

Teesside SitP & Humanists 4th & 13th May 2017

Ian Glendinning
Explain That To Me Again!



- A little intro to me and my *thought journey*
- “Hard Problem” of Consciousness & Free Will
- Introducing Dennett and his evolutionary journey
- Highlights of “From Bacteria to Bach and Back”
- The inconvenient truth?

Me – Getting to Here from Then.

Early Life - Science “Geek” at school Maths / Phys / Chem / Bio

- eg Carl Sagan (Cosmos) / Jacob Bronowski (Ascent of Man) influential
- Atheist & Secularist all my 61-year life. Humanist since 1981.

“Day Job” - Engineer & Technologist / Aerospace & Energy since 1977

- Obviously physical science based, but
“ingenuity” also about managing to get things done with people.
- Lived and worked in Australia, USA & Norway & well-travelled, Russia, China, South-East Asia, Middle-East, South America.

Ongoing “Life’s Work” – Knowledge Research Project

- Data / Information / Knowledge systems & modelling in day job >>>??
- Blogging as “Psybertron” *since 9/11* 2001. www.psybertron.org
“What, why and how do we know?”
- And as [@psybertron](https://twitter.com/psybertron) on Twitter (and other social media)
“Equal-opportunity infidel. Keeping science and humanism honest”

Me – Here & Now

Member - humanism, secularism & rationalism organisations

[BHA](#) / [NSS](#) / [Conway Hall Ethical Society](#) / [SITP](#) etc. – and active in local groups.

Supporter / Subscriber - pro-science campaigns & journals

[Sense-About-Science](#) / [Ask-For-Evidence](#) etc.

Trustee Board Member of [Rationalist Association](#) & **New Humanist**

(***** Lyke Wake Walk Fundraiser** <https://www.justgiving.com/fundraising/lanLWW>)

Plus Amateur Academic Research ...

[Reading, writing and events](#). Not just Science & Technology but also humanities in general, literature, history, politics and **philosophy** generally,

- **Metaphysics / Ontology / Epistemology / Ethics & Quality / P of Mind / P of Science**

Sceptical Position - For “Science and Rationality” but against “Scientism”.

The narrow dogma – or *arrogance* - that science and objective logic is **the** privileged answer to anything and everything that matters (after [Wittgenstein, Gödel](#), etc.)

“Equal-opportunity infidel. Keeping science and humanism honest”

..... asking **“What, Why and How do we Know?”**



- We naturally think of our free will as real. **Our mind and its workings are the thing we experience most directly?** (Though *obviously* we do so *subjectively & psychologically*. Pretty much *a la Descartes in fact – cogito ergo sum, etc.*)
- We reject the idea that we are “pre-programmed” and we reject the idea that the world is “pre-determined” – independent of our own decisions and actions (obviously limited by the physical causation of our power and influence)?
- Without such free-will we’d think of ourselves as “mindless zombies”. We’d be disappointed ***if we believed our conscious mind and our will didn’t affect the real world*** and that our impression was just an illusion evolved to make us somehow feel psychologically better about our actual powerlessness?

Caricature or “Noddy” argument.

- The Hard Problem:
 - The “subjective experience” of our mind (*qualia*) are pretty much impossible to explain “objectively” in terms of physical states of our brains and sense data.
 - The so-called *Hard Problem* philosophically, Impossible almost *by definition* scientifically.
- “*Free-will is dead. Let’s bury it.*” (random scientist)
 - Pretty much everything in **science depends** on the physical understanding that all causation arises from the 4 fundamental forces between the standard model particles and the statistical predictability of quantum mechanics.
 - Every future state is **determined** by previous states and these **laws**. (*Even if something more fundamental underlies these, eg strings, supersymmetry, quantum loop gravity, information, etc.*)
- This leaves no “gap” for our subjective input *not* being pre-determined.

