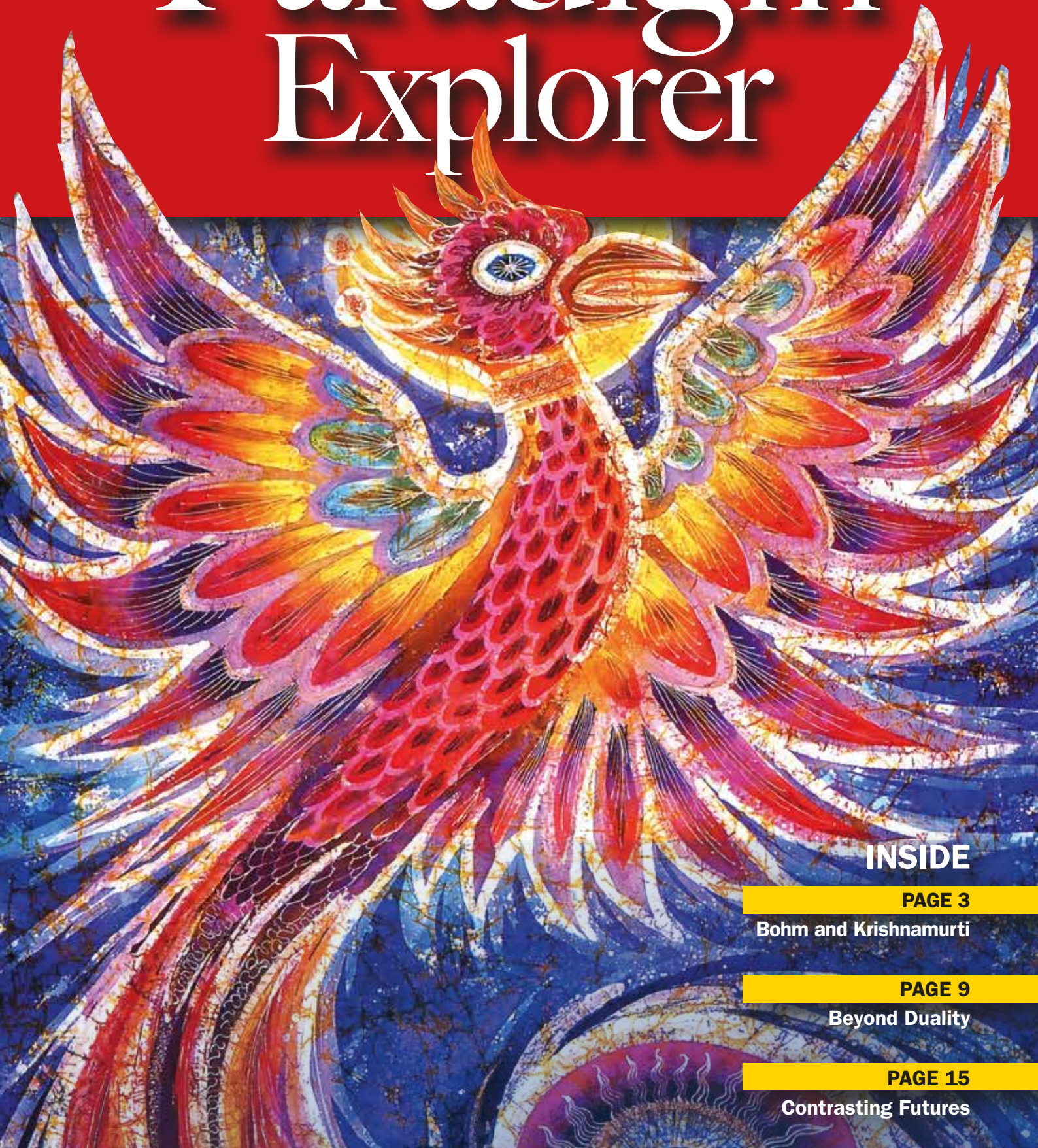


Paradigm Explorer



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Bohm and Krishnamurti

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Contrasting Futures

2017-18 NETWORK CALENDAR

October 28-29

Beyond the Brain XII, Regent's University, London with Dr Rupert Sheldrake and Prof Chris Roe from the Parapsychological Association, Dr Cassandra Vieten and Dr Dean Radin from the Institute of Noetic Sciences, Dr Diane Corcoran and Dr Penny Sartori from the International Association for Near-Death Studies and Prof Stuart Hameroff from the Center for Consciousness Studies, University of Arizona – leaflet enclosed

November 17

Launch lecture for Rupert Sheldrake's new book, *Science and Spiritual Practice*, King's London – leaflet enclosed

November 18

Transformative Innovations in Health. Day conference with the British Holistic Medical Association and the University of Westminster – leaflet enclosed

Jan 29 – Feb 7

Jamaica seminar – see advert below

April 6-8

Mystics and Scientists 41, Latimer Place

July 6-8

Annual Meeting, venue tbc

September 15

Day conference to celebrate 80th birthdays of Keith Ward and Ravi Ravindra

September 28-30

Continental Meeting in Bagni di Lucca, Italy, with Laszlo Institute

LONDON - CLAUDIA NIELSEN – 0207 431 1177 or email claudia@cnielsen.eu

We meet at 38 Denning Rd NW3 1SU at 7.30 for an 8pm start when parking restrictions are lifted. Nearest tube station is *Hampstead* (Northern Line) or *Hampstead Heath* (Overground). Cost is £10 for members and £12 for guests. Please confirm attendance so I can anticipate numbers. Friends and non-members are always welcome.

For more comprehensive information on presentations (to include synopsis and biographies) plus summaries of past ones, go to the London Group page of the SMN site at www.scimednet.org.

Please note that sometimes talks have to be rescheduled and information is sent via email so even if you are not in London but would like to be kept informed of changes, please send me an email and I will put your address on the circulation list.

UPCOMING EVENTS

SEPTEMBER Monday 25th

Laurence Freeman OSB - The Rule of St. Benedict, a little Rule for Beginners

OCTOBER Monday 9th

Prof Tom Lombardo - Future Consciousness: The Path to Purposeful Evolution – An Introduction

OCTOBER (NOVEMBER event)

Monday 30th

Prof Stuart Hameroff - The “quantum pleasure principle” – Did life evolve to feel good?

JANUARY 2018 Monday 8th

David Lorimer - Gnosis, Initiation and Transformation



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Port Antonio Jamaica

30th Jan to 4th Feb

Suggested travel from UK 29th January to 7th February

Dr Jude Currivan will present

ME AND WE: SELF, GAIA AND THE COSMIC HOLOGRAM

The event will be chaired by David Lorimer and hosted by Diana Clift

Further details from Diana Clift - di@dianaclift.com

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Notice to Contributors

All proposed contributions should be sent to the Editor by email as a Word and/or PDF file.

For further guidelines please email: dl@scimednet.org

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Editor: David Lorimer
2 Chemin de la Chaussee,
11230 St Colombe sur l'Hers,
France

E-mail: dl@scimednet.org

Web Site: www.scimednet.org

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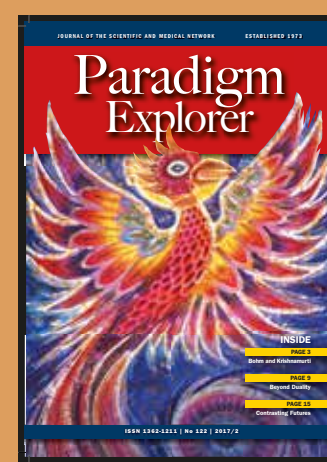
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Paradigm Explorer
Registered office:
151 Talgarth Road,
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Tel: 0203 468 2034.

Email: info@scimednet.org

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Phoenix, by Thetis Blacker (1927-2006)
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A New Child

Dr Paul Filmore, Chairman, chairman@scimednet.org

Dear Member,

As I look through an early copy of Paradigm Explorer, I am heartened that we have together achieved a correct balance between approachability and respectability. The new fresh modern look complements, I feel, the scientific journal appearance. I have confidence that this publication will help in continuing to establish our image as a dynamic, cutting edge organization.

My thanks go to David and Kim at Kingfisher Press for the design, and to David and the editorial team for the content. A fantastic job!

Talking of children, I must mention the imminent arrival of our Office Manager Chiara's baby. Our thoughts are with Chiara and her family. Associated with this, we will be providing maternity cover for Chiara for the next six months, so if you hear a different voice on the end of the office telephone, you will know why.

On other matters, we are in need of overspill office space on occasions, for use by volunteer members. If you have a room, ideally in or near London, that could be used on an ad hoc basis, we would be very interested in hearing from you. The SMN has also a considerable paper archive which we need some help to digitise, and somewhere to store. Storage is also needed for 12 boxes of books from the late Peter Hewitt's library, and a steadily increasing number of boxes of review books. If you are able to help in any way, do please email Chiara@scimednet.org as soon as possible.

It takes effort and time to conceive and produce a child, such as this our new-

formatted journal, to go out from us into the world; part of our *raison d'être*. We are glad of your continuing support in these our SMN endeavours. As Kahlil Gibran says on children:

You are the bows from which your children

as living arrows are sent forth.

