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## Consciousness and the Prior Given of Space and Light

Paper for *Invencao*, Sao Paolo, Brazil, August 1999

Dr. Mike King

Editor's Note,

This issue is an article by Mike King , which I found when catching up his writing at <http://www.jnani.org/> where I also found the following introductory note about the author and his work.

*I am a scholar, artist and spiritual teacher based in a British University. I work across the areas of art, science and the spiritual, and this site presents the explorations I have made over many years. Some key concepts have emerged from this interdisciplinary research. Amongst these are 'postsecular' meaning an impulse in society towards a greater receptivity to spiritual ideas, but based on the security of democratic rights and freedoms. The other is 'jnani' which is a Hindu word meaning non-theistic or non-devotional spirituality.*

That seems to fit well with the aims of the Nowletter. When I read this essay I was surprised to find that it reflected much of my own path. In my thirties, I had some interesting shifts in consciousness which made me determined to discover what lay behind them. I remember at one stage becoming very interested in transparency, in particular how artists handled light when painting glassware. I even attempted an oil painting of a wine glass to see if I could grasp the principles. It is still sitting on a windowsill, a reminder of my early stumbles. I eventually recognised my interest in the Dutch & Flemish masters' representation of colour and light as an unconscious pointer and metaphor for an appreciation of the space-light transparency offered by Traherne and Harding, the exemplars Mike King draws on in this essay.

Please note the change of venue for Alex Reichel's meetings. See page 10.

### Meetings: Page 10

Dialogue – Third Sunday of the month

Harding – First Saturday of the month

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## Consciousness and the Prior Given of Space and Light

Paper for *Invencao*, Sao Paolo, Brazil, August 1999 (See Introduction to the Conference on page 9)  
Conference presentation made possible by travel funding generously awarded by the British Academy

### Abstract

This paper explores the human perception of space and light as a unifying and underlying principle in art, science and the spiritual. Space and light are presented as a joint entity — space-light — which is regarded as a prior given of human experience, both of the objective and the subjective. If science is the systematic investigation of the objective, then the spiritual is presented as a systematic investigation of the subjective, with art as a possible mediator between these two worlds. Two British mystics, Douglas Harding and Thomas Traherne, are introduced as having systems of thought with roots in the prior given of space-light, while the *anthropic* principle from science is introduced with some of its implications for light and space.

**Keywords: consciousness, light, virtual worlds, Thomas Traherne, Douglas Harding, anthropic principle**

When consciousness is empty of thought, it is filled with space and light

### Art, Science and the Spiritual

The electronic arts comprise a relationship and discourse between art and science, culture and technology. At the turn of the millennium it seems that Western thought, with its Enlightenment ideals intact and a booming Western economy, has triumphed. Science is generously offering partnerships with the arts, while the arts are content to frame their deepest questions within the scientific paradigm. So why bring in the spiritual at all? What single question of importance to the West has been answered by the spiritual? What single freedom has the spiritual brought to artists? Do not the majority of the Indian sub-continent, supposedly the home of the most ancient and sophisticated spiritual traditions in the world, aspire to the middle-class comforts of the West?

All this would be true if it were not for the most important outstanding scientific question to spill into the new millennium: — the nature of consciousness. The question was scientifically unaskable at the end of the nineteenth century, but has become scientifically inescapable at the end of the twentieth. The proposition at the heart of much of my work is that certain forms of spirituality, or forms of mysticism, present a framework for understanding and inquiry into the nature of consciousness, a framework that conventional science not merely lacks, but the adoption of which would contradict its ground rules. By proposing a new look at the spiritual, or by accepting it as a third and equal partner to art and science, I hope to fructify both art and science, and also to preserve the natural boundaries of all three. As a trained scientist I have a respect and understanding of its principles that make me flinch at some of the pseudo-science brought to bear on consciousness studies; at the same time, as a life-long student of the mystical, I am equally disturbed by the uninformed hi-jacking or patronising of the spiritual by scientists.

Let us look in more detail at the three-way relationship between art, science and the spiritual, by considering pairs of relationships:

**Art and Science:** This relationship is a familiar one to the electronic arts practitioner, perhaps more often as a relationship between art and technology. Science itself also has an impact on art, in terms of propositions about the physical world that artists engage with, and in terms of new imagery generated by its instruments; imagery of worlds normally too small or too distant to impinge on our unaided senses. Art in turn provides the scientist with a fluidity of thinking and the intuitive modes of apprehension that are central to the great scientific discoveries. It may not do this in a direct way, but studies like Arthur Koestler's have shown the parallels between artistic and scientific creativities<sup>i</sup>.