The Libet Experiment

- [Benjamin Libet](#) (1970's and repeated many times since – famously [with a live Conference audience by Susan Blackmore](#) of *Meme Machine* fame?)
 - The “**brain**” physically responds and reacts to a stimulus 350-500ms **before** any conscious “**mind**” report of awareness and any evident decision to act.
 - Seems conclusive? – that the actions of the conscious mind are epiphenomena, post-rationalisations, **after the event**. The “nuddy” view from science must be right?
- Better conclusions from Libet?
 - Conscious will is many layered - from the physical sensors and hard-wired responses to the increasingly-conscious and complex, higher, supervisory levels.
- Think of the way our conscious mind acts as an evolved & learned capability. Think of free-will rather as **free-won't**? ([Daniel Wegner](#) 2002)
Think of a top-class tennis player returning a serve?
 - **Most** of the action is pre-wired (genetic capabilities, developed skills, learned tactics, experience and anticipation).
 - The time after the ball leaves the opponent's racquet is used **only** to fine-tune or abort.
 - We're not going to waste resources on laborious ballistics calculations and unnecessary time-consuming steps when **we've evolved a better solution to the problem**.

Recent / Current / Topical

- Sam Harris – [Free Will \(2012, my own 2014 notes\)](#):
 - Does he really only say “Free will is an illusion?” or “Free-will doesn’t really exist?” No he doesn’t.
 - He says “Free will is **actually more than** an illusion. That we are the conscious source of **most of** our thoughts and actions ... is false.”
- Dan Dennett (Horseman#3) vs Sam Harris (Horseman#4)
 - Dennett – [Critique of Harris “Free Will”](#) (Jan 2014)
 - Harris – [Letter in response to Dennett](#) (Feb 2014)
Decidedly acrimonious and public spat between friends with a common enemy, but real & deep disagreement on Free Will.
 - Harris – [Waking Up Podcast– Free Will & Dennett Revisited](#) (Jul 2016)
Return to friendly and respectful dialogue, but still a good representation of [*most of*] their actual differences.

Consciousness (& Free Will) are as Real as *You* Are

- Mainstream science conclusion is often that our free-will *cannot exist*. It *must be* some kind of illusion or *epiphenomenon*.
 - To reject that argument one is accused of being a wishful **denial** of accepted science.
 - If the Standard Model(s) of fundamental physics and cosmology = True, Then Free-Will = False.
 - Nothing wrong with Logic, but more than one Conclusion. Physical Science must evolve.
- The **denial** of *the existence of free-will* is itself a scientific dogma or arrogance. Agreeing that it's simply **not yet very well explained by current science** is much more honest.
- “Compatibilism” – after **Dennett** - Sure, physical laws are deterministic, but the networks & layers of causation in mind, consciousness and free-will are evidently complex.
 - Don't be **too quick** to define the objects you are dealing with. Don't be **too greedy** in reducing the problem to linear, deterministic causation in terms of those objects.
 - The **best** explanation for our subjective experience of conscious will *may not be* one reduced solely to terms of the lowest physical objects.
 - **SUSPEND DISBELIEF.**
We have just the required amount of free-will we can use.

Selected Dan Dennett Bibliography

[Born 1942. 1963 Harvard BA / Quine; 1965 Oxford D-Phil / Ryle,
He's a philosopher long acquainted with Oxford genetic-biologists;
Now - Professor of Philosophy at Tufts University, Centre for Cognitive Studies.]

- [1979 (Doug Hofstadter) "Gödel, Esher, **Bach**"]
- 1981 – "Minds I" (*with* Doug Hofstadter)
- 1991 – "Consciousness *Explained*"
- [1995 – (Doug Hofstadter) "Fluid Concepts and Creative Analogies"]
- 1995 – "*Darwin's Dangerous Idea*"
- 1996 – "Kinds of Minds – *Towards* an Understanding of Consciousness"
- 2003 – "*Freedom Evolves*"
- 2005 – "Sweet Dreams: Philosophical Obstacles to a *Science* of Consciousness"
- 2013 – "Intuition Pumps and other *Tools* for Thinking"
"Just as you can't do much carpentry with your bare hands, you can't do much thinking with your bare brain." Mind is more than Brain.
- **2017 – "From Bacteria to **Bach** and Back – The Evolution of Minds"**

Dan Dennett



- Patient with his critics!
- Critics “You’ve still work to do *prove* your ideas to the satisfaction of the rest of us scientists and philosophers”
- Dan “Well, you’ve not proven me wrong, and I’ve addressed your criticisms” (*There are even whole books of collections of arguments and dialogue between him and his critics.*)
- “For the past 200 years philosophy has been done like warfare, aiming to defeat opponent. But you can defeat someone without being right.”
Lewis Gordon / APA2017
- Progress depends on suspending disbelief and resisting gain-saying criticism.