The archer sees the mark upon the path of the infinite,

and He bends you with His might

that His arrows may go swift and far.

Let your bending in the archer's hand be for gladness;

For even as He loves the arrow that flies, so He loves also the bow that is stable.

Warmest wishes to you all,
Paul

Introducing Paradigm Explorer

David Lorimer

After considerable discussion at board level, we have taken the decision to change the name of Network Review, as intimated in an electronic newsletter earlier in the year. We have chosen the title Paradigm Explorer to reflect the content more accurately and the underlying commitment of the Network towards the articulation and communication of a spiritual and ecological worldview.

As many readers will know, the term 'paradigm' was popularised by Thomas Kuhn in his seminal book, *The Structure of Scientific Revolutions* in 1962. Although the notion of a paradigm has been criticised, I still regard it as a useful term to denote the pattern of metaphysical assumptions underlying scientific thinking, as first explored by E.A. Burtt in 1925 in his book *The Metaphysical Foundations of Modern Science*. In the 1990s, this work was followed up by Willis Harman and the Institute of Noetic Sciences.

The work of the Network lies at the interface between science and the rapidly evolving fields of consciousness and spirituality. As indicated in my reviews below of *The Oxford Handbook of Psychology and Spirituality* and *Transcendent Mind*, leading thinkers and practitioners are already moving beyond a mechanistic, reductionist and materialistic approach to consciousness and

postulating a spiritual universe infused with consciousness. This involves new ontologies, epistemologies, methodologies and ethics. Another phrase frequently used in the history of the Network is Wider Horizons, indicating that there is much to discover beyond our immediate sight, and which in the 1970s and 1980s was a week-long course for young people on topics largely absent from conventional education.

The Network remains committed to balancing open-mindedness with rigour, and it is interesting to look back on early newsletters - the name *Network Review* only came in in the 1990s. The first newsletter sent out in January 1974 stated that the immediate aim was to build up a network of qualified scientists and doctors 'who have adopted or are inclined towards the non-materialist interpretation of the universe and who have a sympathetic personal interest in studies of and research into parapsychological, parapsychological and spiritual matters.' The newsletter went on to say that the method of compiling an ever-growing body of facts, each related to and depending on those already established, leads to the development of a great scientific system of immense value and entirely valid and coherent within its own terms. However, new discoveries unrelated to what is already known in a scientific way tend to be ignored, so scientific research should be focused to an increased extent on various areas where true advances in basic understanding of the human situation can be made. Then these results should be communicated within the scientific community. The newsletter continued: 'it may be useful at this point to refine further our

definition, still tentative, of the kind of material we are looking for to recommend to others. So far we have described it as follows:

- Evidence (not proof) of planning by or purpose of some dynamic mind other than that of any incarnate person connected with the research.
- Evidence of the existence of energies, laws and forms of life that cannot be directly apprehended by our normal physical senses.
- Evidence that the physical structure of living or inanimate things is dependent for its maintenance and growth on a more basic nonphysical field.
- Well-attested instances of higher sense perception (also ESP)
- Well-attested cases of mind functioning independently of the body (including out of the body experiences).
- Evidence of the continuity of life after the death of the body.
- More than usually conclusive cases of healing through paranormal agencies.'

Although a great deal of evidence of this kind has accumulated over the last 40 years, we are still in the early phases of a paradigm shift and there is very considerable resistance to this process, as witnessed by the polemical agenda of explicitly sceptical groups with respect particularly to parapsychology and complementary medicine. We welcome contributions to this creative process of exploration of frontiers and expansion of horizons.



Why did Bohm Collaborate with Krishnamurti?

Some Reminiscences and Reflections

David Edmund Moody

This article is adapted from a talk the author gave in London on June 24 at the Bohm/Prigogine centennial celebration conference.

*It is based upon his recent book, **An Uncommon Collaboration: David Bohm and J. Krishnamurti**. Both David Bohm and Ilya Prigogine were honorary members of the SMN.*

The article gives a unique insight into the relationship between the two men by someone who knew them both well.

Background

David Bohm was 43 years old when he met Krishnamurti, and Krishnamurti was 66. The year was 1961, and their work together continued for a quarter of a century, until Krishnamurti died in 1986. During those 25 years, the two men participated together in 144 recorded dialogues. Many of these were with various groups of people, but there were 30 recorded conversations consisting of just the two men talking together. These were published in a series of books, including *Truth and Actuality*, *The Ending of Time*, *The Limits of Thought*, and *The Future of Humanity*.

Many of Bohm's colleagues in the scientific world held a somewhat negative or disparaging attitude toward his involvement with Krishnamurti's work, and, on the surface of events, one can understand why. To someone not familiar with Krishnamurti's actual philosophy, it might appear that he was an unscientific individual, probably some kind of mystic or the leader of a cult. His name alone would have evoked associations with Maharishi, or Yogananda, or perhaps someone who made substances materialise by rubbing his fingers together. In addition to his name, Krishnamurti had a close affiliation in his youth with the Theosophical Society. That organisation raised him from the age of 14 and cultivated him to become an important spiritual teacher. But the Theosophical Society had a strongly esoteric or occult component, which probably reinforced or cemented in the minds of some people the image of a guru offering platitudes to a credulous cult of followers.

But if one looks underneath the surface, the reality of Bohm's relationship with Krishnamurti was very different. The most important difference is that the image of Krishnamurti as a cult figure is completely divorced from who he actually was. Early in his career, more than 30 years before he met David Bohm, Krishnamurti categorically separated himself from his theosophical roots, and he made it a central pillar of his philosophy not to encourage or develop any sense of authority in psychological or religious matters. He emphasised repeatedly that he was not a guru, not a leader, not an authority, and that he did not want to create any kind of organisation to join or any sense of belonging to a special group of followers. On the contrary, "Be a light to yourself" was one of his most frequent and familiar refrains.

Bohm's relationship with Krishnamurti was based on something entirely different than the superficial image of a guru and his follower. The reality is that Krishnamurti developed a comprehensive and original philosophy of mind, a deep and elaborate exposition of the nature and structure of consciousness, including a diagnosis of the sources of illusion and of conflict in the individual and in society. That detailed, concrete, and radical philosophy is what attracted Bohm to Krishnamurti.

And so the relationship between these two men was indeed highly unusual, but not for the reasons Bohm's scientific colleagues might have imagined. Their relationship was uncommon because Krishnamurti's philosophy of mind was uncommon.

It is very original and entirely outside the mainstream of conventional ways of thinking. And so the question is not, what caused Bohm to abandon his scientific background and pursue a mindless allegiance to the leader of a cult. The real question is what moved Bohm to become so involved and invested in this particular philosophy of mind, one so radical, original, and outside the parameters of conventional ideas.

Krishnamurti's philosophy

Space does not permit any thorough description of Krishnamurti's philosophy, but here is a brief summary, for illustrative purposes, of some of the principles or ideas that he rejected or objected to:

- Nationalism
- Organised religion
- All psychological authority
- Fame, pleasure, ideals, "seeking"
- All systems or methods of meditation
- Knowledge as a source of transformation
- Psychological achievement, "becoming"

Each one of these items represents just the tip of a large iceberg. Krishnamurti would never have presented them in this summary form or any kind of epigrammatic or casual fashion. Rather, each point was the product of a complete and detailed exposition. These are just a few highlights that I have pulled together to illustrate the original and unconventional character of his philosophy. But in addition to what he rejected, here is a list of some of the things he encouraged or actively endorsed:

- Nature
- Intelligence (as distinct from intellect)
- Facts
- What is (not escaping)
- Inquiry – doubt, questioning
- (True) meditation
- Not-knowing

Common elements

With this as background, we can examine what influences or sequence of events contributed to Bohm's involvement with this philosophy. We can begin with the fact that quantum physics, which is the branch of physics that deals with events inside the structure of the atom, is a field of science highly conducive to philosophical inquiry. When you penetrate quantum mechanics to its deepest level, many of the principles of ordinary reality that we take for granted fly out the window and give rise to questions that are normally the province of philosophy.

Perhaps the most notorious of the strange features of the quantum world is the connection between the apparatus that we use to observe quantum events and the events under observation. In the quantum domain, the act of observation is inextricably linked with whatever is observed. This basic reality bears a strong resemblance to one of Krishnamurti's most characteristic statements about events in the psychological field: that the observer is the observed. Indeed, it was precisely this feature of Krishnamurti's philosophy of mind that initially attracted Bohm's interest and led to his involvement with Krishnamurti's work.

But this is not the only feature of quantum reality that connects with Krishnamurti's philosophy. Another important and controversial element of the quantum domain is a principle called non-locality. Some of the experimental evidence suggests that subatomic particles that are separated at a distance from one another may be related or "entangled" so that what happens to one particle immediately affects or influences what happens to the other. This phenomenon is called non-locality because it does not seem to matter whether or not the particles are located near to one another. They can still be connected or related no matter how far apart they may be.

