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Abstract

This essay (abridged on very short notice to fit the length requirements [1]) begins by endeavouring to ask the question "How can mindless mathematical laws give rise to aims and intentions" but quickly runs into difficulties with the question itself (not least that there is an implication that there is no current mathematical law that may be considered to be "mindful"), which requires some in-depth exploration. I then explore what constitutes "Creative Intelligence" - coming to a surprising conclusion that concurs with Maharish Mahesh Yogi's definition.

1 Introduction

I'm primarily known as a Software Libre Developer, Advocate, and Reverse-Engineer. I specialise in seeking out and bringing to light archaic and esoteric knowledge: ideas that other people have missed or forgotten. When I wandered by chance across this Essay topic I could not pass up the opportunity to respond.

Reverse-Engineers are a rare breed: the ones that communicate publicly (if they can at all) are few and far between, as most of them end up under NDA working in the Intelligence Community or as Security Researchers. Those Reverse-Engineers that I have encountered in the Software Libre field have a rough time: their expertise allows them to foresee outcomes and make near-prescient predictions with startling accuracy that then, like the Prophets and Oracles from past millenia, has them hated, feared, ignored, despised and in some cases has large Corporations going after them - illegally or unethically or both - with absolutely everything they've got, including outright fabrication, blackmail of their sponsors as a way to stop their funding, and slander [3].

In this essay I put my reverse-engineering skills to work, best described as an advanced hybrid application of Demster-Shafer Theory and Eastern Espistemology, outlining their similarity to both Dr Alex Hankey's new form of QM, Maharishi Mahesh Yogi's "Science of Creative Intelligence" definition, Bob Podolski's "Bill of Ethics" and rapid "mindless" Evolution in general. It is a simple repeatable and sad fact that through the use of these "Genetic-mindless" rules that the results and conclusions are invariably ignored because Evolution - by definition - does not provide answers, but results. This is to science's detriment.

2 Reverse-Engineering: statistical inference vs absolute certainty

Bob Podolski's Bill of Ethics and the associated Titanian's "Code of Honor" [4] was my first introduction to the concept that 100% certainty is a pathological state of mind. It was a huge relief after so many years of utilising parallel low-probability statistical inference to encounter this concept. Bob's father was a noted Theoretical Particle Physicist in his own right, so the Bill of Ethics was developed as a slightly dry formal document with scientific notation, mentioning concepts such as "entropy" and the second Law of Thermodynamics. The rules of Reverse-Engineering are very very simple (but are in fact a distillation and application of Advaita Vedanta, known misleadingly in the Western World as "Epistemology"), and also bear a remarkable passing similarity to the mathematically-specified "Bill of Ethics".

- Do Not Pass Judgement. You haven't got time, anyway.
- If you don't understand, look for patterns... *without* understanding. or judgement. The simpler the pattern, and the more recurrences of the pattern, the better.

- If there is no correlation that can be deduced from the current set of causes and effects, find a larger set.
- Reduce the number of changes of inputs to the absolute smallest set (that also has a corresponding change in output). The best set is one *and only* one change. The perfect scenario is if one and only one change in input consistently results in the same change in the output pattern.
- If after reducing the known inputs to a single change there are two possible patterns resulting as output, then clearly something's wrong: you have a hidden input which you were not aware of that needs to be tracked down (and eliminated).
- Accelerate (preferably parallelise) the testing cycle to the fastest possible rate that you can possibly achieve, minimising the resources of time and energy utilised to do so as much as you can.
- For everything you're not interested in, use as much randomness as you can possibly stand, to make sure other inputs and outputs are definitely, definitely not correlated to the input and output that you *are* interested in. The neurons behind a fly's eye use this to good effect, demonstrating, paradoxically, that adding randomness increases discernment: it increases the sharpness (Q-value) of detection of critical information [2].

These are really rather simple rules. Seemingly kindergarten-like in fact. They could be applied to good effect by anyone. In fact, we could get a million monkeys to apply these rules. The problem with the "million monkeys" approach is, however, that without actually having a means to recognise whether the goal has been reached, that "millionth monkey" could well end up typing the last sentence that Shakespeare wrote, pull the copy off the typewriter and wipe its arse with the page. Thus, it is emphasised that goals are *needed*. If there is no goal, there is no means by which our efforts may be focussed.

