charlie



Bob

- transparency
- Security
- Traceability
- Decentralize

= Trustless = Trustworthy

Extension:

- ETH。 Smart Contract and Decentralized Application Platform
- EOS。 An operating system-like construct upon which applications can be built
- Fabric。 (A blockchain is a peer-to-peer distributed ledger forged by consensus, combined with a system for "smart contracts" and other assistive technologies)
- DAG。 (No Block)
- Private/consortium blockchain。 (No Coin, Supervise, Centralize)

OS

Permission

Smart contract

OnChain/OffChain

Supervise

No Coin

consensus

Ledger

Account

No Block

Throughput

Rollback

Latency

Confidentiality

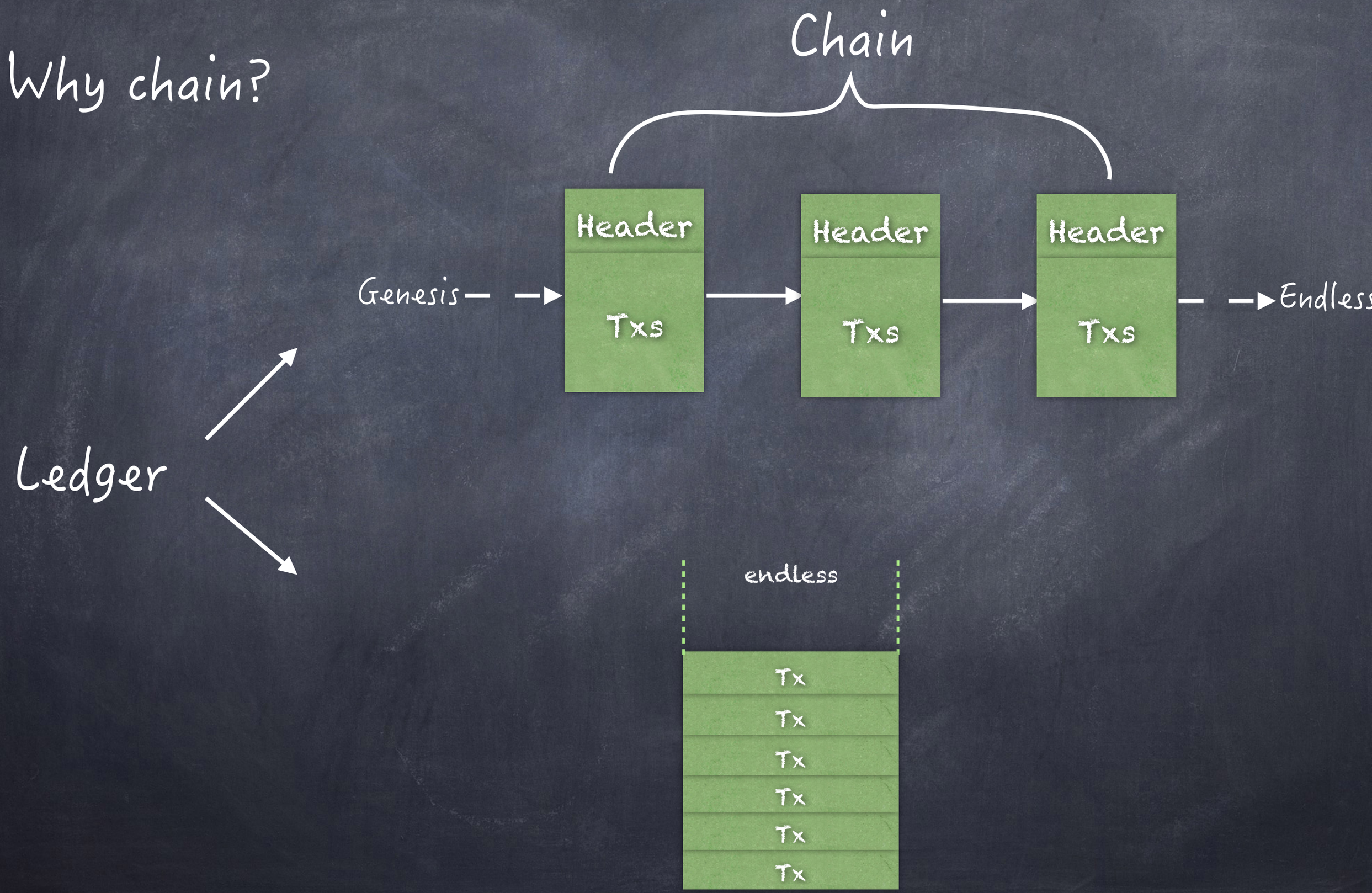
State machine

What a mess!

