New science, ancient wisdom: the dreaming field and evolution of consciousness

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We have reached an extraordinary moment in our history. The emergence of depth psychology and the tremendous intellectual-psychological-imaginative development that has taken place in the last century, and the larger development of the last several centuries that has resulted in the forging of the autonomous modern self, all this allows us not only to recover the anima mundi *but to re-engage it in a new way, whereby we can co-creatively participate in its unfolding rather than simply deny it, try to control it, or be oppressed by it.*

(Tarnas, 2006, p. 199)

'Man's task in the world is to remember with conscious mind what was knowledge before the advent of consciousness… in the child the great images and archetypes of the collective unconscious are living reality, and very close to him; indeed many of his sayings … express this knowledge which still derives from his prenatal existence' (Neumann, 1954, p. 24).

Introduction
It would be hard for anyone to deny that the world is currently in a state of crisis economically, socially, politically and environmentally. One of the reasons for this is a materialist worldview that considers that the world exists outside of ourselves, and is ripe for exploitation and manipulation. Such a view places the human at the top of an evolutionary hierarchy, but without any sense of meaning other than the fulfilment of desire, fuelled by the vast systems of consumer capitalism. Such systems are underpinned by the drive for ever and greater growth, whilst the earth's natural resources are drying up.

However, new findings in science, are orienting to another worldview, in which our relationship to matter, and indeed the nature of matter itself, is in question. Such a view, paradoxically, mirrors some of the beliefs and practices of the old wisdom traditions such as Buddhism, Taoism and the practices of the alchemists. The connective strand in this is a deeper understanding of the nature of consciousness, and its relationship to matter. IN this view, consciousness and matter are co-emergent as both humans and the universe are in a process of evolution. In both areas, there is an understanding of 'field' which interconnects. Rather than the world being outside of ourselves, we are linked together in profound levels of interconnectedness. This paper sets out some of the findings in new science, and shows how they relate to this concept of field. The paper then goes on to suggest that surfacing, remembering and integrating the wisdom of these old traditions may support us in facing the current challenge of our times.

A world in transition
According to Tarnas, and many other thinkers, humanity has reached a turning point, a point of bifurcation in its evolution: this is not merely one of physical evolution, but one of expansion of consciousness. Many historians and archaeologists have attempted to explain the evolution of consciousness in stages, and perhaps the most compelling of these is Jaspers' account of the 'Axial age'. Jaspers argued that during this time around 500BC, 'the spiritual foundations of humanity were laid simultaneously and independently in China, India, Persia, and Greece. At this time, the world was going through great change, much as is happening today – it was 'an interregnum between two ages of great empire, a pause for liberty, a deep breath bringing the most lucid consciousness' (Jaspers, quoted in Armstrong, 2006). At this point the old structures were collapsing, and new ones still had not arrived. Jaspers was interested in the similarities in the thinking of these great spiritual pioneers such as Siddhartha Gautama (The Buddha), Confucius, and Socrates. All these teachers instigated traditions of travelling scholarship when scholars roamed from city to city to exchange ideas. Plato later recalled this as a period of 'anamnesis' – or a remembering of things forgotten. Voeglin (2001) characterised this period as a 'leap of being' when individual values began to emerge from societal ones.

I would argue, along with other commentators that we have arrived at another such moment. Globalisation has brought with it migrations of students across continents; the post-modern mindset leads to a quest for meaning; the old certainties of the mechanistic worldview are grinding to a halt; at the same time there is an awakening of desire for spiritual approaches in every walk of life.

Whilst there are distinct similarities in the conditions then and now, the universe and humanity has evolved, particularly with the advances in new technology. It is still not clear yet what will emerge. However, different eastern spiritual traditions are being called upon in some places to answer the pressing questions of western organisation (Goldman Schulyer, 2012), dialogues are taking place between western science and eastern traditions (Houshmand et al, 1999, Varela et al).

Our processes of knowing are in states of evolution. Nothing is certain, least of all the future. However, our current actions will define and construct our future, and for this, I believe we need not so much revealed truths but conscious co-creation of a future that takes into account the present, and the processes of the past.

Part of this evolution involves new findings and conceptions in science, and these are bringing into being new approaches that are changing the materialistic worldview. I pick out a few of these to show the broad connections with ancient wisdom, and point to areas where the practices of the ancient wisdom traditions may contribute to this expansion of consciousness. First however, we turn to a new understanding of matter.

The revolution in physics and the understanding of matter

At the turn of the century, physics underwent radical change that challenged the existent view of reality. Whilst the Newtonian laws that had created our world held good at a mid-level of inquiry, the invention of measurement instruments such as the microscope and telescope showed up strange behaviour at both the macro level of the universe, and the micro level of sub-atomic particles. At a micro level, it has been seen that the world cannot be divided into smaller and smaller particles – and at these furthest reaches, matter starts behaving in most unexpected ways.

It was the famous double-slit experiment that first showed physicists that the behaviour of electrons was not as anticipated, and brought into question the whole thorny question of the nature of matter.