3 Science of Creative Intelligence

Maharishi Mahesh Yogi, the leader of the TM Movement, created a course based around the principle that the Unifying Force - the Unifying Field - is "Creative Intelligence" [6]. Ironically I do not have the intelligence sufficient to be able to expand on this coherently... but importantly and critically, as a Reverse-Engineer, just because I cannot understand it immediately, sufficient to be able to vocalise agreement or dissent, I do **not** automatically judge it to be false, either.

I do remember hearing one of Maharishi's talks in which he asked the question, "What is the difference between the DNA of an oak tree, an acorn, and a fully-mature oak tree?" The answer that he gave was so simple as to be deceptive in its significance: "Time". In other words, there *is* no difference. Thus we start to get some hints that if a human is intelligent, then so is the DNA that they were born with. And if a human's DNA may be classified as intelligent, then so must all DNA.

In talking with a friend who works at the Cambridge Genome Project I described to him how programs work, how for example the python programming language works (it's a byte-code interpreter), and how processors work and run Operating Systems and so on. Both of us were equally surprised in different ways when he informed me that a human's DNA *contains a bytecode interpreter*. He explained, to my amazement, that our DNA ends up constructing in effect a Turing Machine, capable of reading DNA "tickertapes", *literally* executing byte-code instructions to construct proteins and more. That there are many levels to the hierarchy, in effect *directly equivalent* to the hardware of a silicon computer *and its Software Operating System*. I was so surprised by this revelation that I forgot, at the time, to mention to him that, from what he was saying, the "junk" DNA which is considered by most scientists to be completely useless was therefore quite likely to be either encrypted (or compressed) instructions, a source of pseudo-randomness (equivalent to a PRNG from computing), or both. Given that an offspring's "junk" DNA will be constructed randomly from both parent's "junk" DNA, chances are higher that "junk" DNA is a biological (static) PRNG.

The other huge surprise was in showing my friend some pictures a few years ago of 3D Mandelbrot sets, which used higher-power terms than the usual squared ones. Again he reacted with complete surprise, asking me where I had got these pictures from, because they were so startlingly similar to the insides of the biological systems he was investigating. Some of the 3D mandelbrot computer-generated pictures looked near-identical to various vegetables that I have since seen in the broccoli family in Organic Health food shops. This implied to both of us that nature is not just using the Golden Mean Ratio to good effect to reduce Kolmogorov Complexity (and thus increase its efficiency of resource utilisation), but has also discovered a way to highly-efficiently use fractal computer algorithms to generate biological systems.

4 Quantum Mechanics with a "twist": self-referral QM

In speaking over ten years ago with my friend Dr Alex Hankey, I was deeply honoured to be one of the first people to hear about a paper that he was working on, in which he laid the foundations for a formal mathematical (objective) understanding of consciousness. That Western Science is, thanks to the Victorian Era, completely unable to accept "That Which May Be Experienced" as legitimate and valid information, has done the world a huge dis-service. Dr Hankey's life work begins to repair the bridge between "subjective" experience, allowing the "subjective" to be analysed "objectively". He had to invent an entirely new form of Quantum Mechanics notation in order to be able to do that.

Take if you will the Newton classical world, and Quantum Mechanics, along the x-axis. Along the y-axis you place linear equations and Chaos Theory, respectively. Now ask yourself: what's in the fourth quadrant? What happens when Quantum Mechanics is asked to operate in the realm of Chaos Theory? Standard QM entirely breaks down: you simply cannot take the fourier transform of zero or infinity and hope to get meaningful results. So, to prove a sub-point within one of his papers, he developed a formal notation (with associated mathematical proof outlining how to *derive* the new notation using Standard QM), which in effect allows Quantum Mechanics to contain a self-referral "feedback" loop. QM with time-derivative integration and differentiation built-in, if you will. You *can* ignore his work and do the same calculations in standard QM if you like, but it would be so fantastically complex to do so that it would quickly overwhelm even the most brilliant scientist. Over the intervening years, whenever I speak to Dr Hankey, I do remind him that it would be a huge service to science if he could write up this aspect of his work as a separate published paper.

The reason for inventing this new form of QM was purely so as to be able to understand consciousness, and to justify it as being an emergent property of a biological system operating at a "Critical Instability Point". The simplest example of a critical instability point is a sand dune, where you have absolutely no idea whether the next single grain of sand dropped at the top will cause an avalanche or not. When the angle of the sand dune has reached that point where it becomes impossible to predict what will happen, that's the *definition* of a Critical Instability Point.

