

IS GOD ONLINE? THE GLOBAL BRAIN & SPIRITUALITY IN CYBERSPACE

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“We are what we think. All that we are arises with our thoughts”.
Buddha¹

“The living knew themselves just sentient puppets on God's stage”
T.E. Lawrence

“The proposal for a new general form of insight is that all matter is of this nature: that is, there is a universal flux that cannot be defined explicitly but which can be known only implicitly, as indicated by the explicitly definable forms & shapes, some stable & some unstable, that can be abstracted from the universal flux. In this flow, mind & matter are not separate substances. Rather, they are different aspects of one whole & unbroken movement”. David Bohm.²

The objective of this paper is to show how technology has informed new ways of thinking about complexity, spirituality and ethics. Specifically:

- how the hologram has led to the notion of a holographic brain and a holographic cosmos;
- how noosphere has expanded the holographic concept;
- how the Internet may perhaps tangibly manifest noosphere;

¹ Thomas Bryon, *The Dhammapada: The Sayings of Buddha*. New York: Vintage Books, 1976. p13

² David Bohm. *Wholeness & the Implicate Order*. London: Ark, 1983. p11

- how the computer/human relationship informs our vision of what noosphere may be like; and
- whether God is online.

Pribram, Bohm & the Hologram

The development of holographic theory by Dennis Gabor in 1947 and the later discovery of the laser were turning points not only for science, but for man's exploration of the interrelatedness of consciousness and reality.

A hologram is a true, three-dimensional record of the original object produced by laser photography. The object can be viewed from all aspects and, because of its depth and parallax, objects placed behind can be seen through the holographic image.

The Greek origins of the word "hologram" echo David Bohm's concept of wholeness: '*holos*' means "whole view"; and '*gram*', means "written". The hologram was made possible by the invention of the laser, technology which can create interference patterns. It is produced when a single laser light is split into two separate beams.

The first beam is directed towards the object to be photographed. The laser illuminates the object, bounces off and hits the holographic film positioned in front of the object. The second beam (the reference beam) collides with the reflected light of the first. The interference pattern created is what is recorded.³

There are two remarkable aspects of the hologram. The first is three-dimensionality which led neurophysiologist, Karl Pribram, to conclude that the human brain does not store memories in one particular location of the

³ http://universal-hologram.com/what_is_holography.htm#How is a Hologram Made?

brain. Rather, memories are distributed throughout the brain as a whole. No matter what specific part of the brain may be damaged in a human or animal, memories are not eradicated because of this distribution.

The scientific community had long been struggling to account for such phenomena as telepathy; past life experiences; precognition; feelings of oneness with the universe; photographic memory; or the seeming ability of people with hearing in only one ear to determine the direction of sound.

When the second remarkable feature of the hologram was recognised, it offered a way for scientists to explain how memories could be distributed rather than localised. This feature is wholeness: a holographic plate may be broken into fragments but each piece of holographic film contains the information of the whole, so one piece can still be used to reconstruct the entire image.

By the 1970s, the hologram allowed Pribram to suggest that every part of the brain contains all the information necessary to recall an entire memory. In other words, the brain is a hologram.⁴

Concurrently with Pribram's investigations, quantum physicist David Bohm (who was surely one of the leading, yet still undervalued, thinkers of the 20th Century) believed the hologram provided a new way of understanding order. Bohm's theories were not, however, readily accepted by the scientific community.

His book, *Wholeness & the Implicate Order* published in 1980, beautifully presents his theories regarding the relationship of matter and consciousness. Bohm suggests that our everyday lives are nothing more than mere illusion analogous to a hologram.

⁴ Michael Talbot, *The Holographic Universe*. New York: HarperCollins, 1991. Chapter 1 "The Brain as Hologram".pp11-31

Everything in our physical world from the humble snowflake, an important metaphor for complexity science, to chairs, buildings and electrons are projections from a deeper level of reality which Bohm refers to as the *implicate order*. To quote Bohm: “In terms of the implicate order one may say that everything is enfolded into everything”.⁵

This deeper order of existence gives birth to the physical objects we see and structures the appearance of our world. The explicate or unfolded order is our level of existence. There is a constant flow of movement and exchange between the implicate and explicate orders – the universe constantly enfolds and unfolds so that everything in the universe is a seamless extension of everything else and hence everything is interconnected. Bohm refers to this totality as *holomovement* and refers to the undivided wholeness of all things. Simply stated, Bohm sees the universe as a cosmic hologram.