**Art and the Spiritual:** This relationship can be likened to a centuries-long marriage ending in apparent divorce towards the end of the 19th century. Roger Lipsey, art historian, has suggested that a phrase from Constantin Brancusi, 'an art of our own', sums up the desire by 20th century artists for emancipation from the 'baggage' of religious tradition<sup>ii</sup>, though Modernism has been shown rather surprisingly to have strong roots in the spiritual. (Some of these arguments are presented in *Concerning the Spiritual in Art and Science*.<sup>iii</sup>) However, there is a visible interchange between art and the spiritual in all periods of history. Art provides the spiritual with language and metaphor, poetic expression, and artistic forms for celebration. The spiritual in turn provides subject

matter for the artist, or may present propositions about the subjective world (as science does about the objective), that artists engage with.

**Science and the Spiritual:** This relationship seems the most contentious, in that both provide world-views that are claimed by many in their respective communities as sufficient and exclusive. My claim is the opposite: that neither are sufficient for a full understanding of human experience, and that to exclude one or the other is to live half a life. Ken Wilber's idea of epistemological pluralism<sup>iv</sup> is useful in this context, though it is not the same as the extreme relativism proposed by some post-modernists. The interchange between science and the spiritual that I am interested in is one that does not blur the boundaries or confuse epistemologies. A thoughtful delineation of the spiritual should help place science in perspective, and to keep its methods pure. Science in turn can help in the spiritual by training the mind in rigour, doubt, and enquiry. The dogmatists of the spiritual have much to learn from the humility of the scientist, while the dogmatists of the scientific have much to learn from the holism of the spiritual.

The set of relationships just outlined imply no hierarchy or priority as areas of human endeavour and enquiry, indeed a more equal weighting across all three would be beneficial to much of contemporary discourse. However there are many senses in which one could rank these activities: science no doubt coming first when it comes to solving problems of survival, and in providing explanations of the physical. In terms of *profundity* however, science would rank third. We could say that science deals with the most superficial level of our human experience, the material; art deals with something closer to home, the emotional; and the spiritual deals with the core of our subjective existence, consciousness. When science registers as profound with us I would suggest that it is borrowing the language of art (physicists and mathematicians often talk of beauty), or even the language of the spiritual (a scientific breakthrough is awesome). Art, in dealing with the human dimension of our lives has a natural profundity, but again, it will borrow the language of the spiritual (a work is divine, mystical, transcendent).

Going back to science, we find that the language of science itself is utilitarian and sterile. In the writings of some of the great scientists, such as Einstein, Schroedinger or Eddington we find a meta-science or metaphysics which is far from sterile, but, as pointed out above, these writings draw their profundity from the poetic or the spiritual. Most of the great scientists talk of awe in certain moments of discovery, Einstein going as far as to say that he was deeply religious in his science.

The British-born scientist and Templeton prizewinner Paul Davies has said that 'science is a surer path to god than religion'<sup>v</sup>. He not only claims that the scientific experience can open a door to the transcendent, but also that science is sufficient to take the spiritual enquiry to its ultimate (he uses the term 'God' for this, because of his Christian, theocentric intellectual inheritance, inappropriate I think in a multi-faith world). Certainly, any profound experience can open this door (for instance, a sunset, a work of art, nature, falling in love) but the spiritual is not within the language or scope of science. In the autobiographies of so many great scientists we see that 'the door is opened' but the scientist does not walk through it. Why? Because the room one would enter would be outside science. Even the great Richard Feynman, who insisted on making art important in his life, in as far as he could as a full-time scientist (he reached good amateur status in both painting and music), stopped short his spiritual enquiry after some desultory experiments with isolation tanks<sup>vi</sup>.

This brings us to a useful question: can art mediate between science and the spiritual? The single case of Richard Feynman would suggest not, but the increasing interaction between art and science gives a different indication. Leonardo da Vinci is a man who could have moulded Feynman's vision; an interplay of art and science which, at the heart of the Enlightenment ideal, was *sufficient* for the deeper needs of the individual. However, if the problem of consciousness continues to raise its profile in the scientific community, then art and science will have to turn to the spiritual for answers.