If small pieces of matter, such as, say, marbles, are fired randomly through a single slit, on a screen the other side, they hit as a single stream. When fired through a double slit, two lines appear as they have gone through each of the slits. If a wave was sent through, however, they hit the screen as an interference pattern, with a series of parallel lines. In going through the slit, the wave separated out and cancelled each other out – the interference pattern showing as a line where they meet at the top, and nothing is seen where they meet at the bottom. So the behaviour of the wave is different from that of the particle when going through two slits.

At a quantum level, it was a different story. An electron is a tiny particle. If a stream of electrons are fired through a single slit, and hit an opposing wall, a single line of electrons appear, just like the marbles. When they are fired through a double slit however something strange happens, and the pattern transforms into an interference pattern as though it were a wave. Thinking that perhaps the electrons were bouncing off each other, the experimenters shot the electrons through one at a time so that they could not possibly interfere with each other. The same interference pattern arose. So the only thing that could have happened is that as it approaches the slit, each electron separates out, and acts as a wave of potential, and appears to go through both slits. Mathematically, it appeared to go through, one, through both, through neither, so they

decided to observe what was happening. Experimenters put up a measuring instrument at one of the slits to see which it was going through. As soon as a measuring instrument was set up at one of the slits the electron went through just one, thereby turning itself back into a particle. So, the conclusion was clear: as soon as it was observed the electron decided to act differently, as though it was aware it was being watched. So this raised the questions, what is matter, and what is the observer doing? It seems that the observer collapsed the wave potential into a particle simply by observing.

The world as holograph

This issue of needing awareness to collapse the wave potential into a particle raised metaphysical questions. If the particle was not observed, did it then not exist? For many years, the Danish physicist, Bohr, maintained that the particles did not exist separately, until they were observed; he suggested that they were not really particles at all until observed, but somehow interconnected. This did not satisfy entirely the physicist David Bohm who later posited the existence of quantum potential which existed at a level below the quanta, and out of which all forms were to emerge. He felt that physicists went about things the wrong way by trying to fragment reality and saying that one separate thing, consciousness, interacts with another – a subatomic particle. Later this evolved into a radical new idea of wholeness. Rather than being the sum of its part, the universe was a seamless holographic fabric of what he called an 'implicate order' out of which an explicate manifest would arise in one vast 'holomovement'. Bohm suggested that an implicate (potential) universe is enfolded within the explicate (manifest), and it is only when consciousness (awareness) comes into contact with the implicate that is collapses into form or manifestation. In the explicate universe things seemingly act in a predictable way, but at times this changes, and then everything around it changes. For him the explicate, the implicate, the observer are one and the same: they co-emerge. In fact Bohm believes that consciousness is a more subtle form of matter, and is present in various degrees of enfoldment in matter. Animate and inanimate matter are interwoven and life too, is enfolded in the universe (Talbot, 1991).

Bohm's view of the universe as a holograph is still not readily accepted in science, but it is clear that the findings are challenging the very bedrock of the mechanistic worldview. Metaphysically, this has huge implications for the way in which we view the world. The world is not divisible into tiny pieces of matter – for at this quantum level, the particles appear to act like waves of potential – and it takes an observer for this to appear as matter. Waves turn into particles, and particles into waves! Scaled up to a human level, by paying attention or awareness to certain possibilities, wave possibilities collapse into form. In other words, by paying attention, the implicate, which contains all possibility, emerges as explicate.

Systems thinking, biological evolution and evolutionary processes

The same principles of interconnectedness have been appearing in the field of molecular biology and systems thinking which are challenging the Darwinian theory of evolution. From a systems perspective, 'sustained life is a property of an ecological system rather than a single organism or species' (Morowitz, p. 5). It is an interconnected web of feedback processes. The cell is the basic biological building block of every living organism. Life is defined as the ability of the cell to reproduce

itself by taking in nutrients from the outside world and sustaining itself by means of a network of chemical reactions that take place inside the boundary of the membrane to produce all of the cell's components including this of the boundary itself. This was termed 'autopoesis' (literally 'self-making') by the biologists Maturana and Varela (1980). This process was stabilised by the evolution of DNA and RNA which became the basic memory of the cell as it is, and ensured its future evolution. This has been classified as the beginning of life as we know it.

Similar feedback patterns of activity have been identified in complexity theory in descriptions of the studies of the flow of matter and energy through complex systems. Prigogine (1984) was the first to identify 'dissipative structure' which is an open system that maintains itself far from equilibrium, yet is nevertheless stable. If these systems did not use a continual flow of energy to restore structures as fast as they are decaying they would soon decay. This relationship showed the close interplay between structure on the one hand and flow and change on the other. The dynamics of these include the spontaneous emergence of new forms of order, and is one of the most important concepts of the new understanding of life. This happens when the flow of energy is such, that it will eventually reach a 'bifurcation point' at which point it may branch off into new forms. This is technically known as self-organization and often referred to as 'emergence'. Whilst autopoetic structures are dissipative structures, dissipative structures are not necessarily autopoetic but since emergence is integral to their dynamics, they do have the potential to evolve. Thus, the idea that animate matter evolved from inanimate matter is widely accepted amongst scientists today.