The hologram in fact serves well to explain Bohm’s theories. The image encoded in the interference patterns of the hologram is the implicate order as these patterns are hidden and enfolded throughout the whole of the hologram. The explicate order is seen when the hologram is unfolded or projected from the holographic film and a recognisable image of the whole object is produced.⁶

Ancient cultures expressed this notion of wholeness long before Bohm. Hermes Trismegistus stated: “the without is like the within of things; the small is like the large”, whilst medieval alchemists chanted “As above, so below”.⁷

Western scientific tradition, however, savagely interrupted this flowing understanding. Newtonian science embraced the mechanistic metaphor. In

⁵ David Bohm. op.cit. p 177.

⁶ Ibid. pp145-150, 178

⁷ Michael Talbot. op cit. p290

this metaphor, independent parts and particles have separate existence and this has led science to adopt a fragmentary notion of the world. Bohm suggests that the mechanistic world-view has further led to confusion of the mind: individuals see the mind as separate from the body.

Cartesian duality is the common name given to this mind/body split. René Descartes, the 17th century philosopher, considered that existence may be divided into two distinct entities—a thinking self and a non-thinking body. Thoughts are separate from the body since the body is a non-thinking entity, devoid of thoughts. One's sense of self existed as separate from the body.

Newsweek magazine in 1983 ran a cover story on the mind which succinctly expressed the modern notion of Cartesian duality:

“What’s the matter?”

“Never mind”.

“What is mind?”

“No matter”.⁸

This philosophical dissociation allowed science to divide the universe into living and non-living things, animate and inanimate matter – separate existences and parts which could be individually examined and surgically excised from any notion of consciousness.

Bohm has restored consciousness (awareness, perception, understanding) to the extent we can no longer accept Cartesian duality. Using Bohm's well-known illustration, listening to a piece of music involves previous notes reverberating in consciousness. All musical reverberations exist simultaneously and create a sense of flow/movement/continuity so that the whole is unbroken. The listener experiences enfolding of musical sequences

⁸ *Newsweek* February 7 1983

into consciousness and unfolding in the form of emotional responses (ie singing, happiness), bodily responses (ie foot tapping, dancing) and various interpretive levels of meaning (ie what the music personally means to the listener). For Bohm, consciousness and cosmic intelligence exists in every object, animate or inanimate, and flows through varying degrees of enfoldment/unfoldment.⁹

For a society more attuned to the Newtonian view of the world, as well as the business world's obsession with commercialism and materialism, Bohm's concepts are startling. His theories mean, for example, that human consciousness is enfolded into animal consciousness and matter; that every portion of the universe enfolds the whole; that past, present and future time is constantly enfolding back into the deeper levels of reality.

Bohm suggests: "...sequences of moments that 'skip' intervening spaces are just as allowable forms of time as those which seem continuous".¹⁰ Rather than a linear, sequential notion of time, this suggests that the enfolding/unfolding pattern could conceivably result in 'intervening spaces' (perhaps thousands of years) and so just as humans may separate for long periods of time yet still "pick up from where they left off", so may we witness Cleopatra meeting Julius Caesar for the first time as the universe and life ripples through its enfoldings/unfoldings. And so time may be reversible and fractal, a concept that would give new meaning to the adage "history repeats itself".

Every human cell conceivably contains the holographic image and consciousness of the universe and its galaxies; the cosmic image is contained in every animal, every leaf, every tear drop, every rock or

⁹ David Bohm, op cit pp198-199

¹⁰ Ibid. p211

pebble.¹¹ But this consciousness that Bohm identifies is perhaps a disturbed one and still fractured.

Contemporary philosopher, Michael Grosso, has examined visions and apparitions, specifically of the Virgin Mary, and suggests that they are holographic images projected by the collective consciousness of mankind, which is distressed by the fragmentation of the world which modern science has caused and seeks solace in religion and the promise of salvation and eternal rest.¹²

Jung and the implicate order

Modern consciousness research has added new levels of exploration for psychiatry and psychoanalysis, particularly the linkage between consciousness and the subconscious.