### Space and Light: Physics

Having made some opening remarks about the relationship between art, science and the spiritual, let us look at a theme that links all three: space and light. I would prefer to call them 'space-light', as a single term, in that for the sighted at least, they are not separable. We do of course have an aural and kinaesthetic sense of space (perhaps olfactory as well for animals), but, as this is an essay intended for electronic arts practitioners, the visual will be central to the discussion.

To start with, a quick historical journey through science on a ray of light. Einstein when young tried to imagine what would happen if he could 'ride a beam of light'; what would he see as he caught up with the speed of light? His question, answered only after plotting his own idiosyncratic course through science education, led to a revolution in scientific thought. Light would play a central role in the 'new physics' of the 20<sup>th</sup> century, but it was also central in the early triumphs of science, and even in the questions that gave birth to the scientific method.

From Greek times people were aware that a group of heavenly bodies, called planets after the Greek ‘to wander’, followed erratic paths that could not be explained. Saint Augustine claims to have abandoned his first religion (Manicheanism) because one of its leading bishops could not provide suitable astronomical explanations, and the problem survived a further thousand years. It was the joint efforts of Copernicus, Galileo, Kepler and Newton that eventually provided the solution in terms of the heliocentric theory, elliptical orbits, and the inverse square law of gravitation. None of these men would have progressed however without the key contribution of Tycho Brahe, who invented the telescope (and made lengthy and detailed recordings with it). Newton honoured his predecessors by saying that if he could see so far it was because he stood on the shoulders of giants. But what did he see *with*? The telescope. Science was born through the observation of the planets by means of the first and most significant piece of research technology ever invented. Earth-bound, science could not arise, because of the difficulty of separating out cause and effect, shown for example in the Greek misconception of force as that which produced velocity. Because the planets move in a vacuum, and are mostly only affected by the sun, they present what is known in science as a simple two-body problem. (To solve problems with three interacting bodies is not just 50% more difficult, but orders of magnitude more difficult, and when we come to more complex systems, then chaos theory rules.) However, the success of science with the planets gave experimenters the confidence to tackle more complex earth-bound problems, and also showed how external influences must be limited in order for an analysis to be made. In effect the heavens showed the model for the scientific laboratory.

The problem of the planets (which Richard Tarnas believes was central to the development of the Western mind<sup>vii</sup>) was a space-light problem: the problem was spatial, and the solution found through the first instrument of light: the telescope. The second instrument of light could be considered to be the microscope, which allowed biology and chemistry to develop, and the third instrument (I would claim) is the visual computer. Light then played a central role in the establishment of science, which for several hundred years after Newton seemed to promise a complete logical explanation of the universe, and, by implication, of human experience. By a quirk of fate, it was light again that heralded the end of science. I should say of course ‘end of science’ — a figure of speech like ‘the end of history,’ figures of speech that hide serious points however. By the ‘end of science’ I mean the entry into science of paradox, a direct challenge to Aristotle’s law of the excluded middle, that a thing cannot be both ‘a’ and ‘b’ at the same time. Light, it turned out, was two things at the same time, a particle and a wave. This is light-paradox number one. Light-paradox number two takes place at the atomic level: it is called quantum indeterminacy (and is illustrated with the Schrodinger’s cat *gedanken-experiment*). Light-paradox number three takes place at high speeds: observers travelling at such speeds experience time-dilation and space-contraction — Einstein’s general theory of relativity.

The origins of light-paradox three are satisfyingly found in an experiment made with simple lenses and mirrors: the Michelson-Morely experiment, the most famous null-result in physics. Put simply, it says that the speed of light is invariant with respect to the observer. We know the speed of light in a vacuum is about 186,000 miles per second. If I travel towards a light source at 100,000 miles per second, then measurements of the speed of light relative to myself should give a joint velocity of 286,000 miles per second. If a colleague were to travel at 100,000 miles per second away from the same light source then he or she should measure a joint velocity of only 86,000 miles per second. *In fact we would both measure the same velocity*, 186,000 metres per second. An absurdity! But it turns out that the invariance of the speed of light with respect to the observer is part of the deep structure of existence, like the inverse square law, or the periodic table. However, the reasons that the paradoxes of light hold a difference significance for us than the other discoveries mentioned, is not just that they undermine the notion of science as rational, but that they point to something anthropocentric about the structure of the universe.