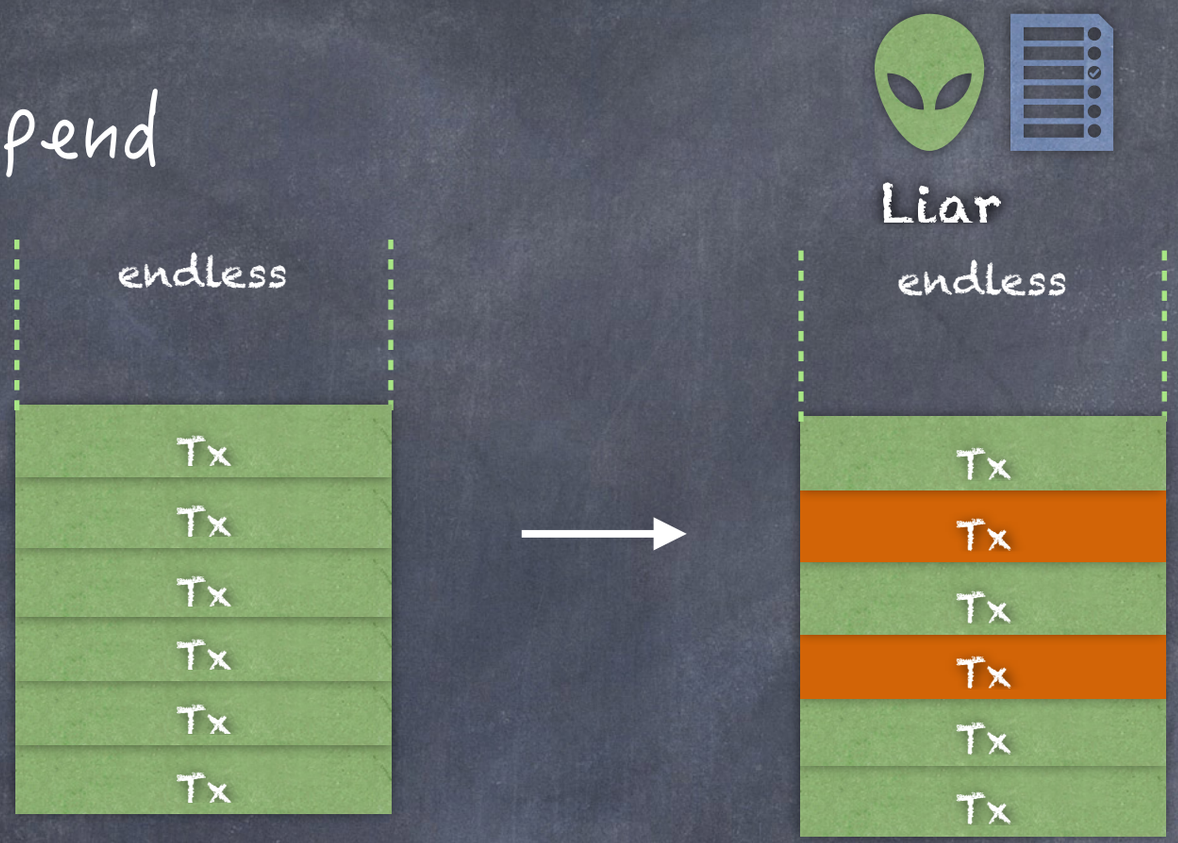
Different perspectives of BlockChain

BlockChain: Chain + Consensus

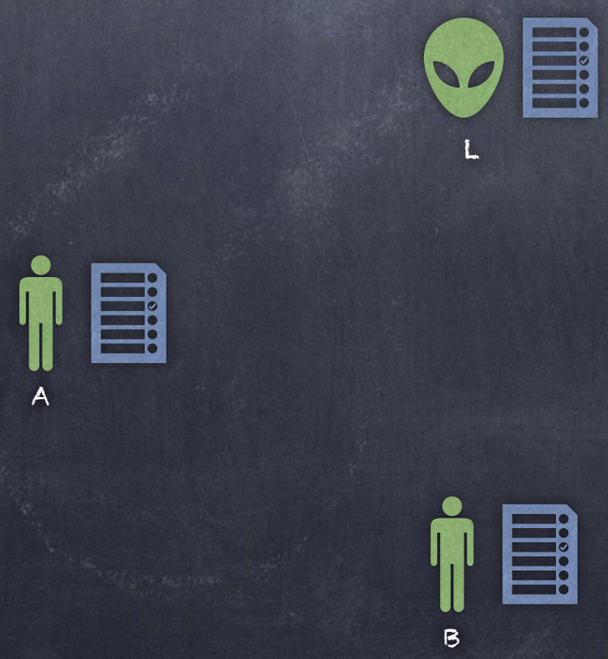
Why chain?


Chain
Genesis
Header
Txs
Header
Txs
Header
Txs
Endless
Ledger
endless
Tx
Tx
Tx
Tx
Tx
Tx