What non-locality suggests is an underlying wholeness or deep connectivity within the basic fabric of physical reality. It is partly for this reason that wholeness was a crucial feature in the development of Bohm's theoretical physics. It is a key concept in his most important book, *Wholeness and the Implicate Order*.

The principle of wholeness was also a central feature in Krishnamurti's philosophy of mind. He held that consciousness as we know it is divided in numerous ways, and that these divisions are inherently illusory. He maintained that the divisions in consciousness are a by-product of our failure to understand the nature of thought and cognitive processes, and that a true and accurate perception brings about psychological wholeness. This fundamental element of his philosophy was similarly important to Bohm and formed one of the basic elements of their collaboration.

Bohm's political affiliations

The philosophical nature of quantum mechanics was not the only stream of inquiry that brought Bohm into contact with Krishnamurti. A second stream had its roots in his interest in Marxist philosophy. During his graduate years working with Oppenheimer at the University of California at Berkeley, several of Oppenheimer's students were interested in and attracted to Marxist ideology, as was Oppenheimer himself to some extent.

Because of Oppenheimer's involvement in the Manhattan Project to create the atomic bomb during World War II, his graduate students were under some degree of surveillance by the army intelligence and the FBI. As a result, in 1949, when Bohm was working as a professor at Princeton University, he was

called to testify before the House Committee on UnAmerican Activities regarding people he knew and political activities from several years earlier.

Because he refused to answer all of the Committee's questions, Bohm was indicted, along with dozens of others, and tried in federal court. The court exonerated him, but the president of Princeton University was a devout anti-Communist, and he intervened in what was normally a faculty decision and refused to renew Bohm's contract. That is what led Bohm to leave the United States and to take a position at a university in Brazil, and then in Israel, and finally at University of London, where he remained for the rest of his career.

As a result of this experience, Bohm suffered a deeply personal loss based on his political convictions, and this must have contributed to his acute awareness of the currents of irrationality prevalent throughout society. This too would have prepared him to be receptive to some of Krishnamurti's views.

Hegelian logic

In addition, the ideology of Marx had its roots in the philosophy of Hegel, and after Bohm left the United States, he became deeply immersed in the study of Hegelian logic. The new form of logic that Hegel introduced is known popularly in terms of the dialectical progression of thesis, antithesis, and synthesis. But this phrase is really just an abbreviation for a deep examination of basic concepts and their relationship to one another. Hegel maintained that within any fundamental concept lie the seeds of its opposite, so that the tension between apparently opposing concepts is resolved in a higher and more complete synthesis.

In his dialectical logic, Hegel was giving close attention not only to the issues with which philosophy is concerned, but also to the process by which philosophical concepts arise and are developed. That is, he was giving attention to the very process by which thought functions. This was a key, crucial step that led to Bohm's interest in and receptivity to the work of Krishnamurti.

For Krishnamurti was above all a philosopher of the nature and structure of thought and its pervasive effects upon consciousness and daily life. Krishnamurti held that the manner in which thought functions is not properly understood, and the failure to understand it is a primary source of illusion and conflict in the individual and in society. Bohm was keenly receptive to this point of view in part as a result of his immersion in the philosophy of Hegel.

To illustrate Krishnamurti's view, here is a list of some of the things he had to say about the nature of thought.

- Thought is mechanical.
- Thought is a material process.
- Thought is limited.
- Thought is fragmentary.
- Thought is knowledge.
- Thought is time.
- The word (thought) is not the thing.

As with our previous list, Krishnamurti would never have expressed these ideas in the brief, summary manner in which they are presented here. In his exposition any one of these ideas would form part of an integrated, comprehensive description of how thought functions and the ways in which it is not properly understood.

These are some of the themes of crucial interest to Bohm and the reason for his extensive collaboration with Krishnamurti. Four years after Krishnamurti died, Bohm conducted a seminar in Ojai, California that became the basis for a book called *Thought as a System*. In that book, many of these themes are described in detail, with Bohm's exceptional skill at elucidating subtle ideas with illuminating examples and colorful metaphors.

So the collaboration between Bohm and Krishnamurti was indeed uncommon, but not for the superficial reasons one might at first imagine. It was a direct and logical consequence of the progression of Bohm's thinking both in the philosophical implications of quantum theory, and also along the path from Marx to Hegel, including the attention to the nature and process of thought and its effects upon consciousness.

Personal reminiscences

Years ago, when Krishnamurti was alive and I was serving as director of his school in Ojai, the Oak Grove School, Bohm and his wife Saral used to come out to Ojai from their home in England every year for six weeks during the Spring. It was Bohm's habit to take a nap in the afternoon between three and four, and when he got up, he liked to have a cup of tea and go for a long walk. During those years, I often went up to his apartment at the four o'clock hour to talk with him and have tea and walk together.

Bohm and his wife always stayed in an upstairs apartment in the office building next to Krishnamurti's home in the east end of the Ojai valley, and our daily walk took us half a mile up a slight incline to the campus of an old and well-established private school. There we continued our walk around a road that circled the whole perimeter of the large school property.

On our way home, Bohm liked to quote a saying from Hegel. It was an aphorism about Minerva, the Roman goddess of wisdom. Minerva had a little owl that used to go with her wherever she went, and so the owl of Minerva became known as a symbol of

wisdom. Hegel believed that the development of philosophy was tied to the development of history, but he thought that philosophy is always one step behind historical events, and doesn't catch up until a major era or epoch of history is almost over.

Hegel said that the owl of Minerva flies at dusk, by which he meant that the wisdom of philosophy can only make a new development at the end or the twilight of an historical epoch. So when Bohm and I kept talking philosophy until night was starting to fall, he would sometimes adapt Hegel's aphorism in an amusing way and say, "The owl of Minerva flies at dusk."

Over the course of seven or eight years, I went on a hundred or more walks like this with Bohm. Our conversation usually lasted two hours or more. The topic of discussion was almost always psychological issues of the kind that he liked to explore with Krishnamurti, and he would do about ninety percent of the talking. My role was to listen and pose questions and say what points I did not understand or were unclear. Bohm was absolutely tireless in his willingness to explain and explore and explicate whatever question we were discussing, even as night fell and it began to get dark. The owl of Minerva flies at dusk.

Relative contributions

One of the issues I had to address in my book was the relative contributions of Bohm and Krishnamurti to the work they were engaged in. The centre of gravity of their work together was Krishnamurti's philosophy of mind, and that was the basis for their mutual explorations. Nevertheless, Bohm made a great contribution to Krishnamurti's work. Krishnamurti clearly wanted his teachings to be consistent with a scientific approach. He wanted the teachings to be factual, not speculative. He wanted people to challenge and question and inquire. He didn't want anything to be accepted on the basis of personal authority. All of this is consistent with the spirit of scientific inquiry. Bohm was well attuned to that mode of inquiry, and he helped Krishnamurti proceed and discuss in that manner.

Nevertheless, there were some differences in their manner and their approach. This was apparent in the way they handled group discussions, such as the many conversations with teachers at the school. Krishnamurti was very serious and sometimes a little bit sharp in the way he replied to people in group dialogues, whereas Bohm was more relaxed and agreeable. Some people said that whenever Krishnamurti was asked a question, he would always begin by saying no, whereas Bohm would begin by saying yes.

When I was a teacher at the school, sitting in the group meetings with Krishnamurti, I would sometimes complain to him afterwards about the way he responded to people. Once I said he seemed to be angry, and he said, no, he was not angry, he just wanted to *move*. Another time he told me, "I cannot tame myself."

There was one occasion when Krishnamurti asked me directly how I would assess the relative contributions of Bohm and himself. I said he was like the sun and Bohm was like the moon, suggesting that the light of the moon is a reflection of the sun. This seemed to satisfy Krishnamurti, but it wasn't quite fair to Bohm, because his light was by no means just the reflection of Krishnamurti or anyone else. What I found remarkable is that Krishnamurti even raised such a question. There is no one else in his career that he would have posed this question about. But it was pretty clear when I said he was the sun and Bohm was the moon, that he thought I was on the right track.

I still agree with that assessment. Krishnamurti was the one with the extraordinary insight, and he always spoke from that direct perception. Bohm was more articulate in some ways, more precise in his language and detailed in his descriptions, but I think his understanding was more intellectual and not as deep and comprehensive as Krishnamurti.

We can also turn the question around and consider what was Bohm's assessment of Krishnamurti. With respect to that issue, we don't have to guess or speculate, because I recorded a conversation with Bohm about two years after Krishnamurti died and raised these questions with him. The transcript of that conversation is included as an appendix in my book. I won't try to summarise it except to say that Bohm had a very interesting and nuanced overall assessment of the philosophy and the personality of Krishnamurti.

At the end of his life, Bohm suffered a serious depression that required him to be hospitalised for several months. Some people have interpreted this as the failure of his work in the psychological field, but I feel this is unfair and wrong. One person who had this attitude told me, "By their fruit you shall know them," meaning that if Bohm got depressed, then all of his work in self-understanding must have been for nothing. That passage in the Bible comes from the book of Matthew:

Beware of false prophets, which come to you in sheep's clothing.... A good tree cannot bring forth evil fruit, neither can a corrupt tree bring forth good fruit. Wherefore by their fruits ye shall know them.

