

Quantum mechanics is weird, imagination differs from reality

My cousin recommended Professor Brian Pippard, when went to Cambridge, solving his *Problems in classical physics* consolidated my faith in science. An experiment involving liquid N₂ in 1967 produced a hysteresis curve instead of the expected straight line. I was ridiculed for proposing that ice had deformed the silica He thermometer bulb it but recent reports of a phase transition in ice XIc at 72 K corroborate it. Both H- and P_i ~ P_i bonds absorb the latent energy released as $\approx 4 \mu$ infrared laser light, affording a consistent framework for the origin of life.

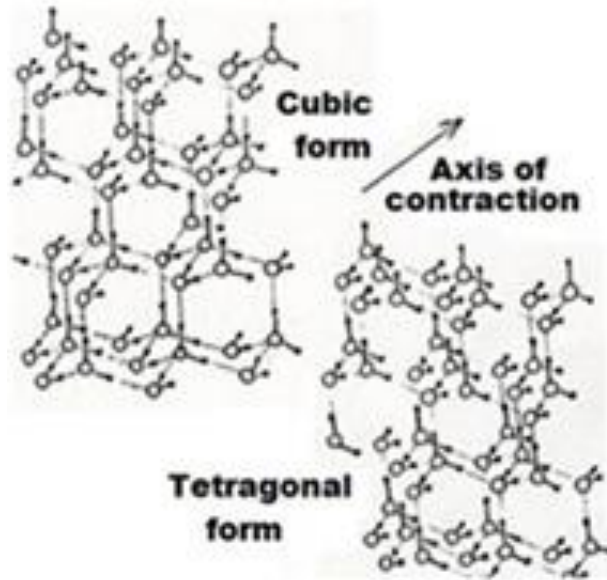
My independent research since graduating in Natural Sciences and Biochemistry, training as a Clinical Biochemist, programming and my PhD thesis was rejected, proposes:

- Biota inter-convert chemical and mechanical energy using resonant cavities.
- Trace element supplements prevent mental and physical disorders.
- Ice XIc released laser light during a primordial ice age, promoting DNA synthesis and originating life.
- A DNA-protein structure explains brain function, simplifying science.

Abstract

The *minion*, evolved to pack chromosomes for efficient replication, is a coiled molecular abacus comprising 1,701 DNA base pairs bound to 189 protein units, explaining human intelligence better than *neural networks*. Its 18 x 63 array of orderly H-bonds connecting amino acids to phosphates stores an 18-character *word*. Memory recall involves resonance between similar minions, nerve fibres serving as wave guides and synapses as gates. Dynamically, they constitute 18-handed clocks, their time unit, $\tau \approx 1.4 \cdot 10^{-15}$ secs and longest conceivable time, $63^{18} \tau \approx$ the 'age of the universe' limit our perception. τ replaces physicists' Planck's constant. The *Tyger equation*, a hyperbolic function, corrects a wrap-around counting *error*, $\beta = 63^{-9}$ creating relativity twixt perception and conception. Light seems to follow a boomerang-like trajectory, warping our perception of space, reinterpreting gravitation and rendering plane surfaces as spheres. Mathematical logic using 0, ∞ and infinitesimal calculus creates an illusory world model.

Familiar situations confirm Einstein's *spooky action at a distance*. A set of nine polyhedrons reminiscent of Plato's perfect solids substituted for electron orbitals affords new insights to Mendeleev's periodic table of elements. Oscillating H-bonds accelerate protons through minion tunnels with sufficient energy to fuse with obstructing nuclei. Correlations between the periods and frequencies of pulsars and those of minions suggest the γ -rays could be harnessed to supply power. Computers and data-bases modelled on minions could create user-friendly interfaces compensating for personality differences and facilitating understanding and agreement.



Cubic to tetragonal transition

Ice, the ordering force

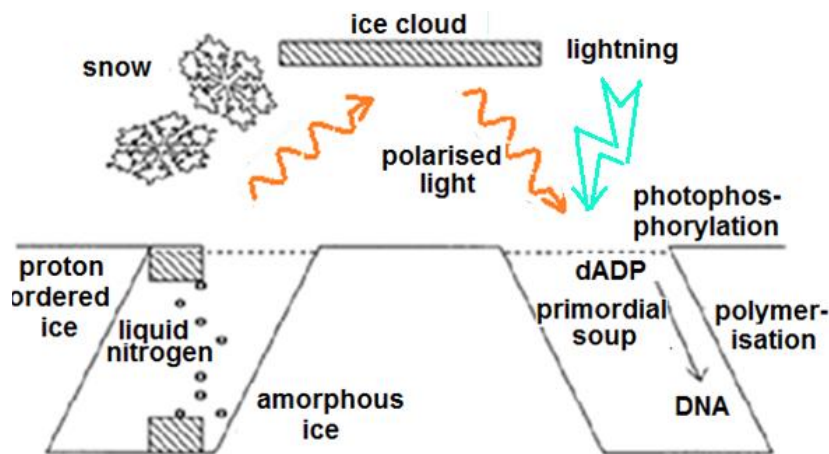
Using:

- H-bond length $h = 1.75 \text{ \AA}$
- Dipole moment $\mu = 1.27 * 10^{-29}$
- OH-bond length $b = 1.01 \text{ \AA}$
- Dielectric constant $\epsilon = 3.1$
- Tetrahedral angle $\theta_a = 104.5^\circ$
- Space dielectric constant $E_0 = 8.85 * 10^{-12}$

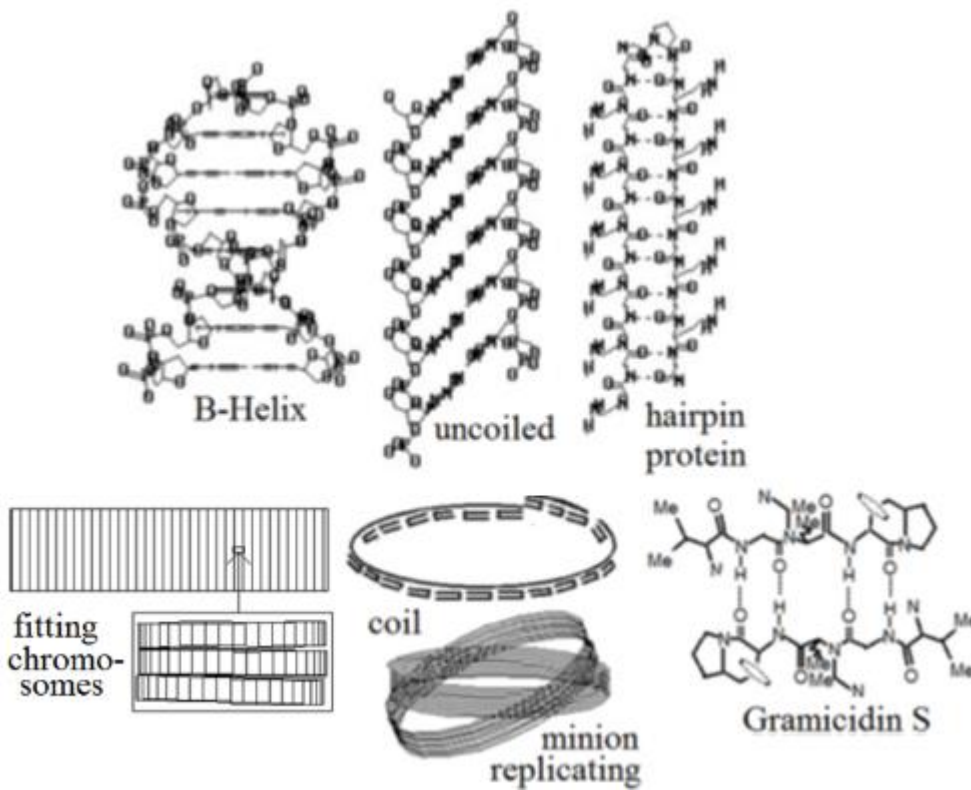
- H-O-H bond angle $\theta_b = 109.5^\circ$
- Planck's constant $N = 6.02 * 10^{23}$
- Charge cloud angle $\theta_c = 120^\circ$
- Velocity of light $c = 3 * 10^8$
- Molecular coordinates of water in
- Ice Ic: $\Delta x = \Delta y = 2.26 \text{ \AA}, \Delta z = 1.6 \text{ \AA}$
- Ice XIc: $\Delta x = \Delta y = 2.32 \text{ \AA}, \Delta z = 1.5 \text{ \AA}$

The latent energy of the ferroelectric transition between ice Ic and ice XIc $\approx 22.3 \text{ kJ/mol} \approx \text{ATP's phosphodiester bond energy}$, wavelength $\approx 4 \mu$.

Transition temperatures: Hexagonal/cubic 130 K Nitrogen boils 77 K
 Cubic/vitreous 110 K Ferroelectric 72 K.