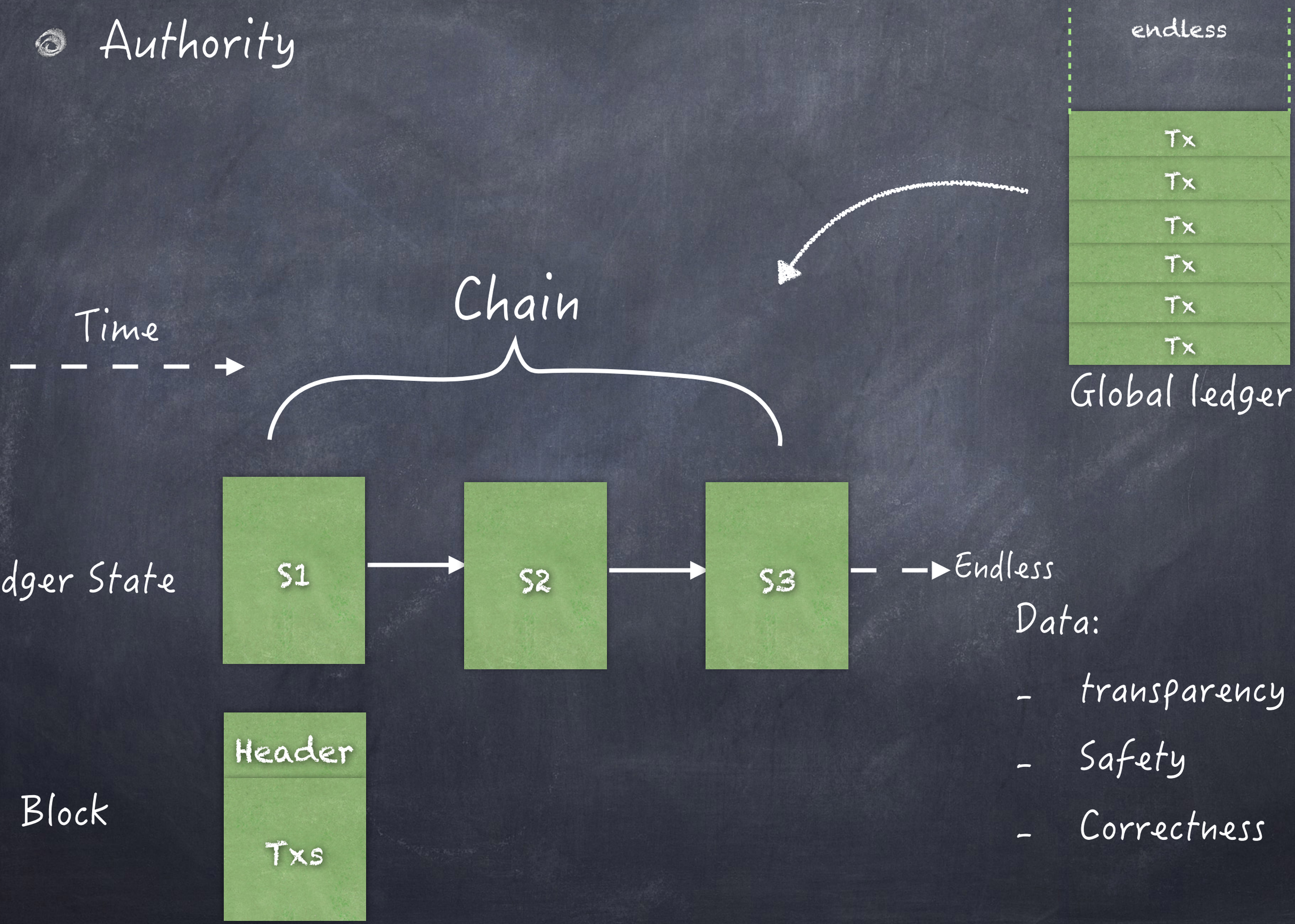
- Double spend



Lack of state consistency



- Authority

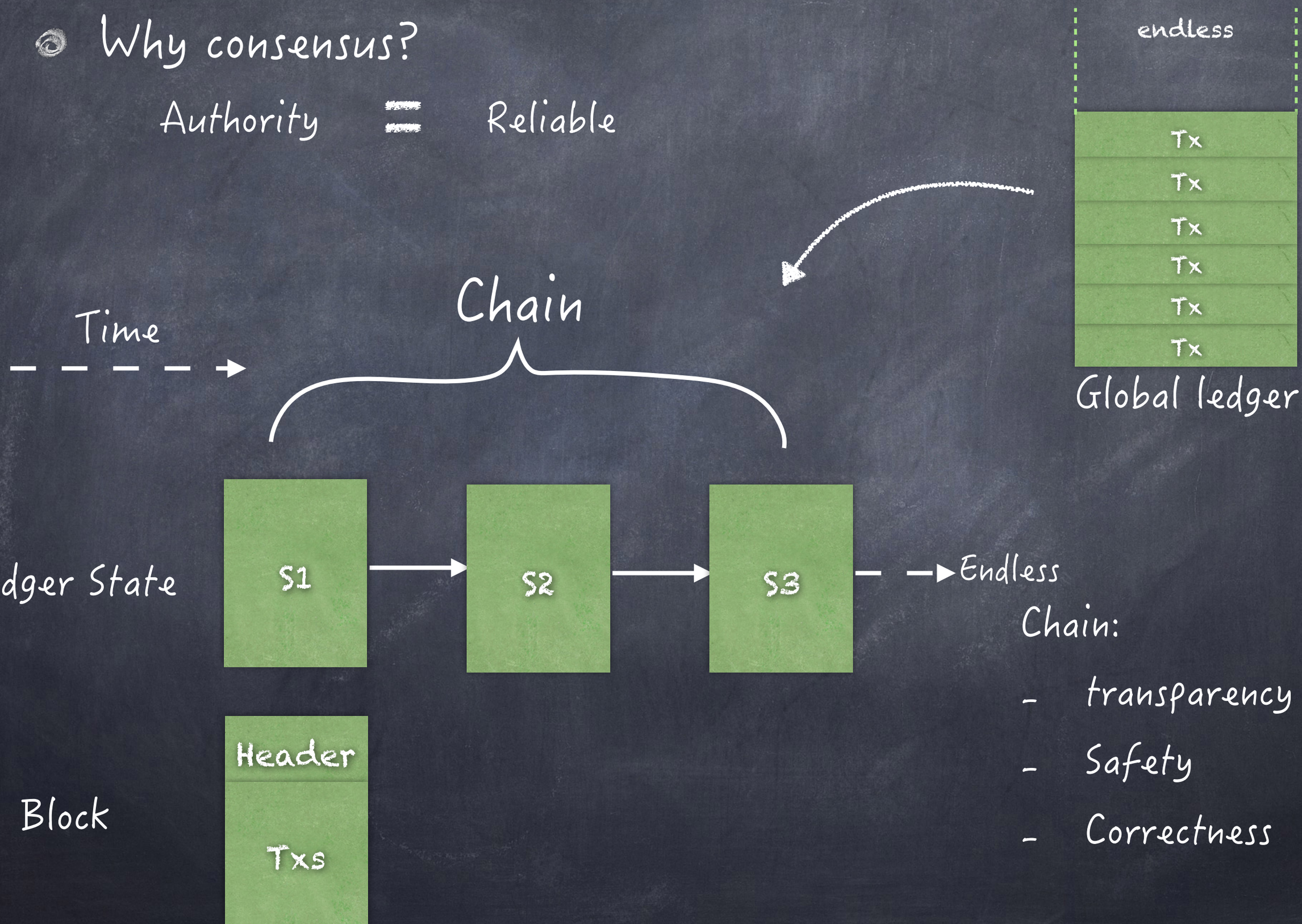


Data:

- transparency
- Safety
- Correctness

- Why consensus?