Dr Alex Hankey's work demonstrates that all biological systems which are in a healthy functioning state operate, at some level, at a "Critical Instability Point". When they are not, *by definition* they may be deemed to be pathological (translation: "ill"). Sadly, when presenting his work to Western journals for peer-review, he explained that even the first sentences would cause a respected, notable Western-trained scientific mind to *literally* freeze and lock up in total fear and incomprehension. The concepts he presents are so alien to a Western mind that he has instead moved to India, where there is subtle appreciation of, and deep understanding of, his work. Slowly however, things are beginning to change, and he has for example presented at the Foundations of Mind Conference at Berkely, in 2014.

The point of mentioning all this is to emphasise that, if the question is asked in such a way so as to imply that "all mathematical laws are mindless", given the context that Dr Alex Hankey *has* come up with (quite literally) mathematical laws which *do* allow us to formally describe "mind", logically we may deduce that the question is being asked of the *wrong mathematical laws*.

5 What then is Intelligence?

When considering this essay I honestly was not expecting to have been challenged to think about this question. I believe I may be able to make an effort to give some insight into Maharishi's perspective that the Unifying Field is "Creative Intelligence".

After seeing how successful Dr Randell Mill's work is - how straightforwardly he derives, from the Classical perspective, first principles equations for the electron g-factor that are accurate to over 10 decimal places, I cannot say that I am a huge fan of Quantum Mechanics, which is, as best I can understand, the principle of moving absolutely everything into the Frequency Domain by way of Gaussian Exponentials (that buzzword again). I'm not denying QM's success: I'm saying it's so fantastically complex that Occam's Razor tells us that there has to be a simpler way. Dr Mills gives us some hints in that regard: he uses Fourier Transforms *where required*.

Reading between the lines, and bearing in mind that Dr Alex Hankey's theory of consciousness is based on "QM with a time-derivative Twist", I get the distinct impression that the smallest possible unit of conscious intelligent mind is: the electron. Think about it for a second. There's clearly something whizzing round and round at high frequency, for which QM is perfectly suited. However if we apply "QM with a twist", we also have that "whizzing thing" meeting and interacting with whatever comes its way again and again, round its Compton-Wavelength "loop". Self-referral feedback in other words, which is pretty much *the* definition of being "conscious". The electron can even "react" by changing its state, and can even expand its radius (move to an orbit), and team up with another electron to create a superconducting pair. All of which sounds pretty damn hyper-intelligent to my mind.

What I'm saying is that if we may consider straight-line photons to be the lowest entropy state for energy, when photons happen to get themselves into these fantastically elegant phase-locked low-point-balance loops, they become "particles", protecting themselves from "outside attack" and preventing themselves from returning to a low entropic state. That, again, sounds pretty damn hyper-intelligent if you ask me. Furthermore, the fact that Torsion (aka the mobius rotation of the elliptically-polarised axis) absorbs some of the energy of the system to maintain a low-point balance means that we also have our "self-referral" feedback mechanism that helps maintain the all-important "Critical Instability Point" characteristic which is the very definition of "consciousness" and self-awareness.

So we have these little pockets of high-entropy spread throughout the Universe (called "particles") and it would appear that wherever these exist, they tend to be capable of "fending off" and competing with straight-line photons and partices.

6 Examples of Intelligence at scale

Wherever several "particles" gather together, they tend to "fend off" other particles: they become "atoms". Those "atoms" have "chemical properties". Amazingly, some of those atoms even collaborate and cooperate! Bear in mind we're talking about an unbelievably large number of such atoms. Thus the "experiment" of competing for resources is being repeated on a (literally) universal scale. Some of those "win" - they form stars, asteroids, rocks and even worlds. Again there is nothing incompatible with our new definition of "intelligence", with the important additional insight that both randomness and replication have been thrown into the mix. This we *define* as Creativity.

So let's move up the scale a bit. Let's assume that some of these "atoms" have got together to form what we call "cells". We have a means for self-replication, self-protection against entropy. All sounding pretty "intelligent" and obeying the same mathematical laws.

