

A Review of
Dr Andrew R Gallimore's

*Alien Information Theory:
Psychedelic Drug Technologies and the Cosmic Game*

— Dr Peter Sjöstedt-H —

In the beginning was the Code, and the Code was with the Alien Other. This may be chanted by a future band of Gallimoreans, eager to spread the word so eloquently revealed in Dr Andrew R. Gallimore's book, *Alien Information Theory*. The book begins with Terence McKenna's line that 'we are imprisoned in some kind of work of art',¹ and it is no exaggeration to claim that the book itself is a work of art: a hard, heavy block full of Gallimore's own twentieth-century EGA-like retro block graphics, interweaving pixelated fonts that combine to express a pixel-like pixie reality. The fact alone that a computational neurobiologist also has the skill of a professional graphic designer and typesetter is indicative of the masterful mind of this Japan-based Englishman.

If we move beyond the physical aesthetic of the book, what is immediately novel is the fact that its cosmology is simultaneously, paradoxically, *both deeply theological and radically reductivist*. One could call it a cyber-spiritualism, a techno-faith, or a computational theology. This originality pushes the work yet further towards art but—further away from truth. To state that the alien information theory is wrong, as I shall argue, is not to say that it is of no value. In the words of AN Whitehead, 'it is more important that a proposition be interesting than that it be true'.² Not only is there much to be learnt about information theory and neurobiology within these resplendent pages, as the topics are so clearly set out, but the deep issues that are addressed are inspirational to further thought. In what follows I shall summarize the thrust of the book, then offer critique primarily on the concept of information and mental emergence.

Here is the Gallimorean cosmology in a paragraph: At the fundamental base level of reality lies pure *Information*, the *Code* that processes that information, and the *Other*: an alien hyperintelligence that created the Code. The Code generates the physical three-dimensional reality that we humans perceive, which is called the *Grid*—which is actually a cross section of the *HyperGrid*: an overarching reality of more than three spatial dimensions (*Hyperspace*). Physical brains, like all physical objects, emerge from the Code, and consciousnesses emerge from brains. By the intake of the common and potent psychedelic chemical dimethyltryptamine (DMT), our brains are transformed so as to be able to allow access to hyperspatial realities and the beings that reside therein (as fetuses we also had such access). The meaning of life is to discover all of this so as to be able to play the *Cosmic Game*: 'to realise the nature of our imprisonment in the Grid and to find our way out' (p. 202). To win the Game, one's consciousness must become permanently transcribed to the HyperGrid so that one becomes a hyperdimensional entity oneself, welcoming newbie players popping temporarily into the hyperdimensional realm. In other words, the meaning of life is to die and pass over into a hyperreality becoming an alien, angel, devil, elf, pixie or the like.

As far as new religions go, I find this one more enticing than others, even though it first appears to be some kind of computer game invented by a high priest. Gallimore in fact makes frequent reference to John H. Conway's *Game of Life*: a simulated world where there are a few rules

(codes) determining whether a cell (a square in the onscreen grid) lives or dies (represented by its being black or white). These few rules result, in time, in surprisingly complex structures that can move, replicate, shoot, etc. It is not made secret that Alien Information Theory is the Game of Life writ large, where the two-dimensional screen cells are transformed into our three-dimensional real selves, and where the programmer becomes the great Other: God Himself.³ In fact, the whole theory can be theologically correlated thus:

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|-----------------------|--------------------------------|
| God | —the Other |
| Laws of Nature | —the Code |
| Our Worldly Realm | —the Grid |
| Heaven/Hell | —the HyperGrid |
| The Road to Salvation | —the Cosmic Game |
| Angels/Demons | —DMT Entities |
| Book of Revelation | —Trip Report |
| The Sacrament | —DMT |
| The Prophets | —JH Conway, T McKenna, PK Dick |
| The Messiah | —Andrew R Gallimore |

Who the Devil is, I cannot say—but I will play his advocate. So let us start at the beginning, to see how it is argued that our worldly realm, the reality we perceive around us, is in truth some sort of simulation⁴ or instantiation of codified information. More concisely, it is claimed that information generates matter and mind. In this sense, the theory is more reductionist than even materialism: reality is not reduced to mere matter, because matter itself is reduced down further to information. What is information?