Scientists John Barrow and Frank Tipler have made a study of scientific results that have anthropocentric implications, summing up their approach as the ‘anthropic principle’. Their arguments are presented in *The Anthropic Cosmological Principle*,<sup>viii</sup> perhaps one of the most significant books written on the implications of science this century. In its ‘weak’ form the principle holds that the nature of the universe is such as to make the development of human life inevitable, because we could not exist in any other type of universe, and therefore could not ask questions about its nature. Few scientists admit to holding this principle in its strong form however, which is put thus: ‘the evolution of the universe is as dependent on consciousness as consciousness is dependent on the universe’. The symmetry of this statement puts consciousness (the ultimate subjective) and the measurable universe (the ultimate objective) on equal footings and co-dependent. This radical view, if more widely accepted, would mark the ‘end of science’ as we know it, and the start of a more holistic approach. My proposition here is that the anthropic world-view would not have arisen without light. Light was essential to the birth and death of a particular form of science; light is also at the centre of artistic and spiritual languages.

Science has recently engaged in a sometimes-bitter dispute with non-scientists who have proposed that science is ‘a social construct.’ The extreme relativism of some forms of feminist and post-modern critical theory inevitably led to this proposition, and many spheres of human activity find liberation in such an approach. For those who participate in the hard sciences, and who may even have sympathy with the broad thrust of such an approach, the overwhelming evidence from science is that there are immutable laws governing the structure and behaviour of the universe. The

social scientists cite the ‘new’ physics (the physics that has led to the anthropic principle) for examples of so-called ‘laws’ of science being overturned by new discoveries. Why then should not another set of new discoveries overturn the current theories? Where is the immutability in all this? I believe, however convincing this argument may be at first glance, that it is flawed. (Neither is it the basis for the ‘end of science’ thesis.) If we go back to the planets, then we find that at the end of the 19th century they still posed problems in their movements, that is a few small anomalies remained, which the inverse-square law could not explain. It took Einstein’s general theory of relativity to resolve them. So does relativity contradict the inverse-square law? Can we find in this the relativism beloved of post-modernists, such as found in fashion, politics and philosophy? Certainly not. Relativity is a refinement of earlier science, valid only for massive bodies and on large scales or velocities. Newtonian mechanics is still valid for the vast majority of every-day calculations, and there is nothing in science to suggest that this will ever change.

‘Science is a social construct’ is true in a trivial sense: science is carried out by people who live in society, and whose behaviour is to some extent socially determined. If we had a radically different society would this lead to a radically different science? Not, at least, in the hard sciences. However, it is interesting to ask to what extent the anthropic principle is a social construct. Let us take just one of the sections in Barrow and Tipler’s book, section 4.8, which deals with the question of dimensionality. (I have explored some of the issues to do with dimensionality in *The Tyranny and Liberation of Three-Space*<sup>ix</sup>, which the following discussion extends.)

At the end of the 19<sup>th</sup> and start of the 20<sup>th</sup> century many intellectuals became interested in n-dimensional space, partly through the work of mathematicians like Minkowsky, and artists such as Duchamp and the Cubists, while the Constructivists explored imagery that attempted to portray four spatial dimensions. Abbot’s *Flatland*<sup>x</sup>, a nineteenth-century social satire about a two-dimensional world, attracted a cult following that persists today. Barrow and Tipler have collected together serious scientific papers asking the question, why does our world have *three* spatial dimensions rather than four or two, or any other (relativity shows that there are four dimensions, but the fourth is time). Different and independent studies apparently show that one of the essential pre-conditions for life to evolve is a planet in *stable* orbit around a sun, stable that is for billions of years. *This is only possible in n-dimensional space where n is three!* So, we learn from science that a prior given of a space that could contain humans is that it is three-dimensional. Could this idea be a social construct? After all it was arrived at via the anthropic principle. The answer is yes in the trivial sense (a human has to exist to ask the question), but no in the sense that a radically different society would not give a different answer. The prior given of three-dimensional space is at the level of the *individual*, not at the level of society.

What science shows beyond doubt, I believe, and what is probably the motivation for most scientific study, is that the universe has a structure that can be discovered, not invented. Another way of putting it is that this structure is a prior given of the universe, or, to put it in a more human-oriented way, this structure is part of the prior given of human experience. Now, returning briefly to my opening questions, if science is so good at excavating and delineating the prior given of our experience, why turn to the spiritual? Because, I would suggest, at best, the spiritual performs a complementary task in the subjective world. John Polkinghorne<sup>xi</sup> has suggested that both science and religion are an inquiry into what is. If we are careful about the type of religion, or the spiritual, referred to in this statement, then yes, it is also an enquiry. But it operates in a different way and in a different sphere: the wholly subjective. If science provides an understanding of the prior given of the wholly objective, then the spiritual provides an understanding of the prior given of the wholly subjective.

