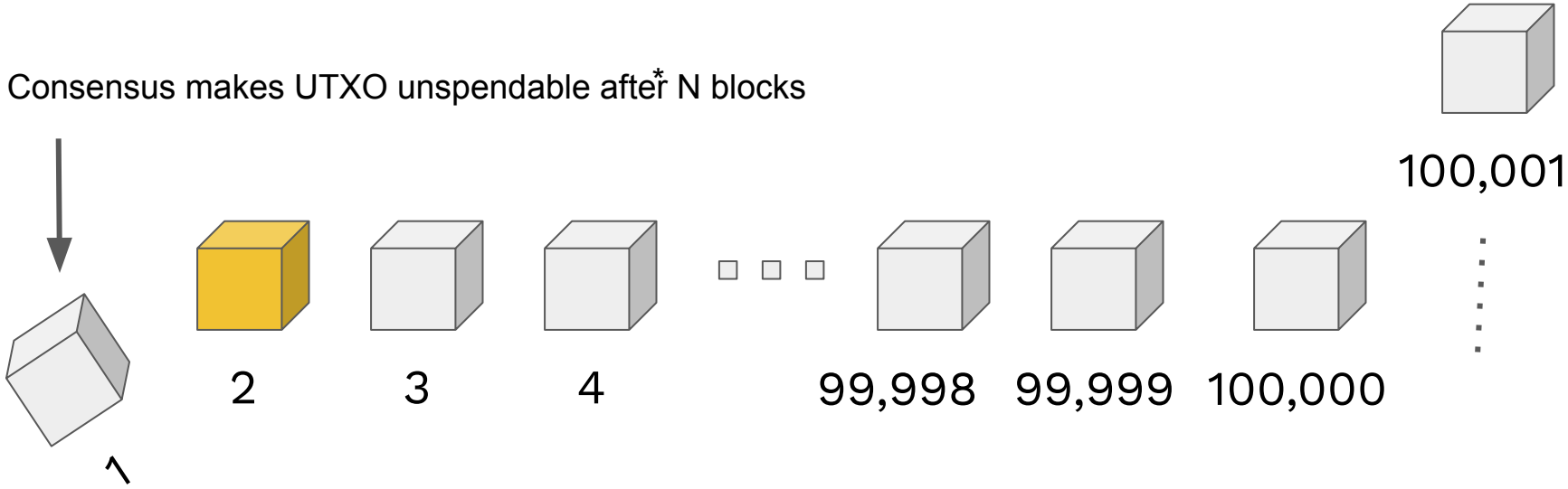
Saito

Transaction Rebroadcasting

1. Delete Blocks and Transactions

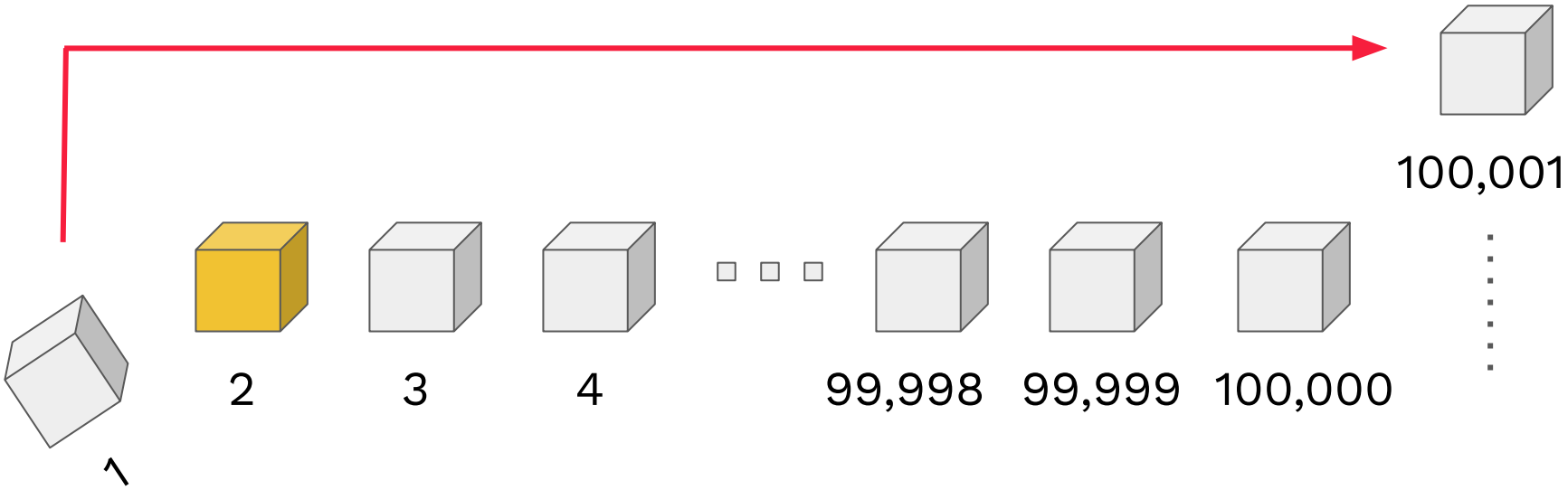
Consensus makes UTXO unspendable after* N blocks