In Darwinian theory, evolution was seen to progress through natural selection and competition – survival of the fittest, and moved on through random mutations. Margulis (1998) argues that evolution at a more complex level than the cell is achieved not simply through DNA replication and mutation, but through a markedly different view of evolution – symbiosis. Margulis proposed that long-term symbioses involving bacteria and other micro-organisms living inside larger cells have led and continue to lead to new forms of life. Thus, her hypothesis is that 'symbiogenesis' sees the creation of new forms of life through permanent symbiotic arrangements as the principal avenue of evolution for all higher organisms. When certain small bacteria merged symbiotically with larger cells and continued to live inside them as organelles, the result was a giant step in evolution – the creation of plant and animal cells that reproduced sexually and eventually evolved into living organisms. In their evolution, these organisms continued to absorb bacteria, incorporating part of their genomes to synthesise proteins for new structures and new biological functions. In this view, according to Margulis, evolution does not proceed by gradual changes over time, but proceeds by long periods of stability, punctuated by sudden and dramatic transitions: 'From the long view of geological time, symbioses are like flashes of evolutionary lightening' (Margulis, 1998, p. 27)

This evolutionary view is far removed from that based upon competition and that of survival of the fittest, which has brought the current system into being. The picture described by Margulis suggests one of cooperation and collaboration, with evolution appearing to emerge at significant points where the flow of matter and energy has reached a point where the current form can no longer contain the energy. These so-

called ‘bifurcation’ points are points where new forms develop, though they also contain the shapes and patterns of earlier forms.

Morphic fields and resonance

Further, the form does not emerge in a vacuum; it emerges in a space and context. Organisms evolve as part of the environment. The context in which forms evolve has been an ages-old debate in different scientific disciplines, and the concept of ‘field’ has emerged to understand this context. According to quantum field theory for example, there are various kinds of matter fields – electron fields, neutron fields and so on. In the beginning of the 1920s it was suggested that organisms themselves were also organised by fields which were called the morphogenetic fields. The nature of these fields still remained a mystery, as they were non-material and consequently had to come from a world of eternal laws of Platonic ideas and mathematical formula.

However, the biologist Sheldrake has posited a radical theory of formative causation which suggests that the structure of the fields is not determined by transcendent ideas or timeless mathematical formula as is implied in a rational universe, but rather that the fields themselves evolve within the realm of nature and are influenced by what has happened before.

What Sheldrake suggests is that self-organising systems as we have examined including molecules, cells, tissues, organs, organisms etc. are made up of nested hierarchies or holarchies of holons, or morphic units. The wholeness of each level depends on an organising field and is a vibratory pattern of activity that interacts with electromagnetic and quantum fields of the system.

Sheldrake called these morphic fields and the could include:

- Morphogenetic fields that shape the development of plants and animals
- Behavioural and perceptual fields that organise the movements and habits of animals
- Social fields that link together and coordinate the behaviour of social groups
- Mental fields that underlie mental activities and shape the habits of minds

These fields are shaped by morphic resonance from all similar past systems and contain a collective cumulative memory. Resonance depends on similarity, and does not change through distance in space or time. They are local, within and around the systems they organise, but resonance is non-local.

Unlike other forms of resonance, such as acoustic resonance, it does not involve a transfer of energy from one system to another, but a non-energetic transfer of information. Since all organisms are structures of activity, they undergo rhythmic oscillations vibrations, or cycles. Thus according to formative causation, resonance occurs when past patterns of activity influence the fields of similar systems. Morphic fields are fields of probability, like quantum fields. In Sheldrake’s view, life and creativity can be said to evolve in feedback processes from past memory, stored both in the form itself through genes, through the current environment, and through the evolution of morphic fields. For him, there is an inherent memory in nature. Whilst all organisms seem to demonstrate their own ends or goals, it often seems to

be unconscious: even in humans conscious purposes are the exception rather than the rule. Evolution seems to progress as a dialectic between habit and creativity.

The mechanism by which this works is as yet unknown. However, Bohm's theories begin to corroborate this possibility. As we saw earlier, for Bohm, the observable or manifest world is the explicate of unfolded order which emerges from the implicate or unfolded order. Bohm thought that the implicate order contains a kind of memory. What happens in one place is 'introjected' or injected into the implicate order, which is potentially present everywhere, thereafter, when the implicate order unfolds into the explicate order, this memory affects what happens, giving the process very similar properties to morphic resonance. According to Bohm this would mean that each moment will contains a projection of the re-injection of the previous moments, which is a kind of memory which would result in a replication of past forms.