Information has been understood in a variety of ways, but Gallimore offers this description: ‘Information is generated when a system selects between a finite number of possible states’ (p. 11). A ‘system’ is ‘any *thing* (concrete or abstract) that can exist in any one of a distinct number of states at any point in time’ (ibid.). He gives the example of the system that is a *coin*, one that can offer two possible states: heads or tails. Learning about which state this binary system occupies (lands on) increases one’s information by the unit of information known as a *bit*. Rather than heads-tails, bits are generally represented by 1-0, the preferred tongue of contemporary computer parlance. This is all accepted and acceptable, the trouble starts when it is written that ‘we will find nothing at the ground of reality other than information’ (p. 15).

Now begins the descent from the standard model of physics to digital physics. For Gallimore all particles are fully definable by *finite quantity* alone, by a limited set of numbers, values. He gives the example of the electron, ‘which can be defined in its entirety by a set of four numbers called QUANTUM NUMBERS’ (p. 18). These are *N* (energy level), *L* (angular momentum), *M(L)* (direction of angular momentum), and *M(S)* (spin angular momentum). He emphasizes that there ‘are no other properties that an electron can possess’ (p. 18). And now we encounter an essential condition for the alien information theory:

‘And since, of course, all matter is composed of these particles, this means that all matter can be *defined* by a finite amount of information. In fact, everything within the Universe *is* nothing more than quantised—digital—information.’ (p. 19, my italics)⁵

But this claim is an obvious *non sequitur*: the conclusion does not follow from the premises. This is where the fatal flaw of the theory smuggles itself in. There is an invalid transition from *definition to existence*. The definition of something is not itself the existent reality of that

something. One could define a person by numbers representing their height, weight, age, and IQ—but to claim that this *information* (e.g. 180:80:40:130) itself *was* the person, would be *to mistake the representation for the reality*, the map for the territory,⁶ the sign for the city. Likewise, our numerical representation of a particle does not at all mean that the particle *is* its representation. The *information about* a particle should not be confused for the reality of that particle—even if we accepted⁷ that such information was finite—just as the information you receive about a planet should not be confused for that planet itself. This error is a typical example of *the fallacy of misplaced concreteness*:⁸ mistaking an abstraction (a part) for the concrete actuality (the whole). The great astronomer, physicist, mathematician, and philosopher Sir Arthur Eddington warned against such mistakes by use of the term *pointer readings*, by which he meant that we should not conflate the reality of something for the reading, the quantities, it gives:

‘Whenever we state the properties of a body in terms of physical quantities we are imparting knowledge as to the response of various metrical indicators to its presence, and nothing more. ... The physical atom is, like everything else in physics, a schedule of pointer readings. The schedule is, we agree, attached to some unknown background.’⁹

The reading a thermometer gives neither *is*, nor generates, the heat. Applied to Gallimore’s examples, if we, for instance, analyse what the energy level (N) of an electron is, we realize that it is a reading that merely points to *the actual reality: energy*. The energy is *represented* by information, *but the information is not the reality*—just as the thermometer reading is not the heat. Energy is not a number; in fact, its concrete reality is still unknown to us.

Information itself is merely abstraction. It can only exist in relation to: (i) the *object* for which information is acquired, (ii) the *data* that the object emits, (iii) the *interface* that can convert that data into varieties of information,¹⁰ and (iv) the *recipient or subject* that becomes informed. If there is no object, there can be no information about it, and the same object can provide infinite information according to the interface.¹¹ Moreover, we should not assume that the data emitted extrinsically by an object is a sufficient, complete description of that object. As Bertrand Russell states,

‘A piece of matter is a logical structure composed of events ... but [its] intrinsic character is not known.’¹²

That our pointer readings of a particle provide certain numbers does not mean that the particle itself is fully described thus. As Eddington puts it, the mass of an elephant, given as a number, tells us very little about the actual reality of that creature. Furthermore, via pessimistic induction, we should realize that particle physics is constantly changing, so that we should be hesitant to accept the current state of knowledge as complete. That there is this specific finite number of numerical representations of a particle may be a belief soon superseded. Further still, we know that the Standard Model of physics is incompatible with the theories of Relativity, so we must caution prudence against any dogmatic assertion that this current state of physics conveys the absolute truth.

