

The Unitive Science of a WholeWorld-View

Summary

Until recently, mainstream science has considered the seemingly separate and material appearance of the Universe as being its essential, and sole, reality. It has held that consciousness somehow arises from the brain as an accidental result of random occurrences that enable the evolutionary emergence, and survival, of the fittest.

Now, a radically different understanding is emerging. Leading edge science across all scales of existence and across many fields of research, instead, tells us that mind and consciousness aren't something we have - but rather what we, and the whole world, are.

This new paradigm converges with profound spiritual insights and experiences of all ages and traditions. It sees the physical realm as the manifestation of a deeper, unified, informational, reality. This integral model invites and empowers a renewed realization of the inherent sanctity and universal worth and value of all existence. Crucially, it offers meaning and purpose to our existence, and that of our entire Universe.

Key scientific discoveries and insights supporting this emerging unitive perception are:

- While apparently solid, physicists know that the physical world is extremely ephemeral. A hydrogen atom, for example is 99.99999999999999 empty space¹.
- A 2012 experimental report², and others since, have demonstrated that information has an innate physicality. Deleting one digitized bit, releases actual physical heat. This is in line with theoretical predictions.
- Increasingly compelling evidence shows that digitized information, the basis of our most sophisticated technologies, also underpins and makes up all physical reality^{3,4,5,6,7}.
- The 1s and 0s of this universal 'alphabet' combine as *meaningful*, not random, instructions that literally 'in-form' give form to the laws of physics, and interconnected relationships throughout the Universe.
- From non-physical, causative realms of an infinite and eternal Cosmos, our finite and closed⁸ Universe emerges, with its meaningful in-formation expressed in complementary ways as conserved and quantized energy-matter and intropic space-time, enabling it to exist and evolve.
- Within space-time, no signal can go faster than the speed of light, thus maintaining causality throughout the Universe. However, quantum mechanics only works if at a deeper level the whole Universe is a coherent and essentially unitive entity³ a phenomenon known as nonlocality⁹.
- Cosmologists are also coming to the view that our Universe is holographic¹⁰, with its 3D physical appearance projected from digital in-formation held on its 2D boundary and pixelated at the minute Planck scale¹¹.
- As time passes, from its birth 13.8 billion years ago (Ga), the expansion of the Universe enables ever greater informational content (intropy) to be experienced within space-time; the essence of evolution¹².

This new scientific understanding shows that our Universe arises not from the implicit chaos of a 'Big Bang', but as an exquisitely ordered, incredibly fine-tuned, and continuing, 'Big Breath', that embodies an inherent evolutionary impulse from simplicity to complexity.



Being holographic – which contains the information of the whole within its parts – this emergent wholeworld-view and its evidence-based unitive narrative reveals the innate interconnectedness, interdependence, multidimensionality and unitive nature of reality.

Further Evidence

This unitive wholeworld-view of a meaningfully in-formed and holographically manifested Universe reveals itself through universal patterns and processes; from cosmology, physics and chemistry, to biology, complex systems and in both the 'natural' world, and human systems and collective behaviours.

On cosmological scales:

- The signature of the 'cosmic hologram' was, for the first time, seen in early 2017 in the cosmic microwave background, the relic radiation left over from the earliest epoch of our Universe that fills the whole of space¹³.
- So-named nonlocal coherence was experimentally proven, far beyond previous measures, in 2018, by nonlocally 'entangling' photons in a laboratory and starlight from as far away as 600 light years from Earth and triggered by light from 12.2 billion light years distant¹⁴. The phenomenon gives a scientific basis to the countless examples of supernormal consciousness such as telepathy, remote viewing and Near-Death Experiences (NDEs).
 - The 2022 Nobel Prize in Physics, denoting 'settled science' was awarded in recognition of such universal nonlocality.

The signature of the cosmic hologram is further evidenced by self-similar, in-formational patterns, known as fractals, which recur at widely differing scales. These extend from individual atoms¹⁵ to our Solar System¹⁶, and to vast, galactic clusters¹⁷.