It should be immediately stressed however that mainstream religion rarely provides a context for enquiry, and so comparisons between science and mainstream religions (of any faith) are misleading. It is generally the mystics (using this term in the formal sense rather than the populist one) that seem to have undertaken such enquiries, effectively turning their lives into laboratories (and sometimes paying with their lives for proclaiming the results). The results, often termed in the West as the ‘perennial philosophy’ (and argued for by Aldous Huxley in a book of the same name<sup>xii</sup>), can be seen as providing the prior given of the subjective, the prior given of our interiority, or the prior given of consciousness itself.

#### Space and Light: Mystics

It is commonly remarked that there are many spiritual metaphors using light, in fact one of the few exceptions to the spiritual language of light is found in the ‘Divine Darkness’ of Dionysius the pseudo-Areopagite (probably a Syrian hermit of the 5<sup>th</sup> or 6<sup>th</sup> century CE). Can we make a connection between the paradoxical nature of light in physics, and its role in the spiritual? And can this connection take further the understanding of the role of light in the visual arts? I believe so.

‘Illumination’ is term often given to the intense spiritual awakening experienced by mystics, ‘enlightenment’ another. However the attitudes of East and West are very different to this event; in the West ‘enlightenment’ is a term reserved for an intellectual and cultural process, while in the East it is meant in the mystic sense, that is, beyond intellect and beyond culture. In the West the great spiritual leaders (Moses, Jesus, and Mohammed in historical order for the three ‘religions of the Book’) are figures whose inner state there is no possibility of attaining,

while in the East the great spiritual leaders (more difficult to pinpoint but including Krishna, Buddha, Mahavira and Lao Tsu) are figures whose ‘enlightenment’ is not just attainable, but a state required of the aspirant.

If we return to the opening remark, ‘when consciousness is empty of thought it is filled with space and light’ then we might examine it in relation to our questions. I framed the sentence as summing up Eastern mysticism in a certain way, but also to introduce a very British 20<sup>th</sup> century mystic, Douglas Harding.

#### Douglas Harding

Harding was an architect, so he was predisposed to the qualities of light and space. His ‘enlightenment’ happened to take place in the Himalayas, though he is convinced that the light and space of any location could trigger the same process, indeed that it acts as a continual demonstration of our true, enlightened, nature. A brief description of his experience shows both the factors common to many such accounts, but also introduces his unique and whimsical understanding of it:

What actually happened was something absurdly simple and unspectacular: I stopped thinking. A peculiar quiet, an odd kind of alert limpness or numbness, came over me. Reason and imagination and all mental chatter died down. For once, words really failed me. Past and future dropped away. I forgot who and what I was, my name, manhood, animalhood, all that could be called mine. It was as if I had been born that instant, brand new, mindless, innocent of all memories. There existed only the Now, that present moment and what was clearly given in it. To look was enough, and what I found was khaki trouserlegs terminating downwards in a pair of brown shoes, khaki sleeves terminating sideways in a pair of pink hands, and a khaki shirtfront terminating upwards in — absolutely nothing whatever! Certainly not a head.

It took me no time at all to notice that this nothing, this hole where a head should have been, was no ordinary vacancy, no mere nothing. On the contrary it was very much occupied. It was a vast emptiness vastly filled, a nothing that found room for everything — room for grass, trees, shadowy distant hills, and far above them snow-peaks like a row of angular clouds riding the blue sky. I had lost a head and gained a world.

It was all, quite literally, breathtaking. I seemed to stop breathing altogether, absorbed in the Given. Here it was, this superb scene, brightly shining in the clear air, alone and unsupported, mysteriously suspended in the void, and (and this was the real miracle, the wonder and delight) utterly free of "me", unstained by any observer. Its total presence was my total absence, body and soul. Lighter than air, clearer than glass, altogether released from myself, I was nowhere around.