Time to move on to time. In line with the desire to chop matter into bits of information, now time gets thus chopped. Gallimore writes,

‘Since the entire Universe updates in parallel, changing from one state to the next, there is no “in between” state of the Universe, which means time itself is discrete. Time doesn’t flow like a river, but is simply the sequence of updates of the Universe from its current state to the next, edging forward one click at a time.’ (p. 24)

This again reflects the framework of the Game of Life—but not real life. No reason is given for the claim that time exists in independent instants, except that it would make it easier to consider the Universe as completely grid-like in terms of both space and then time, so that computation could take place with the numbers t_1 , t_2 , etc. in tandem with the aforementioned particle quantum numbers. But the issues against such a convenient view—especially Bergson’s distinction between time and duration¹³—are not touched upon. Breaking time into separate units causes many further difficult problems such as explaining the direction of time, the width of the specious present, the denial of motion, the denial of direct interaction, Zeno’s paradoxes, how parallel universal updates conflict with issues of succession and simultaneity in Relativity theory, etc. How one instant of time *follows* another, if they are separate units, is ultimately explained by appeal to the great Other: it is He who set in motion the Code. But this is an obvious *appeal to miracle* that seems to be motivated by a desire to fully comprehend reality by throwing a conceptual net of numerical parts thereover. Alan Watts cautioned against such modes of thought:

‘Parts are fictions of language, of the calculus of looking at the world through a net which seems to chop it up into bits. Parts exist only for the purposes of figuring and describing, and as we figure the world out we become confused if we do not remember this all the time.’¹⁴

But what cosmology should one expect from a computational neurobiologist with a sharp insight and imagination fuelled by serious psychedelics? We all see the world according to our own perspectives, tainted by our (mis)fortune, nature, nurture, and culture. In this post-Christian Information Age through which we pass, it is not surprising to find the Universe reflected in such a way. Moreover, the experiences that DMT provides do force a person to revolutionize their whole worldview. As Gallimore puts it,

‘DMT is a 100% reality switch: the DMT worlds bear no relationship whatsoever to consensus reality.’ (p. 112)

‘DMT ... [makes you feel] awestruck, and grateful for the most horrifyingly beautiful and astonishing experience you could never have imagined.’ (p. 179)

This experience is a great mystery for which no one has any adequate answer. It is almost equal in mystery to the relation of mind and matter, the ‘hard problem of consciousness’.¹⁵ For Gallimore, mind is ‘generated’ through the information expressed via the neurons of the brain, an organ itself which, as a material object, is the product of encoded information:

‘[Each] neuron can only generate a single action potential at a time—a single “bit” of information—the massively interconnected network of billions of neurons, each connected to up to 10,000 other neurons, are capable of generating and processing colossal amounts of information.

It is this information, generated by trillions of action potentials per second, that manifests as your phenomenal world. ... [Your] visual world *is* this information being experienced from your subjective perspective—from within.’ (pp. 74–75)

Generally speaking, when one reads about the neural correlates of consciousness, one must always be wary of words such as ‘generates’, ‘manifests’, ‘emerges’, ‘produces’, ‘constitutes’, or even the verb *to be*. These words mask an unknown relation. A neuron’s action potential is the pulse that occurs through the axon (branch) of the cell. In more detail, it is the flow of sodium ions into the axon from the cell body to its synapse (extremity), resulting in the ability to then signal to other neurons. But how sodium ions, i.e. charged metal atoms, in unison manifest subjectivity, consciousness—such as thoughts, emotions, colours, and sounds—is the profound mystery, despite observed correlation. Moreover, how *information* about such pulses (e.g. a pulse as 1; non-pulse as 0) actually *is*, or *manifests*,¹⁶ consciousness would be a greater mystery still. Making metal into mind is modern alchemy; making information into mind is modern madness. To jump from quantities to qualities is to give a completely inadequate explanation, this correlation alone is *merely indicative, not explanatory*, of the relation. Furthermore, much neuronal pulsation is *not* correlated to human consciousness¹⁷ (breaking the identity); and the additional data of neurons (e.g. their incredibly complex factory-like inner processes) are here completely abstracted from, leaving mere extracted barren pulses or bits, which through codification are then strangely assumed to be the necessary and sufficient conditions for consciousness. One cannot derive mind from matter, let alone mind from information.¹⁸