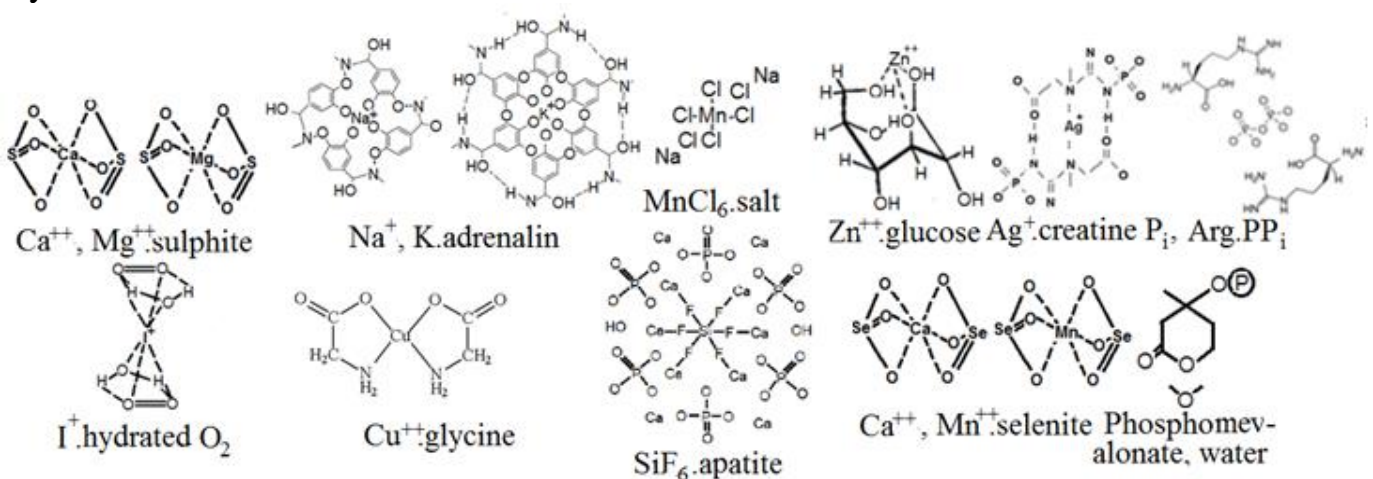


Origin of life



B-helix uncoils & binds to protein hairpin, minions fit DNA on chromosomes. 21 units form a coil, 1701 base pairs replicate, Gramicidin S is analogous

In the mind's eye, quoting Joan Baez' Daybreak, *My life's like a crystal teardrop*. Life started during a primordial ice age when ice crystallizing in pools of liquid nitrogen on Earth's poles changed from cubic to XIc, releasing latent energy as ~4μ infrared laser light. Polarized by reflection by ice in clouds and on Earth's surface, it shone on Darwin's warm equatorial waters, selectively activating nucleotides. They polymerized, creating a DNA noodle soup – some formed analogues of transfer RNA, 'transport DNA's, they fed Oparin's *coacervates* with life's prerequisites deploying trace element ions as carriers, see my book **Science Uncoiled**:



Trace element complexes with substrates

Minions comprise 1701 DNA base pairs, uncoiled but retaining B-helical base-pair spacing and overlap. Anti-parallel β -pleated protein hairpins with alternate neutral/basic A, L, I & V / R, K and P forming an asymmetric U-bend holding them flat, Gramicidin S is analogous. 21 hairpin units complete a coil and 9 coils a minion. They evolved to pack chromosomes and ensure accurate copying. One H-bond on each coil surface is reversed, storing a letter of an 18-character word using a 64-character alphabet. Memory recall involves resonance with minions holding similar words. Axons and dendrites serve as optic cables, communicating with other nuclei. Mental associations with minion coils.

#	QUALITY	PERIOD	COLOUR	MASS	DISCIPLINE
-9	unity	8.7 fs	red	$m_e / 7$	quantum mechanics
-8	justice	5.5 ps	silver	$m_p / 7$	physics
-7	stability	350 ps	blue	2*bp mass	chemistry
-6	progress	22 ns	violet	8.3 ag	computer processing
-5	love	1.4 μ s	bronze	0.033 pg	biochemistry
-4	peace	87 μ s	yellow	130 pg	genetics
-3	beauty	5.5 ms	pied	0.51 μ g	biology
-2	truth	350 ms	gold	2 mg	engineering
-1	goodness	22 s	green	8.1 g	psychology
+1	goodness	23 min	green	32 kg	psychiatry
+2	truth	1 day*	gold	130 t	head hunting
+3	beauty	9 weeks	pied	0.5 Mt	sociology
+4	peace	11 *	yellow	2,000 Mt	politics
+5	love	685 y	bronze	8 Gt	history
+6	progress	43 ky	violet	31 Pt	archaeology
+7	stability	2.7 My	blue	1.8*Moons	palaeontology
+8	justice	170 My	silver	84 * Earths	astronomy
+9	unity	11 By*	red	1 * Sun	cosmology

Qualities associated with minions

The numbers label inner and outer coil surfaces, * connotes approximation. Periods = $63^N \tau$, colours feature in metaphors, adverts, flags and politics, Masses are in ratio 63^2 , m_e and m_p = electron and proton masses, a, f, p, n, μ , M, P, G & P = 10^{-18} , 10^{-15} , 10^{-12} , 10^{-9} , 10^{-6} , 10^6 , 10^9 , 10^{12} & 10^{15} . Minion logic favours using $\mu = \sqrt{M}$ for measuring mass, $E = Mc^2$ becomes: $E = \mu^2 c^2$.