In reality, the causes of depression are not well understood, and there is a great deal of evidence that depression is often purely chemical in nature and may not have any kind of psychological source. It may be simply an illness, like pneumonia or Parkinson's disease. So to attribute Bohm's depression to some kind of psychological failure seems to me wrong and unfair.

But even if his depression did have some degree of psychological origin, that in no way diminishes his accomplishments in the psychological field. We have no way of knowing how disturbed he may have become if he had never met Krishnamurti or taken any interest in psychological issues. He may have become much more depressed at a much earlier age.

Who was Krishnamurti?

Finally, I would like to mention one other issue that is addressed in my book. That is the question raised by Krishnamurti's biographer, Mary Lutyens, in the second volume of her biography, *Years of Fulfillment*. At the end of that book, she asks, "Who or What was Krishnamurti?" She describes how she addressed this question directly to Krishnamurti. They discussed it at some length, but in the end he said he was incapable of answering it. He makes the rather memorable statement, "Water can never find out what water is." Mary Lutyens leaves the question unresolved.

One way to approach this question is simply to bring into focus why it is necessary to ask it. And that is because Krishnamurti was such an unusual individual. I review in my book some of the unique characteristics of him that demand explanation. One was the extraordinary prophecy made in his early teens that he would become the "World Teacher." He had an extreme sensitivity to nature, as expressed in exceptionally detailed and nuanced descriptions recorded in many of his books. He had a unique form of meditation, unlike any other approach, which he insisted was the only meaningful kind of meditation. He experienced a strange, intermittent pain in his head and neck throughout his adult life, one which was associated in some obscure manner with his psychological observations. And above all there was his original, profound philosophy of mind.

Any one of these characteristics would mark Krishnamurti as highly unusual, but taken together they represent an entirely singular individual, someone unlike anyone else who

has ever lived. So in one of the last chapters of my book, I address the question posed by Mary Lutyens and review some possible answers, and attempt to shed some light on this mystery.

I would like to conclude by saying what a privilege it was to know and work with each of these men. I knew at the time it was happening how lucky I was, but my admiration and appreciation for them has only grown through the years. Therefore to write the story of their relationship was not only a privilege but an enormous responsibility. Krishnamurti and Bohm were both historic figures and their relationship with one another was an important chapter in the history of the twentieth century.



David Edmund Moody, Ph.D., is the author of *An Uncommon Collaboration: David Bohm and J. Krishnamurti*. He is the former director of Oak Grove School, founded by Krishnamurti in Ojai, California, where he worked closely for more than a decade with both Bohm and Krishnamurti. His experiences there are described in his previous book, *The Unconditioned Mind: J. Krishnamurti and the Oak Grove School*. He is currently working on a new book containing transcripts and analysis of several conversations he conducted with Bohm. The tentative title is *Philosophy, Science, and Religion: Dialogues with David Bohm*.

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Beyond Duality

Our In-formed and Holographic Universe

Dr Jude Currihan

This article argues that the 20th century scientific revolution was incomplete. Science has overlooked the significance of information and consciousness which need to be incorporated in a more comprehensive view of reality and which naturally reconciles quantum and relativity theories.

Completing the 20th century scientific revolution

Although the scientific revolution of the 20th century expanded and replaced the previous Newtonian ideas of a Universe of things and absolute space and time with interactions of energy fields, quantum probabilities and relativities, it was an incomplete revolution in overlooking the significance of information and the inclusion of consciousness.

As these are being increasingly viewed as crucial to our understanding of reality, we are now on the threshold, not only of a further scientific revolution, but even perhaps a revolution in the way we view ourselves and the entire Cosmos.

Recent discoveries, experimental evidence and theoretical insights across all scales from the tiniest to the entirety of our Universe and numerous fields of research ranging from physics, cosmology, information theory and complex systems to biology, human-made structures and social behaviours are accumulating and converging.

To paraphrase Hermann Minkowski, who pioneered our 20th century geometrical and relativistic understanding of space and time and update his insights for this widening perception: henceforth space-time by itself and energy-matter by itself are doomed to fade away into mere shadows, and only a kind of union of the two will preserve an independent reality. Information is being seen as offering this union; underpinning, pervading and literally in-forming the formation of physical reality.

Just as the informational description of any physical object, interaction and process can be formulated as the digitised bits of information in our technologies, such informational bits, not as random data, but combined as patterned and relational in-formation are being discovered to comprise the foundation and all-pervasive nature of our Universe. Moreover, mounting evidence is demonstrating that from dynamic

in-formational patterns embedded on a holographic boundary and initiated from deeper non-physical realms, our entire Universe arises, exists and evolves as a unified entity.

Information is real

Despite its appearance of solidity, physicists know when drilling down to sub-atomic scales that matter is extremely ephemeral. Its will-o'-the-wisp nature shows our Universe is essentially more than 99.9% no-thingness and where material entities, rather than embodying any solidity, instead have been shown to be merely excitations within energetic fields.

They also know that, whilst within space and time, no signal can go faster than the speed of light, Bell's theorem, named after physicist John Stewart Bell shows mathematically that quantum mechanics can only work if the whole Universe is also nonlocally interconnected as a single entity. Such nonlocal and universal coherence has now been experimentally proven in laboratories on macroscopic scales¹ and astronomically for distances of at least 600 light years from Earth².

However, given our everyday experiences of the apparent solidity of the physical world and the seeming separations between large-scale objects, such evidence of its truly ephemeral nature and fundamental interconnectedness has looked to have little relevance for most of us. This may be about to change.

In 2012 an experiment led by physicists Antoine Bérut and Eric Lutz³ demonstrated that when a digital bit of information is deleted, actual physical heat is released and in line with theoretical predictions.

This experiment validates an initial insight by communications expert Claude Shannon and later expanded on by information theorist Vlatko Vedral⁴ that the entropy of a system, previously considered as its level of order and disorder, is better understood as being the measure of its information content. The experiment proved the links between

information and physical concepts of heat, work and entropy.

From these and other discoveries, extraordinary though it might seem, an increasing number of physicists are coming to consider that the digitised information, that is the basis for all our technologies, is exactly the same as universal information, also articulated as digitised bits, that underpins and literally makes up all physical reality. Leading-edge scientific research is discovering and coming to realise that our high-tech virtual realities and holograms are children's toys for which the appearance of our Universe is the master class.

The cosmic hologram

The patterned information, or in-formation that in-forms all physical reality does so at a fundamental scale that naturally emerges when all the forces of our Universe are combined. This so-called Planck scale for energy, matter, space and time is equivalent in terms of space and time to an almost unimaginably tiny length of around 10^{-35} metres and a time duration of approximately 10^{-44} seconds respectively.

To understand how the Planck scale relates to the informational attributes of physical reality, we need though to consider a further extreme phenomenon of our Universe; black holes. Studies of black holes show that the information describing their physical properties, their so-called informational entropy, isn't proportional to their three-dimensional volumes. Instead and acting exactly like a hologram, it varies in relation to their two-dimensional spherical surface areas, or event horizons.

If we imagine the surface areas of such event horizons to be covered in tiny triangles at the Planck scale, every miniscule Planck area stores one bit of information at this minute pixelation of space-time. Extending this insight from black holes to our entire Universe, as the so-called holographic principle, then shows that physical reality isn't just inherently in-formed but holographically manifested.

In bringing together these two profound perceptions of an in-formed and holographic Universe, literally as a cosmic hologram, scientists are beginning to restate and expand the laws of physics as informational algorithms. Just like those that instruct our computers to operate, these fundamental laws are now being understood as instructing our entire Universe how to do so.

The latest cosmological evidence strongly posits that our Universe is finite; born 13.8 billion years ago, but not with a chaotic big bang, but in an exquisitely ordered and finely-tuned Big Breath and as what's called a closed system. From these and other discoveries and insights it's becoming ever clearer that energy-matter and space-time are phenomena that emerge from and which are complementary expressions of such universal information.

Thermodynamics to infodynamics

There are certain key aspects of our Universe and one key premise that are pointing the way to not only restate and expand the laws of thermodynamics in informational terms but suggesting how, by doing so, quantum and relativity theories, might be reconciled.

The key aspects, supported by cosmological evidence, are that spatially our Universe is geometrically flat and that it is both finite and closed in space-time. And, as we have seen, both theoretically and experimentally, information has been proven to be physically real.

The key premise, supported by a theoretical framework and progressively by evidence, as we shall see, at all scales of physical existence, is that not only is our Universe informationally based but also holographically manifested

These key aspects and premise, I propose, enable the expansion of the laws of thermodynamics, designated by Ludwig Boltzmann in the 19th century to describe the behaviour of gases, as laws of information or infodynamics.

