

What is Consciousness?

Arguments Concerning The Relationship Between Consciousness And Information

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Original version: 27 June 2024

Abstract

In this essay about the mysterious human condition of consciousness I explore the possibility that it is a new kind of field, as yet undefined by conventional physics. For reasons that will become apparent it seems that a new field is the most appropriate place to begin for an understanding of consciousness, although it is quite possible that consciousness is not a field at all, in which case we must look elsewhere! As the possibility of a new kind of field is discussed, a number of other related aspects of new physics are explored.

Fields

In a previous essay¹ I discussed why I believe that it is time for science to take the next step in its understanding of the Universe. There is general agreement amongst scientists and philosophers that physics has barely moved forward since the 1970s, yet there are so many aspects of our understanding that remain absent.

One of these areas is something that is fundamental to our lives - consciousness.² This continues to be a mysterious phenomenon, yet there is a growing amount of evidence from other areas of science that seems to offer pieces to the jigsaw.

In this essay I will discuss ideas that have been in my mind since I first read Thomas Gleick's startling book about Chaos³, followed quickly by others that will be referred to below. Today, over forty years later, I at last feel able to present these ideas in, I hope, a coherent manner.

I start by proposing that consciousness is a new kind of field that fills the Universe. I draw together elements from a number of other leading scientists that seem to relate consciousness and information.

¹ Trethewey, Ken: New Physics For Old - A Gentle Journey Through Modern Physics and Cosmology. (2023), <https://soapbox.kentrethewey.co.uk/newphysics.htm>

² It is unfortunate that the English language does not possess a better word. Although dictionaries tell us that conscious can be both a noun and an adjective, common usage tends to use conscious mostly as an adjective, reserving the clumsier word consciousness for the role of a noun. I will use consciousness as a noun in this essay.

³ Gleick, James: Chaos - Making a New Science. Viking Books (1987). 0-7493-8606-1

What do we know from conventional Physics?

A field is a region of space in which the elements of space can be assigned a value of a given parameter.

A field is a physical property that can be quantified by measurement. It can be scalar, vector or tensor.

A field contains energy.

A force is an action that comes to bear upon matter present in the field.

The field dissipates with distance.

Example: The Sun exerts a force of gravity upon the Earth because the planet is within the gravitational field of the Sun. Other far distant astronomical bodies will not feel the Sun's gravity because the distance is too great.⁴

How many different fields are there?

There should be one field for each of the four forces:

Strong Force of atomic particles;

Weak Force in radioactivity;

Electromagnetic force in electricity and magnetism;

Gravitational force in gravity.

The subject can soon become very complicated, and the example given above of the Sun

⁴ A curious example occurs with Mach's Hypothesis that spinning objects feel new forces - "centrifugal" force. E.g., ice skaters spinning with their arms in or out are thought to feel the force exerted by the entire Universe, rather than the Sun alone!

exerting a gravitational force upon the Earth is worth reiterating. Another example but on an atomic scale is when an electric charge is present in space. It creates an electric field that will exert a force upon a second electric charge. My starting point here is that a brain causes a field of consciousness that can exert an as-yet unmeasured force upon another brain.

For many decades there has been a great effort by scientists to unify these four forces of nature, and after succeeding with strong, weak and electromagnetic forces, many have largely given up trying to bring gravity into the Grand Unified Theory (GUT) whilst others cling to String Theory which appears to be losing its support rapidly amongst the independent⁵ scientific community. Dare I suggest that the objective is fruitless and there is in any case a fifth force that results from a field of consciousness? In this essay I explore the possibility of a new field and a new force due to consciousness.

Is There A Field Of Consciousness?

When two people are close (and if they have the right mental structures) can they transmit thoughts and feelings between themselves, as in psychic effects and telepathy?

Many 'ordinary' people deny the existence of the paranormal, even though they might occasionally come across an individual who seems to have extraordinary senses. Are we to believe that all of these gifted people are liars and charlatans? The problem is made worse because there is a large number of professional tricksters who make their living by performing tricks on us. It has become impossible for 'ordinary' people to distinguish between what might be real and what is faked.