One can *simulate* (in part)¹⁹ matter from information (e.g. computer-game bricks) and one can *simulate* (in part) mind from information (e.g. computer-game characters), but the simulation should not be conflated for the reality that is simulated. As philosopher of mind Jaegwon Kim writes,

‘No one will confuse the operation of a jet engine or the spread of rabies in wildlife with their computer simulations. It is difficult to believe that this distinction suddenly vanishes when we perform a computer simulation of the psychology of a person.’²⁰

Though we must distinguish reality from a simulation thereof, we can agree with Gallimore that the reality which we perceive is but a fractional representation of the whole that is out there. Gallimore here uses Kant’s distinction of the world as we perceive it—*phenomena*—and the world-in-itself—*noumena*.²¹ We do not perceive the world as it really is. On the basic level, we do not even see infra-red or ultra-violet, as certain other creatures do. Kant is known for saying that even space is a projection of our minds and as such is merely phenomenal, not objectively real. Less known is the fact that Kant was the first to claim that the tridimensionality of space was not necessary:

‘[That space] has the property of threefold dimension ... is arbitrary A science of all these possible kinds of space would undoubtedly be the highest enterprise which a finite understanding could undertake.’²²

A space of more than three dimensions is known as *hyperspace*. After Kant’s proposal, mathematicians showed that the idea is not paradoxical, notably Bernhard Riemann in 1854. Thereafter the idea of a *fourth dimension* of space was popularized by writers such as Charles Hinton and Edwin A Abbott in the late nineteenth century. In the early twentieth century the Kaluza-Klein Theory proposed that a fourth spatial dimension (in addition to time) should be assumed to exist to make Einstein’s Theory of Special Relativity cohere with electromagnetic theory. And since then String Theory and M-Theory in physics have proposed that ten or eleven dimensions exist, respectively.²³ An interesting question is how such hyperspace may relate to

the mind. This question was considered by philosophers such as PD Ouspensky, HH Price, CD Broad, and the neurophilosopher John R Smythies (all within the intellectual psychedelic circles of the first half of the twentieth century).²⁴ Now Gallimore is suggesting a new psychedelic response to this metaphysical question.

‘[In] the presence of DMT, the brain *re-emerges* from Cell states sensitive to the HyperGrid’s orthogonal dimensions. *[The] brain is transformed into a higher-dimensional processor within the HyperGrid.* ... [The] brain is itself constructed from this information As DMT floods the brain, the profound changes that occur in the information it generates are observed from a completely unique subjective perspective.’ (pp. 159....163)

DMT is a molecule structurally similar to endogenous serotonin and thus is a key that fits the synaptic lock that is the serotonin, 5-HT_{2A} receptor. For Gallimore, not only does DMT allow the brain to receive information from orthogonal (right-angled) dimensions to our own consensus three, but *the brain itself changes* to become a hyperspatial object within the hyperspatial HyperGrid, as the brain for Gallimore essentially is a sum of information, a sum that is now extended. Though we do not gain extra sense organs for gazing upon these orthogonal dimensions, we do now receive direct input therefrom to our (augmented) brains. Gallimore reminds us that we can perceive things without sense organs, such as the objects within our dreams, and so hyperspatial realities can reveal themselves *directly* through brain stimulation rather than *indirectly* through the sense organs.