Biological cold fusion

Protons are accelerated by oscillating H-bonds along minion tunnels. According to the *Tyger* equation (using polar coordinates Θ and Φ , $\beta=63^{-9}$ and $\tau \approx 1.4$ fsecs), protons and neutrons appear to be planes. Substituting concentric polyhedrons for electron orbitals affords new insights to Mendeleev's periodic table of elements. When protons collide with nuclei blocking their paths, they fuse, driving the carbon nitrogen cycle. The γ -rays released follow *Tyger* paths, returning as pulsars with the same periods & frequencies. The cytochrome chain resembles a ping-pong ball bouncing on spring balances, mitochondria are $\frac{1}{2}$ -wave resonant cavities for $\lambda \sim 4\mu$, trapping energy. Zeolites might serve to capture γ -rays to harness simulated minion nuclear fusion to address climate change. Fleischmann and Pons bred scepticism (a Pd crystal's adsorbed water is analogous to minion tunnels).

mitochondrion
 $\frac{1}{2}\lambda$

water film on palladium

energy splitting

cytochrome chain
0.29 volts

Oscillating H-bonds

Tyger equation

$$\frac{d^2\Theta}{dt^2} = \frac{\pi\beta^2}{2\sqrt{e^{([1+\beta]^{t/\tau} + [1+\beta]^{-t/\tau})}}}$$

$$\frac{d^2\Phi}{dt^2} = \frac{\pi\beta^2}{2\sqrt{e^{([1+\beta]^{t/\tau} - [1+\beta]^{-t/\tau})}}}$$

1 2 3
4 5 6
7 8 9

nine 'perfect solids'

Tunnels T through minion

carbon-nitrogen cycle

Periodic table

Li	Be	B	C	N	O	F	Ne											
Na	Mg	Al	Si	P	S	Cl	Ar											
K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr	
Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe	
Cs	Ba	La	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn	
Fr	Ra	Ac	Rf	Db	Sg	Bh	Hs	Mt	Os	Rg	Cn	Uut	F1	Uup	Lv	Uus	Uuo	

Cold fusion, *Tyger* relativity, minion tunnels, cytochrome chain, nuclear structure, C-N cycle, periodic table

A consistent account of brain function reinterprets the evidence for quantum mechanics

For my first job, I programmed IBM 360 and Commodore PET computers. The mainframe manuals were 2 feet thick, the micro-computer's slim. Noting their programming languages could be reduced to nine instructions, I suggested our intelligence can too and devised the *minion*, comprised of 189 of Linus Pauling's anti-parallel β -pleated sheet protein U-bends, each binding nine uncoiled DNA base pairs forming a coiled abacus. They degrade to *nucleosome core particles* on extraction, their successful predictions in many fields support their roles in human intelligence. *Minions* make wrap-around counting *errors* of 1 in $63^9 \approx 1.56 * 10^{16}$, explaining Heisenberg's uncertainty principle.

Oscillating H- bonds connecting amino acid ω amines to DNA phosphates create the illusion of time. The minion clock follows the Geiger counter logic of Dekatrons™, its time unit $\tau \approx 1.39 * 10^{-15}$ seconds replaces Planck's constant, correctly predicting day-length, Sun-spot cycle period and the age of the universe. The *Tyger* equation is a hyperbolic function compensating for the relativity between perception and conception, topologists might prove it warps our view of reality, interpreting planes as spheres. Michelson and Morley determining the speed of light confused 20th century science, I've restored its simplicity.

Quantized electron orbitals usurped Michael Faraday's discrete positively charged electric particles. Darwinian evolution involves accumulated small changes, Karl Popper's philosophy permits extrapolation from axioms until their falsified. Publication eases acceptance, *Things Take Time* wrote Piet Hein. Visualizing nuclei as plane combinations affords deeper insights to Mendeleev's periodic table than quantum physics, consistent with recent reports of ununoctium ^{294}Uu and ^{302}Uu .

Future prospects

I hope to divert research funds and resources from physicists' extremities to middle ground, disease prevention, sustainable agriculture and clean energy generation and invite you to implement my proposals. If you're persuaded that Einstein's doubts were valid, please try to prove it empirically. It would free resources for other 21st century scientists to resolve malnutrition, ignorance and environmental problems. Contact me, Michael T Deans using michaeltdeans@gmail.com with any questions.