The first law of thermodynamics states that the energy of a closed system is always conserved. Expanding this to our entire Universe, taking account, as quantum theory does, that energy and matter are equivalent and finally understanding that information can be expressed as energy-matter leads to a restatement of the first law as: *information expressed as the energy-matter of our Universe is always conserved.*

The second law of thermodynamics states that the entropy of a closed system always increases. Boltzmann described entropy in terms of the number of microstates of a system. We have seen though, how, thanks to information theory, the notion of entropy can be restated to describe the information content of a system. Whilst entropy has hitherto been commonly thought of in terms of order trending to disorder, now from an informational viewpoint and considering it for the Universe as a whole, it is coming to be considered in terms of simplicity evolving to complexity.

Given the extraordinarily ordered and simplest state that cosmologists have discovered prevailed at the birth of our Universe, also means that the entirety of space-time at its first moment embodied its minimum informational entropy.

The second law can then be restated as: *the total informational entropy of our Universe always increases over space-time.*

Including the premise of the holographic principle, that each Planck area of the holographic boundary of our Universe embeds one bit of information, the continually increasing entropic flow of

information within space-time means that from that first moment space *must* expand and the arrow of time *must* flow for the space-time of our Universe to express ever more information. Indeed, I suggest that the nature of time itself may now be comprehended as the ever-increasing accumulation of the evolutionary and experiential information of our Universe.

The two laws of infodynamics indicate an understanding that energy-matter and space-time are complementary expressions of information; the first enabling our Universe to exist and the second enabling it to evolve as a finite and unified entity within an infinite and eternal Cosmos.

Recognising that quantum and relativity theories deal respectively with the existence of energy-matter and the evolution of space-time, the resultant laws of information I would advocate, are then able to also support and indicate a natural reconciliation of these two pillars of 20th century science.

Universal geometries

The ancient understanding that universal geometric relationships underpin all physical phenomena, is also now being validated. Instead though of idealised patterns, computer analyses of vast amounts of data make it possible to uncover these in-formational and holographic templates as fragmented dimensional and self-similar shapes termed fractals that holographically scale up and scale down throughout universal phenomena.

They arise from dynamic in-formational basins called attractors in the complex plane of phase space, which is being increasingly understood as an actual nonphysical domain of reality; rather than merely the mathematical realm on which virtually all fundamental laws of physics are based.

From individual atoms⁷ to the scale of vast galactic clusters⁸, examples of such attractor-based, fractally realised patterns abound. On our planetary level, instances of such innate in-formational patterns so far investigated range from geology and geophysics (coastlines, topographical features, tectonic plates, river drainage systems, sizes of mountains within ranges); meteorology (clouds, lightning cascades, snowflakes) to chemical processes (corrosion).

Holographic behaviours

Crucially, however, the signature of the cosmic hologram is not only being discovered throughout the so-called natural world but also in our collective human behaviours.

Examples of such correlations investigated to date include movements of stock market prices by the 'father of fractals' Benoit Mandelbrot; internet traffic, website links and data routes^{7,8,9} email, snail mail and social internet group communications and web browsing^{10,11,12}, geographic and time-based usage of mobile phones and over time¹³

and characteristics of so-called small world networks¹⁴, first studied by social psychologist Stanley Milgram in the 1960s.

In 2015, astrophysicists Henry Lin and Abraham Loeb at Harvard tracked how by looking at their population densities, respectively people and stars, cities grow in the same in-formational ways that galaxies evolve¹⁵.

Many researchers are also discovering how dynamic in-formational forms pervade ecosystems and guide and pre-dispose evolutionary processes; seeing too how they are identical to the in-formational structures of the internet and our complex social behaviours.

Researchers Lewis Richardson in the 1940s and recently Neil Johnson and his team at the University of Miami have even uncovered how the in-formational relationships that link the relative frequencies and destructive powers of earthquakes are the same as those that plot the occurrences and scales of fatalities of human conflicts.

Such wide-ranging discoveries are showing both the 'me' of our individual uniqueness and the diverse yet fundamentally interconnectedness of the 'we'; not only of humanity but the entirety of our Universe.

Beyond duality

Invariant space-time allied with universal nonlocality ensures that our Universe exists and evolves as a coherent and unified entity. Whilst within space-time, the speed of massless entities such as photons of light is a universal limit to the flow of information, thereby preserving causality, the innate nonlocality of our Universe enables it to simultaneously 'observe' itself existing and evolving universally and at all scales of existence.

At their most fundamental level, the increasing discoveries and insights that our Universe is innately in-formed and holographically manifest and the expanded awareness it provokes, raise profound questions of the nature of reality itself and crucially of the meaning of consciousness.

Philosopher David Chalmers's famous 'hard' question of how mind arises from materiality may now be able to be resolved by the progressive proof that mind is matter and matter is mind, and thus there is no such duality. Essentially, the increasing evidence is that consciousness isn't something we have but what we and the whole world are.

From its simplest Planck scale pixelation, digitised information arranges into dynamic, patterned and relational in-formation, with simplicity evolving to complexity and emergent self-awareness.

With such a developing perspective of the unified nature of reality, we are in the embryonic stage of a 21st century

scientifically-based revolution that offers the potential of reconciling with universal spiritual experiences, supernatural phenomena and explorations of consciousness to reveal that *all* we call reality is the ultimate unity of cosmic mind expressing, exploring, experiencing and evolving at all scales of existence. It is progressively offering compelling evidence that we are microcosmic co-creators of the realities of our Universe that exists and evolves as an integral and finite entity, perhaps one of many, within the infinite and eternal oneness of the Cosmos.

What if we collectively begin to understand, experience and ultimately embody the awareness of unified reality, and so are empowered to live more and more consciously in harmony with its inherent oneness and evolutionary impulse of ever-greater self-awareness?

What if we, as a species, are able to acknowledge that it has been the limitations of our duality-based perceptions which have primarily driven the conflicts, inequalities and exclusions of our fear-based behaviours?

What if, instead of continuing to fall into fear, humanity can come together to leap into love?

What if by re-memembering who we really are and *knowing* rather than hoping that we are each microcosmic co-creators of its unified reality empowers us to celebrate both the me of our individual uniqueness and the we of our collective diversity and harness our communal wisdom to transform our current global emergency into the emergence of our conscious evolution?

What then?

Based on *The Cosmic Hologram: In-formation at the Center of Creation* by Jude Currivan (Inner Traditions, 2017)

Dr Jude Currivan is a cosmologist, planetary healer, futurist and international author. She has a Masters Degree in Physics from Oxford University, specialising in quantum physics and cosmology, and a PhD in Archaeology researching ancient cosmologies from the University of Reading in the UK. Her work integrates leading edge science, consciousness research and universal wisdom teachings into a wholeworld-view aiming to raise awareness and empower resolutions to global challenges. www.judecurrivan.com

Jude will be the speaker at Frenchman's Cove in February 2018 – see advert on inside front cover.

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The Whole Spectrum: Biological to Spiritual

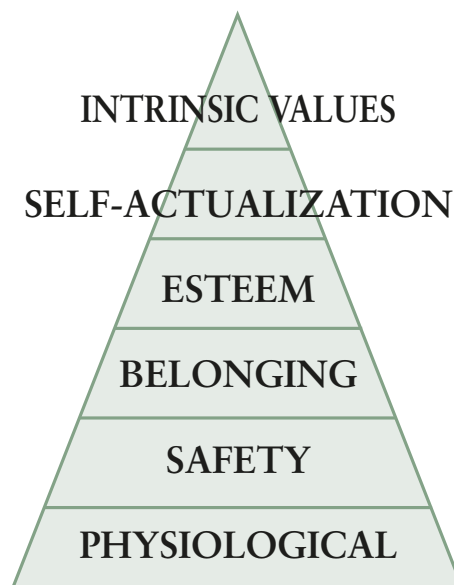
Hazel Skelsey Guest

The categorisation of Body/Mind/Emotions/Spirit can be seen as a currently fashionable way of describing human beings in terms of four quite distinct components. These are loosely related to Carl Jung's Four Functions, namely sensing/thinking/feeling/intuiting respectively, which again are distinct. Their separateness in the popular psyche is in no way diminished by the well-known fact that emotions have their physiological correlates, nor by the extensive research carried out since the early 1970s on the physiological correlates of transcendental meditation. This paper aims to show that they are aspects of our being which are inextricably linked in a continuum. Two systems will be used to justify this thesis, the first of which is already well-known in a curtailed form. Editorial note: Network Trustee and founding member Geoffrey Leytham working in the psychology department at the University of Liverpool was one of the first in the UK to recognise the significance of Abraham Maslow's work and had an extensive correspondence with him.

Abraham Maslow's Hierarchy of Needs

Abraham H. Maslow (1908-1970), well-known psychologist, was elected President of the American Psychological Association in 1962. He is known worldwide for his Hierarchy of Needs.

Some readers will be surprised to see Intrinsic Values at the top of his hierarchy of biologically-rooted motivating needs when many textbooks and tutors of business and management courses represent the hierarchy as having only five levels, from Physiological to Self-Actualization. This is because his seminal paper on the subject (Maslow, 1943) did indeed contain only those five levels. The paper was an immediate success worldwide and his five levels became enshrined in the



required reading for students on business and management courses, in spite of the fact that the paper did acknowledge that something was missing.