Gallimore continues that DMT differs from other psychedelics in that:

‘DMT ... exerts a more specific effect: rather than simply rendering the [cortical] information more random, DMT shifts the intrinsic information from one pattern, the *consensus world pattern*, to another pattern: the *DMT world pattern*.’ (p. 172)

That is, DMT switches on a latent structure of the brain (the DMT world pattern), whilst it switches off the dominant structure of the brain that generates our consensus world and allows modification from the common senses. DMT allows information from the greater HyperGrid to enter and change the brain and thus the mind:

‘the brain re-emerges from the HyperGrid as the hyperdimensional brain complex, and the tripper becomes part of that higher-dimensional reality. This is when the elves welcome you home.’ (p. 177)

This hyperstate does not last more than a few minutes (of our time), as endogenous serotonin molecules soon return to take over their hijacked receptors. Part of the Cosmic Game in Gallimore’s theology is for a species to gain enough intelligence to isolate and synthesize DMT so as to be able to move on to the next level of cosmic realization. The next stage:

‘involves a continuous infusion of DMT, maintaining a stable breakthrough DMT brain concentration, perhaps over several days or even longer (p. 210).

This will allow a full transcription of one’s brain to the hyperspatial realms. Finally, winning the Game occurs once,

‘transcription [of mind to hyperspace] is completed ... your original brain will likely be dissolved. This means to anyone observing you from outside the DMT space—from the consensus world, the Grid—you will appear to have died.’ (p. 210)

I must admit that this is not a game that particularly appeals to me. I generally prefer chess, in part because checkmate is not accompanied by brain extermination. The seeming exception to this befalls the knight who plays chess against Death himself to forestall his demise, in the classic Swedish film, *The Seventh Seal*. But this game of chess is not real because the world in which it is played is not real. Likewise, one wonders whether the Cosmic Game is real considering the proposed cosmos in which it is located.

There are two immediate issues that confront the idea that DMT allows one access to, and existence in, a hyperspatial world (leaving aside the previous problems facing the world as information). These are (1) whether reality actually has more than three dimensions, and (2) whether DMT causes a hallucination rather than a veridical perception. With regard to the first, to be brief, we can say that the fact that hyperspace is logically and mathematically consistent does not itself mean that it is real. Though logical impossibility implies non-existence (e.g. a four-sided triangle), logical possibility does not *per se* imply existence of course. Secondly, the aforementioned hyperspatial theories of physics have not been verified. In fact, it is hard to say how they could be verified. At present they are based on an *inference to the best explanation*: i.e. if we assume n dimensions, then Relativity and the Standard Model of physics cohere. The logical problem of course is that other hypotheses may also conduce to such coherence, and so we cannot be certain that hyperspatial dimensions have actuality. There are additional philosophic arguments for the reality of hyperspace from, for instance, the aforementioned HH Price and John R Smythies (a friend, incidentally, of Aldous Huxley and Humphry Osmond who coined the word ‘psychedelic’), but these arguments are certainly debatable.²⁵ For Gallimore, it is the Other, the Code, and Information that are fundamental rather than space. Therefore, the dimensionality of space is simply a matter of its encoding (as in our own hyperspace computer simulations). But that other sentiences (DMT entities) exist within orthogonal dimensions to our own relies upon the theory that information can make matter and mind, which, as above, appears rather implausible. Furthermore, it also relies upon the existence of the hyperintelligent, transcendent, computer-game creator god: the Other—an existence for Whom evidence and reason is non-extant. If we do not place our faith in such a god, then we must look elsewhere for faith in hyperspace.

Even if we were to believe that more than three dimensions of space do exist, the question still arises as to why DMT induces a veridical (objectively real) perception of that objective hyper-reality rather than inducing a hallucination of such a reality. I feel Gallimore could have explored this question in depth, especially considering the fact that he alludes to (non-veridical) dream worlds produced by the brain. If the brain can produce dreams which are not veridical, then why can it not produce DMT worlds that are not veridical? There are some minor suggestions relating to the feeling of familiarity and the perception of regularity, but these alone are not particularly persuasive.

However, there is no doubt that DMT breakthrough experiences are vastly different to dreams, and so cannot have identical causal explanations. It is certainly possible that these could be in part explained by positing hyperspatial dimensions. But such an explanation need not be conditioned upon an *information theory*, which is, I have submitted, infected with logical error.