The biggest problem in acceptance of these new ideas is simply that there are no tools yet invented to measure the effects. If there is to be a new field of consciousness, it means that there should be a way to measure it. Current science cannot do this. This leads to the controversial arguments in which scientists accuse psychics as frauds, in opposition to the widely-held beliefs of humans throughout time that psychic effects and telepathy are real. Does that not tell us that *our brains are the instruments* that detect, if not actually measure this field? Just because our science has not yet invented such a device does not mean that it cannot exist. Perhaps evolution has already done it?

⁵ By 'independent' I mean those who are not already dependent upon funding for research in this area.

Scientists wishing to investigate paranormal phenomena have invariably used electromagnetic measurement tools to determine the presence of fields emanating from the supernatural, especially in measuring brain activity where there is no doubt that many brain functions do involve electromagnetic processes.⁶ But so far there has been no success in associating the consciousness with electromagnetic fields and therefore we must conclude that consciousness is not measurable by current instruments. If consciousness is not an electromagnetic field then it is not measurable using that technology.

I am proposing that consciousness creates a field of its own, or more widely interacts with another field of consciousness. Are we right to think that a brain can measure consciousness? It surely is aware of its own and if there is a field in which our own brain functions then we should also expect that field to be transmitted into the space around us, whether strongly or weakly! And if there are other conscious people in the vicinity the two conscious brains should be able to interact. We would expect it to be most likely when the two brains are close, but it also depends on how strong the field is between them.

I am not alone in making this suggestion. Rupert Sheldrake proposed his theory of a field that he called Morphic Resonance in the 1990s.⁷ His proposal originated from the idea that there was a kind of field containing information that was used by plants and crystals to determine the number of petals a flower should have or the type of structure a crystal should adopt. During the years since his first proposal, Sheldrake has broadened the scope of his ideas significantly such that there is now much overlap with what I write here.

It was also through reading Sheldrake's work that I was reminded of my time as a synthetic organic chemist when, from time to time, I made a compound that had never been made before. In general, the procedure involves making the new compound whilst dissolved in a solvent and then crystallizing it into solid form. The remarkable thing that struck me then (and still does) is how does this entirely new species know what crystal structure to adopt? There are a number of common crystal structures and one would expect that the structure adopted would be predictable by application of thermodynamic laws. However, this is not necessarily always true and

⁶ Seth, Anil: *Being You - A New Science of Consciousness*. Faber and Faber (2021), 978-152 474287-4

⁷ Sheldrake, Rupert: sheldrake.org

we are left with the impression that a new compound brought into the Universe for the first time needs to 'decide' how it is going to organize its atoms in the solid state. Furthermore, once it has done so, it seems that all other molecules later created anywhere else in the Universe will 'know' that the first molecules adopted that particular structure and will therefore do the same. This is just another example I throw into my essay in favour of the presence of a stream of consciousness - or a history of the Universe - that pervades all space and time and is being continuously updated by new events and information.

Charisma and Vibes

I am here tempted to address the human attribute of charisma. There are people who are well known to exhibit 'charisma' in large 'quantities' - we might say that they exert a strong field of consciousness, so much so that others nearby feel their strong presence. This strong field can be very influential on the behaviour of others. We are all familiar with the way certain charismatic people are able to persuade others to join a cult. These 'leaders' can take over the lives of others, showing how powerful such forces can be. Some call this brainwashing. My feeling is that such people have a particular brain structure that exerts a powerful field of consciousness that could be for the good, as well as the bad.

My examples here are Nelson Mandela, Bill Clinton and Miles Davis, all of whom were well known to have enormous charisma. You can, I'm sure, think of many others. In a sense this is a measurement of the as-yet unrecognized field of consciousness expressed by an everyday human attribute. Some brains exert a strong field of consciousness, whilst others do not.

At a lower level, we are familiar with people who can be persuasive, yet not necessarily charismatic. The forces exerted by one consciousness on another are clearly present, even if we might merely ascribe the effect to the power of logical argument.