Yet in spite of the magical and uncanny quality of this vision, it was no dream, no esoteric revelation. Quite the reverse: it felt like a sudden waking from the sleep of ordinary life, an end to dreaming. It was self-luminous reality for once swept clean of all obscuring mind. It was the revelation, at long last, of the perfectly obvious. It was a lucid moment in a confused life-history. It was a ceasing to ignore something which (since early childhood at any rate) I had always been too busy or too clever to see. It was naked, uncritical attention to what had all along been staring me in the face — my utter facelessness. In short, it was all perfectly simple and plain and straightforward, beyond argument, thought, and words. There arose no questions, no reference beyond the experience itself, but only peace and a quiet joy, and the sensation of having dropped an intolerable burden.<sup>xiii</sup>

Harding’s ‘headlessness’ is an absurdity that does however resonate strongly with the ‘no-mind’ of Zen. Harding also points up in a way that no mystic has done before to the prior given of experience, when mind is silent: it is a light-space phenomenon, curiously absent of self. Harding believes that children and animals see this prior given unmediated and as presented, but that the price of adulthood is to take on the notion that we are what we look like from approximately six feet away (and in its extreme becomes the ‘image-consciousness’ of fashion). Our subjective experience on the other hand is maintained as Harding describes in the above passage, and for which he uses the shorthand ‘headlessness’. It takes the child-like gravity of the mystic to recognise it however.

Einstein and Harding have this in common: they were bold enough to accept a prior given at face value and push its implications to the limits, one in the objective realm, and the other in the subjective realm. For Einstein to accept the invariance of the speed of light with respect to the observer as a given liberated his thought from conventional restraints that had prevented others from making the discoveries of relativity, and allowed him to develop the *special* theory of relativity. (He repeated this strategy by taking inertial and gravitational acceleration to be the same thing, against all conventional wisdom, leading to the *general* theory of relativity.) Einstein remained a scientist of his time however, in that he did not push the anthropic implication of his postulates. Harding took his discovery at face value and created a new cosmology that places the individual at the centre of a universe of space and light. Curiously Einstein’s discovery does the same: the speed of light is invariant with respect to you, placing you at centre-stage. It does not matter what your relative velocity with respect towards a light source, you conveniently shrink (the Lorenz contraction) to allow you to measure it at the only permissible speed (in a vacuum): 186,000 miles a second. But nobody else experiences the shrinkage unless they travel with you!

We are brought now to a basic difficulty with this exposition: the charge of solipsism, the view that nothing exists

outside of our own mind. If we say of someone that ‘they think they’re at the centre of the universe’ or ‘they think the world revolves around them’ we are saying in a colourful way that they are selfish. But Einstein’s and Harding’s discoveries may show that solipsism simply reflects part of the deep structure of our experience, a prior given of the objective and subjective universe. Solipsism in the West has had an interesting history, involving philosophers such as Descartes and Berkeley, though mostly it is rejected by serious thinkers. In the East no such problem exists. If we take the root religion of the East, Hinduism, then we find that in its core mystical texts, the Upanishads, an identity between the individual and the universe is a central proposition, summed up as ‘thou art that’ or as ‘atman is brahman’ (meaning the individual soul has in some way identity with the universal soul or God).

Let us continue the exploration of these ideas by taking a deeper look at Harding’s proposition that children and animals ‘see’ better than adults the prior given of space and light. We will do this through the work of another British mystic, Thomas Traherne.

#### Thomas Traherne

Traherne was born in 1637, but his major works were not discovered until the end of the 19<sup>th</sup> century, and some as recently as 1957. He was a chaplain from the age of 32 until his death in 1674. I consider Traherne to be one of the ‘lost Buddhas of the West’, a group that includes Pythagoras, Heraclitus, Socrates, Plotinus, Spinoza, Walt Whitman, and Douglas Harding. Traherne’s work is obscure and needs some background in mysticism to decipher, but has an extraordinary resonance with Harding’s (a British pop group called the Incredible String Band once honoured both men with a song called ‘Douglas Traherne Harding’). Passages in some of Traherne’s poems could, with some stylistic corrections for the differing periods and cultures, come straight from Whitman’s *Leaves of Grass*. Whitman, Harding and Traherne have a common goal in their teachings (for their life and works are properly considered as teachings): to make ‘you possessor of the whole world.’ This phrase comes from Traherne’s *Centuries of Meditations*<sup>xiv</sup> and is another way of saying that one is ‘filled with space and light’.

Traherne’s *Poems of Felicity* celebrate the vision of the child, saying for example, ‘To infancy, O Lord, again I come, / That I my manhood may improve,’ and ‘A simple infant’s eye is such a treasure / That when ‘tis lost w’ enjoy no real pleasure.’ In this child-like vision all the contents of his visible world are his treasures, whether pebbles, children’s faces or the property of others. If we bracket out the archaic, poetic language, and the theistic sections (Traherne was after all a chaplain), then we find a vision stripped to its basics of light and space. The emphasis he places on light is shown in this line: ‘The visive rays are beams of light indeed, / Refined, subtle, piercing, quick and pure.’ Traherne is not repeating a fallacy of the Middle Ages that vision involves firing rays into the surrounding, but making the point that vision is filled with light. He is echoing the sentiment of Saint Katharine of Sienna who said ‘I am the light by which I see.’