Bacteria to Bach and Back (B2B&B)

- Dennett in B2B&B – His *argument* has no simple beginning and end. Start wherever you are and be prepared to go round as many times as it takes.
- In practice he presents the whole evolutionary history of the emergence of life and consciousness. He makes extensive use of his *Evolutionary Design Space* visualisation for evolution of many examples of Darwinian / Lamarkian “things” with many variables (3 Variables at a time) *See next few slides.*
- **Our Subjective Consciousness is *who and what we are.***
We are a need-to-know user interface.
The objective denial of subjective reality can only be broken if we accept our subjective selves within science.]
- He provides *some* references, where *particularly* relevant, he even makes *some* asides and detours to address predictable *critical* counter-arguments at a few key points, BUT
- **“Life’s Too Short”** he (actually) says – see first point – and repeat.

Life, The Universe *and Everything*?

- Darwin's Dangerous Idea in B2B&B

- All the way from Physics to “Intelligent Life” Evolution is *algorithmic* with very few simple basics.
 - Population
 - Vary (a few, by whatever cause)
 - Select (from population, by whatever set of mechanisms)
 - Repeat
- The point being new branches (species) of the population emerge, new populations with their own cycles – ad infinitum.
- It's “strange loopy” – it looks circular, but not only do new things emerge, *new unpredictable kinds of thing* emerge on new levels.
- Physical things > New physical things > Chemical things
- Chemical things > New chemical things > Living things
- Living things > New living things > Conscious things
- Conscious things > ... Thoughts, concepts, memes, tools, culture, J.S.Bach, the Sagrada Familia, ... you name it.

Evolutionary Design Space Example

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FROM BACTERIA TO BACH AND BACK