In a more colloquial vein, we often say that a person gives off good or bad 'vibes' - where vibes is derived from vibrations, almost implying that there is some mysterious force being emitted by a person. (Vibrations are themselves fully part of modern physics in quantum mechanics.) How often have we formed the instant feeling that we dislike someone? With no evidence or knowledge of a person's nature or characteristics, we just know that we either like them or dislike them

the moment we are in their presence. Clearly, each human will exert a different field of consciousness dependent upon their brain structure.

Chemists have long proposed that natural human interactions take place because of the emission of pheromones and this may well be true, but it does not rule out other effects from interacting conscious biological systems.

A final thought is that there are some mysterious effects of human behaviour caused when individuals come together in groups of different sizes. Many books have been written by social scientists about the vagaries of crowd behaviour. Yet is this another area where the stream of consciousness acts collectively? Standard physics accepts that fields contain energy and it follows that if there is a strong interaction between the conscious minds of a group of people then it is hardly surprising if surprising behaviour results.

The Work of Roger Penrose

One of our greatest minds, Nobel laureate Sir Roger Penrose, first brought the curiosities of consciousness to my attention in the 1980s with his book, *The Emperor's New Mind*.⁸ He pointed out circumstances in which groups of atoms can come together in ways that don't conform to conventional ideas of physics and chemistry. My own mind immediately thought of the chemical species called the 'buckyball'. Properly called buckminsterfullerene, this remarkable species consists of sixty carbon atoms in the geodesic shape in which pentagons and heptagons are joined alternately to make an approximate sphere - more familiar to some readers as the shape of a modern football. It was found in 1985, present in soot, yet there is no obvious way in which, according to the very well understood laws of the chemistry of carbon, sixty carbon atoms, colliding with each other at random, could join up to make this molecule. It has always seemed to me that this was evidence of atoms 'knowing in advance' that it was possible to make such a species and then joining together in a new mechanism currently unknown to science. Such an idea is consistent with Sheldrake's newer ideas about morphic resonance that atoms can have consciousness - a suggestion that makes conventional scientists extremely uncomfortable.⁹

⁸ Penrose, Roger: *The Emperor's New Mind*. Penguin Books (1991), 978-0-14-0145342-6.

⁹ The problem here is in the definition of consciousness. Past culture has demanded that only humans can be conscious. To deny consciousness to animals and other creatures is unacceptable today, and here I intend to use the word in its broadest sense.

Penrose, continued to develop his ideas in a second book.¹⁰ Here he developed arguments about what consciousness might be, examining the evidence for and against four different possibilities.

One approach was a strong one for it had long been considered that, whilst at the lowest level, everything conformed to quantum mechanics as a wave function of all possibilities, real events were caused when the wave function collapsed into a measurable process and that this collapse was caused by the presence of an observer - us! The inevitable conclusion was that it is our consciousness interacting with nature at the quantum level that causes events to occur. Although making a strong case Penrose was not able to reach a definite conclusion.

Later, prompted by a suggestion from an anaesthetist, Stuart Hameroff in the USA, Penrose realised that consciousness could be switched on and off by anaesthetics and that this took place in a part of the brain called microtubules. It could be argued here that this was direct evidence of chemical processes becoming involved with consciousness. These ideas have been laid to rest for now with the strong suggestion that microtubules are the part of the brain responsible for consciousness - the 'meter' of consciousness - whilst the rest of the organ provides all the other necessary functions of life. (Clearly an anesthetized human is still alive even when his consciousness has been switched off.)

A Stream of Consciousness

The academic Rupert Sheldrake is one of the leading scientists who propose that most things in the Universe have a level of consciousness. He associates consciousness with change, and that it is not present in things that are unchanging.

We would clearly state that dead people are not conscious, but there are many processes that continue in a body as it decays. Since even electrons and subatomic particles may change in certain circumstances, and since the Sun is undergoing a perpetual change caused by its nuclear processes, Sheldrake's argument leads to the conclusion that even atoms and stars can exhibit consciousness - though, of course, not necessarily of the kind in human brains.