But can we make a distinction between childish and childlike? In an old Abbott and Costello film they find a thousand dollars tied together with a rubber band. They pick it up, turn it over, making remarks of amazement, and twang the elastic. Finally one of them says: ‘Wow! *Real* rubber!’ (Note: there was a reason for this, but I like the story out of context.) It is hard for the educated Westerner not to find Traherne, Whitman and Harding similarly foolish, perhaps mistaking their capacity to become the space and light for all things as a form of possession, of owning, that cannot distinguish the realities of legal ownership; that cannot separate the value of a thousand dollar bundle from the rubber band that holds it together. The accusations that the mystics are foolish, solipsistic, Panglossian or even anodyne are common. If, as I contend, they have in fact something important to say about the prior given of space and light, then we need to examine these accusations in more detail.

#### The pre-trans Fallacy

Ken Wilber has introduced into this debate the notion of the pre-trans fallacy, that we may mistakenly view the post-transcendent individual as pre-adult, that is childish or immature. Although we know virtually nothing about Traherne from contemporary sources, Whitman and Harding are well-documented, and are far from naïve, Panglossian, or anodyne, indeed ‘grizzled’ and ‘forbidding’ (words Whitman used for himself) describe them both well, though ‘felicitous’ is certainly part of their make-up. The paradox is that such serious mature individuals present what *seems* to be the child’s version of reality. As Traherne says however, it is ‘to improve his manhood’. As Einstein saw, and the child in the story about the Emperor’s new clothes saw, the simple and obvious may in fact represent the deep structure of our universe, however inconvenient to the adult mind (or scientific establishment). There is not space here to explore Ken Wilber’s work other than to say that the arguments he puts forward in the pre-trans fallacy are useful, though have a strong basis in developmental psychology.

#### Consciousness

The Scottish philosopher David Hume was concerned how we construct a three-dimensional coherent world from the discrete and kaleidoscopic sense-impressions that continuously flood us. This is an early version of one of the key problems in current research into consciousness: the question of holism. How do we account for the unity of

consciousness? If we restrict this to the question of how do we account for the unity of our experience of three-dimensional space, then the notion of a 'prior given' as developed here may help. We have seen that light has intense anthropic implications, and so too does three-dimensional space. If consciousness is the ground of all human experience, then why not identify it with space-light as the ground of experience? In the extreme of objective experience, hard science, the anthropic principle has established that space-light is intimately connected with the evolution of human life, even the weak anthropic position agrees with this. In the extreme of subjective experience, the heights of mysticism as found for example in the works of Harding and Traherne, space-light plays a central role. And who stands in the middle between the extreme objective and the extreme subjective? The artist.

One could see this as an issue of simplicity: art, science and the spiritual all tend to reduce the contents of consciousness until light-space is relatively empty, in which, through a few bare essentials, it can be understood and revelled in. In the simplicity of the scientific laboratory, a place where extraneous influences are minimised (as in the celestial laboratory of the Enlightenment), the deep structure of space-light emerges, as objective fact. In the simplicity of the mystic's inner life the deep structure of space-light emerges, as subjective fact. The artist oscillates between simplicity and complexity, the purity of one period giving way to the Gothic of the next, only to be swept aside by the re-assertion of simplicity.

Space-light is more than this however: it is in itself a delight, separately and together. The infants of all mammal species take a kinaesthetic delight in their limbs, and soon extend this to a delight in space-light as they explore their environment (watching infants with a cardboard box quickly reminds one of this, and confirms Traherne in the sentiment that the simplest of things are the real treasures).

#### Conclusion: The Arts

Having detailed some arguments from physics and mysticism concerning the significance of space and light to consciousness, it can only be left as an open question at this point how the artists of the new millennium may integrate these concepts into their work. The electronic arts practitioner, in some ways the new polymath, is well placed to use the new space-light tools of virtual reality to explore the striking resonance regarding the prior given of space and light across science and mysticism. It is stressed that only certain forms of mysticism deal directly with the relationship of space-light to consciousness, though light itself is a widespread metaphor in the spiritual. The anthropic principle in science encompasses a rich set of ideas that resonate outside of science, into art and the spiritual, and may hold the key to a better understanding of consciousness. The question as to how art can mediate between science and the spiritual is recommended as an important one for the new millennium, though, as this paper suggests, the fundamentals of light and space may be a fruitful starting place for the enquiry.