Arising from non-physical causative 'attractors', on our planetary level, examples so far include:

- geology and geophysics¹⁸
- coastlines¹⁹, topographical features, tectonic plates, river drainage systems, sizes of mountains within ranges
- meteorology, clouds²⁰, lightning cascades, snowflakes
- chemical processes including corrosion²¹
- neuroscience^{22,23}

Our collective human behaviours also reflect them, including:

- movements of stock market prices by the 'father of fractals' Benoit Mandelbrot
- internet traffic, website links and data routes^{24, 25, 26}
- email, snail mail and social internet group communications and web browsing^{27, 28, 29}
- geographic and time-based usage of mobile phones³⁰

Linking such 'natural' and 'human' patterns even further, in 2015, astrophysicists tracked how, by looking at their respective densities of people and stars, cities grow in the same in-formational ways that galaxies form³¹.

Researchers have even uncovered relationships linking the relative frequencies and destructive powers of earthquakes with the occurrences and scales of deaths from human conflicts^{32, 33, 34}.



Purposeful Evolution

Driven by the exactitude of the in-formational relationships pervading the laws of physics, evidence is also revealing an innate and universal evolutionary impulse and directionality of our entire Universe³⁵. From its primordial simplicity to successive generations of stars, black holes and galaxies, led to the formations of immense interstellar clouds of hydrogen, star dust and ice. Acting as complex molecular collaboratories, their elemental abundance and finely-tuned physical and chemical properties enabled all the prebiotic building blocks of future biological life to come into being^{36,37,38,39,40}.

Subsequently, and likely triggered by shock waves from nearby supernovae explosions⁴¹, portions of such clouds gravitationally collapsed into enormous numbers of planetary systems throughout our galaxy⁴². Doing so, not chaotically but into harmonically resonant proto-planetary discs, *proplyds*, their complex attributes and dynamics⁴³ engendered the birth of planets able to potentially harbor the further emergence of biological organisms.

As evidence is showing, in progressively increasing numbers the presence of rocky and water planets and in habitable – sufficiently warm - zones, then provide environments able to nurture further evolution.

Our own planetary home, Gaia, is especially optimal; whose geosphere, hydrosphere, atmosphere and biosphere has embodied an in-formationally interdependent *gaiasphere* for some four billion years. Pulsed, not by passive continuity, but proactively by change and challenge, evolutionary emergence has not only survived but flourished. Gaia's innate nature is far from equilibrium and the intricate collaborations of the *gaiasphere* are perpetually dynamic; yet throughout providing opportunities for the biosphere to grow in complexity, diversity, and individuated self-awareness.

With regard to biological evolution, its foundational building blocks are themselves in-formationally intricate and optimally fit for purpose. The structure of DNA⁴⁴, the exact number of amino acids required for protein construction⁴⁵; their fractal folding for structural complexity⁴⁶; essential catalytic enhancements⁴⁷; extensive coding corrections⁴⁸ and RNA checks and balances to guide purposeful emergence and minimize mutations and horizontal gene transfer (HGT) mechanisms for radical and rapid emergence^{49,50} are all meaningfully and purposefully engaged.

Conclusion

The emergent understanding that our Universe meaningfully exists and purposefully evolves as an essentially living and unitive entity, show that we and our choices matter.

Re-membering the unity of reality instead of its illusion of separation, invites and empowers us to link up and lift up together and in doing so, to transform our world.

The scientific basis of the wholeworld-view is described more fully in the book, <u>The Cosmic Hologram: In-formation at the Center of Creation</u>, by <u>Jude Currivan</u>, 2017, Inner Traditions and which details evidence and insights from many researchers, and in <u>The Story of Gaia</u>, by Jude Currivan, 2022.

It is also explored in A New IN-SCIght of IN-formational SCIence.