Fractal patterning

Many of these discoveries have proceeded alongside, and as a result of the emergence of complexity theories and fractal patterns. Fractal geometry was developed by Mandelbrot in order to provide a 'language to speak of clouds' – or in other words to describe and analyse the complexity of irregular shapes in the world. (Capra, 2003, p.136) Using this method, predictions are made about the qualitative as opposed to quantitative characteristic of systems. The most striking property of the fractal shapes is that their characteristics are found repeatedly at descending scales, so that their parts at any scale, are similar in shape to the whole. This too is the characteristic of a holographic universe. The fractal patterns recur on different scales with slight variants that are self-similar but not exactly the same. The point is that the shape of the whole is similar to itself at all levels of scale. (We may also make some connections here with Sheldrake's theory of formative causation, where forms repeat themselves through composites in the field).

Katya Walters (2003) suggests that within the random chaos of our universe, self-similar patterns can be found repeating on every scale (micro, mid and macro). In a radical leap, she suggests that fractal patterning not only pervades our universe, it even birthed it. She also suggests that our genetic code is just a smaller and more visible scaling variant of the master fractal code which she has demonstrated is also embedded within the permutations of the I-Ching, which she claims contains both code for mind and for the physical energy of the universe. This may not be so far-fetched when we consider that in physics the concept of space-time as an energy-filled substratum of the universe emerged, such that 'the quantum vacuum' has been said to carry distributed information recorded on particles throughout the reaches of space and time (Laszlo, 2005). Fractal mathematics allows a newer view of the universe to emerge, and brings us back into relationship with maths which we could see not just as a tool for counting, but as an inherent part of consciousness in relationship with the perception and emergence of matter.

Fractal mathematics, perhaps like the universe, starts with the number 0, and then suddenly perceives itself – and from that moment the creative story begins. The universe begins to become conscious. Then we can see that as we pay attention to anything, it begins to change: something co-emerges.

Mind and matter evolve together

One of the most important implications of this new understanding of life is a radical conception of the nature of mind and consciousness. Rather than mind and matter being independent entities, systems thinkers have been realising that mind and consciousness are not things but processes; and not only this, they are co-emergent processes. This has blossomed into a whole interdisciplinary field called cognitive science which transcends biology, psychology and epistemology (Capra, 2003). The distinguishing feature of this school is that processes of knowing are emergent with processes of life.

Cognition, according to Maturana and Varela (1980), is the activity involved in the self-generation and self-perpetuation of living networks. The organising activity of living systems, at all levels of life, is mental activity. The processes of autopoesis, in which a system undergoes structural change with its environment while preserving its patterns of interaction, is said to be a cognitive process. Life and cognition are inseparably connected. In all levels of life, mind is immanent to matter. Cognition in this theory involves the entire process of life including perception, emotion and behaviour; in this process, the components of the system continually produce and transform one another. One type of change is self-renewal thus maintaining its overall identity. The second type of structural change are those which create new structures, which are developmental rather than cyclical and come about either as a result of environmental influences or as a result of the system's internal dynamics. According to autopoesis, a living system couples to its environment structurally: a cell membrane continually incorporates substances from its environment into the cell's metabolic processes. As a living organism responds to environmental influences with structural changes, these changes in their turn alter its future behaviour. In other words, it is a learning system. As it keeps interacting with its environment, a living organism will undergo a sequence of structural changes, and over time will form its own individual pathway. Thus at any point on this pathway, the structure of the organism is a record of structural changes. All living beings have a history – and living structure is always a record of prior development. This insight would seem to corroborate Sheldrake's theory of formative causation – if we recall that here the structure of morphogenetic fields is not determined by either transcendent idea or mathematical formula, but it depends on what has happened before – i.e. it depends on memory.

However, according to Maturana and Varela, you cannot influence an organism, you can only disturb it – for the living system not only specifies its structural changes, but it also specifies which disturbances from the environment trigger them. The living system maintains the freedom to decide what to notice and what will disturb it. The structural changes in the system constitute acts of cognition, and this is defined by the choice of what to bring into awareness. By specifying which perturbances from the environment trigger changes, the system specifies the extent of its cognitive domain from which it 'brings forth a world'. Thus, according to Maturana and Varela, cognition is not a representation of an independently living world, but rather a continually bringing forth of the world through the process of living.

Cognition here is associated with all levels of life and not the type of consciousness that we commonly associate with the word. Cognition has a much wider application than consciousness which unfolds at certain levels of complexity and which require a brain and nervous system. Consciousness is a type of cognitive process emerging

from complex neural activity. There are two types of consciousness – primary consciousness when cognitive processes are accompanied by basic perceptual, sensory and emotional experience, and a higher order type of consciousness which involves self-awareness – a concept of self held by a thinking and reflexive subject. This emerged during the evolution of the great apes, together with language, or conceptual thought which we can call self-awareness. Language is a tool through which human behaviour is coordinated with both technology and with one another (Capra, 2003, p. 52). However, according to Maturana and Varela, much of thought is largely unconscious, stored in automatic neural pathways which bypass the body.

Reflective consciousness, on the other hand, which evolved around 500BC, involves a level of abstraction that includes the ability to hold mental images, which allows us to formulate values, beliefs, goals and strategies, which leads us to the inner world of concepts and ideas, but also the social world of organised relationship and culture. It also gives the possibility of formulating time and space, since the mental images are constructed outside of time and space.

