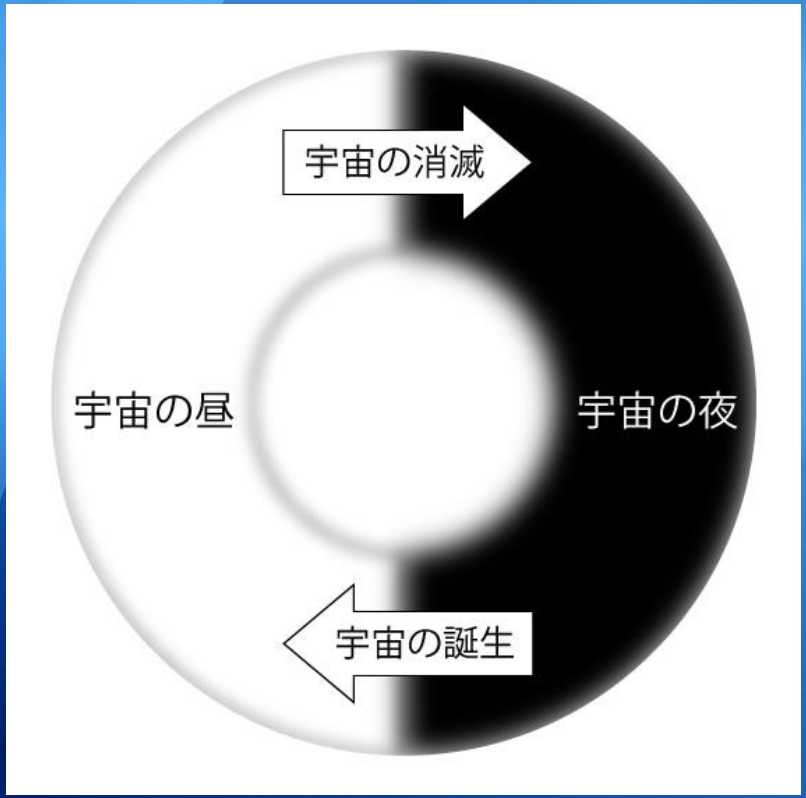
人間の意識とは
（宇宙的存在になる人間の進化）

Takaaki Musha

宇宙の生成と消滅

プラフマン＝大日如来

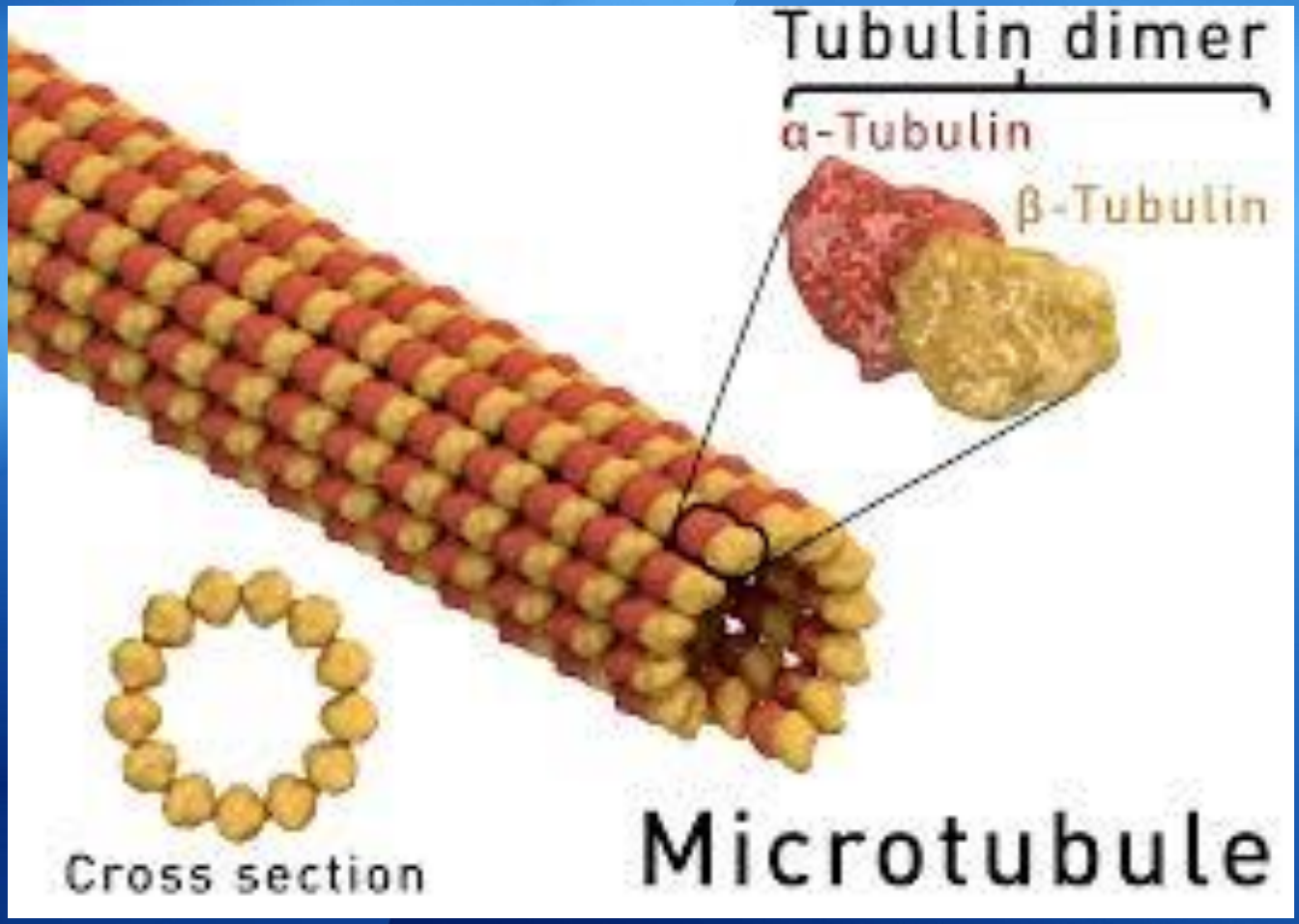


量子脳理論の提唱者

Penrose & Hameroff

Nerve System of the Brain

意識はマイクロ･チューブルの中で発生する量子論的働き

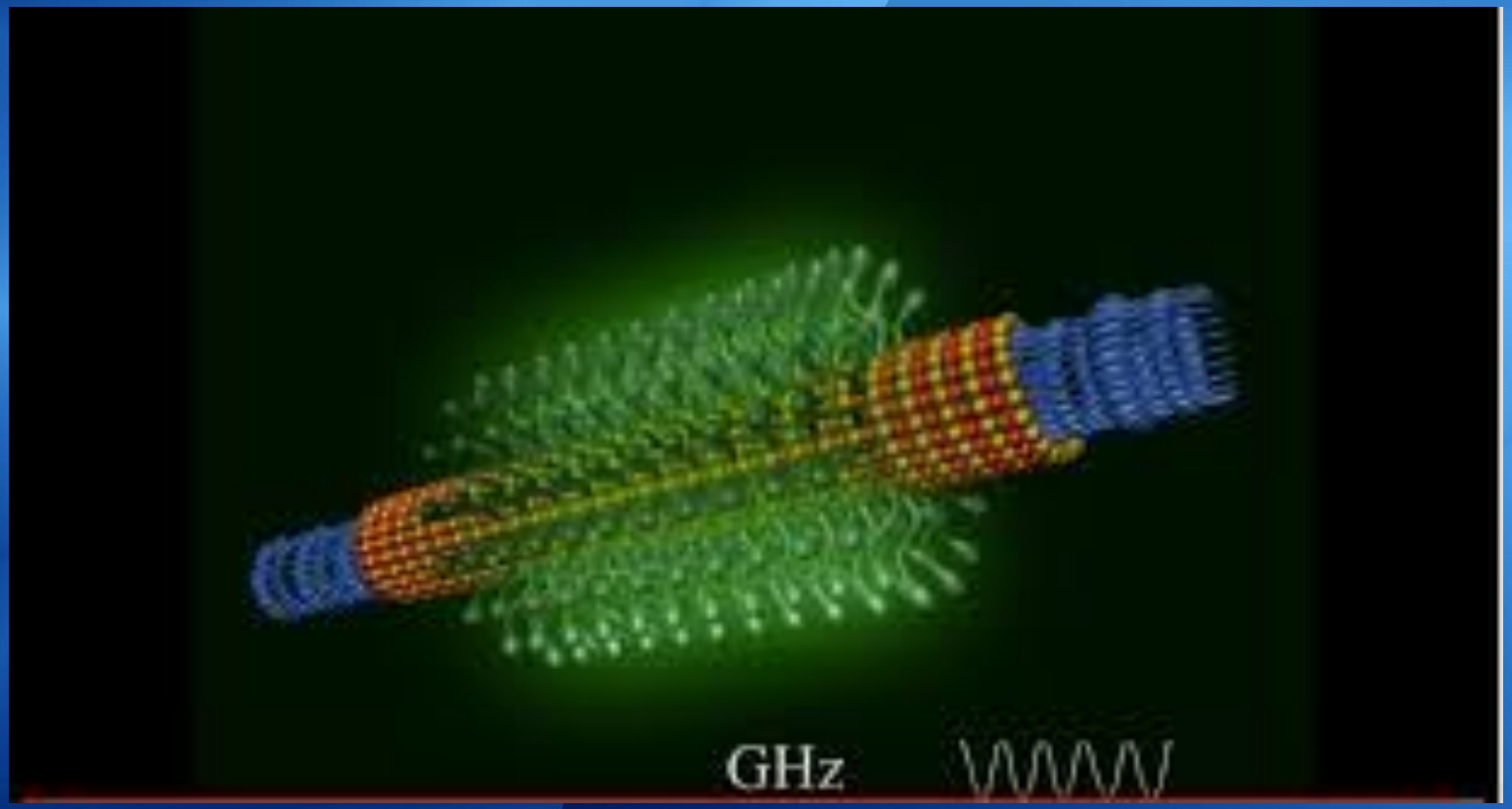


Human consciousness is created inside the microtuble.