Carl Jung says:

*As far as we can discern, the sole purpose of human existence is to kindle a light in the darkness of mere being. It may even be assumed that just as the unconscious affects us, so the increase in our consciousness affects the unconscious.*¹³

I suggest that Jung's concept of the collective unconscious has parallels with Bohm's implicate order. Jung's patients consistently presented with dreams, fantasies and psychological fears which contained symbols often not explainable through their personal experiences. Jung believed that these symbols were rooted in mythology and religion and he identified archetypes (prototypic phenomena eg wise old man) which form the content of the collective unconscious that is shared by all humans and which reflect

¹¹ Michael Talbot. op cit. p 50. Renee Weber, "The Enfolding-Unfolding Universe: A Conversation with David Bohm", in The Holographic Paradigm. Ken Wilber (ed). Boulder: New Science Library, 1982. p 72.

¹² Michael Grosso's Philosophical Café <http://www.parapsi.com/online/survivalofdeath/flatliner-paradigm.cfm>

¹³ Carl Gustav Jung, Aniela Jaffe. *Memories, Dreams, Reflections*. New York: Vintage Books, 1989.p 326

universal human thought found in all cultures. In a universe of interconnectedness, all consciousness is also interconnected.

Archetypes reside in the collective unconsciousness or implicate order and unfold or spontaneously arise in the mind particularly in times of crisis. Mythology bases its stories on archetypes and provides a rich pool of content which helps to reveal deep truths hidden from consciousness. Mythology helps in unfolding the enfolded and contemporary society has largely ignored the strong possibility that the unconscious or implicate constantly communicates with the conscious or explicate and together flow along the continuum of unbroken wholeness.

Jung's concept of synchronicity or meaningful coincidences which are beyond mere chance happenings or events (ie acausal) further suggests evidence of the implicate order.

A famous Jungian-type synchronicity is the scarab story, where a patient Jung described as "intellectually inaccessible", related her dream about an item of jewellery in the form of a golden scarab beetle. Jung heard a tapping on the window and on opening it, an insect flew into the room and Jung caught it in his hand – the insect was a gold-green scarab.¹⁴

In Ancient Egypt the scarab, in the form of amulets and inscriptions, symbolised rebirth and Jung considered there was a meaningful connection between this rebirth symbol and the need for a transformation of consciousness in his patient. The deep disturbance within his patient's psyche had seemingly caused an event in the physical world – a connection which Jung called an acausal connecting principle. Just as the physical world affects us, so we also affect the physical world.¹⁵

¹⁴ Tony Crisp, *Coincidences: Towards a Greater Understanding* . London: London House, 2000. pp88-89

¹⁵ <http://www.chartplanet.com/html/synchronicity.html>

Most people experience synchronicities as purely external phenomena and Western society fails to recognise the importance of the acausal patterns of meaning. The strong interrelatedness between the physical world and our psyche cannot be explained by recourse to the scientific notion of cause and effect. The implicate unfolds the symbols or knowledge contained in the collective unconscious and gateways are opened which have the potential to restore the individual psyche to health and spiritual contentment.

The notion that synchronicities could be flaws in the fabric of the physical or explicate reality, allowing us a momentary but tantalising glimpse of the implicate, unitary order which underlies everything is suggested by F. David Peat. A Jungian-type synchronicity is:

*“..the human mind operating, for a moment, in its true order & extending throughout society & nature, moving through orders of increasing subtlety, reaching past the source of mind & matter into creativity itself”.*¹⁶

Teilhard de Chardin, the global brain and cyberspace

Pribram, Bohm and Jung were essentially concerned with viewing the world through a complexity lens – acknowledging that from primordial times, a cosmic intelligence or encoded information has been embedded in mind and matter. The development of the hologram allowed Pribram and Bohm specifically to adopt a holographic view of the brain and the universe, seeing within fingerprints and leaves, the cosmic whole.

The speculative thoughts of the Jesuit theologian and scientist, Teilhard de Chardin, has perhaps extended this cosmic interiority. Teilhard considered that the evolutionary destiny of mankind was towards an interspecies global

¹⁶ F.David Peat. *Synchronicity: The Bridge between Mind & Matter*. New York: Bantam Books, 1987. p 235.

consciousness. This global consciousness would become the thinking layer of the earth (or Gaia) which Teilhard, along with his Russian counterpart Vladimir Vernadsky, referred to as 'noosphere'.