I add this point to inform the reader that unfortunately these ideas exist under the disdainful

¹⁰ Penrose, Roger: *Shadows of the Mind - A Search for the Missing Science of Consciousness*. Oxford University Press (1994). 978-0-19-853978-9.

heading of pseudo-science and that Sheldrake is very much outside the mainstream of current scientific thinkers, but is given more credibility than many other pseudo-scientists. Far from being a crazy idea, the intense feeling of being under the influence of the Sun, Moon and stars was for thousands of years very strong amongst our ancestors, even as today we shield ourselves from the natural world with the many other fields - mostly electromagnetic - in modern daily life. The idea that they were simply ignorant people of primitive intelligence is offensive coming from those of us who have no idea where to look for Ursa Major. Like us, they simply had no means of measuring the phenomena they felt sure were dominant forces in their lives, but which most of us dismiss. In Sheldrake's world I think it could be that we live in a perpetual and universal stream of consciousness.

I am reminded of a number of books I read in the 1990s by Tom Stonier¹¹ who proposed a new theory of information that was not heard of again and was clearly too radical for conventional physicists. His idea was for an entirely new way to measure information and that, once created, new information became part of the history of the Universe. There is a clear link here with the work of Unger and Smolin¹² in which they proposed the following:

There is only one Universe;

The Universe is bathed in time that is not reversible and not the same as space;

Mathematics is a human construct that will never be adequate to describe the Universe;

The Universe has a history.

Each of these statements is remarkable in itself, but the four together form a coherent basis on which to move forward in our understanding of the Universe and our place within it. And these are not isolated ideas proposed by people of imperfect understanding, as some might have us believe.

The idea of there being a history, and that time is not the same as space and is actually irreversible, is also fundamental to the work of Stephen

¹¹ Stonier, Tom: *Information and the Internal Structure of the Universe*. Springer-Verlag (1990), 978-3-540-19599-8. Stonier, Tom: *Beyond Information - The Natural History of Intelligence*. Springer-Verlag (1992), 978-3-540-19654-4. Stonier, Tom: *Information and Meaning - An Evolutionary Perspective*. Springer (1997), 978-3-540-76139-X.

¹² Unger, Roberto Mangabeira, and Lee Smolin: *The Singular Universe and the Reality of Time: A Proposal in Natural Philosophy*. Cambridge University Press, (2015), 978-1107074064.

Wolfram¹³, another brilliant mind who is being disregarded by conventional science because he keeps talking about computation. Wolfram's three books - *A New Kind of Science*, *A Project to Find The Fundamental Theory of Physics*, and *The Second Law* already offer a unique way to unify everything in the Universe - an objective that has so far eluded all science. I believe this is the most promising way forward yet in physics and cosmology.

Wolfram has developed a New Physics in which time and space are not the same. In his model, time is the application of the rules of the Universe upon tiny elements of space. In this sense it is clearly a computation. But the elements of space are the tiniest yet proposed - perhaps as small as 10^{-400} m³, whilst the intervals of time of which the rules are applied could be around 10^{-100} s. The implications of these unimaginably tiny numbers will be discussed below, but I shall state here that it does not mean they cannot exist. In Wolfram's paradigm, his 'field' in which the Universe progresses is called the Ruliad.

The common threads amongst these revolutionary ideas are most appealing to natural philosophers who are convinced that there is much more to science than we currently understand. There is a growing feeling amongst many deep thinkers that a radical new approach is needed.

I cannot break away from the strong urge to associate these obviously similar proposals of history, information, consciousness with the as-yet entirely mysterious property of 'dark energy' that makes up a great proportion of the Universe. No-one seems to have any idea why the Universe should consist of so much 'stuff' that is not measurable. Could this be the information contained in the Universal stream of consciousness that we all bathe in? Even the physicists call it dark energy, and it could be that this is the energy of the stream of consciousness that pervades the whole of the Universe, conveying all of its history and laws - Information, by another name.¹⁴

The Most Obvious Evidence That Science Refuses To Accept

In the 1980s, Stephen Wolfram discovered that there were systems that could not be represented by mathematical equations.¹⁰

¹³ stephenwolfram.com.