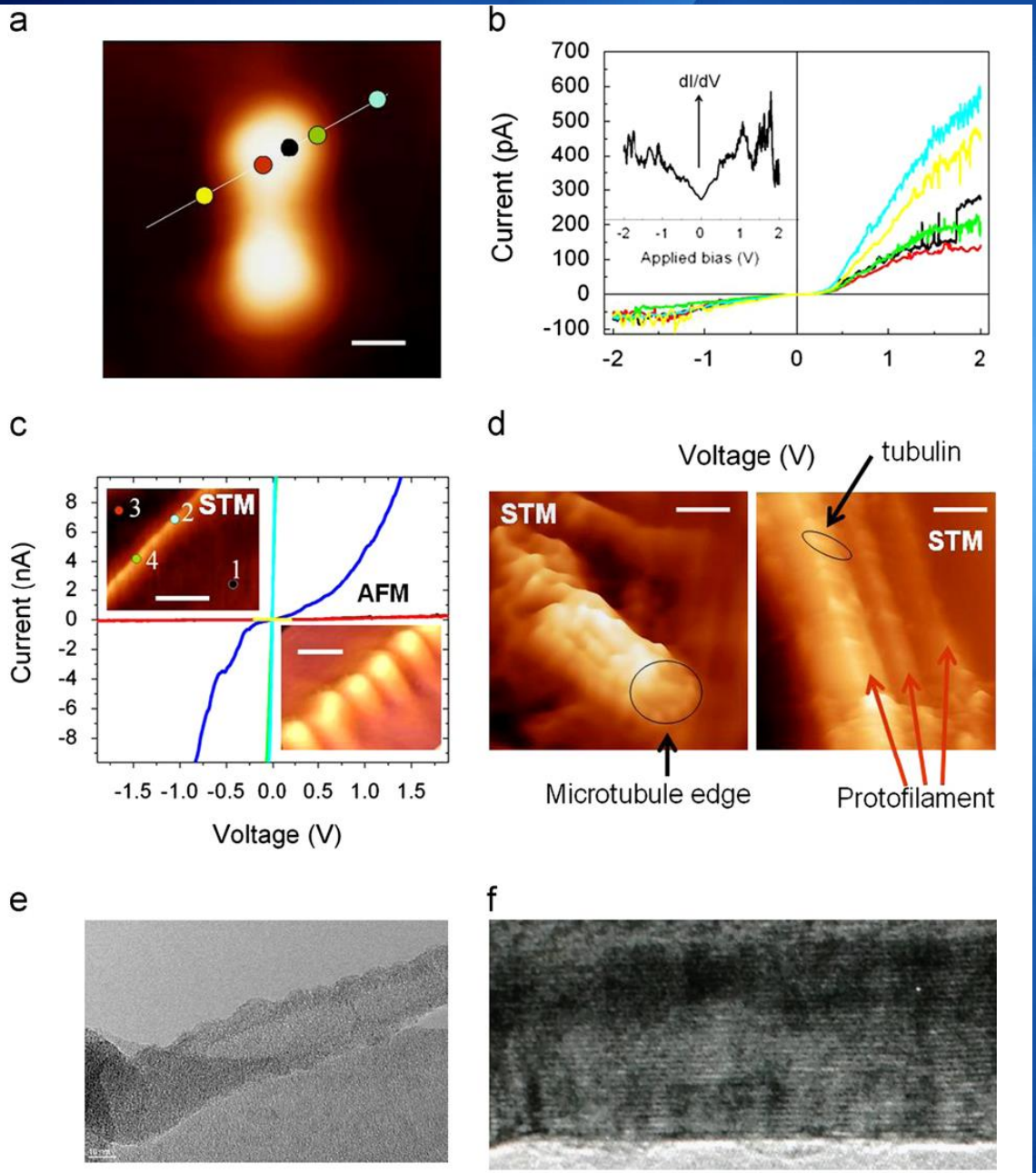
チューブリン内部の量子過程を確認

Anirban Bandyopadhyay

チューブリンの中で起こっている電気的現象を確認



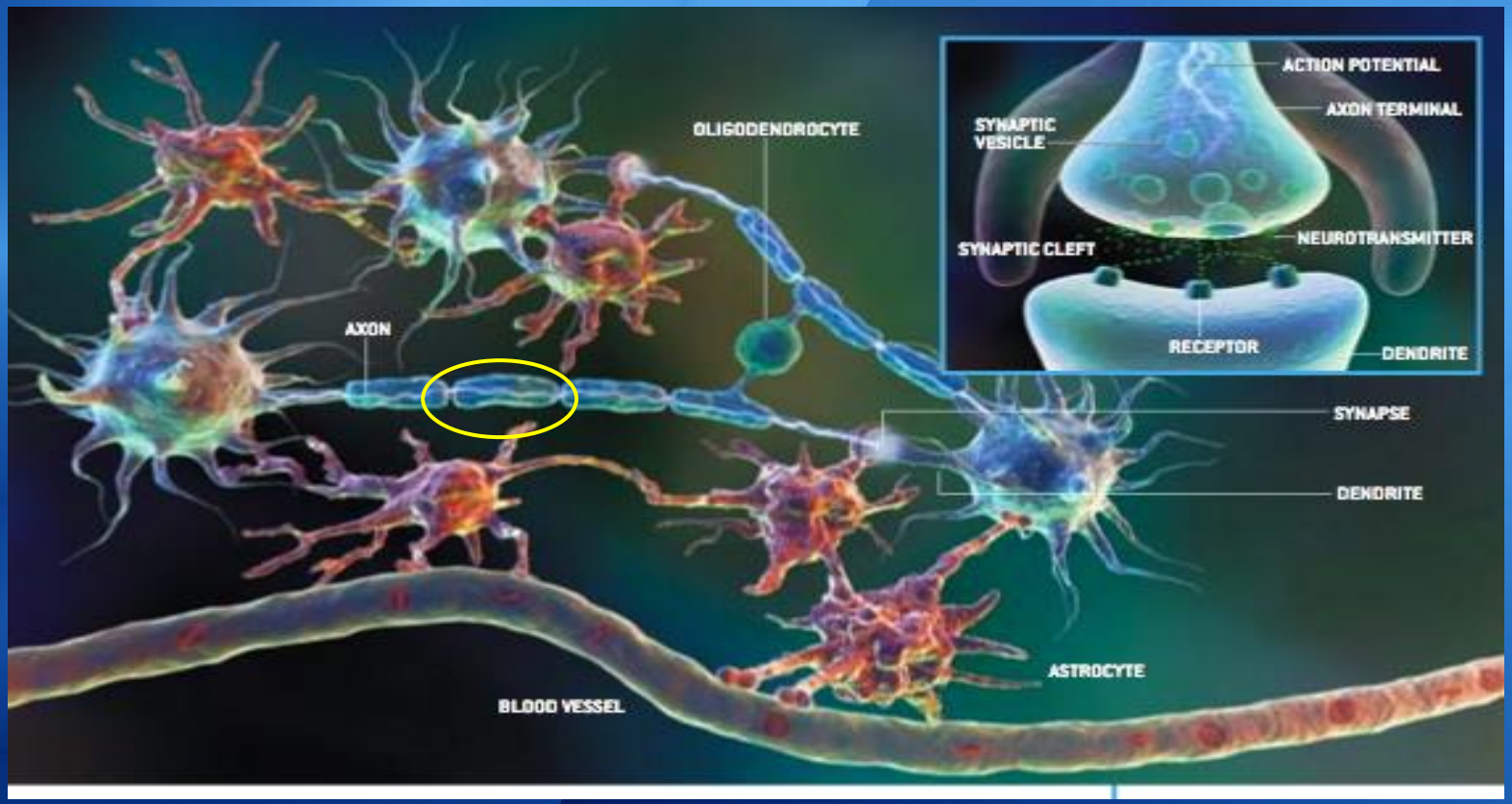
Tublin vibration



ngle tubulin and single microtubule: (a) The STM image of a single tubulin at + 2 V, 50 pA, the scale bar is ~ 1.8 nm, the l

Human Brain

Structure of the human nerve system

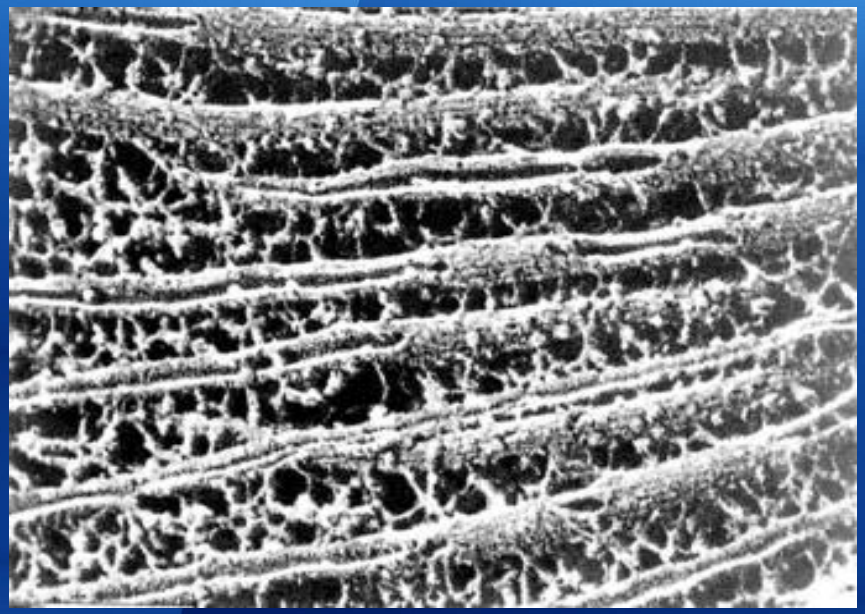


Specific form of quantum computation is conducted at the level of synapses among brain neurons suggested by Hemeroff and Penrose.

