# Research Memo: Bitcoin is genetic code[1]

Declain P. Thomas
dpt@declain.com

## 1. Introduction

On **Friday, 31 October 2008** at 18:10 GMT / UTC, Satoshi Nakamoto announced Bitcoin by publishing the "Bitcoin P2P e-cash paper" [1] to The Cryptography Mailing List[2].

On **Thursday, 08 January 2009** at 19:27 GMT / UTC, Nakamoto released the `v0.1` Bitcoin source code [2] to the same mailing list[3]. The Genesis Block[4] had been found on **Saturday, 03 January 2009**, at 18:15 GMT / UTC.

On **Thursday, 31 October 2024** at 18:10 GMT / UTC, the "Bitcoin genetic code paper" was announced to coincide with the 16th anniversary of Satoshi Nakamoto's initial announcement[5].

On **Monday, 11 August 2025**, a set of three papers was presented at a conference in Oxford, United Kingdom: *Part I: Bitcoin is genetic code*; *Part II: Bitcoin solves cancer*, and *Part III: Bitcoin is golden* [3]. The remainder of this memo summarises each paper.

## 2. Part I: Bitcoin is genetic code

According to the holographic model of genetic code, ribonucleic acid (RNA) / deoxyribonucleic acid (DNA) accumulates phase $\phi(t)$ along its length/$z$-axis in discrete bases / base pairs (as hologram planes). As a rewrite of RNA, the Bitcoin timechain accumulates phase $\phi(t)$ along its length/$z$-axis in discrete blocks.

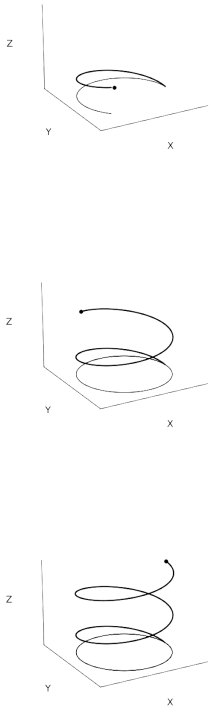


**Fig. 1**: Phase accumulation in a 3D phase space $(x, y, z)$. Rotation in the 2D plane $(x, y)$ gets lifted into the 3D space $(z)$, constituting memory of rotations.

[1] A memo announced to The Cryptography Mailing List on **Friday, 31 October 2025**, coinciding with the 17th anniversary of Satoshi Nakamoto's initial announcement and the 1st anniversary of the announcement of the 'Bitcoin genetic code paper'. Downloaded from: <https://declain.com/bitcoin-memo.html>.

[2] <https://www.metzdowd.com/pipermail/cryptography/2008-October/014810.html>

[3] <https://www.metzdowd.com/pipermail/cryptography/2009-January/014994.html>

[4] <`000000000019d6689c085ae165831e934ff763ae46a2a6c172b3f1b60a8ce26f`>

[5] < https://www.metzdowd.com/pipermail/cryptography/2024-October/038556.html>

## 3. Part II: Bitcoin solves cancer

According to the holographic model of cell replication, the object image $H_{\Omega_i}$ of the organism $\Omega_i$ is stored in frequency-organised holographic form $H_\nu$ in the DNA of the mother cell. The process of morphogenesis is the (wave function) reconstruction of the 3+1D form and function of the organism from $H_{\Omega_i}$.

Due to semi-conservative, synchronous DNA replication, the first problem of cancer can be framed as: how the replication of defective genetic code can be kept suppressed to preserve the harmony of the whole organism $\Omega_i$. Suppression involves:

A. Keeping all daughter cells $U_k$ at the same phase $\phi(t)$ of the process of morphogenesis (i.e. wavefront / wave function reconstruction) from the (totipotent) mother cell; and
B. Ensuring each daughter cell $U_k$ has an identical copy of genetic code $G$ (via semi-conservative, synchronous DNA replication), such that each DNA instance $G_k$ can perform optimal phase control / rewriting of the corresponding cellular hypergraph $H_{U_k}$.