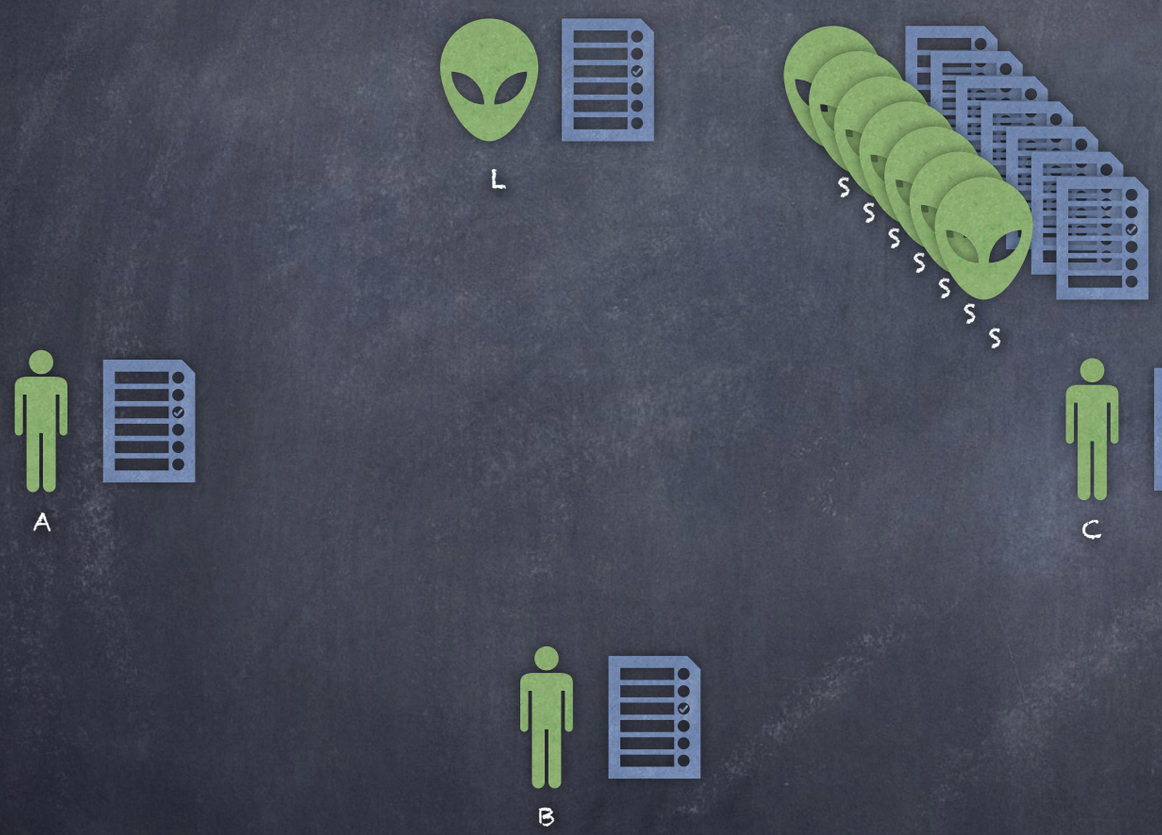
Authority = Reliable



Chain:

- transparency
- Safety
- Correctness

- Consensus

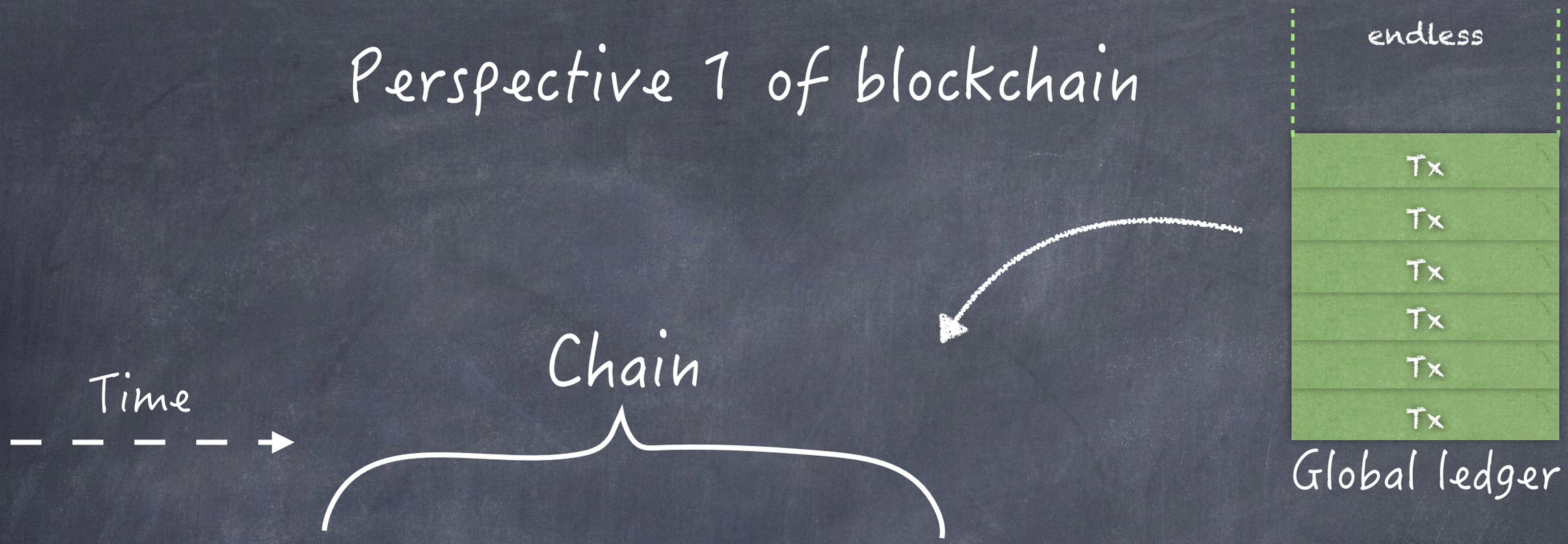


Voting is good

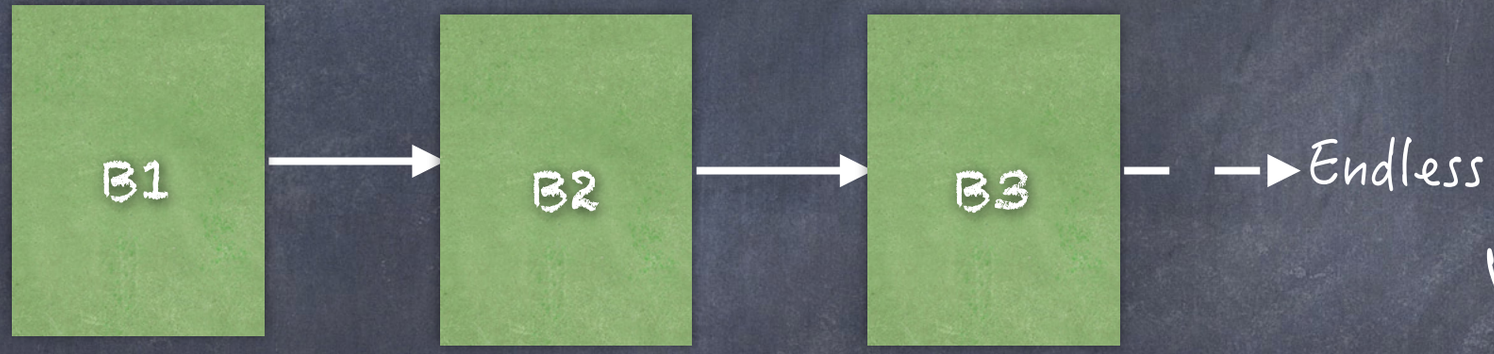
Pow kill the sybil

- Sybil attack

Perspective 1 of blockchain



Block



\+ POW

\+ P2P

Value:

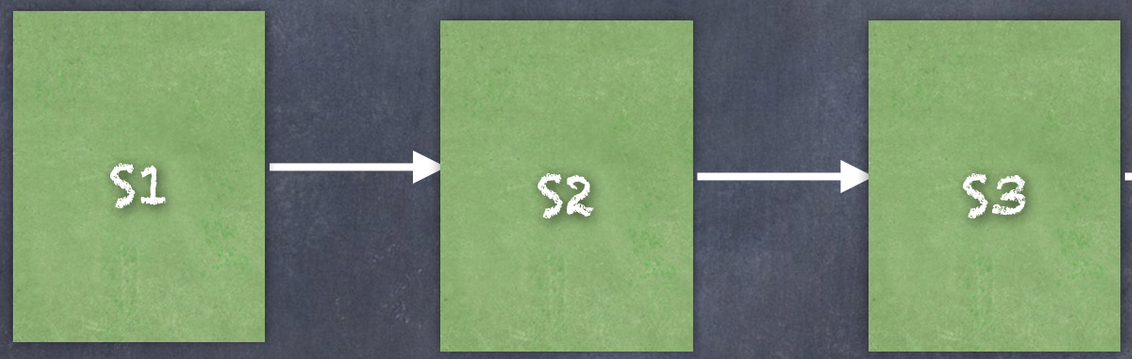
- transparency
- Security
- Traceability
- Decentralization

Perspective 2 of blockchain

Time

Chain

State



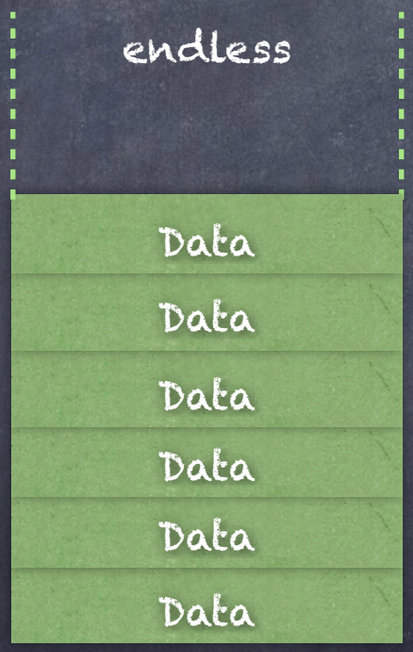
\+ Consensus

\+ P2P

Value:

- transparency
- Safety
- Correctness

What's kind of data can be supported?