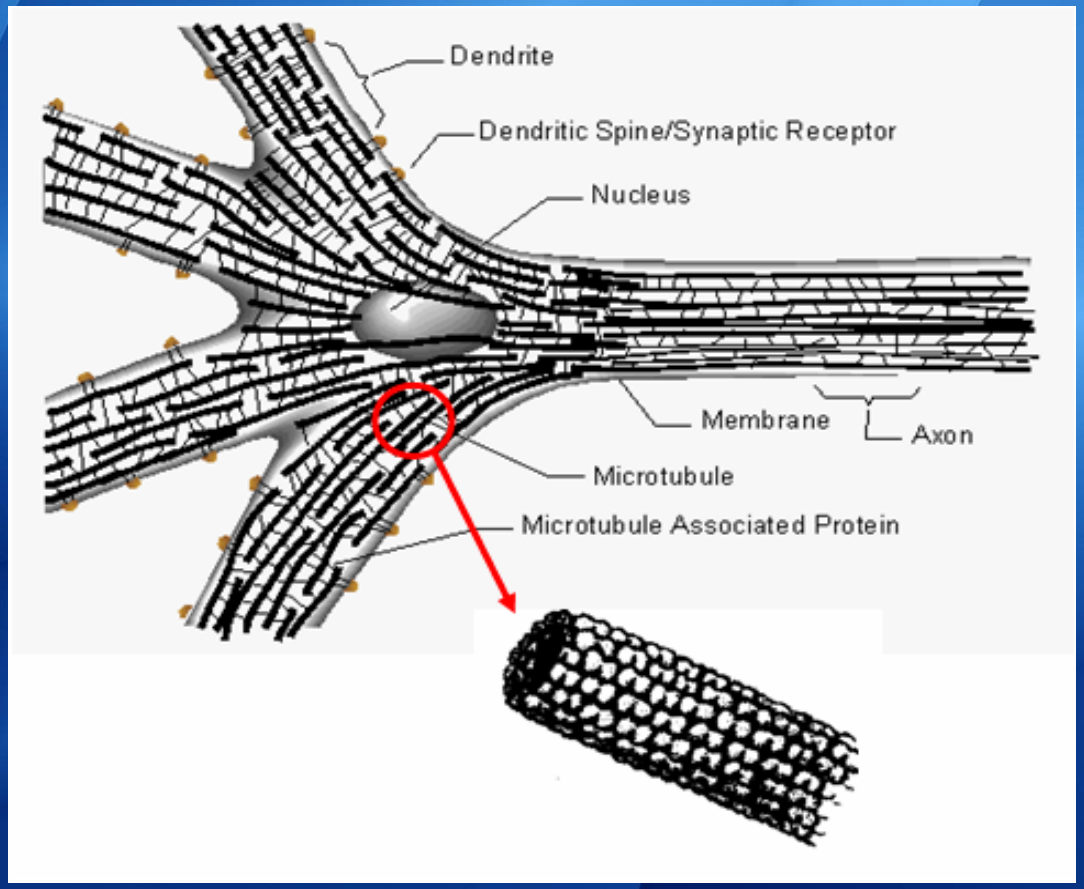
Hypothesis for the Brain function

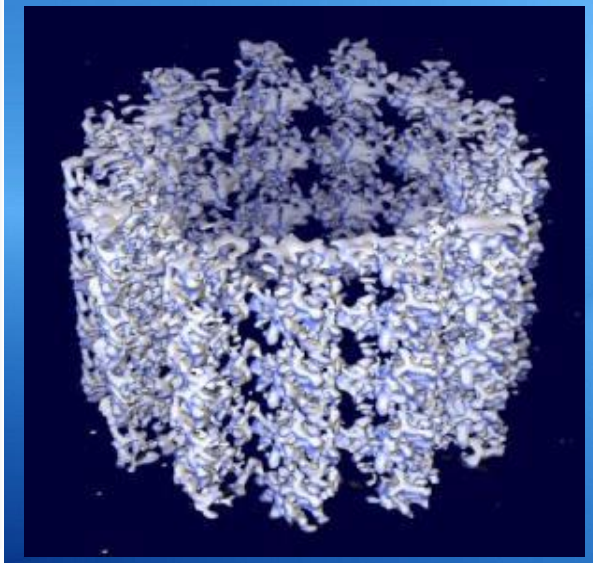
The conscious process in the brain was related with the macroscopic condensates of massive evanescent photons generated by the Higgs mechanism (by Jibu et al)

Human Nerve System is operated by superluminal photons?



Structure of the microtuble

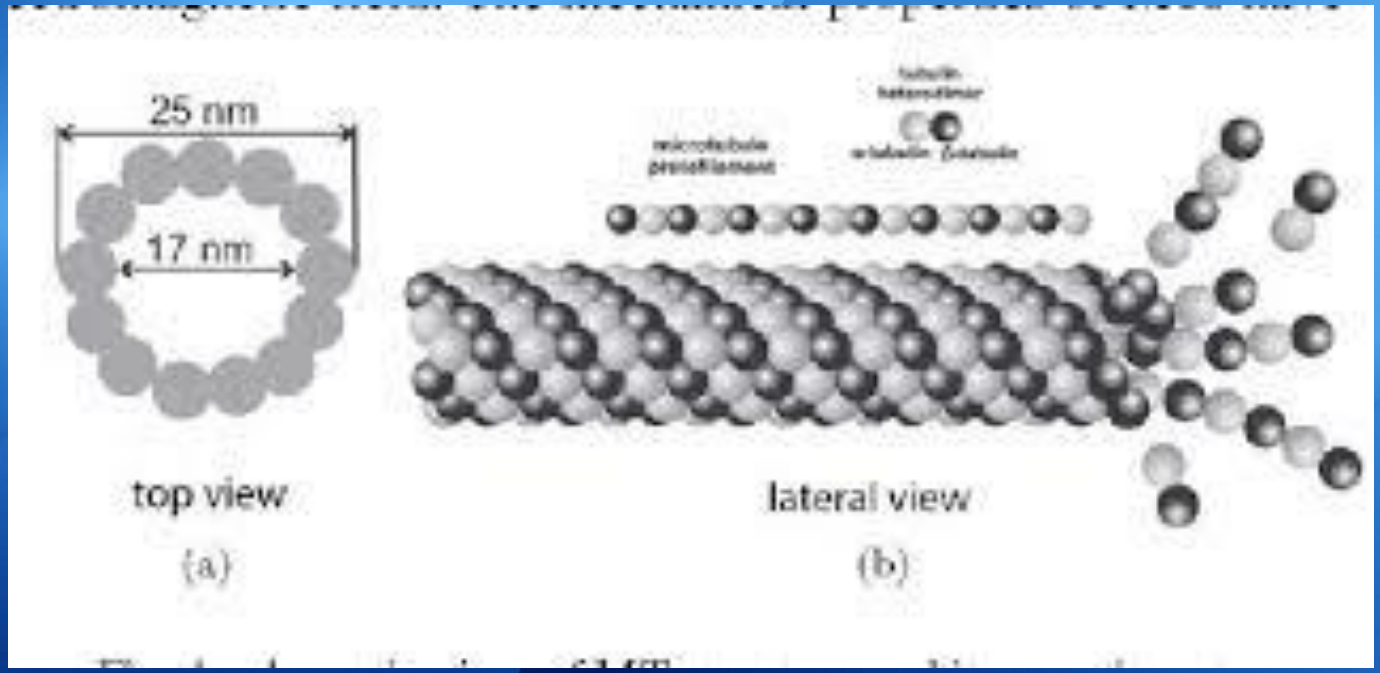




Microtuble structures

Microtuble s in brain neurons function as quantum computers (Hameroff, Penrose)