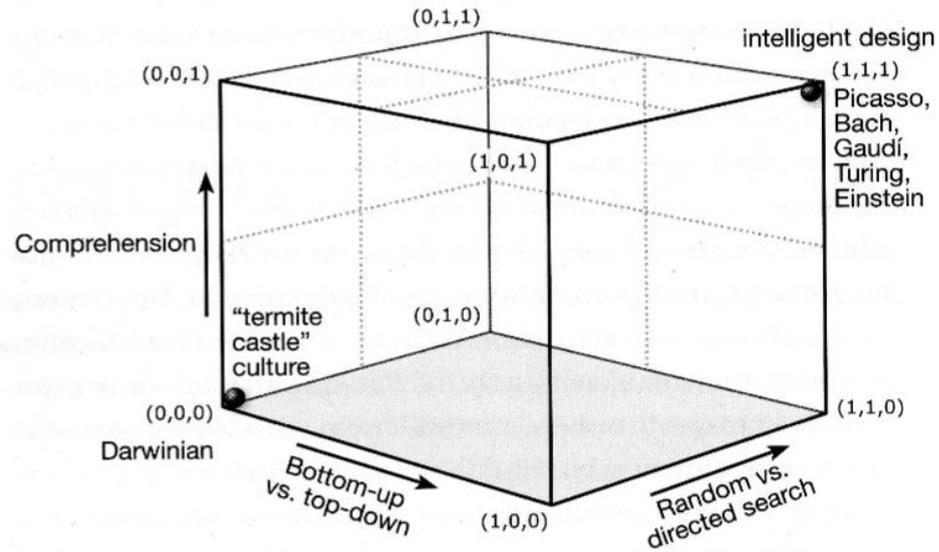


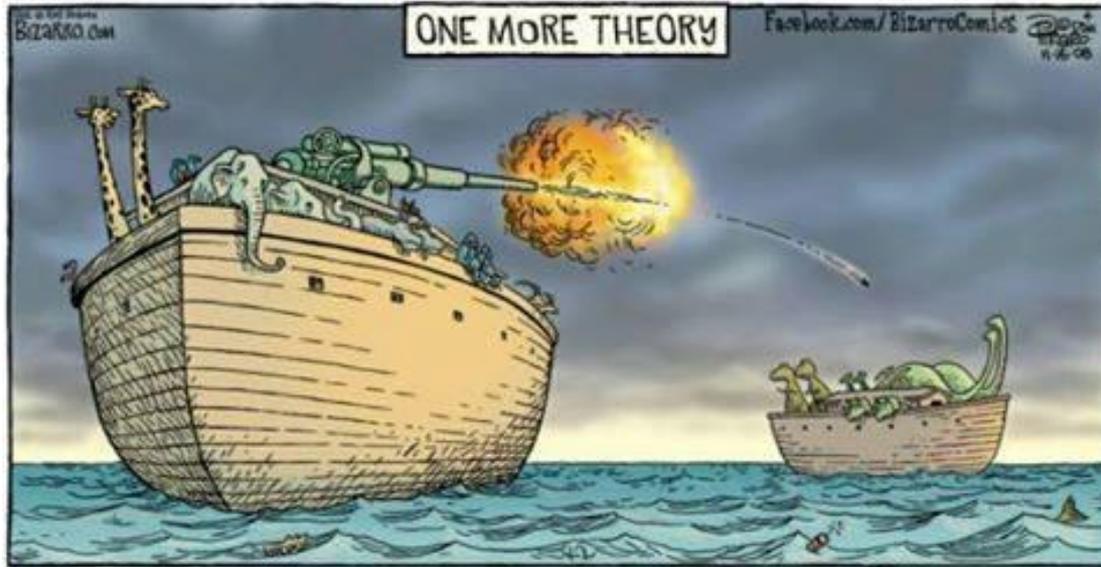
FIGURE 7.5: Inverted Darwinian space with Darwinian phenomena at (0,0,0) and intelligent design at (1,1,1).



Things “reclaimed” in B2B&B

- The idea of “***intelligent design***” for things designed by *naturally evolved* intelligence.
(*Not* supernatural ID / Creationism)
- The “***what for***” as well as the explanatory “how” sense of “why?”. Teleology - the idea that things (with a *mix* of Lamarckian and Darwinian evolution) can exhibit purposefulness, towards purposes and ends that themselves evolve naturally.
(*No* supernatural “end” towards which all is directed, or any director doing the directing.)

“We” (our consciousness, our subjective experience and our will)
- are our evolved user interface to our physical / biological beings.



The problem with science explaining that lies with science's dogmatic over-reliance on objective, reductionist, determinist, materialism, *not* with the evolutionary explanation of how consciousness came to be as it is.

Explain that to me again?

There is no one-time explanation-on-a-plate for consciousness:

We must go round the *evolutionary loop* multiple times.

Science itself (*tools*) will evolve with our *understanding* (not just *knowledge*).

Q&A / Discussion ?????

Hidden Slide

- <http://theoatmeal.com/comics/believe> on Prejudiced Thinking Resisting Argument.
- <https://www.youtube.com/watch?v=N0vO5zc73qk> John Lloyd on “What Matters”
- The Bach connection?
- Materialism vs Culture & humanities?
Objectified **memes** / memeplexes / machine / systems views
It’s the greedy objective reductionism that’s the problem – with physics as well as humanities.
- Strange-loopy attractors / chaos?
- Rappaport / Registry Assembly Prog?
- Other pet topics (hidden) slide follows if needed for Q&A / Discussion.

Me & My Free Will – *My* Pet Topics

Evolution including Memetic Evolution of Knowledge & Belief.