File IPFS

Code SmartContract

... Any data you can image

Data related to business

OS

Permission

Smart contract

OnChain/OffChain

Supervise

No Coin

consensus

Ledger

Account

No Block

Throughput

Rollback

Latency

Confidentiality

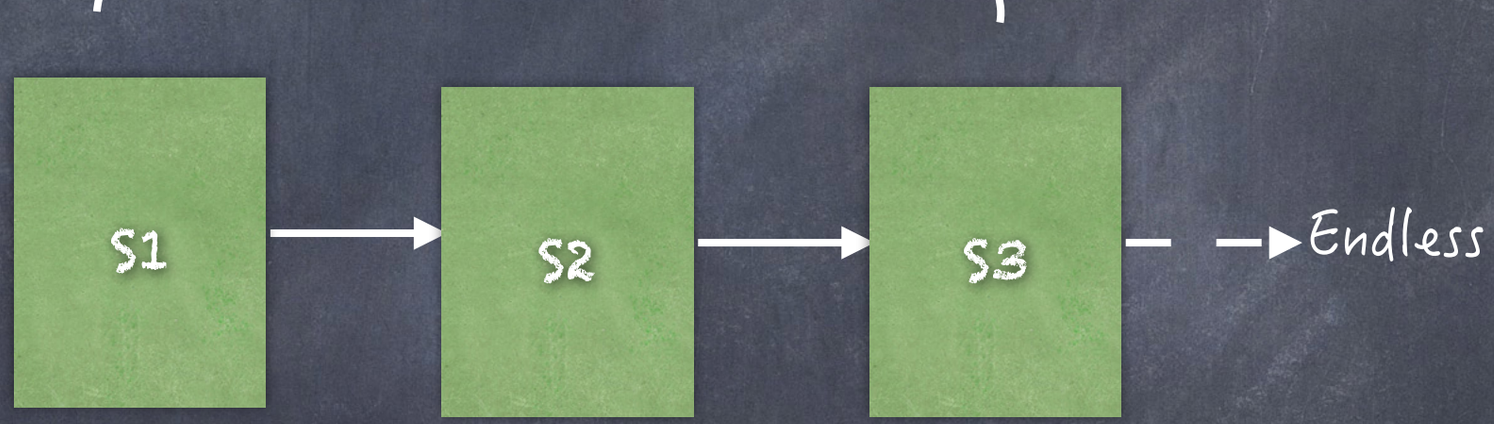
State machine

All related to Data

BlockChain or StateChain?

Chain

State



Is block necessary?

Chain

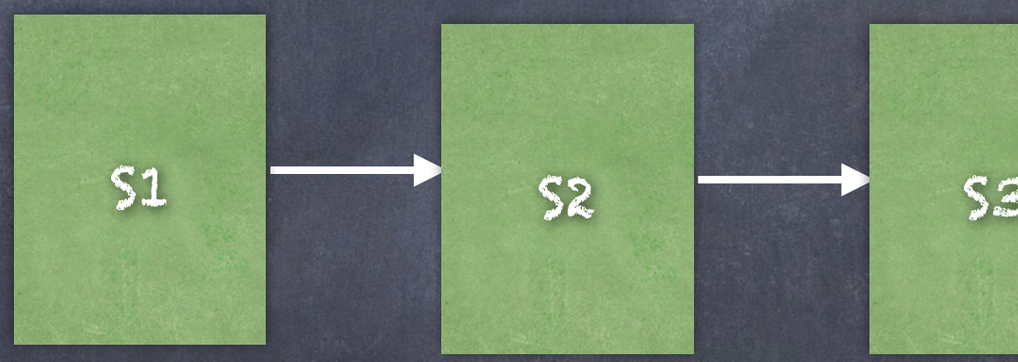
State → S1 → S2 → S3 → Endless

No block solution: DAG

OnChain or OffChain?

Chain

State



Endless

endless

Data
Data
Data
Data
Data
Data

Data center

Core State

OS

Permission

Smart contract

OnChain/OffChain

Supervise

No Coin

consensus

Ledger

Account

No Block

Throughput

Rollback

Latency

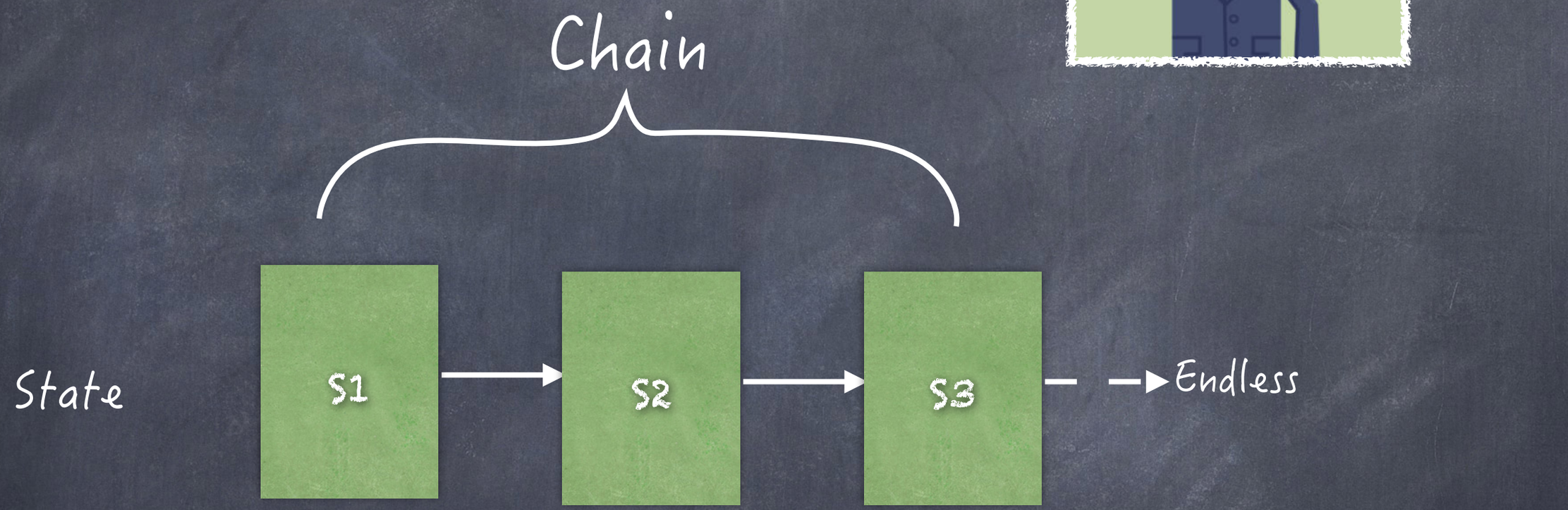
Confidentiality

State machine

All related to State

Which consensus is better?