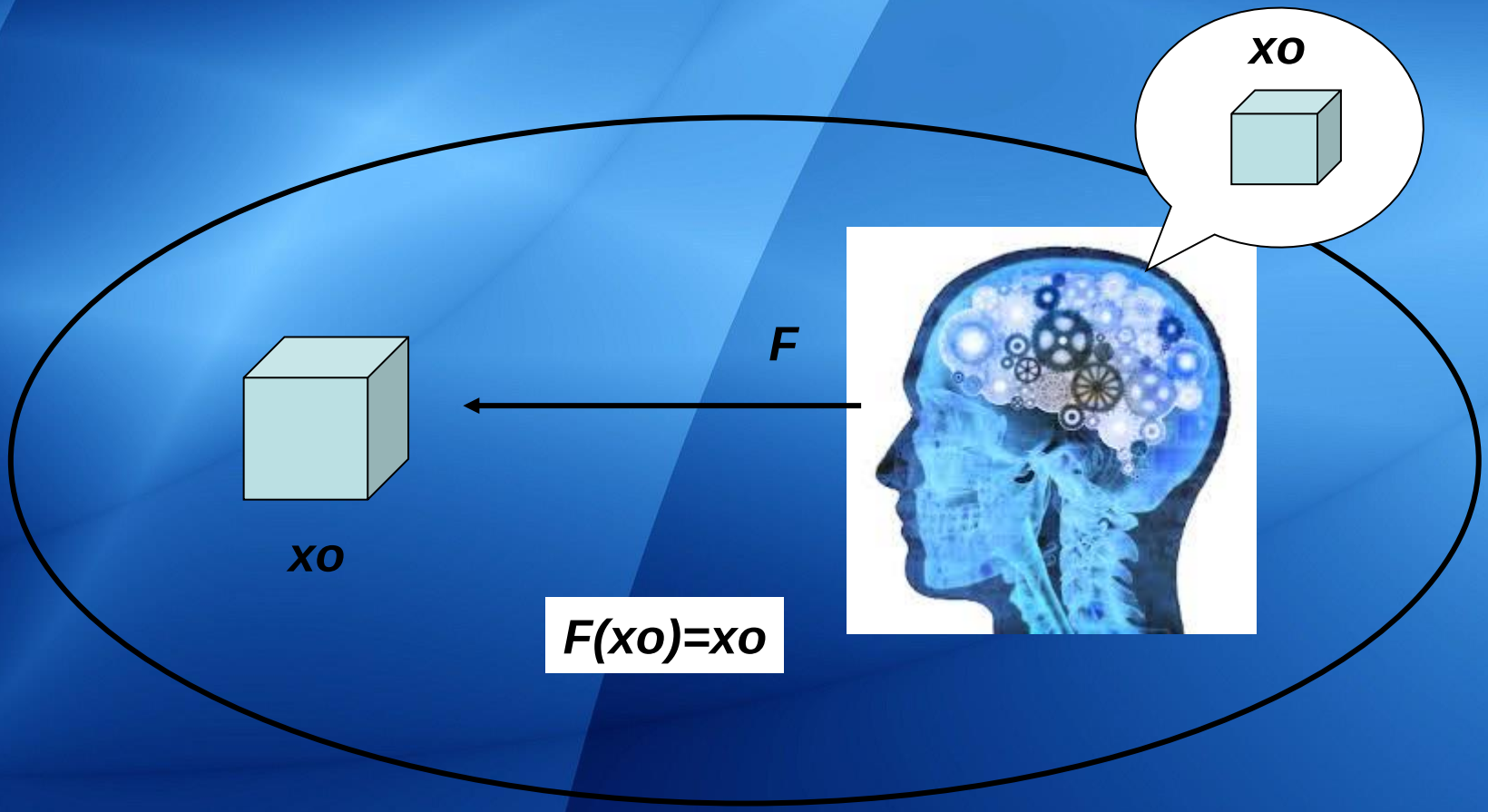
マイクロ･チューブルの構造



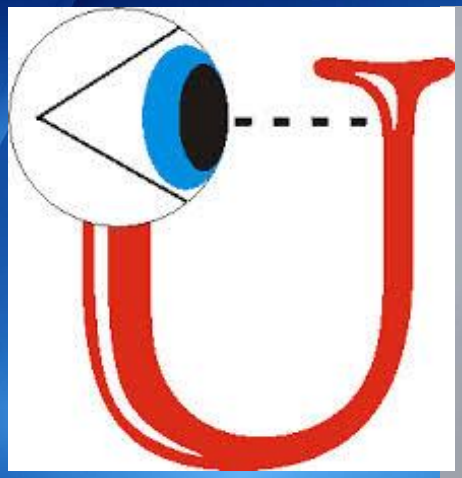
意識の定義

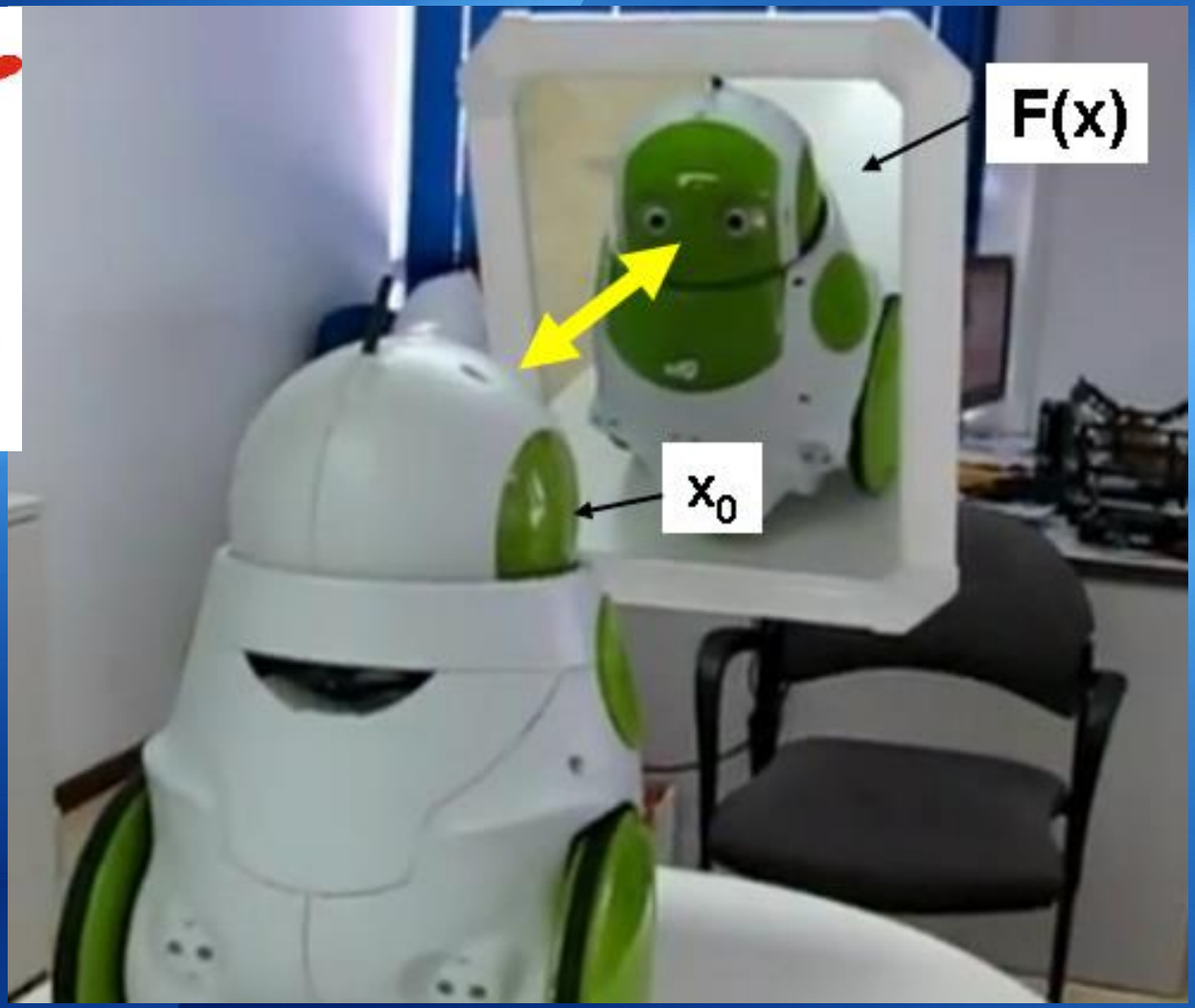
自己を自己として認識する働き

F : 認識関数



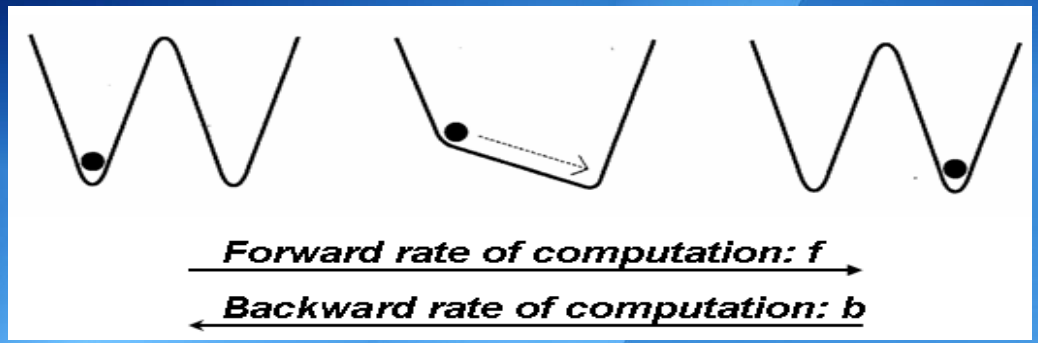
Who am I?





意識の意味

無限回の計算によって自己を認識する
自己＝Fの不動点



$$E_1 = kE_0,\ E_2 = kE_1,\ E_3 = kE_2, \cdots E_n = kE_{n-1}, \cdots$$

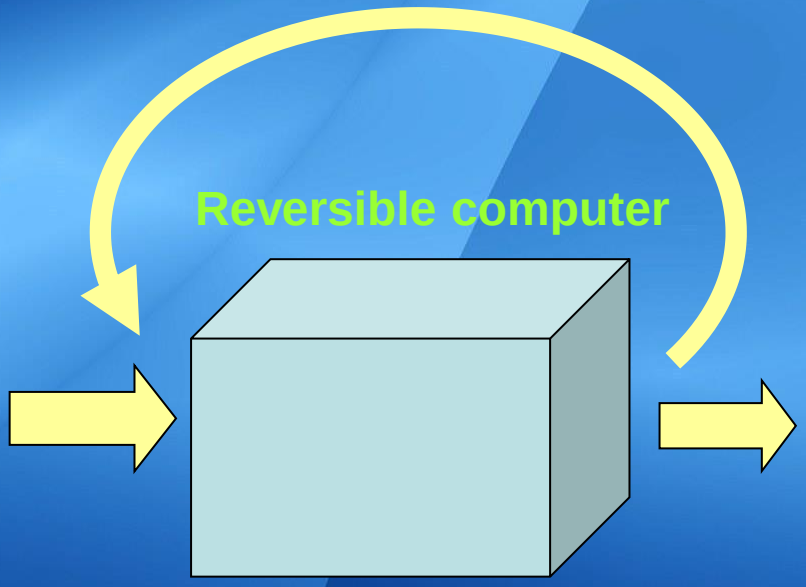
$$k = 2(f-b)/(f+b)$$

$$X \supset F(X) \supset F^2(X) \supset \cdots \supset F^n(X)$$

$$F(x_o) = F(\bigcap_{n<\omega_o} F^n(X)) = \bigcap_{n<\omega_0} F^n(X) = x_o$$

F(xo)=xo

Energy loss for each computational step



(Energy for each step)

$$\Delta E_1 = E_0 - E_1 = (1-k)E_0$$

$$\Delta E_2 = E_1 - E_2 = (1-k)kE_0$$

$$\vdots$$

$$\Delta E_n = E_{n-1} - E_n = (1-k)k^{n-1}E_0$$

Time required to complete the infinite steps of computation

(Margolus and Levitin equation to perform logical operations)

$$\Delta t = \frac{\pi \hbar}{2\Delta E}$$

(Total time for computation)

$$T = \sum_{n=1}^{\infty} \Delta t_n = \frac{\pi \ \hbar}{2E_0} \sum_{n=1}^{\infty} \frac{1}{(1-k)k^{n-1}}$$