After its publication he spent some twenty-five years exploring what motivates self-actualisers, including examples of transcendence/peak-experiences (Maslow, 1968, 1970). His problem was that he recognised this was in the spiritual realm, and for him that meant it could not be the result of biological evolution and therefore did not belong in his hierarchy.

Eventually he was persuaded that spiritual motivations which transcend self-interest, such as compassion, the pursuit of justice or truth, ethical considerations, the love of

beauty, and religious beliefs, are potential in every human being even if not actualised, and therefore must be biologically-rooted in the species. So finally he added Intrinsic Values to his Hierarchy (Maslow, 1967,1976; Guest, 2014). Shortly afterwards he died with the result that his, by now well-established, earlier version which had Self-Actualisation at the top, lives on in the literature of psychology and business studies, with his amended version mainly confined to publications related to humanistic and transpersonal psychology.

Ken Wilber is one of the well-established authors to include Maslow's sixth level, referring to it as 'self-transcendence' rather than 'intrinsic values' (Wilber, 2000, chart 7), and thereby emphasising that this level of motivation not only transcends self-interest but also tends to evoke peak-experiences.

The Hierarchical Structure

By tracing the evolution of species from the very earliest life forms to *homo sapiens* it is not difficult to justify the order in which Maslow's six levels of motivation gradually emerged, starting at the bottom of the chart and working upwards.

He was of the opinion that we are distinguished from the most advanced of non-human species by being the only creatures that can be motivated by Self-Actualisation and Intrinsic Values (Maslow, 1987, p57). Here I have to disagree with him. Self-Actualisation is about being truly who we are and living life to the full, and our close relationship with domestic dogs and cats gives us the impression that they are indeed fulfilled at this level if living within a loving and caring family. However, I doubt a dog's obedience is due to an ethical sense of right and wrong but rather to a desire to please its owner. As for dolphins and whales, we know too little about them to be able to judge, so we are still justified in claiming to be the only species that is capable of being motivated at the spiritual level, namely Intrinsic Values.

The order of appearance of these needs in the evolution of species is repeated in the development of the human embryo and young child, which may be why we experience these motivations as having an order of priority. When two urges of comparable strength are experienced simultaneously, that which is lower on the chart tends to take precedence over the higher. People give up their careers to care for a sick loved one (Self-actualisation v Belonging), potential whistle-blowers can be deterred by threats (Intrinsic Values v Safety), and whatever else one is doing will be abandoned temporarily in order to relieve oneself (predominance of a Physiological need). The only exception to this pattern is if the higher need is stronger than the lower, for example people persecuted for failing to change their religion (Intrinsic Value v Physiological and Safety).

This prepotency of the lower needs means that those fortunate persons who manage

to live their lives at the level of Self-Actualisation or Intrinsic Values, must already have their lower needs satisfied to a large extent. Although wealth does not necessarily bring happiness, it certainly can help.

It was precisely this principle of priority which made Maslow's theory an immediate success with business managers because it gave them ideas about how to motivate their work forces to become more productive: provide adequate breaks, the right tools, safety precautions, working in teams, rewards for good performance, and compassionate leave.

Destructive Aspects

Each one of these motivating levels of need has its destructive side. For example, at the Physiological level is the drug addict's need for another fix, under Safety there are phobias, Belonging can give rise to possessiveness and discrimination, Esteem can mean choosing the wrong people as role models, Self-Actualisation may be expressed in the form of greed or tyranny, and Intrinsic Values is where we find terrorism backed by religious ideology.

Religions recognise the dark side. Some have deities with mixed characteristics. In others God is good, which requires the existence of a satanic figure to account for evil at the spiritual level.

The notion that our needs must be all good because they are natural, and that higher needs are necessarily an advance on the lower ones, is both simplistic and dangerous. Management courses which have taught that Self-Actualisation is the highest motivation to which one can aspire, may have inadvertently encouraged their students to aspire to becoming rich financiers by using those dodgy practices which brought large banks to their knees in recent times.

0: Neutrality	
-1: Self-Assertion	+1: Exploration
-2: Attack	+2: Co-operation
-3: Retreat	+3: Participation
-4: Self-Abasement	+4: Generativity
-5: Despair	+5: Emancipation
-6: Depersonalisation	+6: Transpersonalisation

Without the spiritual sixth level, Intrinsic Values, ethics is not taken into consideration.

Deficiency needs are another destructive aspect. These occur when a person has experienced traumatic deprivation in a basic need at some time in the past. The endeavour to fulfil that need then stays with them with the result that they are forever pursuing it to excess, even when it is actually being satisfied. They are stuck in a groove. For example, the person who clings obsessively in a relationship probably has a deficiency need for Belonging, and someone who is forever trying to prove himself in spite of

success, probably has a deficiency need for Esteem.

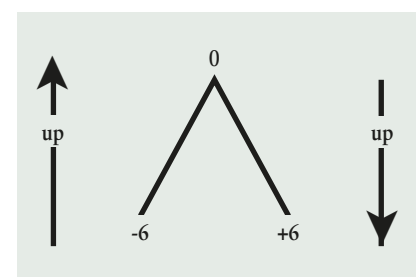
This kind of vulnerability is at the root of the radicalisation of prisoners in our jails. Many a convict feels that he does not belong. The mere fact of his having been arrested and imprisoned reinforces this impression. Then along comes a group of men calling him 'brother' and inviting him to join them. At last he has a 'family' to which he belongs. Next they boost his own self-esteem and encourage his esteem for their leader by emphasising toughness. The crime for which he was incarcerated is treated as a qualification for a future role of violence in which he can self-actualise because that is what he is good at, and to justify this role he is taught their version of ideology which now becomes his guiding intrinsic value.

The grooming of vulnerable young girls for sex follows a similar pattern, based on their need to belong. If they do reach a point at which they realise their error, they feel there is no-one to turn to for help because of their all-pervading sense of not belonging, reinforced by a lack of self-esteem.

Ian Marshall's Scale of Responses

We come now to the second of the two systems. The Jungian psychiatrist Ian Ninian Marshall (1931-2012) is known for his co-authorship of several books with his wife Danah Zohar. What is not well-known is that in the late 1960's and early 70's he developed a therapeutic system called 'Sequential Analysis', which used a skin-resistance meter as a monitoring device (Guest, 1990). One small part of the system is his Scale of Responses (Guest & Marshall, 1997).

By interpreting each of the thirteen items as broadly as possible, this covers all possible responses to stimuli of whatever kind.



The Scale of Responses is like a step-ladder going from -6 at the bottom, through 0 to +6 at the top, which has been folded in half to reveal pairs of opposites. For example ± 6 are the egoless pair. Transpersonalisation occurs when one has transcended the ego, and Depersonalisation when the ego has disintegrated. The signs for plus and minus do not indicate 'good' and 'bad'. Rather plus shows that one accepts the current situation to some extent, while minus indicates some degree of non-acceptance. Every one of these responses is appropriate in certain circumstances.

± 1 : establishing the nature of a situation
± 2 : functioning with, or against, others
± 3 : totally involved in, or withdrawn from, the situation
± 4 : feeling extremes of capability
± 5 : extremes of the spirit
± 6 : ego-less states

Neutrality is no response at all, which is not the same as deliberately ignoring things although that may be what it looks like to someone else. Apart from Neutrality these responses to situations can be active or passive, overtly expressed or just inwardly felt. They are how one actually feels and not how one is pretending to feel.

Normal Position

Everyone has their normal position on the chart. This is their most frequent response. We can all recognise the shy person at -3: Retreat or the bossy one at -1: Self-Assertion. Movement away from one's normal position usually occurs one step at a time, up or down or across to the opposite. So we tend to find a given individual's responses cluster within a section of the chart.

During meditation there is a gradual transition, one step at a time, from one's normal position towards +5: Emancipation, or possibly an altered state of consciousness at +6: Transpersonalisation.

LSD is associated with ± 6 and heroin with ± 5 . Because the latter is physiologically addictive users tend to stay in or close to -5 until the next fix sends them into its opposite at +5.

Bereavement is a situation in which one is suddenly plunged down the chart to somewhere low on the left-hand side. Probably -5: Despair. Temporarily this is one's new norm. Recovery takes a long time because it requires a slow climb step by step up the chart, -5 to 0 and then +1, +2 to wherever one's eventual new norm will be. Friends of a bereaved person often make a mistake when stage -2: Attack is reached and anger is expressed. This can take many forms from a threat to sue the hospital to criticism of relatives for not showing more concern, and even anger directed at the dead person. It is vital to allow this stage. Any attempt to

dampen it will only send the subject down again into -3: Retreat. Each stage of the bereavement process must be fully expressed in order eventually to reach a satisfactory new norm.

Recovery from an accident follows the same path. If the accident causes unconsciousness then there is a brief moment of disorientation at -6: Depersonalisation while recovering consciousness, followed by a slow climb up the ladder.

Other Patterns

'One-Step-Up' is a manipulator's weapon and is very difficult to counteract, because the victim has responded automatically before realising what is going on. If A appears to be exactly one step up on B then this drives B down a step. An accomplished manipulator will then follow the victim down to the next stage, being one-up yet again, and so on. For example a shy child at -3: Retreat is criticised by an adult at -2: Attack, which sends the child down into -4: Self-Abasement ('It is my fault'). The adult now makes no approach to the child who perceives this as -3: Retreat, which once again is one-up on the child who descends into -5: Despair.