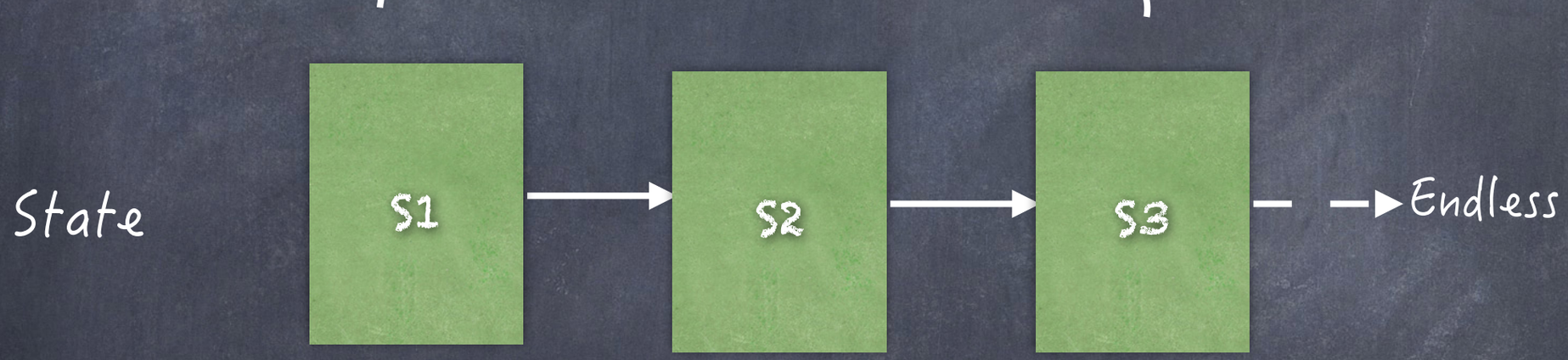
Chain



Consensus	Voting	PBFT
	Value proven	POW POS
	Authorization	POA/Consortium Chain

Is coin necessary?