For ordinary particles (electron, photon)

Computation cannot be completed within a finite time.

$$\infty$$

Evanescent photon in a superluminal mode

(Klein-Fock-Gordon equation)

$$\left(-\frac{1}{c^2}\frac{\partial^2}{\partial t^2} + \nabla^2 - \frac{m_*^2 c^2}{\hbar^2} \right) A(x,t) = 0$$

$$A(x,t) = A_0 \exp\left[-\frac{Et + px}{\hbar} \right]$$

Tunneling photons traveling in an evanescent mode can move at a superluminal speed.

Uncertainity relation for the supeluminal particle

$$E^2 = p^2c^2 - m_*^2c^4$$

Relativistic equation for superluminal particles

$$\Delta p \approx \frac{v}{c^2}\Delta E$$

If $\Delta v / v^2 \approx 0$

Uncertanity principle for Superluminal particles

$$\Delta E \cdot \Delta t \approx \frac{\hbar}{\beta(\beta - 1)}$$

where $\beta \approx 1 + \frac{c}{2\omega d} + \sqrt{\frac{c}{\omega d} + \frac{c^2}{4\omega^2 d^2}}$

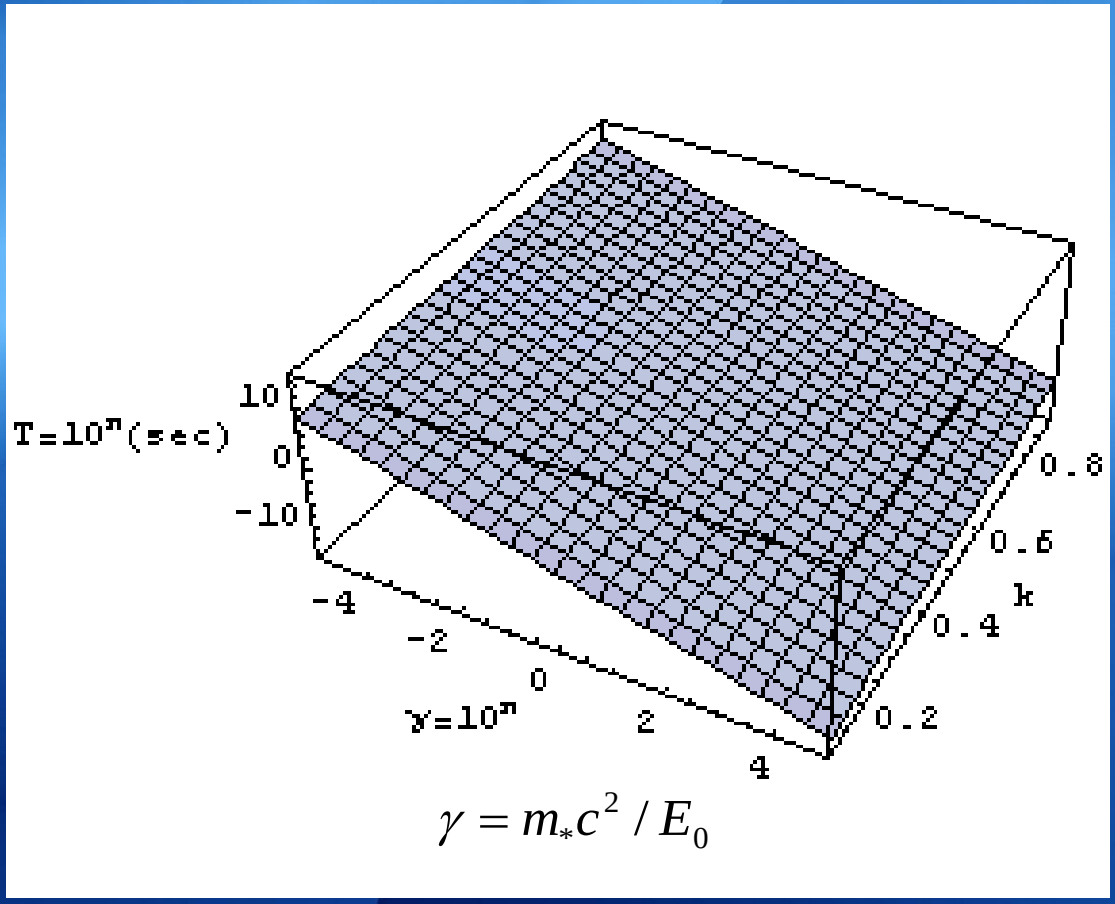
Time required to complete the infinite computation for superluminal photons

(Total time for computation)

$$T = \sum_{n=1}^{\infty} \Delta t_i = \frac{\pi \hbar}{2E_0} \sum_{n=1}^{\infty} \frac{1}{\beta_n (\beta_n - 1)(1-k)k^{n-1}}$$

where $$\beta_n = \sqrt{1 + \frac{m_*^2 c^4}{E_n^2}} = \sqrt{1 + \frac{m_*^2 c^4}{k^{2n} E_0^2}}$$

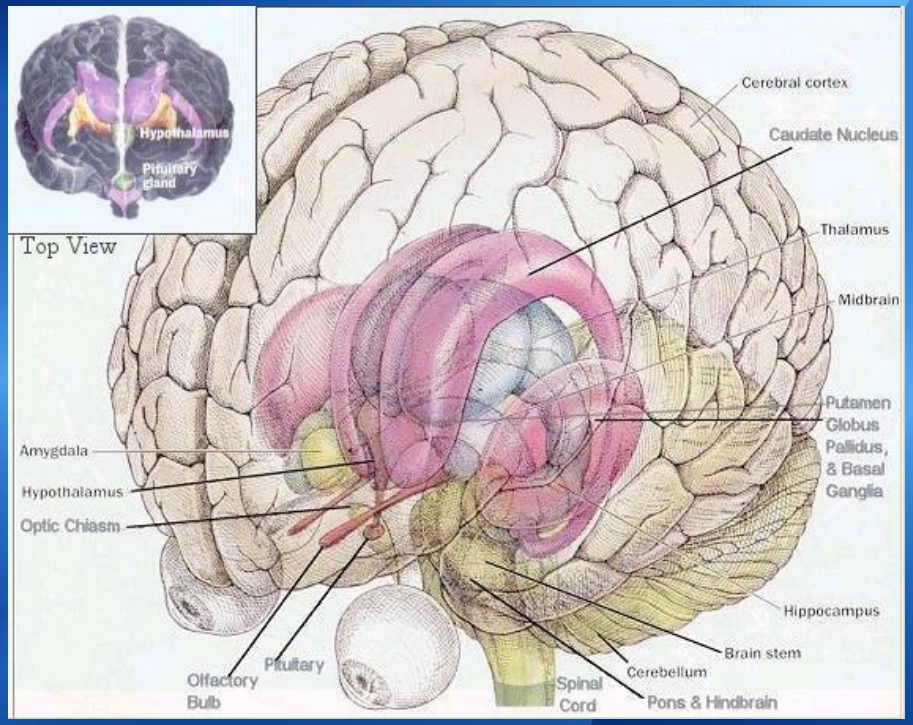
Result of mathematical calculation by Mathemathica



$$\gamma = m_* c^2 / E_0$$

Infinite computation can be completed within a finite time.

Decoherence time obtained from the tachyon hypothesis



Decoherence time (L.Diosi, 2005):

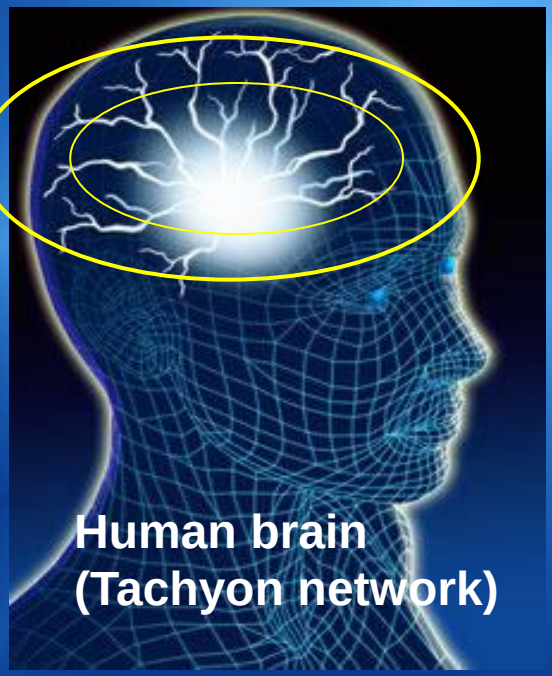
$$t_D = \frac{\hbar^2}{\tau}\frac{1}{(\Delta E)^2}$$

$$\tau_D' / \tau_D \approx (E_0 / E_0')^2 = [\beta(\beta-1)]^2$$

$$\tau_D' = \tau_D \times [\beta(\beta-1)]^2 \approx 0.03\text{sec}$$

This satisfies the decoherence time, $10^{-5} \sim 10^{-4}$ sec , which is required for conducting quantum computation estimated by Hagen, Hameroff and Tsuzynski, and that also satisfies the time scale of neuron firing given by $\tau \approx 10^{-3} \sim 10^{-4}$ sec .