We arrive then at the realization that alien information theory does not compute. Yet the tome contains elements of truth that may be further fruitfully examined. I was enthralled when reading the book, and it certainly lit a blaze of thoughts that have fastened my understanding in certain directions. Its aesthetic presentation and surprising novelty cannot be overstated, qualities that are perhaps themselves symptomatic of the creative powers that psychedelics can bestow.

A deeply psychedelic experience will change one's world, the question is to what. If it is, after all, to Gallimore's alien world, then I have lost the game—"Game over, man, game over" to quote from *Aliens*. But one hopes there are other equally-phantastic games to play.

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- ¹ Spoken at 'The Incident', a symposium on art and phenomena held in Fribourg, Switzerland in June 1995.
- ² *Adventures of Ideas*, ch. XVI. Compare Nietzsche: 'We do not object to a proposition just because it is false. ... The question is rather to what extent the proposition furthers life...' (*Beyond Good and Evil*, §4).
- ³ Gallimore's deity is a *deist*, rather than *theist*, god, because this creator only creates the Code and then lets the universe run its course. The alien hyperintelligence god does not, as a theist god does, interfere in life to perform miracles or listen to prayers, etc.
- ⁴ Gallimore points out that his is *not* a simulation theory because 'our Universe is an *instantiation* of a reality rather than a simulation of one' (p. 193).
- ⁵ It might be thought that this statement is not given as an argument but as the prefatory introduction to an argument, but this is not the case—this definition-to-existence is the argument. A few pages on, Gallimore reiterates that 'the *prima materia* of our Universe is digital information' (p. 22).
- ⁶ A phrase from Korzybski, 1933/1994, Supplement III, p. 750.
- ⁷ I do not accept this limitation, as advanced below.
- ⁸ This fallacy was named by AN Whitehead (See for instance Whitehead, 1925/1967, p. 49, *et passim*), whom it happens deeply inspired McKenna (see, for instance, McKenna and McKenna, 1975/1994).
- ⁹ Eddington, 1928, pp. 257...259.
- ¹⁰ The same data can yield different information according to rules of conversion. For example, If I had data about the weight of apples, and I had the rule that: [if (weight > 80g) then 1; if (weight ≤ 80g) then 0] then I would get binary information of a certain order. But if I changed the rule to different weights then that same data would yield different information. We see here that information is dependent on desired or given variables.
- ¹¹ See the previous endnote.
- ¹² Russell, 1927/2007, p. 384.
- ¹³ See for instance Bergson, 1907/1998.
- ¹⁴ Watts, 1966/2011, p. 97.
- ¹⁵ Coined by Chalmers, 1995.
- ¹⁶ It is unclear in the book whether Gallimore is promoting an identity theory or an emergentist theory of mind. At times he writes that information generates mind, at other times it is written that information is mind.
- ¹⁷ See Koch, et al., 2016.
- ¹⁸ But note that this is not to claim that mind and matter are distinct—it is not to claim any dualism.
- ¹⁹ I write 'in part' as information *per se* is abstraction, as detailed above. Information can only exist as such in context.
- ²⁰ Kim, 2011, p. 153.
- ²¹ Gallimore, p. 62; Kant, 1781/7/1999, pp. 338–365 (in the Transcendental Analytic, bk. II, ch. III).
- ²² Quoted in Rucker, 1984/6, p. 38. In his later work Kant repeated the assertion: '[that] space has three dimensions ... cannot at all be shown from concepts, but rests immediately on intuition' (Kant, 1783/1977, pp. 28–9 [Pt. I, §12]).
- ²³ See Kaku, 1994 for String Theory.
- ²⁴ Their relevant titles are listed in the References.
- ²⁵ See my 'Conspectus of J. R. Smythies' Theories of Mind, Matter, and N-Dimensional Space': https://www.academia.edu/37366414/Conspectus_of_J._R._Smythies_Theories_of_Mind_Matter_and_N-Dimensional_Space [accessed 12 June 2019]