Crossing worlds: resonances of the old with the new
In the ancient world, this identification of mind, or cognition with the process of life was quite normal, but is novel to science. In the ancient world the rational human mind, was just one aspect of the immaterial soul, or spirit. The basic distinction was not between body and mind but between body and soul, or body and spirit. Soul and spirit in the ancient world were described with the metaphor of the breath of life.

The existence of at least two levels of reality has been known in all the great wisdom traditions in many forms. In Buddhism, for example, it is nirvana that exists within samsara; it is encapsulated in the ancient hermetic traditions 'as above, so below'. What these traditions share, and what has been lost from our civilisation, is a process of 'perception' or 'knowing' that is called awareness.

Let us take, for example Buddhism, which has a different ontological starting point from materialist science. It begins with the Buddha's insight into the nature of reality, variously termed interdependent origination, conditioned co-production or in the Sanskrit *pratitya samutpada* which he formulated as:

This being, that becomes, from the arising of this, that arises; this not being, that does not become;from the ceasing of this, that ceases
Majjhima-Nikaya, II.32: Samyutta Nikaya, II. 28

A later formulation of this as the metaphor of Indra's net from Hua Yen Buddhism pointed to the existential understanding that each individual is the cause of the whole and the whole acts as a cause for the individual in question, for the individual only exists or functions within the total environment; an individual is at once the cause of the whole and is caused by the whole (Rees, Atula and Danavira 2002). Indra's net 'symbolises a cosmos in which there is an infinitely repeated relationship among all members of the cosmos. This relationship is said to be one of simultaneous *mutual identity* and *mutual inter-causality*.' (Cooke, 1977, his italics).

What is called the universe is a vast body made up of an infinity of individuals and matter all sustaining each other and defining each other. The Hua-yen world is

completely non-teleological. The universe is taken as a given, a vast fact which can be explained only in terms of its own dynamism. Just as the 'mind' is a vast fact that can be explained only in terms of its own dynamism.

However, there are resemblances here with the vast holographic universe as proposed by Bohm, with its constant holomovement, its infinite reflecting surfaces of information, containing both past and future. The Hua Yen view, from the East, and the holographic one of Bohm, from the West, take many years to understand, or even glimpse at, and come from divergent ontological premises. However, throughout the history of civilisation, the alchemists which are common to both, have inquired explicitly into the relationship between mind and matter, and attempted to transform matter through the power of mind.

Working with mind and matter: the science of alchemy

Alchemical processes are present in Taoism, known in ancient Egypt, in Tibetan Buddhism, and in the West sat alongside the traditions of the church in the middle ages. Alchemists merged their inner reality, with the external reality of the matter with which they worked. By spending long periods of time working with different matter, by gazing at these processes, alchemists projected their own reality and fused with the matter in which they lived. From this merging, they believed, the 'philosopher's stone' would emerge. This would entail a change in the quality of the matter they were examining.What the philosopher's stone is, or was, remains still a mystery, but more importantly is its symbolic representation as an individual quest for meaning. From this process, however, we can see that it was quite possible for alchemists to accept the possibility that changes in the personality of the artisan somehow effects changes in the matter in which he or she are working. It is quite possible to see this too as inquiring into the 'field' – by paying attention the alchemist sees both into the past, and into the future, and thus creates the opportunity of breaking through the habits which have formed the particular element in the first place.

How did we lose the wisdom of the alchemists? As rationality and industrialisation took over, the imaginative faculty became the stuff of the romantics, a sideshow as the great edifice of industrial structures began to dominate our landscape. Alchemy, with its emphasis on mutual transformation, was regarded as a dangerous and heretic science, and was consequently derided, only to fall into oblivion. It could not co-exist alongside the growth of the modern ego with its emphasis on the self, and with the brain as the centre of activity.

For real and long-lasting transformation to take place, an irreversible change has to take place, a change from one state to another. The only changes of this magnitude take place in nature, and in chemistry, as energy may change from solid to gas when applying heat. This means, the death of one state, and the birth of another. This is why alchemists use initiation as the central part of their work.

Initiation traditionally took place in earlier cultures to mark the transition from one stage of humanhood to another such as the rites of adolescence. Some of these still exist in our global world, such as marriage and funerals. These honoured a new and different way of being in the world – which also meant that the initiate's way of

perceiving the world changed. There was no going back. The emotional and perceptive structures were so changed, that they learned to serve new ideals. They were not the person they used to be. These processes themselves can be traced back to the great mystery cults. Mysteries were initiation rituals of a voluntary, personal and secret character that aimed at a change of mind, body and soul through the experience of the sacred.

However, in going through this process, initiates need to meet the darker aspects of themselves, that which was previously in the shadow. So the process includes experiences of terror, dread, rage, and deep anxieties. In the terms of the alchemists, substances are 'tortured' and have to 'putrefy'. Putrefaction ,and the blackness of the psyche were the secret of their art. In this process, they projected their own inner world on the matter with which they worked, and so experienced themselves as changed from a leaden state, to one of illumination, so that they would have an inner self that is stable amidst the impact of life's events, and the emotional and instinctual turbulence of the inner world.