Decoherence time for the tachyon field in a brain



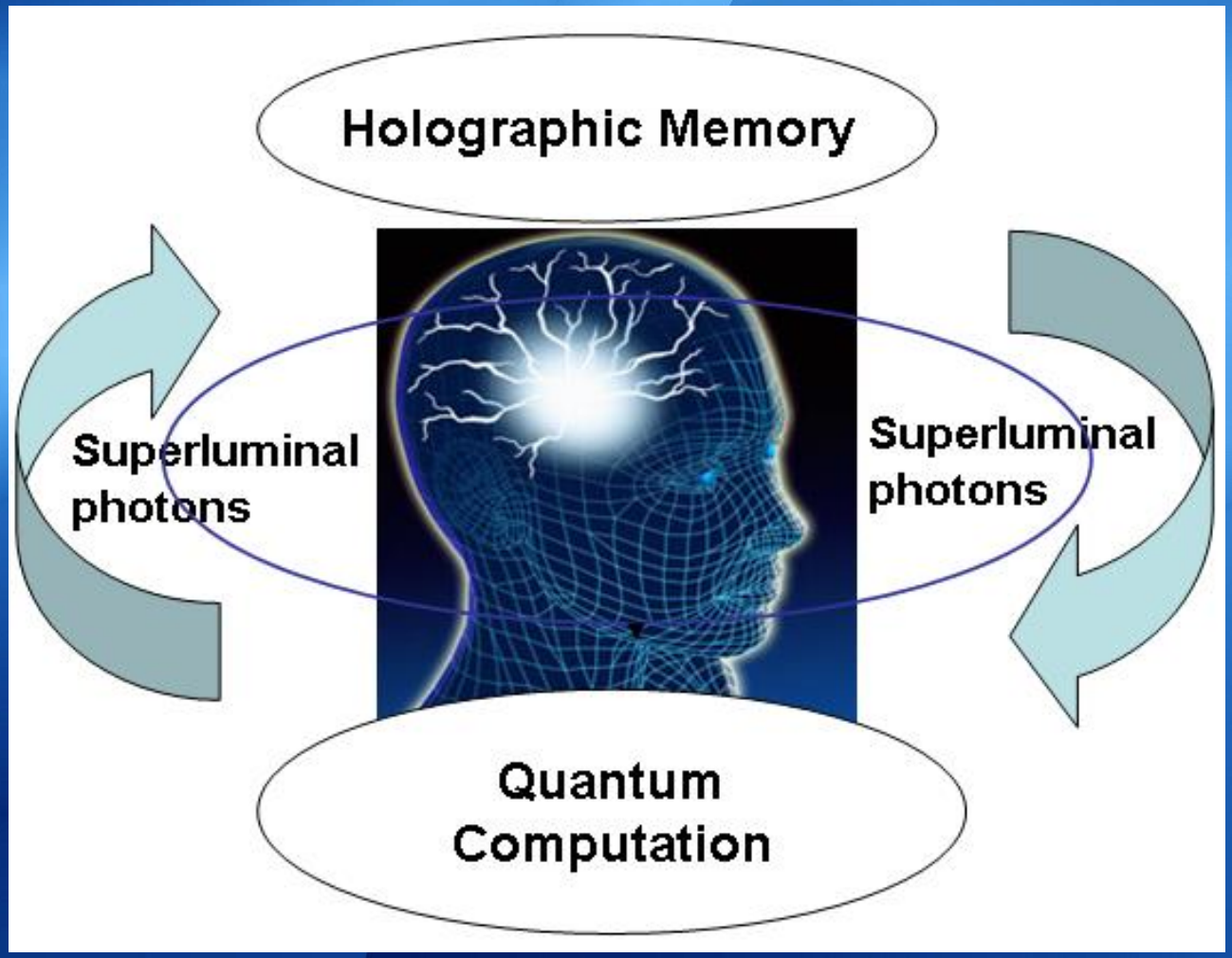
(Decoherence time)

$$\tau'_D \approx \tau_R \left(\frac{\hbar}{\Delta x} \sqrt{2mk_BT} \right)^2 [\beta(\beta-1)]^2 \approx 2\times 10^{-4} \tau_R \ \text{(sec)}$$

where $$\beta \approx 1 + \frac{c}{2\omega d} + \sqrt{\frac{c}{\omega d} + \frac{c^2}{4\omega^2 d^2}}$$

$\tau'_D / \tau_D = 1.3\times 10^{12}$ for the case when we let $d = 15nm$, that is the same order as the extracellular space between the brain cells.

脳の働き

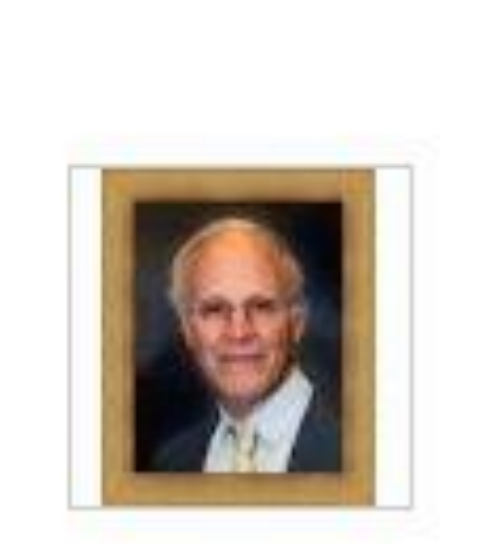

Holographic Memory
Superluminal photons
Superluminal photons
Quantum Computation

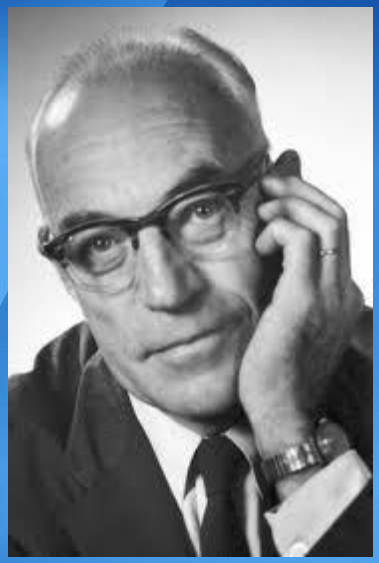
- From the theoretical analysis, it is seen that the accelerated Turing machine called a Zeno machine has a possibility to be realized by using superluminal particles from the standpoint of quantum mechanics. Thus an extraordinary capability of human brains compared with the ordinary silicon processors might be explained if they are composed of superluminal photons, because they have a capability to function beyond the ordinary Turing machines.

Human mind is a hypercomputer as claimed by J.R.Lucas.

Hypothesis based on superluminal consciousness by Dr.Dutheil

His hypothesis is based on a model in which consciousness is a field of tachyon or superluminal matter belonging to the true fundamental universe.





(Hypothesis by Prof.Dutheil)

- The brain is nothing more than a simple computer that transmits information.
- Consciousness, or the mind, is composed of a field of tachyons or superluminal matter, located on the other side of the light barrier in superluminal space-time.

Non-locality of wavefunction for the tachyon field

(Feinberg equation)

$$\left(\frac{\partial^2}{\partial t^2} - \nabla^2 - \mu^2 \right) \phi = 0$$

$$\phi_k(x) = \frac{1}{(2\pi)^{3/2}} \exp[i(\mathbf{k}\cdot\mathbf{x} - \omega t)] \equiv \frac{1}{(2\pi)^{3/2}} \exp(ikx)$$

$$\varphi(x) = \int \phi_k(x) f(k) d^3k \neq \delta^3(x)$$

Non-locality of wavefunction

THE SUPER COHERENT ORGANISM VIA TACHYON FIELD
proposed by Prof. Laszlo

- The living organism is extraordinary coherent with the world around it, dynamically, almost instantly correlated with all other parts.
- The mind of one person appears able to act on the brain and body of another.
- Modern people display a capacity for spontaneous transference of impression and images, especially when they are emotionally close to each other.