¹⁴ As if that were not enough, there are continuously uncountable numbers of neutrinos populating the Universe whose purpose we have no idea about. Neutrinos might be a red herring, even if they are so mysterious, but it might be another good place to start a line of enquiry that might revolutionize science.

This is one of the most important discoveries of the 20th century yet is still not accepted by mainstream science.

It has been the case throughout the development of traditional science that a system, once properly investigated, would conform to mathematical analysis. In his words, knowing the way of representing the system in mathematics, an observer could "jump ahead in time" and predict the state of the system at some point in the future. The obvious way to illustrate this is to consider that we can predict the precise date and time in the future of a solar eclipse and the exact location on Earth from where it can be seen. Perhaps more usefully, we can calculate the precise trajectory that a spaceship must travel to intercept any object in outer space. These are extraordinary abilities and should rightly be applauded.

However, no matter how much we try, we can never calculate the flight of a helium balloon released at a children's party, nor know exactly any weather condition on our planet in the future. We will never be able to calculate where a piece of wood dropped into the ocean off California will end up.

Some scientists have naively felt that this is simply because we do not yet have sufficient understanding of the physics involved and that we will be able to do this someday. This is completely wrong. The world's most powerful supercomputers in the hands of meteorologists have still not enabled precise predictions of the weather. Neither will they in the future.

Stephen Wolfram defines a principle of computational irreducibility.¹⁵ His full definition is hard to understand but put simply it refers to systems that cannot - *and will never be able to* - be computed in advance. Wolfram tells us that the Universe as a whole is a system that is computationally irreducible, but contains regions in which there can be systems of computational reducibility, i.e there *are* things that conform to mathematics and can allow us to make predictions, but there are many more that cannot.

At once we see that there will always be limitations upon what science can do for us. This in itself tells us that we need a new approach to physics.

Besides its clumsy terminology, it is also, I believe, Wolfram's insistence on linking his ideas to computation that is anathema to conventional physics and keeps him locked out of the mainstream. All that is needed are different words, for what else is going on here but 'computation'?

¹⁵ I can only guess that it is this unfriendly term with its thirteen syllables that is the reason why other physicists refuse to mention it.

Scientists have always needed the power of mathematics and the implicit use of numbers to quantify the effects they measure. As I said at the start of this essay, it is the quantification of species inside a field and the ways in which they change that is the essence of traditional experiment and understanding of fields. For the ultimate example of computation in physics we need look no further than the Large Hadron Collider at CERN which thrives on measurements of exabytes of data. Indeed the pressure from physicists to build the LHC brought with it severe computational difficulties in handling the amounts of data such that we were moving beyond the capabilities of the human brain to comprehend.

The Problem of Numbers

Standard scientific investigations involve the setting up of experiments and the making of measurements. Theories that arise from such experiments are then presented in written form to colleagues amongst the scientific community and subjected to a process called peer review. Unfortunately, it is difficult to break out of the domain of conventional science under the constraints of the standard methods, especially when the scientist - i.e. the observer of the experiment, is actually part of the experiment. This difficulty has bedevilled quantum physics for a century or so. Furthermore, to propose ideas that fall wholly outside of conventional science provokes vociferous opposition from those with vested interests. There seems no doubt that these are at least some of the reasons why progress in physics and cosmology has been so slow since the 1970s.

Much of the writing of philosopher Unger in his part of the collaboration with nuclear physicist Lee Smolin concerns proposals for radically new ways of approaching cosmology that most scientists would be unwilling to consider. These difficulties involve the idea of history in the universe and the valid definition of experiments when the person executing the experiment cannot be excluded, i.e. the already identified problem of the observer in quantum mechanics.