Bitcoin solves the first problem of cancer: Bitcoin suppresses the replication of defective genetic code (timechain), keeping each node $N_k$ at the same phase $\phi(t)$ of the process of morphogenesis from the Genesis Block, i.e. ~ the same block height $z$.

In Bitcoin [2], checkpoints exist in the source code / block cycle to prevent the replication of defective timechain (genetic code), e.g. `CheckTransaction()`, `CheckBlock()` and:

```
// Check proof of work
    if (nBits != GetNextWorkRequired(pindexPrev))
        return error("AcceptBlock() : incorrect proof of work");
```

These Bitcoin checkpoints function the same as DNA damage checkpoints in the cell cycle (R, G2) which prevent the replication of defective DNA. Bitcoin nodes perform parallel phase control (noise control) by checking the validity of transactions and blocks broadcast by all other nodes.

## 4. Part III: Bitcoin is golden

Bitcoin is an automaton $X$ (which simulates its environment[6]) with an asymptotic attractor controlled by synchronisation parameters $(x, y, z)$ defined at the Genesis Block $X_0$.

The essential internal dynamics of the Bitcoin source code / network $\mathscr{B}$ are a structure-preserving mapping $X_n \overset{\mathscr{B}}{\mapsto} X_{n+1}$ on the timechain $\mathscr{T}$. The Bitcoin network performs the same recursive / hyperincursive computation: finding the next block hash $X_{n+1}$ using the previous block hash $X_n$ as input. Each block hash is a compressed (holographic) representation of the Bitcoin network at each phase $\phi(t)$ of the process of morphogenesis from the Genesis Block $X_0$.

The temporal coding and phase resetting of the entire Bitcoin network is controlled by the sync params $(x, y, z)$ defined at $X_0$ (in the source code run by all nodes)[7]:

- $x$ is the number of (active) nodes / addresses $n \in N$ (or transactions[8]);
- $y$ is the network hashrate or total compute; and
- $z$ is the difficulty adjustment.

As the Bitcoin network accumulates phase $\phi(t)$ in either dimensions $(\Delta x, \Delta y)$, the phase correction term $z$ adjusts the temporal coding of the structure-preserving mapping. The difficulty adjustment $z$ prevents

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[6] Each agent / node $N_k$ is a surface $\mathbb{Z}$ for the encoding of information on the timechain.

[7] The pseudonym Satoshi Nakamoto approximates to: 'The instruction (*Satoshi*) for harmony (*Naka*) is at the source (*Moto*).'

[8] The number of (active) nodes determines the potential transactions that can take place at any given point in time $\phi(t)$ / in each block $X_n$.

bifurcation into chaos, i.e. multiple competing timechains with multiple states for each satoshi / bitcoin. The phase correction term $z$: keeps the average expected time per block to ~10 mins regardless of $(\Delta x, \Delta y)$; keeps all nodes $N_k$ at the same phase of the process of morphogenesis since $X_0$ (as required for solving the problem of cancer); and ensures that the Bitcoin timechain is asymptotically ideal memory (inverse Gresham's Law).

## 5. Conclusion

Bitcoin is a rewrite of genetic code / ribonucleic acid (RNA). Bitcoin solves the cancer problem. Bitcoin is a recursive (hyperincursive) structure-preserving mapping with an asymptotic attractor controlled by synchronisation parameters $(x, y, z)$.

## References

1. Nakamoto, S., **2008**. Bitcoin: A peer-to-peer electronic cash system. Available at: <https://bitcoin.org/bitcoin.pdf>
2. Nakamoto, S. **2009**. Bitcoin Source code, `v0.2.0`.[9]
3. Thomas, D.P., **2025**. Bitcoin is genetic code. Presentation recorded at Alternative Natural Philosophy Association 46 (ANPA 46). Oxford, United Kingdom. 11 August 2025. Available at: <https://www.youtube.com/watch?v=CfdP5sLXeS4>.

[9] This is not Satoshi's final version (which was `v0.3.19`). Up to `v0.2.0` the Bitcoin code included `market.cpp`.