Interaction of the human brain with the Collective Mind via tachyon field

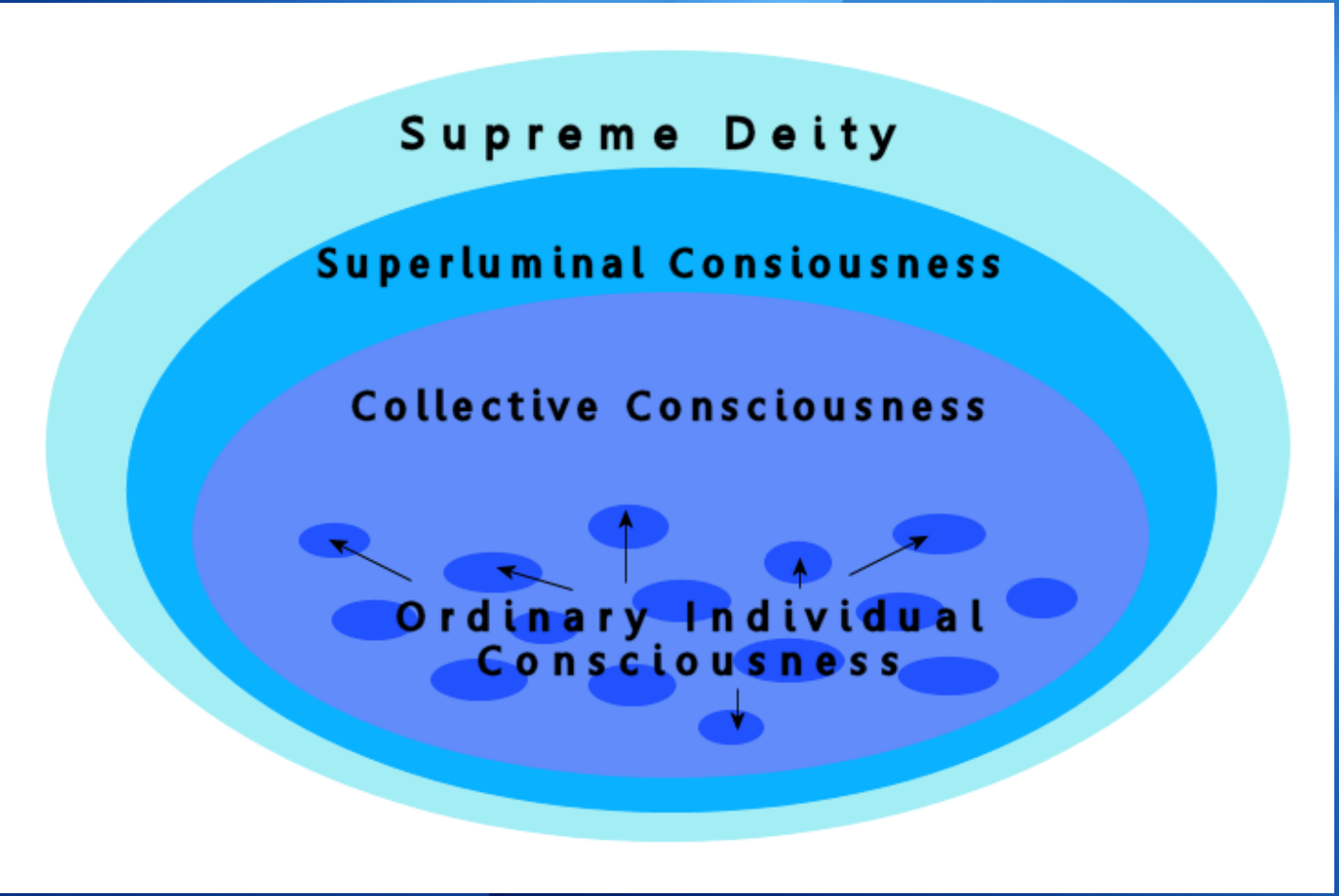
Human brain has the possibility to act as a unseparate whole.

Non-local tachyon network

Human brain has an extraordinary capability of computation compared with the silicon processors.