References:

- 1. https://education.jlab.org/qa/how-much-of-an-atom-is-empty-space.html
- 2. Bérut, A., Arakelyan, A., Petrosyan, A., Ciliberto, S., Dillenschneider, R. and Lutz, E. Experimental verification of Landauer's principle linking information and thermodynamics. Nature, 483, 187-189 (2012). Science. 334(6060):12536. doi: 10.1126/science.1211914 (2011)
- 3. Currivan, J. *The Cosmic Hologram: In-formation at the Center of Creation* (Inner Traditions, 2017)
- 4. Vedral, V. Decoding Reality the universe as quantum information (OUP, 2010)
- 5. Radin, D. Real Magic: Ancient Wisdom, Modern Science and a Guide to the Secret Power of the Universe (Harmony, 2018)
- 6. Gober, M. An End to Upside Down Thinking (Waterside, 2018)
- 7. Talbot, M. The Holographic Universe (HarperCollins, 1996)
- 8. https://erc.europa.eu/news/stephen-hawkings-last-paper-co-authored-erc-grantee-posits-newcosmology-interview
- 9. https://www.physicsoftheuniverse.com/topics quantum nonlocality.html
- 10. https://en.wikipedia.org/wiki/Holographic_principle
- 11. https://en.wikipedia.org/wiki/Planck units
- 12. https://pubmed.ncbi.nlm.nih.gov/37866471/#:~:text=In%20framing%20the%20emergent%20cosmology,that%20describes%20energy%2Dmatter%20and
- 13. Afshordi, N., Corian, C., Delle Rose, L., Gould, E. and Skenderis, K. From Planck Data to Planck Era: Observational Tests of Holographic Cosmology. Physical Review Letters, 2017; 118.041301
- D. Rauch, J. Handsteiner, A. Hochrainer, et al., "Cosmic Bell Test Using Random Measurement Settings from High-Redshift Quasars," Physical Review Letters 121, no. 8 (August 2018).
- 15. Fractal Patterns Spotted in the Quantum Realm. Physics World online (February 9, 2010), http://physicsworld.com/cws/article/news/2010/feb/09/fractal-patterns-spotted-in-the-quantum-realm
- 16. Warwick University, "Astrophysicists Find Fractal Image of Sun's 'Storm Season' Imprinted on Solar Wind" (2014). www2.warwick.ac.uk /newsandevents/pressreleases/astrophysicists_find_fractal.
- 17. International Centre for Radio Astronomy Research, WiggleZ Confirms the Big Picture of the Universe, (2012) www.icrar.org/news/news_items/media-releases/wigglez-confirms-the-big-picture-of-the-universe
- 18. D. L. Turcotte, "Fractals in Geology: What Are They and What Are They Good For?" GSA Today (1991). www.geosociety.org/gsatoday/archive/1/1 /pdf/i1052-5173-1-1-sci.pdf
- 19. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC433088/pdf/pnas00053-0043.pdf
- 20. https://pdfs.semanticscholar.org/f94c/6b5c3727c2b6043b14b22bd092e2cc29e325.pdf
- 21. https://www.sciencedirect.com/science/article/pii/0010938X91901145