By contrast 'The Knight's Move' should be in every counsellor's and psychotherapist's toolbox. If person C is at -n then person D can contain the situation by being (or appearing to be) at n+1. Obviously this rule cannot be applied when the client is in -6: Depersonalisation, which is the kind of situation Stanislav Grof addresses when dealing with spiritual emergencies (Grof & Grof, 1990).

Conclusion

Either one of these two systems is sufficient to demonstrate that Body/Mind/Emotions/Spirit are not four distinct aspects of *homo sapiens*, but are interlinked.

Maslow's motivation theory is based on biological evolution and its levels range from the physiological through the emotional and social to the spiritual. Marshall's responses all have their physiological correlates and range from the personal at 0 and ± 1 , through the interpersonal to the spiritual. Moreover, in both systems there are patterns of inter-relationship. Together these two systems demonstrate that, far from being separate elements in our being, the biological, physiological, emotional, social and spiritual aspects are inter-related and form a continuum (Guest, 2016).

Hazel Skelsey Guest read mathematics at the University of Cambridge, UK in the 1940s, and later studied psychotherapy at the pioneering Centre for Transpersonal Psychology in London in the 70s. She lectured in mathematics at City University, London, volunteered as a student counsellor, and ran courses on Transpersonal Psychology for their programme of General Studies, the first courses on TP to be part of any degree programme in a British university. On retirement she moved to Cambridge to practise as a psychotherapist.

This article is based on Hazel's book 'The Walrus's Handbook' which was published in Dec 2016 by Archive Publishing, Dorset, England. ISBN: 978-1-906289-29-4. See review in section below.

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Contrasting Futures for Humanity: Technotopian or Human-Centred?^I

Jennifer M. Gidley, PhD

We are at a critical point today in research into human futures. Two divergent streams show up in human futures conversations. Which direction we choose will also decide the fate of Earth futures in the sense of Earth's dual role as home for humans, and habitat for life. The author here chooses a deliberate oversimplification to make a vital point.

The two approaches I discuss here are informed by Oliver Markley and Willis Harman's two contrasting future images of human development: 'evolutionary transformational' and 'technological extrapolationist' in *Changing Images of Man* (Markley & Harman, 1982). This has historical precedents in two types of utopian human futures distinguished by Fred Polak in *The Image of the Future* (Polak, 1973) and C. P. Snow's 'Two Cultures' (the humanities and the sciences) (Snow, 1959).

What I call 'human-centred futures' is humanitarian, philosophical, and ecological. It is based on a view of humans as kind, fair, consciously evolving, peaceful agents of change with a responsibility to maintain the ecological balance between humans, Earth, and cosmos. This is an active path of conscious evolution involving ongoing

psychological, socio-cultural, aesthetic, and spiritual development, and a commitment to the betterment of earthly conditions for all humanity through education, cultural diversity, greater economic and resource parity, and respect for future generations.

By contrast, what I call 'technotopian futures' is dehumanising, scientistic, and atomistic. It is based on a mechanistic, behaviourist model of the human being, with a thin cybernetic view of intelligence. The transhumanist ambition to create future techno-humans is anti-human and anti-evolutionary. It involves technological, biological, and genetic enhancement of humans and artificial machine 'intelligence'. Some technotopians have transcendental dreams of abandoning Earth to build a fantasised techno-heaven on Mars or in satellite cities in outer space.



Interestingly, this contest for the control of human futures has been waged intermittently since at least the European Enlightenment. Over a fifty-year time span in the second half of the 18th century, a power struggle for human futures emerged, between human-centred values and the dehumanisation of the Industrial Revolution.

The German philosophical stream included the idealists and romantics, such as Herder, Novalis, Goethe, Hegel, and Schelling. They took their lineage from Leibniz and his 17th-century integral, spiritually-based evolutionary work. These German philosophers, along with romantic poets such as Blake, Wordsworth and Coleridge (who helped introduce German idealism to Britain) seeded a spiritual-evolutionary humanism that underpins the human-centred futures approach (Gidley, 2007).

The French philosophical influence included La Mettrie's mechanistic man and René Descartes's early 17th-century split between mind and body, forming the basis of French (or Cartesian) Rationalism. These French philosophers, La Mettrie and Descartes, along with the theorists of progress such as Turgot and de Condorcet, were secular humanists. Secular humanism is one lineage of technotopian futures. Scientific positivism is another (Gidley, 2017).

Transhumanism, posthumanism and the superman trope

Transhumanism in the popular sense today is inextricably linked with technological enhancement or extensions of human capacities through technology. This is a technological appropriation of the original idea of transhumanism, which began as a philosophical concept grounded in the evolutionary humanism of Teilhard de Chardin, Julian Huxley, and others in the mid-20th century, as we shall see below.

In 2005, the Oxford Martin School at the University of Oxford founded The Future of Humanity Institute and appointed Swedish philosopher Nick Bostrom as its Chair. Bostrom makes a further distinction between secular humanism, concerned with human progress and improvement through education and cultural refinement, and transhumanism, involving 'direct application of medicine and technology to overcome some of our basic biological limits.'

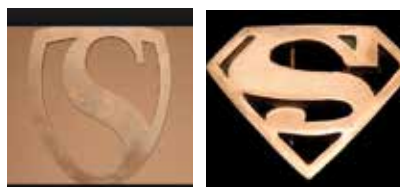
Bostrom's transhumanism can enhance human performance through existing technologies, such as genetic engineering and information technologies, as well as emerging technologies, such as molecular nanotechnology and artificial intelligence. It does not entail technological optimism, in that he regularly points to the risks of potential harm, including the 'extreme possibility of intelligent life becoming extinct' (Bostrom, 2014). In support of Bostrom's concerns, renowned theoretical physicist Stephen Hawking, and billionaire entrepreneur and engineer Elon Musk

have issued serious warnings about the potential existential threats to humanity that advances in 'artificial super-intelligence' (ASI) may release.

Not all transhumanists are in agreement, nor do they all share Bostrom's, Hawking's and Musk's circumspect views. In David Pearce's book *The Hedonistic Imperative* he argues for a biological programme involving genetic engineering and nanotechnology that will 'eliminate all forms of cruelty, suffering, and malaise' (Pearce, 1995/2015). Like the shadow side of the 'progress narrative' that has been used as an ideology to support racism and ethnic genocide, this sounds frighteningly like a reinvention of Comte and Spencer's 19th century Social Darwinism. Along similar lines Byron Reese claims in his book *Infinite Progress* that the Internet and technology will end 'Ignorance, Disease, Poverty, Hunger and War' and we will colonise outer space with a billion other planets each populated with a billion people (Reese, 2013). What happens in the meantime to Earth seems of little concern to them.

One of the most extreme forms of transhumanism is posthumanism: a concept connected with the high-tech movement to create so-called machine super-intelligence. Because posthumanism requires technological intervention, posthumans are essentially a new, or hybrid, species, including the cyborg and the android. The movie character Terminator is a cyborg.

The most vocal of high-tech transhumanists have ambitions that seem to have grown out of the superman trope so dominant in early to mid-20th-century North America. Their version of transhumanism includes the idea that human functioning can be technologically enhanced exponentially, until the eventual convergence of human and machine into the singularity (another term for posthumanism). To popularise this concept Google engineer Ray Kurzweil co-founded the Singularity University in Silicon Valley in 2009. While the espoused mission of Singularity University is to use accelerating technologies to address 'humanity's hardest problems', Kurzweil's own vision is pure science fiction. In another twist, there is a striking resemblance between the Singularity University logo (below left) and the Superman logo (below right).



When unleashing accelerating technologies, we need to ask ourselves, how should we distinguish between authentic projects to aid humanity, and highly resourced messianic hubris? A key insight is that propositions put forward by techno-transhumanists are based on an ideology of technological determinism.

This means that the development of society and its cultural values are driven by that society's technology, not by humanity itself.

In an interesting counter-intuitive development, Bostrom points out that since the 1950s there have been periods of hype and high expectations about the prospect of AI (1950s, 1970s, 1980s, 1990s) each followed by a period of setback and disappointment that he calls an 'AI winter'. The surge of hype and enthusiasm about the coming singularity surrounding Kurzweil's naïve and simplistic beliefs about replicating human consciousness may be about to experience a fifth AI winter.

The dehumanisation critique

The strongest critiques of the overextension of technology involve claims of dehumanisation, and these arguments are not new. Canadian philosopher of the electronic age Marshall McLuhan cautioned decades ago against too much human extension into technology. McLuhan famously claimed that every media extension of man is an amputation. Once we have a car, we don't walk to the shops anymore; once we have a computer hard-drive we don't have to remember things; and with personal GPS on our cell phones no one can find their way without it. In these instances, we are already surrendering human faculties that we have developed over millennia. It is likely that further extending human faculties through techno- and bio-enhancement will lead to arrested development in the natural evolution of higher human faculties.