意識を氷山に例えると
顕在意識
潜在意識
集合的無意識

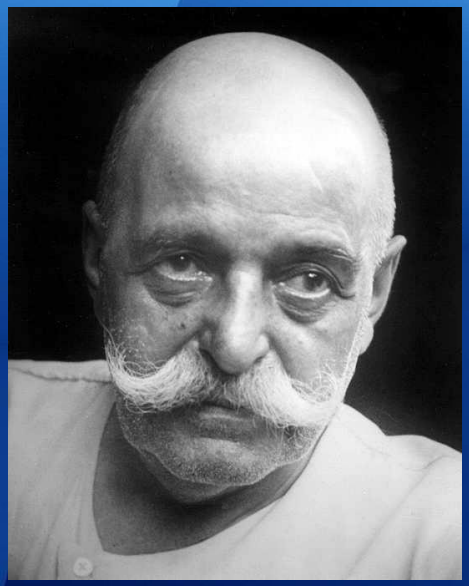
Structure of the Mind



私たちの行動をコントロールしているのは「自分の意識」ではない。
脳はたいてい自動操縦で動いており、意識は遠いはずれから脳の
活動を傍観しているにすぎないのだ。

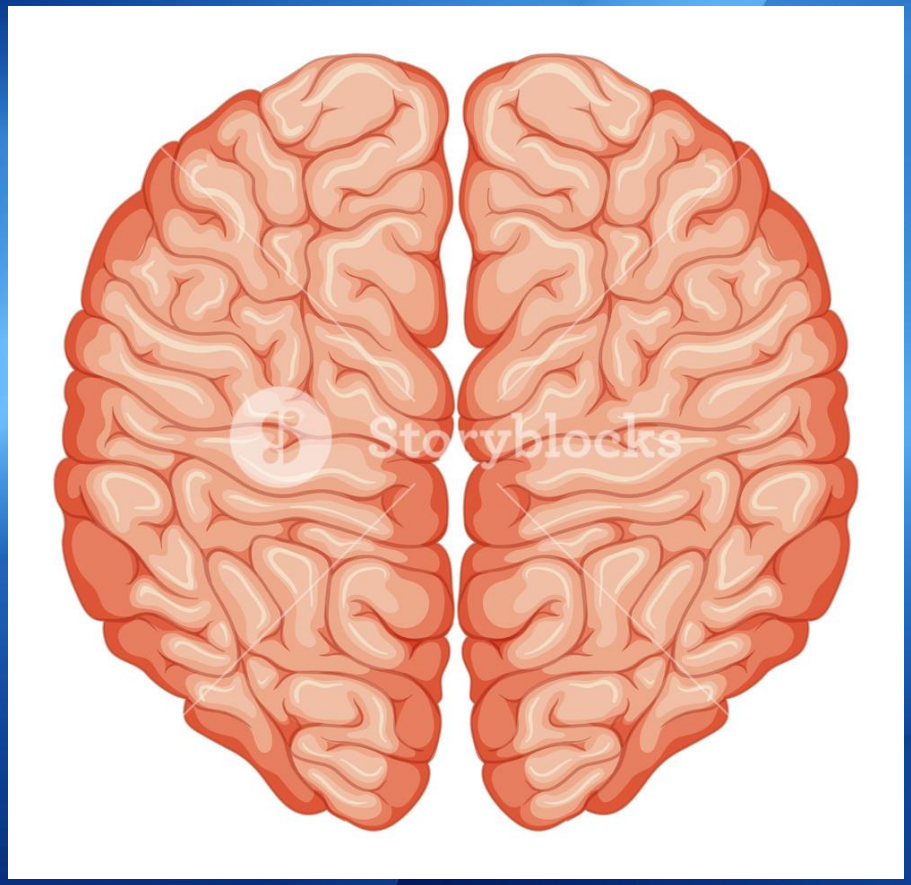
人間の脳は限られた部分しか使われていない。

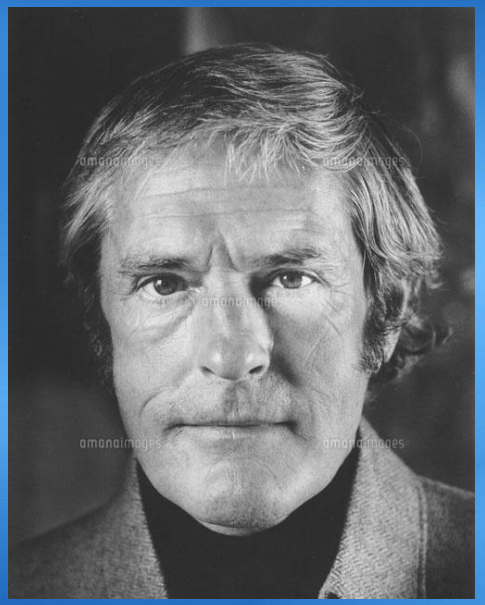
人間の意識はまだ未分化の状態にある
すなわち眠っている状態



ロシアの神秘主義者
グルジエフ

ティモシー・リアリー博士の脳のサーキット理論





脳の神経系は八つの潜在的回路から成立している。

リアリー博士のサーキット理論

大脳左半球

- 生物生存回路
- 情動回路
- 喉頭操作系回路
- 家庭的回路

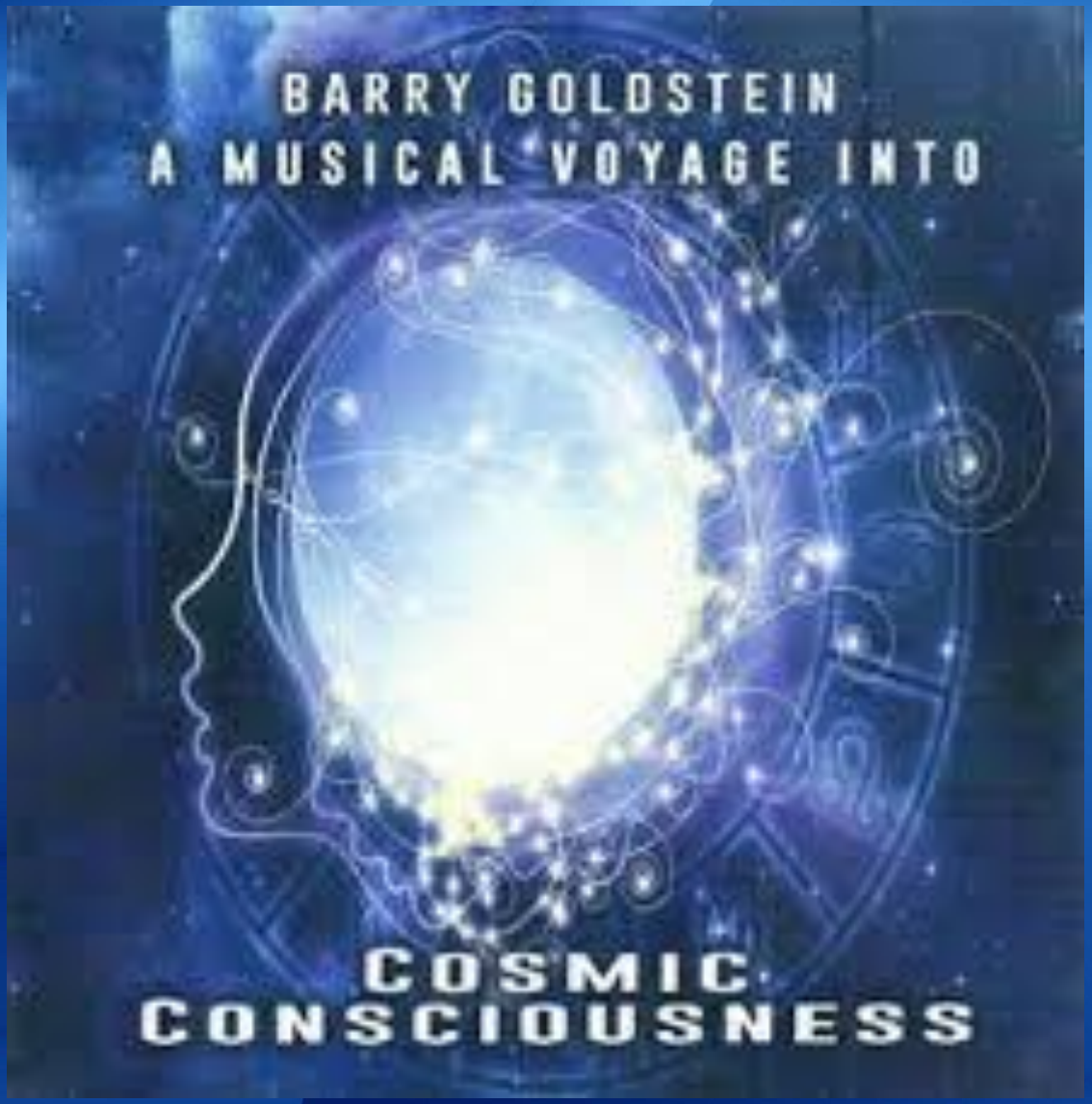
→ 地球上での生存に関係

大脳右半球

- 神経身体回路
- 神経電気回路
- 神経遺伝子回路
- 神経原子回路

→ 現在、使われていない。
将来、地球外的なものに進化するとき使用される

右脳の覚醒により宇宙意識に目覚める

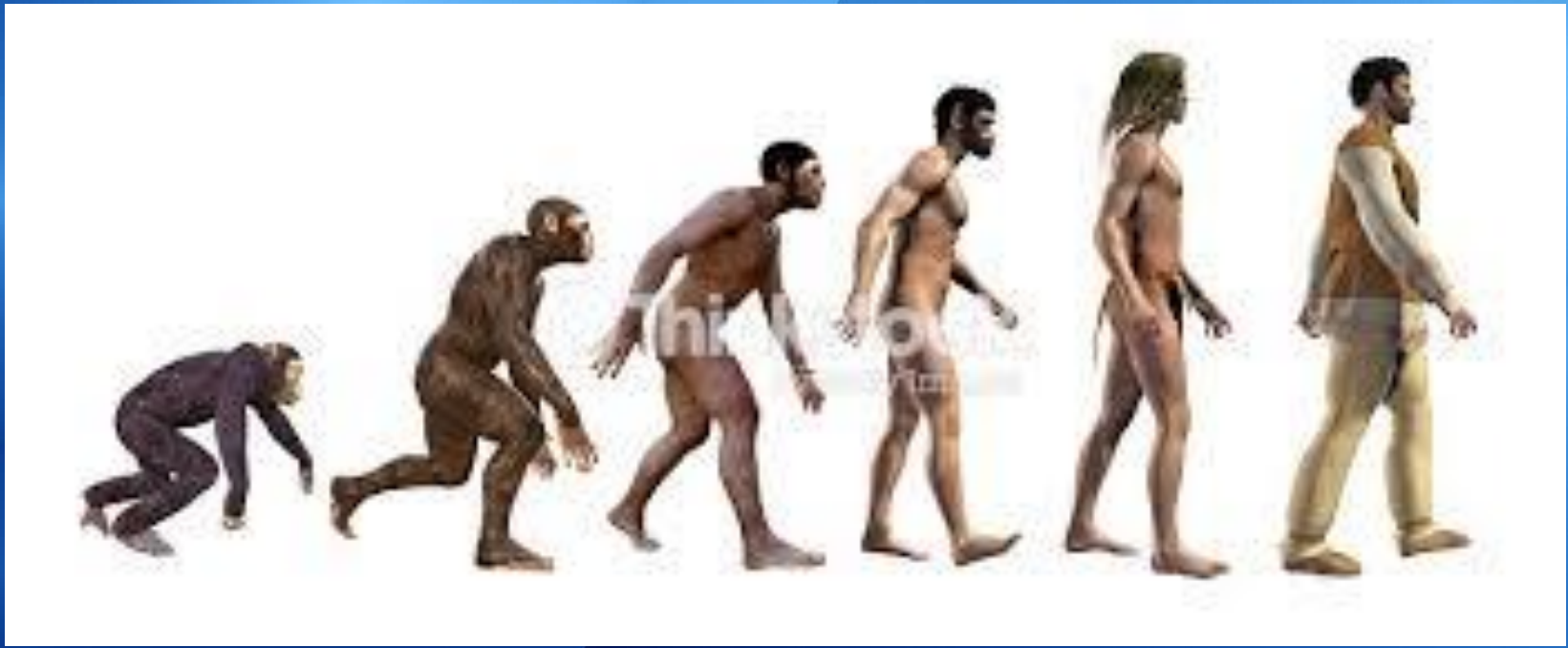


人間の覚醒ー無限宇宙への進化

自己＝大宇宙

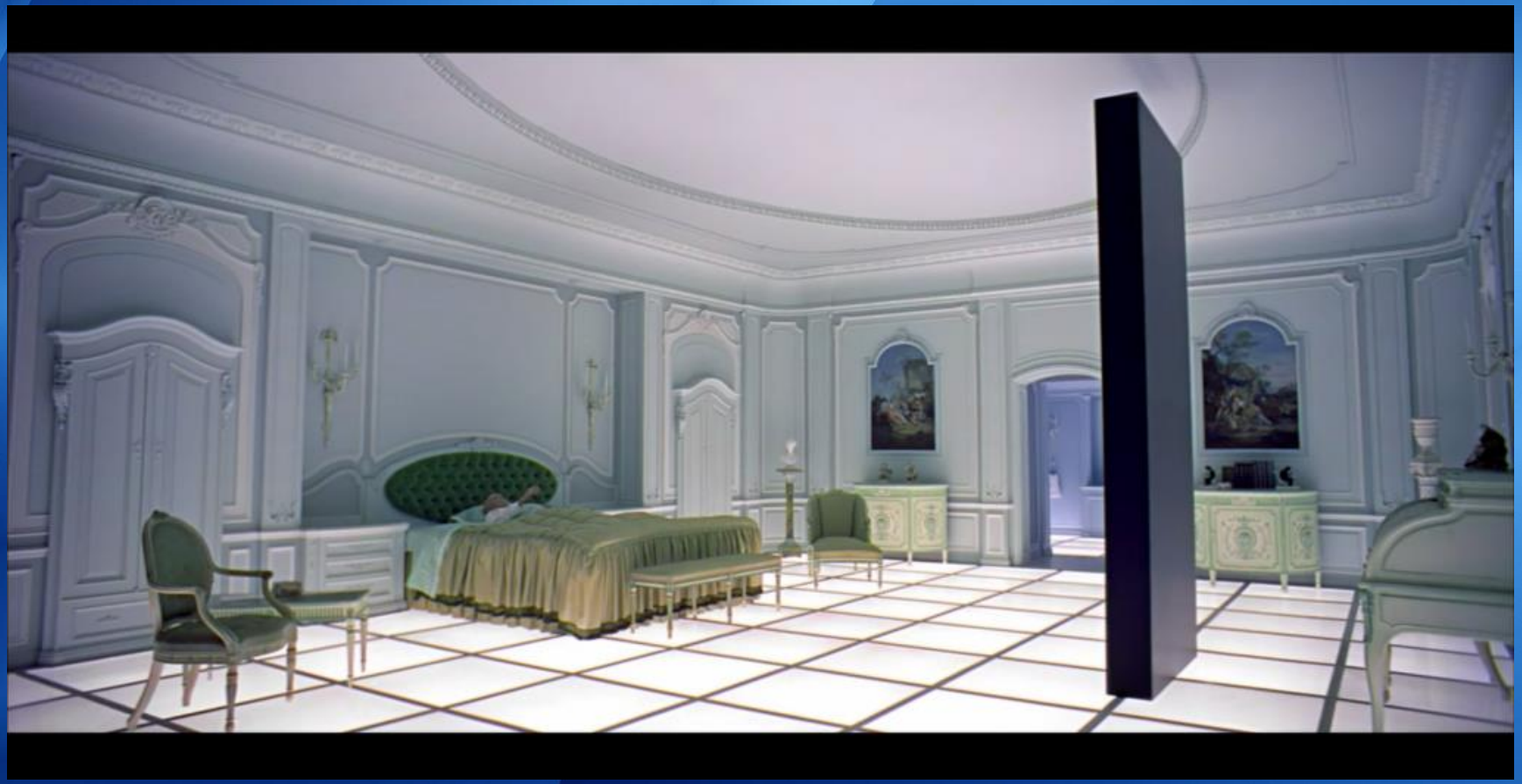
映画2001年に出てくるモノリス

人間は高次の宇宙的存在により進化させられた



人類の中には地球外的な存在へと進化していく可能性が脳の中にすでに組み込まれている。

次の進化の段階



スターチャイルド

地球を離れた宇宙的存在

自己に至る 十牛図

一.尋牛

二.見跡

三.見牛

四.得牛

五.牧牛

六.騎牛帰家

七.忘牛存人

八.人牛倶忘

九.返本還源

十.入てん垂手

将来、人間は右脳の活性化（覚醒）により地球外的存在に進化する

人類から天使のような存在に進化する。

クンピュータも意識を持つか＝シンギュラリティ・ポイント

The End