The notion of noosphere is that of an interrelated network of thoughts and communication between all species. The modern expression of noosphere is provided by Howard Bloom and is probably best understood as planetary consciousness:

*“The global brain is not just human, made of our vaunted intelligence. It is webbed between all species. A mass mind knits the continents, the seas and the skies. It turns all creatures great & small into probers, crafters, innovators, ears & eyes. This is the real global brain, the truest planetary mind”.*¹⁷

Marshall McLuhan's *global village* concept was heavily influenced by Teilhard, however, McLuhan was more concerned with technology as an extension of senses, particularly those of sight and sound rather than planetary intelligence.¹⁸

Teilhard envisaged an advanced stage of evolution characterised by a complex membrane of information enveloping the globe. This membrane would contain the sum total of human consciousness and would manifest itself into "the living unity of a single tissue" containing our collective thoughts and experiences. This living tissue would also contain the divine spark which was guiding an increase in global consciousness.¹⁹ Teilhard went so far as to suggest that "Christ is realised in evolution" suggestive of the possibility that Teilhard, as a theologian, considered the final stage of

¹⁷ Howard Bloom, *The Global Brain: The Evolution of Mass Mind from the Big Bang to the 21st Century*. New York: John Wiley & Sons, 2000. p207

¹⁸ "Marshall McLuhan's Global Village" <http://www.aber.ac.uk/media/Students/bas9401.html>

¹⁹ http://www.wired.com/wired/archive/3.06/teilhard_pr.html

organic evolution to be progressive syntheses of humanity and matter whose ultimate convergence point is that of God ²⁰

I suggest that there is a fundamental difference between Teilhard's noosphere and James Lovelock's Gaia theory. Noosphere is a complex system of individual minds, albeit minds which would be interconnected into living tissue. Lovelock's Gaia theory suggests that the global brain is itself an intelligent being wherein individual minds lose their individuality. This does not result in homogeneity at the cost of diversity, rather it suggests that Gaia is herself an evolutionary layer which is:

*“a complex entity involving the Earth's biosphere, atmosphere, oceans and soil; the totality constituting a feedback or cybernetic system which seeks an optimal physical & chemical environment for life on this planet”.*²¹

The incredible rate of computer technology implementation in the late 20th Century allows us to consider the Internet as an electronic noosphere and, along with this notion, we can further explore the holographic concept.

Holograms were the first technological emulation of omni-centredness, in other words, the way God is presumed to inhabit the universe. From the hologram, we leap to the Internet which has been variously described, but is perhaps best stated as a global information infrastructure which has three functions: transportation, communication and storage of information. An infrastructure which has eroded boundaries between the real and the virtual.²² The Internet is a global, digital hologram. Its centre is everywhere; you can access it from anywhere.

²⁰ <http://www.december.com/cmc/mag/1997/mar/cunning.html>

²¹ James Lovelock, *Gaia: a new look at life on earth*. Oxford: Oxford University Press, 1995, p10

²² Steven G Jones (ed) *Virtual Culture: identity & communication in cybersociety*. London: Sage Publications, 1998, p5

Neural networking technology forms the Internet's 'nervous system'. Neural networks attempt to imitate the way a human brain works by creating connections between processing elements, the computer equivalent of neurons.²³ These connections are hypertext links that closely resemble the associative connections formed by neurons in the brain.

Taking Teilhard's noosphere speculations, I propose that the Internet has the potential to manifest a tangible global brain so that noosphere becomes a reality rather than theological/scientific speculation. This is largely because of the Internet's resemblance to the human brain's functioning and associative connections; its pulsating, earth-encompassing reach; and its potential to store all human knowledge which is instantly accessible. (I leave aside the fact that the Internet also has the potential to divide humanity into information-haves and have-nots as this is not the focus of the paper). The Internet is hard-wiring the collective consciousness.

As the computer blinks "come and play with me", the omni-distributed array of information/knowledge allows human minds to become instantly aware of collective knowledge, the interrelatedness of cultures, individuals and minds.

Using Bohm's theories, I further suggest that the Internet itself represents the implicate order or in Teilhard's terms is the internal consciousness of the thinking layer. Internet technology provides the outer layer or membrane which encloses the global brain.