* N could be 50 or 100 years for a monetary asset like Bitcoin


tokens and
data are
disappearing!
Artist // YouTube

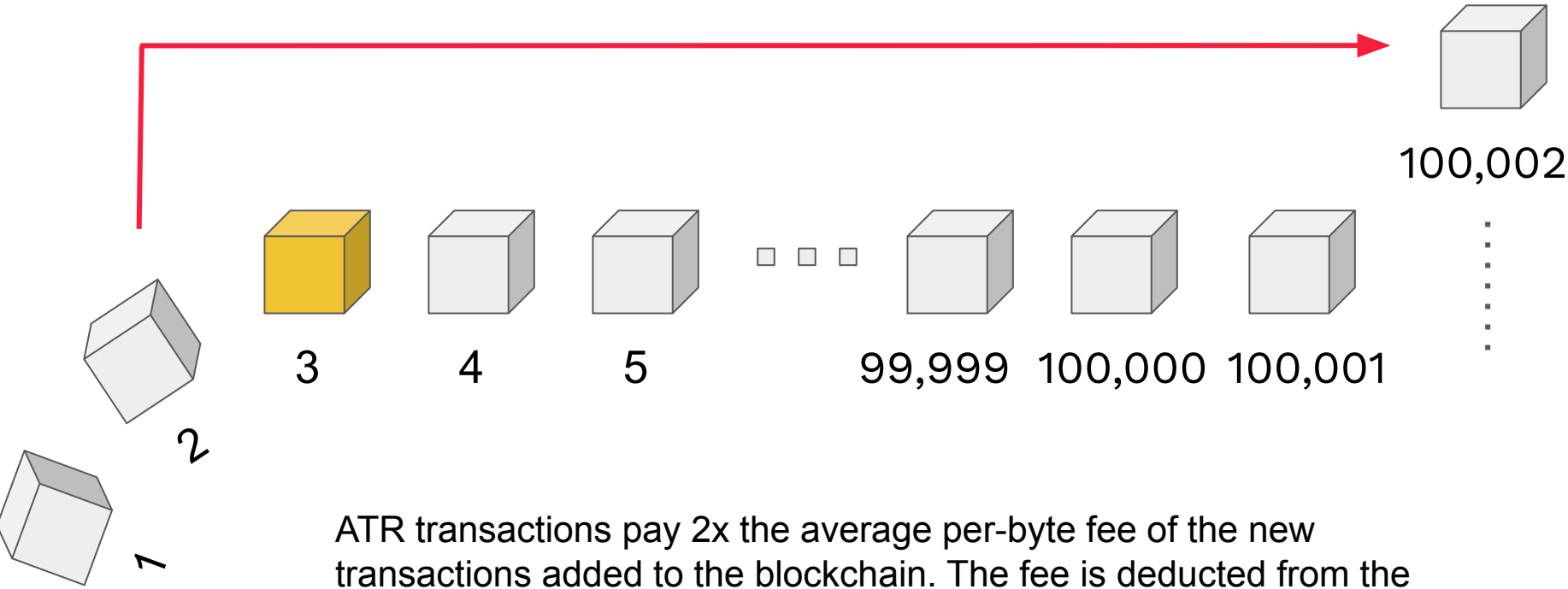
2. Automatic Transaction Rebroadcasting (ATR)



- UTXO from block 1 must be re-included in block N+1 as a new ATR transaction
- original transaction is embedded inside the rebroadcast transaction
- blocks invalid unless they contain all required ATR transactions


permanent
data on a
transient
ledger!

3. Auto-Deduct Fees for Rebroadcasting



ATR transactions pay 2x the average per-byte fee of the new transactions added to the blockchain. The fee is deducted from the new UTXO when it is created.

A Fundamental Change in Blockchain Economics:

1. As the blocksize nears capacity transaction fees rise.
2. ATR transaction fees rise faster
3. At what point do block producers maximize profits?
4. At capacity, profit maximization happens when data-in equals data-out

And No More Incentives to Cheat:

1. Block producers cannot delete data before permitted -- otherwise they will not know how to create ATR transactions and cannot get paid for producing valid blocks.

2. Block producers cannot “pass the buck” -- collect fees today and then leave the blockchain once it gets expensive to operate. Future costs are paid with future fees.

Other Benefits of ATR:

- zero inflation
- dust recycled into ongoing subsidy for block producers
- even a shrinking blockchain earns income
- permanent assets on transient chains
- incentivize manual rebroadcasting
- txs fees inversely proportional to blockchain length
- no additional security risks over permanent ledger

N.B. the network can still have a blocksize cap -- the market mechanism still works. In this case ATR simply creates a maximum theoretical size for the blockchain and induces the market to price access to it properly..

Go Deeper

Learn about Saito

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