The characteristic process takes place in a crucible, which holds the fire of destruction and creation. The material worked upon is the *prima materia* which is never fully defined. The intent of this is the dissolving of old states and evolving of new ones, in a turbulence of emotions. This turbulence needs to be integrated in order that the numinous qualities of the process can be experienced. This change was said to take place in a space that they called the 'subtle body', a mediating area, which was neither material nor spiritual. This is the mysterious space that exists between the inner and outer world of the individual. The understanding here was that the essence of an individual is not separate from others and neither is the personality stable and unchanging.

Vital to this process is the alchemist intertwining himself with the matter in which he is working. In fusing with the object, there is an understanding that the individual is an inseparable part of a greater unity. The alchemical process leads to the creation of a higher spiritual state. This is almost impossible for us to consider with our conditioned Western minds, which has separated the ego so clearly from the unconscious where it arose. The notion of 'enlightenment' in itself implies a moving away from the dark, rather than a true meeting with the dark forces which are equally part of our individual and collective psyche.

As Lindsay notes: ' This identification of the scientist-artisan with the processes he is producing is perhaps the hardest aspect of alchemy for anyone nowadays to understand or enter into. To men in whom the alienation of the intellect from the world of nature have been carried very much further than among classical Greek thinkers, the whole thing seems fantastic and overstressed, unreal. But in fact it was passionately real, and in my opinion it held an element of truth which we must strive to grasp and recapture if our science is to measure up to the full demands of reality.' (Lindsay, p.27 quoted in Swartz-Salant 1998).

Working with consciousness in spiritual traditions

Many of the old wisdom traditions contain practices which work directly with levels of consciousness which are accessed through altered states. These states are achieved either through long training including alchemical-type processes, or sometimes, as in

the case with many shamanic cultures, through the use of hallucinogenic substances. The aim may be said in all cases to bring into the light of consciousness many of the habitual patterns of activity thus breaking free from blind repetitions of behaviour, and opening to a more aware and open state of consciousness. In all these traditions, the notion of 'awareness' is critical, and this is developed through various practices which experiment with, for example, the relationship between the inner and the outer world, through withdrawal from the usual feedback responses from the senses. In a way, they can be said to withdraw the senses from the explicate world which is giving constant, and largely habitual feedback, and dropping below into a world which is not mediated directly by the senses, and paying attention to a deeper and broader 'field' – in Bohm's terms the implicate field. In an evolutionary sense, they help a practitioner choose the future more clearly by bringing into awareness the habits and patterns which are normally unconscious. In so doing this may help the practitioner transform their daily life into one of greater awareness.

For example, in Tibetan Buddhism many hours in meditation may be spent in visualising certain 'deities' or 'bodhisattvas', and in so doing, the qualities of that being may become developed in the practitioner. If we draw on Sheldrake's theory of morphic resonance, such practices build up a positive memory field for experiences. These practices break-down unwanted habits, and create new ones.

Taoist practitioners, like alchemists, learn to project their psyche outside of their bodies, and in this way, can draw in positive energy from the external world and revitalise their bodies. Different forms of reality or worlds are accessed through these practices; we could imagine then that the field into which they are tapping is the implicate field as posited by Bohm, and that their awareness is bringing into manifestation either the past or the future, as an explicate reality.

However, in all traditions, the danger of developing these practices without a teacher, or leading an ethical life are highly stressed. If carried out without an ethical intent, or tutor, then the practitioner is as likely to meet very difficult and emotionally overwhelming experiences as well as those of bliss or ecstasy. In all cases, spiritual traditions are recreating conditions of birth and death, as transformation implies a complete transformation of being. Some prior knowledge and commitment is required to go into this territory of altered consciousness. Further, within this 'field' which is being accessed lies all the memory of past lives and experience, some good and bad.

Often, to access these states requires great training and courage, as the practitioner moves beyond the 'known' and into the 'dark night of the soul' to meet different aspects of him or herself. The modern transpersonal researcher, Grof, has collected much empirical data to show the experiences that subjects undergo when taking LSD which can also access different states of consciousness. They report states of bliss, ecstasy, but also terror and despair. He correlates these with various experiences in the birth process and suggests that memories of emotional and physical experience are stored in the psyche not as isolated bits and pieces but in the form of complex constellations which he calls COEX systems (systems of condensed experience). These COEX constellations will have a theme that characterises it such as rejection, or emotional deprivation, and will have several layers that manifest at different points in a person's life. These COEX systems have resemblances to Jung's understanding of archetypes or past life experiences – and they may be explained as manifesting

from the implicate field as condensed patterns of activity that have particular resonance with the individual concerned. Buddhist understanding too uses the notion of '*samskaras'* which is the habitual patterns that a person brings into their life. These *samskaras* are unconscious and one of the aims of spiritual practice and meditation is to bring these to awareness and transform them. Spiritual practice can uncover these 'COEX's and in so doing transform the personality. Jung's process of individuation was to uncover different aspects of the psyche and integrate them into the whole personality.