Jungian archetypes are emerging on the Internet – the Hacker as warrior of the new techno-territory and the Chatter, the playful communicator or fictitious personality. The Hacker particularly is emerging as a mythological figure able to bring down global companies by hacking through firewalls into

²³ "What is an artificial neural network?" <http://www.emsl.pnl.gov:2080/proj/neuron/neural/what.html>

computer systems. Collective mythologies abound and the interrelatedness of communication, culture and self is becoming apparent on the Internet.²⁴

Returning to Pribram's investigations into the location of memories within the brain, the Internet is not localised. That is, one's sense of self is no longer delineated by what tribe, village or community you live in; the sense of self is no longer location based because one's existence has evolved into a collective self. Technological memories are globally distributed, analogous to Pribram's discoveries when he first saw a hologram and proposed that the brain distributed memory as a whole.

Massive global immigration into *cyberspace* (a term coined by William Gibson in his science fiction novel *Neuromancer* to describe virtual worlds)²⁵ has seen users hang up their cyber-shingles and open the virtual door into their own experiences, histories, thoughts and ideas. And so the Internet, with an energy of its own, is an attractor. It is vortex of communication which creates new meaning.

Because it is virtual, the internet is witnessing the convergence of consciousness and communication. Jeremy S. Gluck uses a new term, *comsciousness* to describe a new plane of information and awareness brought about by this convergence.²⁶ I would describe this new plane as multi-interactive intelligence.

Is God online?

²⁴ Victoria Ward & Kim Sbarcea, „Voice: storytelling is knowledge management“ in Kim Sbarcea (ed) *Rethinking Knowledge* Sydney: Butterworths, 2002, pp 92-93

²⁵ William Gibson, *Neuromancer*. New York: Ace, 1984

²⁶ Jeremy S. Gluck “Comsciousness Aspects”. <http://www.spiritechvirtualfoundation.org/comscious.html>

In the vast emptiness of cyberspace, Teilhard's vision of a thinking layer, which perhaps includes the concept of God, implies that the glut of information in cyberspace will be used ethically and to ultimately create a web of wisdom. It also implies that the neural networking technology of the Internet will successfully surface the underlying interconnectedness and unity between people and cultures as Internet users roam cyberspace.

The cyberhood is open for business but will seduction and commercialism (the McDonaldisation of cyberspace) dominate over one's sense of soul and spirituality in cyberspace?

What is interesting is that the uniqueness of the Internet as a technological invention is often used to explain why virtual worlds are so seductive, why they offer an alternate reality. But technological change is not new to humanity.

Johann Gutenberg and his invention of the modern printing press caused technological upheaval in the 1400s. The printing of a book for the sake of learning or exposing humanity to new concepts and ideas was not the rallying cry of this period of history. The rallying cry was Hell itself – the battle to save Christians from the inferno of hell was fought out in print by the offering of treatises and tracts devoted to salvation and forgiveness. The voice being heard however was that of the religious order; the individual voice was silent.

On an enhanced scale, the Internet is a larger story in itself. The internet is nothing more than jumbled conversations, with people of all races and gender trying to be heard. The attraction of cyberspace is its almost religious connotations – anyone can enter technological heaven, as long as you have the technology. You are not denied entry because you represent a

minor religion or hold deviant or anti-social views. Cyberspace is seductive because of its non-hierarchical space, because loneliness can be replaced by joining in conversations with people you may never meet, because your gender can be hidden and indeed explored and manipulated.²⁷

The ontology of cyberspace itself, begs the question of what it means to **be** in a virtual world, whether one's own favoured virtual world or another's world. What is the essence of soul in cyberspace? Is the spiritually isolated voice more likely to be heard in cyberspace because of the Internet's connectedness?

Finding God on the web is almost like being involved in a Digital Crusade. Cyberspace is having a profound impact on cyber-pilgrims who surge through web sites on their way to re-examining their religious beliefs and understanding of spirituality. The Internet has the potential to be whatever it needs to be for the user – for the religious, it is akin to a spiritual bazaar where cyber-churches offer self-organising, interactive electronic communities of faith.

A quick surf for *Christ* or *God* on any search engine will result in thousands of hits from Scientology groups (alt.religion.scientology) to the Vatican's own web page, complete with 'email The Pope' (as God's major representative on Earth, we might jokingly suggest that, given The Pope's email address, God is Online!).

As the Internet unfolds our relationship with computers, so it is unfolding our relationship with the Creator. We create computers, as God creates all living

²⁷ Kim Sbarcea "The New Frontier: the Internet" November 2000. Essay which formed the basis for the article cited in Footnote 23; Margaret Wertheim, *The Pearly Gates of Cyberspace: A History of Space from Dante to the Internet*. Sydney: Doubleday, 2000.

things and as we advance in computer technology by creating artificial intelligence, potentially we will parallel the Creator in giving breath to a new form of intelligent life – the marriage of God and the global computer networks. And this will require mankind to explore a new type of relationship and awareness – that of man and machine.