Memes & [memetics](#). Echo-chambers and conspiracy theories. Understanding & Rationalisation of Belief, Faith & “Political” Dogma. Simple vs Simplistic; Binary arguments vs Subtle & complex considerations. Attention-grabbing / headline-reporting of scientific “discoveries”. Public scientist “rock-stars” on the one side, social-media-enabled advocates & critics on the other.

Decision-Making & Governance – literally “[Cybernetics](#)” (pre-1940’s, before AI etc.)

What information we have, how we interpret it as knowledge, and how we base decisions to act upon it? Systems view. From Individual choices to super-national government & policy.
Decidability: scientifically, even statistically, undecidable questions (Taleb).

Complexity in Layers.

Reality of iterative emergent properties & “strange loops” ([Hofstadter](#)). Late-binding definitions. Too-greedy reductionism ([Dennett](#)). Broad & narrow definitions. *Sorta* two-way causation. Objective Identity distinct from ourselves.

Philosophical (and Political) Problems at the Bleeding Edges of Science.

Cosmogony, big bang, multiverse(s), inflation, evolution of our universe. The appearance of design. Anthropic perspectives. Scientific dogma. Incompleteness of standard particle model(s). Physics as information. Reality of time & causation. Maths as part of the universe and its history. The evolution of laws and constants. ([Unger & Smolin](#), [Nagel](#), [Sheldrake](#))

God & Faith vs Science & Reason “Wars”. The Four Horsemen, Islamism, etc. (‘nuff said)

Brain-Mind, Consciousness, (Artificial & abnormal states of consciousness)

.... & Free-Will. (Next)

More Recently Topical

- [Unger \(Philosopher\) & Smolin \(Scientist\)](#)
 - [*The Singular Universe and the Reality of Time*](#) (2015) Chap-7
 - “A symptom of the metaphysical folly ... [where time and laws of causation are outside physics, is that] ... sense impressions are incompatible with [our model] *therefore* qualia cannot exist.
But ***the one thing we can be sure of is*** that qualia do exist.”
- [Baggini \(Philosopher\)](#)
 - [*Freedom Regained*](#) (2015)
 - Sam Harris, [seemingly] the most fervent denier of free-will, says:
“The fact that our choices ***depend on*** prior causes does not mean they don’t matter [or don’t exist]. Human choice ... is as important as *fanciers of free will* believe ... we are not the authors of our thoughts and actions ***in the way that*** people generally suppose.”

Additional Refs used in Q&A

- Carlo Rovelli ?
[Seven Brief Lessons](#) (*Layman's intro to modern physics.*)
[Reality is Not What it Seems](#) (*Deeper, but readable, on "information" physics more fundamental than existing standard models, AND on the "I" of consciousness.*)
- Ian McGilchrist ?
[The Master and Emissary](#) (*Rehabilitating left-right brain realities. Note also "Autism" link also.*)
[@DividedBrain](#) (*Film due for release, with John Cleese.*)
- Damasio, Sacks et al ?
[A summary of links](#)
(*"Abnormal" - atypical or altered - brain states.*)



“What, Why and How do we Know?”

I knew in 2001 it was a **philosophical** question:

But I was asking it for practical reasons:
Information Modelling / Decision-Making /
Knowledge Management / Quality Management /
Governance of People, Processes and Systems.