Chain



Consensus

Coin: Incentive

OS

Permission

Smart contract

OnChain/OffChain

Supervise

No Coin

consensus

Ledger

Account

No Block

Throughput

Rollback

Latency

Confidentiality

State machine

All related to Consensus

- Conclusion

BlockChain = A trustworthy framework

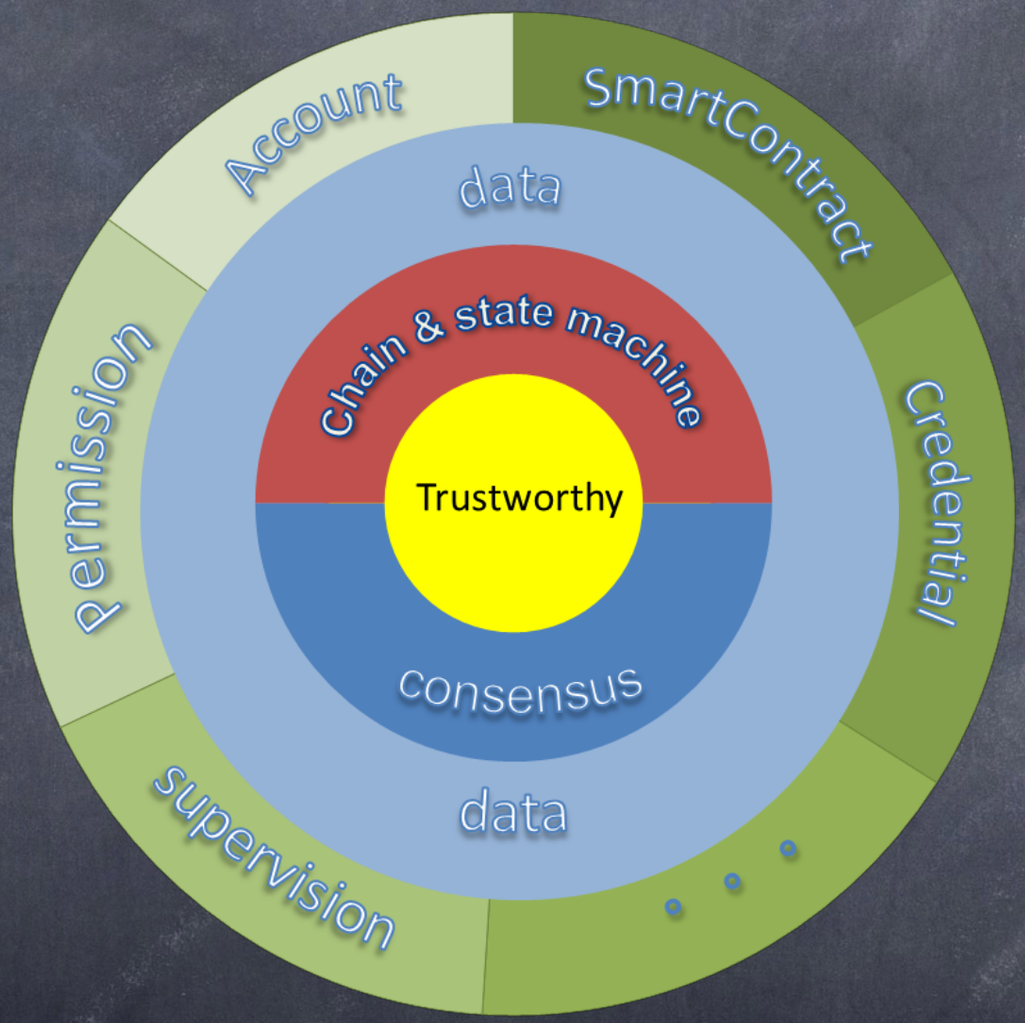
Consensus

Chain/State machine

+ Data System → Value:

- transparency
- Safety
- Correctness

Perspective 3 of blockchain



Value:

- transparency
- Safety
- Correctness
- Business application

Is cryptography necessary?

Is p2p the only choice?

Why EOS cannot be BlockChain 3.0?

More than BlockChain

BlockChain & BigData

Big Data

endless

Data

Data

Data

Data

Data

Data

Big Data

Map

Sub tasks

T1

T2

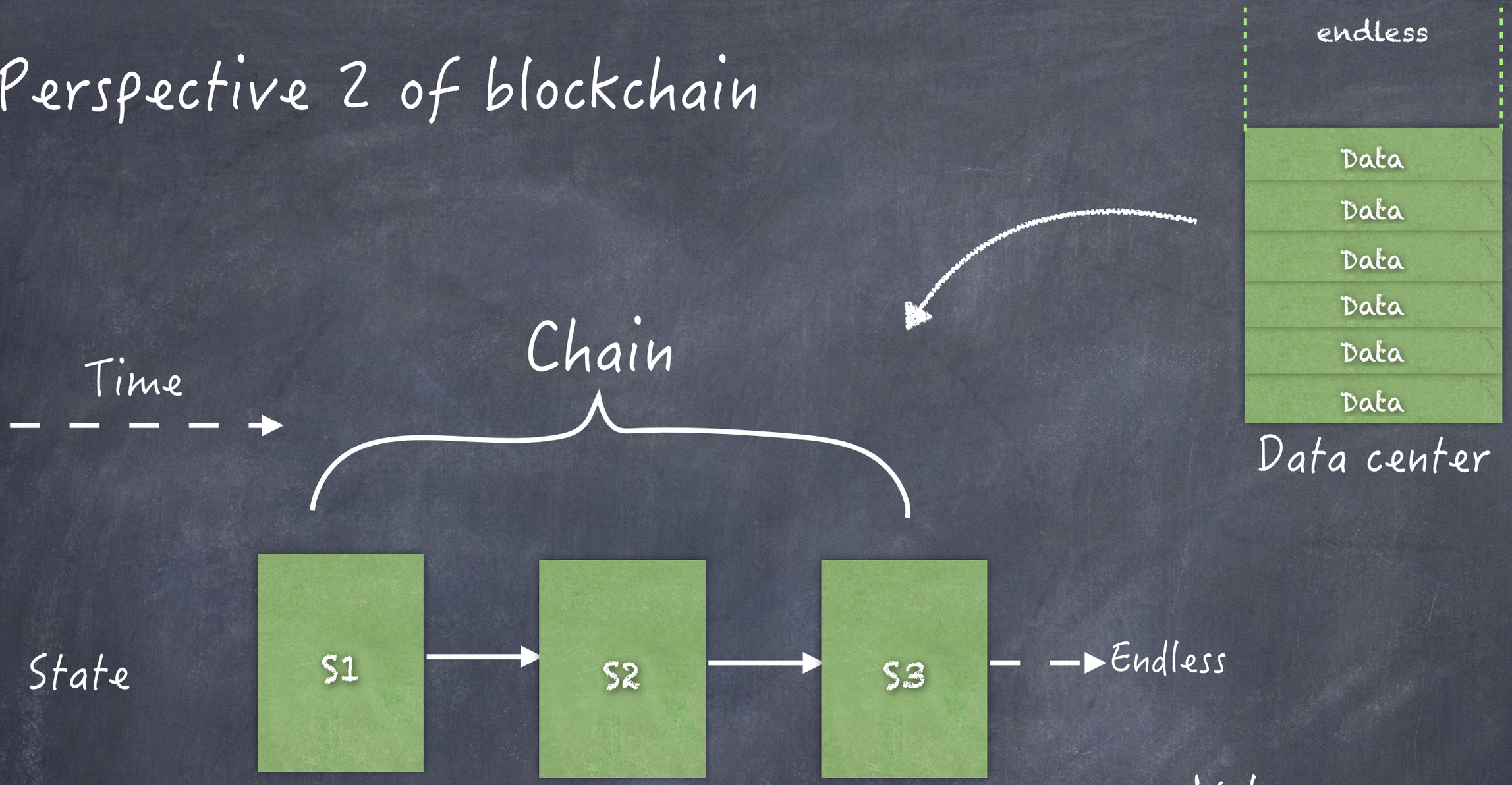
T3

Tn

Reduce

Result

Perspective 2 of blockchain



\+ Consensus

\+ P2P

Value:

- transparency
- Safety
- Correctness

Big Data & BlockChain

Big Data center

Value:

- Correctness
- Resource maximum
- Cheap

Map

Unsolved tasks collection :

Solved tasks blockchain :

Reward

Public Computing power:

Read

Commit

Computed

Alice

Thank you!