This awareness of man and machine is not a constant notion nor is it one that we know (ie a modernist project, where the computer is seen as little more than at the service of man; a kind of lower order slave or factory worker to be “used and abused”; a relationship which is uni-directional).

The new relationship is a heightened level of awareness and understanding – a “cyber paradigm”. A multi-directional relationship which has been created by a new source of energy (the Internet), the fusion of man and machine, and the colonisation of cyberspace. Cartesian duality will evaporate, for interactive virtual worlds require us to engage our bodies along with our minds and allow us to re-construct the self (virtual reality games leave players with a sense of having been a part of the virtual “real” world).

Perhaps we will be able to find soul in cyberspace for, as Thomas Moore said: "Soul is not a thing, but a quality or a dimension of experiencing life and ourselves." ²⁸

I think, therefore I am?

This “brave new world”, no doubt one that Teilhard dreamed of, raises some fundamental (if not dark) questions:

²⁸ Sherry Turkle *Life on the Screen: Identity in the Age of the Internet* New York: Touchstone, 1995. p10.

- what is the essence of humanity and can a machine replicate this essence? can the computer participate in global collective consciousness or will it merely be the carrier/agent?
- what do we consider to be uniquely human and is it really so unique?. Do animals also have reasoning, language, culture and morality?
- will the Internet and its virtual worlds only ever provide us with an illusion of reality/life in much the same way that Bohm suggests that what is “out there” is nothing more than waves and frequencies which our brains convert to trees and other comforting objects?²⁹
- will the human fear of machines/computers (largely a product of the Cold War and the accompanying threat of nuclear war) result in reluctance to embrace the best technology can offer?
- how will (or will we) accept non-biological thinking? and at what point might we hold non-biological thinking responsible for moral choices?

In order to answer or partially answer these questions, we will explore contemporary mans' efforts at defining a sense of self. The 19th and 20th Centuries witnessed the stumbling efforts of scientists to distinguish ourselves from the Darwinian ape. The issue of how we gained humanity was the leading question but the shift to a global brain may result in a different question: how do we protect against losing our humanity? For at what point in the convergence of human and machine do we say that 'humanness' is lost?

²⁹ Bohm, pp1-2

The popular science fiction series, *Star Trek: The Next Generation*, has two characters. On the continuum of man's fears, hopes and relationship with technology, these characters represent opposite ends. The first character, *Data*, is an android intentionally built to model human behaviour. Data is pale, exceptionally polite and non-threatening.

The second character or group are *The Borg or Borg Collective*, a knowledge base of various alien cultures, with each individual Borg connected. Their 'motto' is '*you will be assimilated; resistance is futile*'. The Borg consciousness is stable - in a state of equilibrium - which denies the potential for creativity, exploration and experiment. The only way to increase Borg knowledge is to "assimilate" other species into the hive mind through a process of ferocious determination to crush the enemy. In the TV series, the Borg are depicted as dark, fearsome creatures who are part organic, part machine and who seemingly lack any moral code of conduct.

In contrast, the human collective or consciousness is chaotic but through the pull and energy of attractors (ie Internet) has the potential for creativity and innovation that is not at the expense of other species.

One famous episode of *Star Trek*, "*Does Data have a Soul?*", asked whether Data was sentient. If the response was negative, then Data and other androids could be treated as slave labour for Star Fleet.

Sherry Turkle is a noted US authority on humans and their relationship with computers. As part of her pioneering studies during the 1980s and 1990s, she interviewed children, computer programmers and scientists in order to answer the question of what one can expect from a machine and what one can expect from a human. To quote her subjects:

“To have a real conversation with a computer, you need to have a computer that has some sense of you and some sense of yourself. The computer must be conscious, aware. The only place I see that happening is if you go beyond expert systems to neurally based machines that learn from experience. I am thinking of machines like Data on Star Trek: The Next Generation. Machines that are machines more in the sense that we are machines”.

“The computers I imagine...would have that anxiety that comes with feeling death that I think makes us have so much of our human personalities. It would be very important, too, to give them blood and pain. Seeing your own blood, and the pain you feel, I don't know if you could understand a person without knowing that fear, that vulnerability that you are an animal after all”.³⁰

The notion of humanity or humanness is sentience. A conscious awareness that one is fragile, vulnerable, can think, can feel pain or joy and has a sense of morality (however this may be defined). That one is, after all, a mortal animal.