Dreams and waking consciousness

In many of these traditions too, the nature of dreams, and its possibilities for transformation are of great importance. In Tibetan Buddhism, practices are developed for 'lucid' dreaming, where the practitioner gains ever greater control over the dream, and can eventually make definitive choices within them. Dreams are not just what happens when one is asleep, but are the actions of the psyche in processing the experiences of the day. In this state the practitioner is no longer lead by the senses as experience by the external world, but undergoes a process of imprinting of experience. Dream work attempts to make this more conscious.

In Tibetan Buddhism, too, there is a notion of more subtle energies than those apparent in matter. Humans are said to have both a gross body and a subtle body, and in practising, yogis are said to be able to develop their subtle body in such a way that it can leave the physical body.

The Tibetan Book of the Dead provides a teaching that helps the dying person through the process of death, with its understanding that it is at this moment which gives the most profound and beneficial experiences can come about. It outlines in specific detail the different compassionate and wrathful deities that the dying person will meet as her consciousness withdraws from the body. They represent the unconscious creative powers of the mind which make up reality. They are called the five wisdoms, the peaceful ones representing the pure nature of the mind's powers and the wrathful wisdoms the principle of transformation. The Tibetan Book of the Dead may be said to evoke and bring into consciousness the memory of the past, and the possibilities of the future, and by bringing these possibilities into the present, enable the dying person to break through old habits which are still creating bad or unethical karma, at this moment of great intensity.

These states are not unknown in the West. The great polymath, Rudolf Steiner, for example, created a whole system of instruction that would enable a student to process their experience during sleep and bring into being the higher spiritual worlds. One of the practices was for the student to constantly go back in his mind through time, imprinting the experiences more consciously in the physical body. He too, posited that after a while, the student would learn to leave their physical body, and in the astral body would be able to transcend time and space.

Working with the field in the modern world

Aside from the growing spiritual traditions, one place where this is also understood is in the rooms of therapists and healers. Often a ritual is created around the therapy to evoke the practices of the old alchemists, and both therapist and client are brought into intense, intimate relationship with one another. Part of the process is to bring into consciousness those layers of the psyche that have been pushed into the unconscious, and to hold the tension of both dark and light in the therapy room. It is noted that by holding the dark and light, then something else emerges in the 'field' – what Jung and the alchemists would have called the 'third' - just like our evolutionary processes, something new is created which had previously been locked into old habits.

Working with these levels of the unconscious, old memories, ancestors, companions, may simply arise from the field. This evokes the 'marriage of opposites' that is a part of the alchemical process. Thus: 'The issue of analyst and analysand as subjects in the field must be combined with the issue of analyst and analysand as objective observers of processes within the field. The mystery that analyst and analysand must encompass is that container and contained are the same. To experience this sameness, they must experience life between opposites; they must get to know this middle life, the realm that the Tibetans call a *bardo*, and which the alchemists called the 'subtle body'.(Swartz-Salant, 1998).

By evoking the field, and imagining its presence, it is possible evoke a more liminal space in which the habits of our present become more alive, as do the memories of the past, and the possibilities of the future.

Towards a sustainable future

Industrialisation has brought with it many technological advances: however it is clear that it is now in economic, social and environmental crisis. These findings in modern science have not yet reached the mainstream, but they carry with them the possibilities for a real shift that could ensure a co-evolution. The planet is running out of energy that fuelling our homes and businesses, and a solution is required, as Einstein often noted, at a level beyond which the problem is created. This level will require the collaboration and relationship of humans to themselves, which has grown through the iteration into greater self-consciousness, with one another, and with the planet on which we find ourselves.

In the new world discovered by quantum physics, and supported by new evolutionary biology we can talk about relational holism – whole systems are created by relationships amongst sub-atomic particles. Here the parts don't remain as parts but are drawn together by a process of internal connectedness.

The driving force of evolution according to the emerging new theory, is not to be found in chance events of random mutations but in life's inherent tendency to create novelty. As we have seen earlier, the characteristics of self-organising systems is the spontaneous emergence of new structures and new forms of behaviour in open systems far from equilibrium, characterised by internal feedback loops and described mathematically by non-linear equations. This means engaging in a fundamentally new relationship with order. This is a dynamic organising energy. When nourished by information, this is the gift of a living universe. The gift is evolution, growth into new forms. Life goes on richer, more creative than before. The greater the span of

awareness, the greater the awareness of the conditions, then this embraces life at all levels. Many of our current systems are in breakdown, as, despite new technology, communication falters. Organisations tend to be structured in hierarchical, and not holarchical ways, and so information cannot flow. Employees are not furnished with the information from the field, explicit or implicit, to grow and develop within the system.