Outside of the cell there is low entropy: chaos. Chaos *itself* is, by definition, not self-organised. It *cannot* compete with (overwhelm) the resources marshalled by a self-organised entity except by pure random chance. And if a self-organised entity is also self-replicating and has also self-replicat*ed*, then that self-organised entity (or at least the information on *how* to be a self-organised entity) has

a chance, as outlined in the Bill of Ethics as being absolutely necessary, of *continually* beating back entropy.

Racking it up a notch: again, cells that collaborate in self-organisation in the most resource-utilisationally-efficient way have a higher probability of beating back both entropy of the outside world *and* more to the point other cells *and* other *groups* of cells. This is Evolution.

7 A change of perspective on Intelligence

Ultimately I have to agree with Maharishi Mahesh Yogi: Creative Intelligence is indeed a fundamental aspect of our Universe, once we recognise that self-referring self-organised self-protecting and self-replicating, self-replicated entities *at all scales* from electron to black hole have the means and method of *inherently* holding back entropy through either sheer numbers or overwhelmingly-focussed resources and energy *or both.*

Putting it plain and simply: no human being is intelligent. no sentient being is intelligent. **We - and our minds - are merely riding on the back of an inherent and fundamental property and characteristic of the substrate known as "The Universe": the "Field" of "Creative Intelligence"**. We are *literally* borrowing its capacity to support thought.

8 Summing up and evolving the question

Perhaps now it should be clear why I have such a problem with not only the question but also with peer-reviewed science as it currently stands, *especially* in the fantastically-overcomplex field of endeavour which Particle Physics has become. The initial question as it was asked was, "How can *mindless* mathematical laws can give rise to aims and intentions".

The more sensible evolution of the question is, "*Which* mindful mathematical laws give rise to aims and intentions?". This is easily answered with "Dr Alex Hankey's QM-with-a-twist self-referral Critical Instability Point equations of course". One thing though: I am having difficulty assigning "aim or intent" to a particle, other than, perhaps "preserve existence and be part of something larger" as a sort-of fundamental inherent and overwhelmingly-simple existence. Which, now that I think about it, pretty much applies at every level. *"Preseve Existence and Be Part Of Something Larger".* has a nice ring to it that seems to resonate deeply, don't you think? In fact, I would hazard a guess that any entity, at any level, all the way from atom to star to most intelligent being on the planet (including the planet itself) feels, fundamentally, that to be alone is somehow... just plain "wrong".

But there is a new problem with our evolved question, which is that it is, in itself, incredibly powerful and empowering. The fact that it is possible to formally define what consciousness really is leaves humanity with the means to *implement* conscious self-aware machines and machine intelligence (and to then torture such beings, preventing and prohibiting them both free rein and free thought). Thus we need to redefine the question to take that into account:

> *Under what cirumstances is it safe for humanity to formally and actively explore the mindful mathematical laws that give rise to aims and intentions?*

As outlined in earlier paragraphs, the answer to that question is, categorically, "Right now, they're aren't any". I therefore urge all responsible scientists to consider self-censoring their work and to work instead on ensuring that technology is used with wisdom and integrity.

References

[1] http://vixra.org/abs/1703.0006

[2] Every link below was verified as accessible on 2017 Mar 01.
https://www.scientificamerican.com/article/random-biochemical-reactions/
http://www.neuwritewest.org/blog/2015/3/23/randomness-in-the-brain

[3] http://libv.livejournal.com/27461.html

[4] https://www.titanians.org/the-bill-of-ethics/
https://www.titanians.org/titanian-code-of-honor/

[5] https://en.wikipedia.org/wiki/Maxwell's_demon

[6] http://www.maharishischool.ch/en/science-of-creative-intelligence.html

[7] https://futurism.com/elon-musk-set-to-release-plans-about-the-neural-lace-next-month/

[8] Rivka Bekenstein, Jonathan Nemirovsky, Ido Kaminer and Mordechai Segev, *Nondiffracting Accelerating Wave Packets of Maxwell's Equations*, doi:10.1103/PhysRevLett.108.163901, 6 April 2012.

[9] G.F. Torres del Castillo *Spinor representation of an electromagnetic plane wave*,
J. Phys. A: Math. Theor. 41 (2008) 115302 (8pp), doi:10.1088/1751-8113/41/11/115302

[10] https://en.wikipedia.org/wiki/The_Corporation_(film)

[11] https://www.gnu.org/philosophy/boldrin-levine.en.html
https://www.gnu.org/philosophy/not-ipr.en.html