The divide between humans and computers was more pronounced in the 1950s and 1960s. Science fiction novels and films were crowded with examples of computers and robots self-destructing in plumes of smoke when faced with a problem or reasoning structure beyond their programming. Or machines would wreak havoc and activate the missile button that would cause one of humanity's greatest psychological fears – the nuclear war so graphically depicted in the 1980s film, *The Terminator*. This perceived divide

³⁰ Sherry Turkle, op cit. pp 118-119

allowed man to take the superior stance by appealing to humans' adaptability, inventiveness, problem solving skills and intelligence.

With the advent of more sophisticated neural networking technology, the human vision of computers is less hysterical. Recent films such as *Blade Runner* and *The Matrix* (although set in dark, futuristic, decaying worlds) depict androids who can cry, are passionate and sexual, and who are able to participate in a human's life.³¹

If Teilhard's dream of a "thinking layer" is to occur then a fundamental shift in the human vision of computers will need to take place. Although cyberspace is heavily colonised by "techno nerds" and the average worker in the office who uses the Internet to find information, we have not perhaps reached a level of comfort with computer technology/Internet to freely engage with it so that we reach the "tipping point" – the transformation stage or flashpoint where a critical mass of collective connections is achieved and the result is that next level of awareness, Bohm's implicate order.

Using again Bohm and Teilhard's belief that consciousness pulsates and courses through matter, then the phones lines, communication pathways, hard wiring and software that is the Internet's nervous system is also pulsating with awareness.

The convergence point where the "thinking layer" and planetary intelligence manifests as a reality will occur when humans accept a new way of thinking about computers and technology; when Bohm's concept of the implicate order is understood. Only then will the human brain and non-biological

³¹ Ibid, p 118

thinking enfold and unfold in a holographic techno universe of endless feedback cycles.

The fact that we are still unsettled and anxious about global collective intelligence is apparent in contemporary *Star Trek* episodes featuring the sterile but fearsome Borg Collective.

Global brain: an evolutionary eventuality?

If Teilhard is correct and an advanced stage of evolutionary progression is noosphere, would we wish to challenge this possibility? Do we need or want a planetary intelligence?

The computer age has given us our present understanding and definition of what it is to be human. There is no doubt that thousands, if not millions, of people around the world, particularly in Third World countries, either do not have access to the Internet or do not wish to engage with technology. The result of this may be that parallel worlds will co-exist – the Real Life world and the holographic techno universe of cyberspace. This inaccessibility or reluctance may slow down the eventuality of a global brain but the notion of complexity is precisely that we cannot design or prevent the unfolding of an outcome.

Our fear of globalisation is underpinned by an anxiety that individuals will lose a sense of self or that requisite variety will no longer be respected. It is possible that the global brain concept may fall victim to this anxiety but, in reality, planetary intelligence will surely be far richer because it will reflect multiple varieties, values, beliefs, meanings, symbols and archetypes. Rather than a loss of individual control, noosphere will be a celebration of variety and will imply a new dynamic order of complex relationships and interconnectedness.

The Western world has long been concerned with notions of morality, good and evil and definitions of spirituality. Ancient cultures, along with contemporary tribal cultures in Africa and South America for example, have implicitly understood that spirituality is connected with “being in touch” with the spirit world and animal deities.³²

We have lost this metaphysical understanding and this has caused us to adopt a socially constructed code of ethical conduct. The individual self has become isolated and fragmented in modern society and this notion of isolation leads to irresponsible behaviour which needs to be policed. The individualistic lens does not widen so that detrimental affects on other people and species are seen. Capitalism, along with its greedy masters using and abusing resources, tolerates individualistic behaviour.

We have perhaps socially engineered our current rules, regulations and notions of good/bad behaviour so that we can keep people and society “in line”. But the moment we become globally conscious, policing will no longer be needed, because noosphere and planetary intelligence will reconnect us to a higher level of spirituality where we will acknowledge that everything that happens is connected; each level of consciousness from matter to animals to humans is connected; and the holographic universe flowingly enfolds/unfolds; so that “I am you”.³³

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³² I am writing from personal experience/understanding from having lived in Kenya.

³³ an African saying