A further issue that has become clear to me and is generally not discussed in my reading concerns the magnitudes of behaviours under consideration. I first became aware of it in Stonier's books where he attempted - in best scientific practice - to quantify the amounts of information under consideration. It quickly became apparent that the magnitudes of the numbers involved were

unimaginably large, even with modern numerical methods in mathematics. It was here that I first came across the googol, long before Google was thought of. Some readers might feel comfortable with the idea of 10^{100} , but here we are merely starting to explore the realm of numbers that represent magnitudes beyond imagination. Wolfram's work has accelerated since he began his New Physics Project in 2020 and the magnitudes of parameters he is suggesting are almost beyond credibility. However, despite placing severe demands upon our credibility, he has had extraordinary success in explaining the origins of quantum mechanics, the mysterious second law of thermodynamics and the role played by mathematics in conventional science.

Astronomers and cosmologists have grown used to working with very large numbers, but the kinds of numbers emerging from some of these new ideas seem to suggest that our methods of working numerically are becoming obsolete.

The matter has arisen again lately with the work of Wolfram whose thinking about the magnitudes of the parameters in his theory are veering towards the unquantifiable. I cannot help but think that, once again, we are up against artificial barriers created by standard scientific practice that insists upon measurements and quantification in order to prove things mathematically when they cannot be explained using mathematics. It is the old way of thinking that continuously thrusts numbers upon us, the size of which we struggle to handle, so why would we expect the Universe to be quantifiable at all? Wolfram tells us that in much of the Universe it cannot.

It seems to me that we need new methods (cf Unger) that do not demand this approach. The Universe does not need mathematics. Neither does consciousness. In our heads, we are never aware of the amount of storage available and that if we listen to yet another music stream or watch another movie whether there will be enough storage in our brains to handle it. Elon Musk might one day be able to implant some extra solid state memory inside our heads, but will that improve our consciousness? I think not.

How is our memory stored inside our brains? Scientists would have us believe the well-worn model of electrons moving about inside neurons and firing synapses, but the truth is that we don't have much idea. It seems to me extremely unlikely that a few seconds of music that I recognize as being a song by the Beatles are a result of a mere retrieval of bits into bytes, or that the observation of a photo-

graph on my phone requires a computation of its 20 Mb to enable me to recognize my family's faces.

I feel secure in stating that the Universe does not work like this and neither do our conscious brains within it. Could it be that consciousness is an interaction of our advanced information detector inside our brain with a Universal Field of Information of unimaginable size? That this field contains the complete History of the Universe and the Laws by which it moves forward in time?

It is not necessary to attach numbers to everything. Mathematics is an invention of human and is not fundamental in the Universe. We can continue to progress our evolutionary Society by working in Wolfram's regions of computational reducibility, but our understanding of the way the Universe works can only progress by accepting certain fundamentals as beyond conventional science.

Some readers ask, where did the laws of the Universe come from? I would respond by saying that from the moment of the big bang the laws of physics were not what they are now. They were probably different and there was no need for inflation.¹⁶ Eventually, the Laws of Physics that we know today arose from everything that had gone before and had been recorded in the Universe's (then) tiny history. Now, as the Universe continues to expand, and with it the size of its Field of Information, so do the countless systems within it evolve according to the interactions of the matter and energy with the Field of Information. It may yet be that the Laws of the Universe change over time - that they evolve as they seem to have done in the past and, as the Universe changes, will continue to do into the future.

The Implications for Life and Evolution

Let us accept that there is a Universal field of consciousness and that this field carries all of the information that has accumulated throughout the evolution of the Universe. It would imply that the laws of physics, determined at some point in the earlier life of the Universe, are carried across time and space, and that the consciousness of all matter requires it to conform to these laws. Why is this not a computation by another term?

The effects caused by the 'forces' exerted by the field of consciousness upon matter result in the changes that take place throughout the Universe. Where the appropriate presence of certain elements exists, processes are

enabled. On Earth, because of its particular combination of elements, it was possible for forces of Universal consciousness to create life forms that themselves exhibit consciousness.

All living things, therefore, have different elements of consciousness and, depending upon the particular arrangements of atoms within these lifeforms, control centres of consciousness - microtubules in brains - develop. In *homo sapiens* it happens that a centre of consciousness is sufficiently developed to enable not only awareness of surroundings, but also higher level processes of thinking, as yet only partly understood. It fits comfortably with Penrose that in humans it is the particular atomic/molecular arrangement of the microtubules that acts as the measuring device of the field of consciousness. Interruption of that structure using anaesthetics allows consciousness to be switched on and off. Meanwhile, the vital functions of the body are still carried out by the rest of the brain.