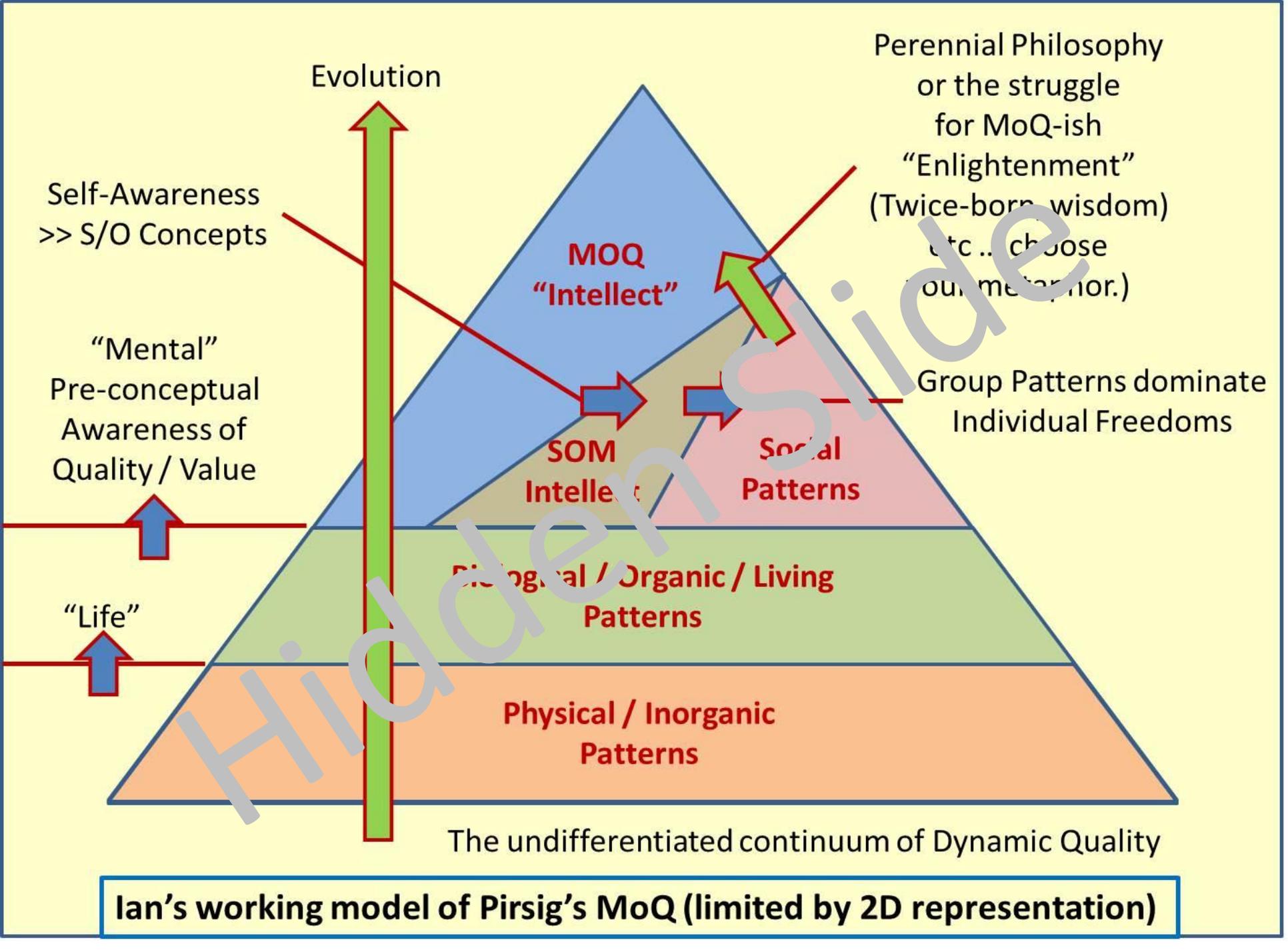
Until in 2002 when I read:

Zen and the Art of Motorcycle Maintenance (1974)

I didn't properly realise I was about to make a deep
dive into **Philosophy itself**: Metaphysics /
Epistemology / Ontology / Phil of Mind / Phil of
Science / Science & many “pet topics” within these.

Pirsig was my “Seed Crystal”

Robert Pirsig (R.I.P.) 6 Sep 1928 – 24 Apr 2017



“As Advertised” Intro ...

- Materialist science has a hard time explaining consciousness and almost *by definition* cannot explain our subjective experience of it. And, even when it tries, it remains just as hard to account for how our subjective "will" can really affect the physical world.
- The problem is as old as philosophy itself, most famously exposed during the Enlightenment by Descartes's dualism and dubbed simply "The Hard Problem" in the late 20th century.
- So hard that many scientists and philosophers have concluded *in all seriousness* that Consciousness and Free Will must be illusions, that they *simply cannot be* real.
- **NB : SUSPEND DISBELIEF**