Clearly, where information does not flow, there is no relationship, and therefore no creativity. If we consider an organisation to be a more complex version of the cell, then the one that will thrive will be one that is an open system, porous to its environment, yet able to interact with the outside world, just as the receptor cells in the cell membrane do. Rather than performance management, which locks information within the organisation, isolating it from its conditions, just as it isolates its members, then there needs to be self-evident, yet porous boundaries.

This requires the building or evolution of organisations which display the characteristics of organisms in nature, and not the mechanical clockwork which is clearly winding down. Such organisations arrange themselves so that they are self-emergent and networked. It means that the hierarchical organisations of the past will no longer survive, and even those which are currently successful are realising that they have to move to become sustainable. Interestingly, those organisations which are most successful, and becoming successful, are beginning to use the practices of eastern traditions in an effort to unlock the potential of employees. They recognise that the well-being and self-regulation and knowing that comes from meditation and self-reflection truly create the learning organisation which is the one that will survive into the future.

Collective evolution

I believe we are at a stage of both recovery of the old '*anamnesis*' as Plato called it, and of facing collectively into the new. Such facing squarely into the nature of reality is what will be required for everyone in these times of challenge and chaos, as an old civilisation dies.

We can project our psyches into the cosmos, with humility, but in so doing this will require a willingness to face up to the unknown, to the terrors of birth, death, humiliation, alienation, pain. Each of us as individuals will need to go through this process, alone. And we do not know what is on the other side.

If we take a holographic view of the universe, which is, perhaps, one towards we are collectively headed, then an evolution of consciousness, means an ever-increasing understanding of the different orders – the implicate and the explicate – as explored by the physicist Bohm. In the depths of the implicate exist all that there ever was, and all that there ever is to be. From the implicate unfolds the explicate. The explicate unfolds back into the implicate, just like the ocean waves on the sea. These unfoldings take place in our entire body, in our hearts and minds, in the felt sense, in the meetings we have with others. Evolution here means an ever-deeper listening to our souls and hearts, and a seeing of the infinite play in the universe. It requires, above all, the willingness to surrender to the movements of the universe, to its karmic requirements, to a deep acceptance of who and what we really are, so that our being is

able to flow with the rivers of time, and not fragment into isolated pieces of matter, disconnected, meaningless and without feeling.

Bhikkhu Nanamoli and Bhikkhu Bodhi (1995) The Middle Length Discourses of the Buddha. A Translation of the Majjhima Nikaya. Wisdom Publications: Boston US

Bohm, D (1980) Wholeness and the Implicate Order. London:Routledge

Capra, F (1997) The Web of Life. London:Harper Collins

Capra, F (2003) *The Hidden Connections*, London: Flamingo

Cooke. F. *Hua-yen Buddhism: The Jewel Net of Indra.* University Park and London, The Pennsylvania State University Press

Houshmand, Z, Livingston, R and Alan Wallace (1999) *Consciousness at the Crossroads: Conversations with the Dalai Lama on Brain Science and Buddhism* Snow Lion: Canada

Jaspers, C, quoted in Armstrong (2006) *The Great Transformation: The Beginning of our Religious Traditions* New York: Knopf

Lindsay, J (1970) *The Origins of Alchemy in Graeco-Roman Egypt*, Frederick Muller, UK cited in *The Mystery of Human Relationship*, Swartz Salant, 1998 Routledge, London.

Margulis, L (1998) Symbiotic Planet. *Basic Books*: New York

Maturana, H and Varela, F. (1980) Autopoesis and Cognition, Reidel: Dordrecth, Holland

Neumann, E (1954) *The Origins and History of Consciousness.* Princeton, Princeton University Press

Rees, B (2012) 'East meets West: The Development and Methods of Crucible Research' in Inner Peace-Global Impact: Tibetan Buddhism, Leadership and Work, ed. K.G Schulyer, Information Age Publishing; New York

Rees, B, Atula and Danavira (2002) 'Unity id Diversity and Diversity in Unity: Consciousness and Myth in Organisational Life. Paper presented at the Workshop on a New Agendea for Organisation Theory in the 21st Centrury, Brussels, Belgium

Sheldrake, R (1988) *The Presence of the Past,* Harper Collins:London

Steiner R. (2007) An Exercise for Karmic Insight. Sophia Books: London

Swartz-Salant, N (1998) *The Mystery of Human Relationship: Alchemy and the Transformation of Self*. London: Routledge

Talbot, M (1996) *The Holographic Universe.* Harper Collins: London

Tarnas, R. (2006) ' Understanding the modern disenchantment of the Cosmos'. In *Sky and Psyche: The Relationship Between Cosmos and Consciousness*. Eds. Campion, N and Curry, Edinburgh: Floris Books, pp 183-201

Varela, et al (1997) *Sleeping, Dreaming and Dying: An Exploration of Consiousness with the Dalai Lama*, Wisdom, Mass

Voeglin, E (2001) [1985] 'Order and History (Vol. 5)': In Search of Order. *Collected Works of Eric Voegelin*. Columbia; University of Missouri Press

Walter, K (2003) Double Bubble Universe: Mind and Matter in a new TOE, Texas: Kairos Center