- 22. https://www.ncbi.nlm.nih.gov/pubmed/24362815
- 23. https://pdfs.semanticscholar.org/3d60/949cce1d0c7b850860a729848d81c8bf17e3.pdf
- 24. Willinger, W. and Paxson, V. Where Mathematics Meets the Internet. Notices of the American Mathematical Society, 45, 961-970 (1998)
- 25. Albert, R., Jeong, H. and Barabási, A-L. The Diameter of the WWW. Nature 401 (6749): 130–31. arXiv:cond-mat/9907038. Bibcode:1999Nature 401, 130A doi:10.1038/43601 (1999)
- 26. Faloutsos, M., Faloutsos, P, and Faloutsos, C. Power-laws of the Internet. Technical Report UCRCS-99-01. University of California, Riverside. (1999)
- 27. Barabási, A-L. and Oliveira, J. G. (2005) http://www.nature.com/nature/journal/v437/n7063/abs/4371251a.html
- 28. Dezsö, Z., Almaas, E., Lukács, A., Rácz, B., Szakadát, I. and Barabási, A-L. Dynamics of information access on the web. Physical Review 73, 066132 (2006)
- 29. Rybski, D., Buldyrev, S. V., Havlin, S., Lilijeros, F. and Makse, H. A. Scaling laws of human interaction activity. (2009) http://www.pnas.org/content/106/31/12640.abstract
- 30. Song, C., Qu, Z., Blumm, N. and Barabási, A-L. Limits of predictability in human mobility. Science. 327(5968):1018-21. doi: 10.1126/science.1177170 (19 Feb 2010)
- 31. Lin, H. and Loeb, A. https://www.technologyreview.com/s/534251/astrophysicists-prove-that-citiesonearth-grow-in-the-same-way-as-galaxies-in-space/ (2015)
- 32. L. F. Richardson, Variation of the Frequency of Fatal Quarrels with Magnitude, Journal of the American Statistical Association 43, no. 244 (1948): 523–46
- 33. L. F. Richardson, Statistics of Deadly Quarrels, 1809–1949, ICPSR5407. (pub. 1984) www.icpsr.umich.edu/icpsrweb/ICPSR/studies/5407
- 34. Miami University, Predicting Insurgent Attacks, news release July 14, 2011 www.miami.edu/index.php/news/releases/predicting insurgent attacks
- 35. Currivan, J. The Story of Gaia: The Big Breath and the Evolutionary Journey of Our Conscious Planet (Inner Traditions, 2022)
- 36. B. A. McGuire, A. M. Burkhardt, S. Kalenskii, et al., "Detection of the Aromatic Molecule Benzonitrile (c-C6H5CN) in the Interstellar Medium," Science 359, issue 6372 (January 2018): 202–205
- 37. Max-Planck-Institut für extraterrestrische Physik, "New Organic Molecule Discovered in an Interstellar Cloud," Spaceref, press release June 17, 2020
- 38. Y. Oba, Y. Takano, H. Naraoka, et al., "Nucleobase Synthesis in Interstellar Ices," Nature Communications 10, article no. 4413 (September 2019)
- 39. S. Ioppolo, G. Fedoseev, K.-J. Chuang, et al., "A Non-Energetic Mechanism for Glycine Formation in the Interstellar Medium," Nature Astronomy 5 (November 2020): 197–205
- 40. "Scientists Discover Sugar in Space," Goddard Space Flight Center press release, June 20, 2000
- 41. P. Banerjee, Y-Z Qian, A. Heger, et al., "Evidence from Stable Isotopes and 10Be for Solar System Formation Triggered by a Low-Mass Supernova," Nature Communications 7, article no. 13639 (November 2016)



- 42. https://www.nasa.gov/history/more-planets-than-stars-keplers-legacy/#:~:text=The%20Kepler%20spacecraft%20at%20Ball,than%20stars%20in%20our%20galaxy
- 43. M. Kruss and G. Wurm, "Seeding the Formation of Mercurys: An Iron-Sensitive Bouncing Barrier in Disk Magnetic Fields," The Astrophysical Journal 869, no. 1 (December 2018): 45.
- 44. S. J. Freeland and L. D. Hurst, "The Genetic Code Is One in a Million," Journal of Molecular Evolution 47, no. 3 (January 1998): 238–48
- 45. Currivan, J. *The Story of Gaia: The Big Breath and the Evolutionary Journey of Our Conscious Planet* pp 103-105 (Inner Traditions, 2022)
- 46. E. Lieberman-Aiden, N. L. van Berkum, L. Williams, et al., "Comprehensive Mapping of Long-Range Interactions Reveals Folding Principles of the Human Genome," Science 326, issue 5950 (October 2009): 289–93
- 47. A. Radzicka, R. Wolfenden, (January 1995). "A proficient enzyme". Science. 267 (5194): 90–3. doi:10.1126/science.7809611
- 48. G. Battail, "Error-Correcting Codes and Information in Biology," Biosystems 184 (October 2019): 103987
- 49. A. Pawluk, "Tiny Answers to Big Questions," Cell 170 (July 2017): 215-17
- 50. N. Obeng, A. A. Pratama, and J. D. van Elsas, "The Significance of Mutualistic Phages for Bacterial Ecology and Evolution," Trends in Microbiology 24, issue 6 (June 2016): 440–49