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### ***Invenção: Thinking the Next Millennium São Paulo, Brazil, August 1999***

This explanatory note is the introduction to the conference. I took it from <http://www.sun.rhbc.ac.uk/Music/Conferences/99-8-inv.html> - where more information is available.

Invenção is an opportunity for those working at the creative edge of the arts, sciences and technology to collaborate in the transdisciplinary development of ideas and innovative strategies for life in the next millennium. Invenção is a "seeding" event that seeks to identify key questions and issues that can lead to the radical transformation of culture.

Just as increasingly artists work with the metaphors of science, so scientists are employing forms of representation, such as visualisation, which owe much to research in the digital arts. As art is transformed by interactivity, so science increasingly recognises the subjectivity of the observer. In turn, technology informs our aesthetic and epistemological structures and is engendering new processes of perception, communication and cognition.

Invenção will examine the consequences of this convergence of art, science and technology on our sense of self and human identity, on consciousness, community and the city, as well as on learning and leisure. For example, the artist is challenged to consider what might lie beyond "electronic art": where might the connectivity of the Internet, the interactivity of hypermedia and the fluidity of virtual reality lead us? The scientist, walking a delicate balance between the world of the quantum, deep space, chaos and complexity has profound questions to ask about the constraints of nature and the part that can be played by artificial intelligence and post-biological systems in the construction of reality. Bio-technology and nano-engineering add further dimensions to these questions.

Invenção will take place in Brazil, whose euphoric energy, cultural diversity and productive optimism is intended to characterise the conference. With its history of dynamic pragmatism coupled with utopian vision, Brazil is a country where dreams can be reclaimed, a vast space both geographically and culturally, in which we can re-invent ourselves and collaborate in the construction of new realities.

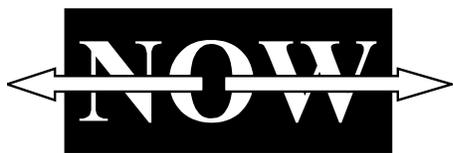
Invenção will be structured to enable a wide range of presentations, collaborations and interventions to take place, involving lectures, workshops, panel discussions, papers and breakout groups. The onsite activity will be integrated with online activity, through a dedicated website. The proceedings will be embodied in a CD and print publications.

**Academy of the Word Seminar Programme** Dr Alex Reichel (02) 9310 4504 – 2<sup>nd</sup> & 4<sup>th</sup> Tuesdays– Polding Centre, Level UB, 133 Liverpool St., SYDNEY. 2000 - The New Phone Number is (02) 9268 0635. **Second** Tuesday 6.15pm - *Healing & Well-being* - **Fourth** Tuesday 6pm - *State of the World*

**Blavatsky Lodge of The Theosophical Society** Level 2, 484 Kent St., Sydney (near Town Hall Station) Talks Programme Every Wednesday at 2.30pm and 7pm – Printed programme available 02 9267 6955 and at – <http://www.matra.com.au/~hpb/index.html>

**Melbourne – Evening Satsang/Dialogue with Penny Fenner** 23a Britten Street Glen Iris - Monday evenings 7.30-9.30pm - To confirm attendance and for further information please call 03 - 9885 0119 T: + 61 3 9885 0119// 0411 554 007 - E: [penny@fenner.org](mailto:penny@fenner.org) - [www.skilfulaction.org](http://www.skilfulaction.org)

**Look for Yourself Meetings** First Saturday of the month at 10am, 81 Greville street, Chatswood (off Fullers Road) Alan Mann 02 9419 7394



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Sydney City	Third Saturday	Blavatsky Lodge of the Theosophical Society - Level 2, 484 Kent St., City	2.30pm Terry O'Brien	02 8218 5900 M.Box770184
Chatswood	Third Sunday	81 Greville St. (off Fullers Rd) Chatswood	10.30 am Alan & Margot Mann	02 9419 7394
Nowra	First Saturday	The Tea Club, Berry Street, Opposite Roxy Cinema	4-6pm –Riche du Plessis	4423 4774
Nowra	Third Sunday	3/117 Berry Street, Nowra	10.30 am Riche du Plessis	4423 4774