Nevertheless, the only thing separating humans from lower life forms is the degree to which the centre of consciousness has progressed.

In particular relevance to evolution there arise a number of consequences. Following the acceptance of Darwin's theory of evolution in the 19th century, there has been no significant progress in deeper explanations of evolution as there has been in particle physics and relativity, for example. In my opinion there has never been a satisfactory explanation of the mechanisms for the development of such complex life forms. It is too easy to simply say that the raw materials for life on Earth would inevitably lead to the development of organs of extreme complexity given the millions of years that have elapsed. In any other field of science, quantitative analyses of the relevant chemistry and physics, coupled to statistical mechanics and our deep understanding of the necessary environmental factors would by now have established that the likelihood of an organ with the complexity of the human eye was possible, or not.

Richard Dawkins¹⁷ is currently the most vocal and popular proponent of the human as an entirely machine-like creation with absolutely no involvement of any external influence. I suggest that the ideas presented here are in opposition to his in that there is a Universal field of consciousness that provides the workshop manual for all processes in the Universe, including human evolution. If this

¹⁷ Dawkins, Richard: *The Selfish Gene*, Flamingo (1978), 978-0586083161. Richard Dawkins: *The Blind Watchmaker*, Longman (1986), 9780582446946

¹⁶ The inflationary phase that followed the Big Bang remains the subject of fierce argument.

particular watchmaker is blind then so be it.¹⁸

The implication is that the emergence of species that became widely separated on the evolutionary scale still had an 'awareness' of what structures and functions were proving successful in other species. The eye is an organ that immediately springs to mind as an obvious example of something that is found across an enormous range of species that evolved along very different biological pathways. However, there would be many chemical processes - protein synthesis, for example - occurring at a much lower level in the organism that were common factors in the successful evolution of new species, in a way that almost indicates atoms and molecules having an 'awareness of what was possible. If you wish to attribute this to the influence of a Watchmaker, whether you call it 'intelligent design', or simply God, that seems reasonable to me.

It is my suggestion that the field of Universal consciousness acts as a data-bank for the future progression of the Universe, including the development of lifeforms, where appropriate chemical and physical circumstances allow. To put it simply, the atoms and molecules, aware as they are of the current laws of physics to which they must adhere, are also 'aware' of what is possible. This is similar to Wolfram's Ruliad.

Once progress has been made in one area of biology, the information stored in the history of the Universe is then available for new developments. The idea that biology with the complexity of the human being has occurred as a result of a random sequence of events is, to me, as illogical as the obstinacy with which modern science denies the presence of paranormal phenomena.

Artificial Intelligence

The current excitement about the development of AI implies that we will soon have machine intelligence that can greatly out-perform humans. This will be done by means of chemical arrangements of inorganic materials that bear no resemblance to humans and that operate in electromagnetic fields. However, at present there are no structures envisaged that would resemble the microtubules in our brains and thus I am inclined to believe that they can have no consciousness, at least in the advanced form with which we as humans are familiar. Perhaps in the distant

future when we begin to make androids from the same sort of chemistry as us things will change.

Conclusion

I have a most frustrating feeling that science is missing something very big in the understanding of consciousness. Suggested by many other deep thinkers, and in the context of common experience throughout human history, there seem to be many promising avenues to explore, yet nothing is being objectively reported, and what does get reported is dismissed as the thoughts of cranks and lunatics.

We need to open our minds to new possibilities and ignore the criticisms from those trapped in 20th century physics. As I associate myself strongly with the ideas of Penrose, Stonier, Unger and particularly Wolfram, I get the intense feeling that it is not I who am suffering from delusion about God, but Dawkins.

¹⁸ Atheist Dawkins is an active proponent of his religion with his books, especially *The God Delusion*, Black Swan (2007), 978-0552773317