From the perspective of psychology of intelligence the term artificial intelligence is an oxymoron. Intelligence, by nature, cannot be artificial and its inestimable complexity defies any notion of artificiality. We need the courage to name the notion of 'machine intelligence' for what it really is: anthropomorphism. Until AI researchers can define what they mean by intelligence, and explain how it relates to consciousness, the term artificial intelligence must remain a word without universal meaning. At best, so-called artificial intelligence can mean little more than machine capability, which will always be limited by the design and programming of its inventors. As for machine super-intelligence it is difficult not to read this as Silicon Valley hubris.

Furthermore, much of the transhumanist discourse of the 21st century reflects a historical and sociological naïveté. Other than Bostrom, transhumanist writers seem oblivious to the 3,000-year history of humanity's attempts to predict, control, and understand the future (Gidley, 2017). Although many transhumanists sit squarely within a cornucopian narrative, they seem unaware of the alternating historical waves of techno-utopianism (or Cornucopianism) and techno-dystopianism (or Malthusianism). This is especially evident in their appropriation and hijacking of the term 'transhumanism' with little apparent knowledge or regard for its origins.

Origins of a humanistic transhumanism

In 1950, Pierre Teilhard de Chardin (1881–1955) published the essay *From the Pre-Human to the Ultra-Human: The Phases of a Living Planet*, in which he speaks of ‘some sort of Trans-Human at the ultimate heart of things’. Teilhard de Chardin’s Ultra-Human and Trans-Human were evolutionary concepts linked with spiritual/human futures. These concepts inspired his friend Sir Julian Huxley to write about transhumanism, which he did in 1957 as follows [Huxley’s italics]:

“The human species can, if it wishes, transcend itself—not just sporadically, an individual here in one way, an individual there in another way—but in its entirety, as humanity. We need a name for this new belief. Perhaps transhumanism will serve: man remaining man, but transcending himself, by realising new possibilities of and for his human nature” (Huxley, 1957).

Ironically, this quote is used by techno-transhumanists to attribute to Huxley the coining of the term transhumanism. And yet, their use of the term is in direct contradiction to Huxley’s use. Huxley, a biologist and humanitarian, was the first Director-General of UNESCO in 1946, and the first President of the British Humanist Association. His transhumanism was more humanistic and spiritual than technological, inspired by Teilhard de Chardin’s spiritually evolved human. These two collaborators promoted the idea of conscious evolution, which originated with the German romantic philosopher Schelling.

The evolutionary ideas that were in discussion the century before Darwin were focused on consciousness and theories of human progress as a cultural, aesthetic, and spiritual ideal. Late 18th-century German philosophers foreshadowed the 20th-century human potential and positive psychology movements. To support their evolutionary ideals for society they created a universal education system, the aim of which was to develop the whole person (*Bildung* in German) (Gidley, 2016).

After Darwin, two notable European philosophers began to explore the impact of Darwinian evolution on human futures, in other ways than Spencer’s social Darwinism. Friedrich Nietzsche’s ideas about the higher person (*Übermensch*) were informed by Darwin’s biological evolution, the German idealist writings on evolution of consciousness, and were deeply connected to his ideas on freedom.

French philosopher Henri Bergson’s contribution to the superhuman discourse first appeared in *Creative Evolution* (Bergson, 1907/1944). Like Nietzsche, Bergson saw the superman arising out of the human being, in much the same way that humans have arisen from animals. In parallel with the efforts of Nietzsche and Bergson, Rudolf Steiner articulated his own

ideas on evolving human-centred futures, with concepts such as spirit self and spirit man (between 1904 and 1925) (Steiner, 1926/1966). During the same period Indian political activist Sri Aurobindo wrote about the Overman who was a type of consciously evolving future human being (Aurobindo, 1914/2000). Both Steiner and Sri Aurobindo founded education systems after the German *bildung* style of holistic human development.

Consciously evolving human-centred futures

There are three major bodies of research offering counterpoints to the techno-transhumanist claim that superhuman powers can only be reached through technological, biological, or genetic enhancement. Extensive research shows that humans have far greater capacities across many domains than we realise. In brief, these themes are the future of the body, cultural evolution and futures of thinking.

Michael Murphy’s book *The Future of the Body* documents ‘superhuman powers’ unrelated to technological or biological enhancement (Murphy, 1992). For forty years Murphy, founder of Esalen Institute, has been researching what he calls a Natural History of Supernormal Attributes. He has developed an archive of 10,000 studies of individual humans, throughout history, who have demonstrated supernormal experiences across twelve groups of attributes. In almost 800 pages Murphy documents the supernormal capacities of Catholic mystics, Sufi ecstasies, Hindi-Buddhist siddhis, martial arts practitioners, and elite athletes. Murphy concludes that these extreme examples are the ‘developing limbs and organs of our evolving human nature’. We also know from the examples of savants, extreme sport and adventure, and narratives of mystics and saints from the vast literature from the perennial philosophies, that we humans have always extended ourselves—often using little more than the power of our minds.

Regarding cultural evolution, numerous 20th century scholars and writers have put forward ideas about human cultural futures. Ervin László links evolution

of consciousness with global planetary shifts (László, 2006). Richard Tarnas in *The Passion of the Western Mind* traces socio-cultural developments over the last 2,000 years, pointing to emergent changes (Tarnas, 1991). Jürgen Habermas suggests a similar developmental pattern in his book *Communication and the Evolution of Society* (Habermas, 1979). In the late 1990s Duane Elgin and Coleen LeDrew undertook a forty-three-nation World Values Survey, including Scandinavia, Switzerland, Britain, Canada, and the United States. They concluded, ‘a new global culture and consciousness have taken root and are beginning to grow in the world’. They called it the postmodern shift and described it as having two qualities: an ecological perspective and a self-reflexive ability (Elgin & LeDrew, 1997).

In relation to futures of thinking, adult developmental psychologists have built on positive psychology, and the human potential movement beginning with Abraham Maslow’s book *Further Reaches of Human Nature* (Maslow, 1971). In combination with transpersonal psychology the research is rich with extended views of human futures in cognitive, emotional, and spiritual domains. For four decades, adult developmental psychology researchers such as Michael Commons, Jan Sinnott, and Lawrence Kohlberg have been researching the systematic, pluralistic, complex, and integrated thinking of mature adults (Commons & Ross, 2008; Kohlberg, 1990; Sinnott, 1998). They call this mature thought ‘postformal reasoning’ and their research provides valuable insights into higher modes of reasoning that are central to the discourse on futures of thinking. Features they identify include complex paradoxical thinking, creativity and imagination, relativism and pluralism, self-reflection and ability to dialogue, and intuition. Ken Wilber’s integral psychology research complements his cultural history research to build a significantly enhanced image of the potential for consciously evolving human futures (Wilber, 2000).

I apply these findings to education in my book *Postformal Education: A Philosophy for Complex Futures* (Gidley, 2016).



Can AI ever cross the consciousness threshold?

Given the breadth and subtlety of postformal reasoning, how likely is it that machines could ever acquire such higher functioning human features? The technopians discussing artificial superhuman intelligence carefully avoid the consciousness question. Bostrom explains that all the machine intelligence systems currently in use operate in a very narrow range of human cognitive capacity (weak AI). Even at its most ambitious, it is limited to trying to replicate 'abstract reasoning and general problem-solving skills' (strong AI). In spite of all the hype around AI and ASI, the Machine Intelligence Research Institute (MIRI)'s own website states that even 'human-equivalent general intelligence is still largely relegated to the science fiction shelf.' Regardless of who writes about posthumanism, and whether they are Oxford philosophers, MIT scientists, or Google engineers, they do not yet appear to be aware that there are

higher forms of human reasoning than their own. Nor do they have the scientific and technological means to deliver on their high-budget fantasies. Machine super-intelligence is not only an oxymoron, but a science fiction concept.

Even if techno-developers were to succeed in replicating general intelligence (strong AI), it would only function at the level of Piaget's formal operations. Yet adult developmental psychologists have shown that mature, high-functioning adults are capable of very complex, imaginative, integrative, paradoxical, spiritual, intuitive wisdom—just to name a few of the qualities we humans can consciously evolve. These complex postformal logics go far beyond the binary logic used in coding and programming machines, and it seems also far beyond the conceptual parameters of the AI programmers themselves. I find no evidence in the literature that anyone working with AI is aware of either the limits of formal reasoning or the vast potential of higher

stages of postformal reasoning. In short, ASI proponents are entrapped in their thin cybernetic view of intelligence. As such they are oblivious to the research on evolution of consciousness, metaphysics of mind, multiple intelligences, philosophy and psychology of consciousness, transpersonal psychology and wisdom studies, all providing ample evidence that human intelligence is highly complex and evolving.

When all of this research is taken together it indicates that we humans are already capable of far greater powers of mind, emotion, body, and spirit than previously imagined. If we seriously want to develop superhuman intelligence and powers in the 21st century and beyond we have a choice. We can continue to invest heavily in naïve technopian dreams of creating machines that can operate better than humans. Or we can invest more of our consciousness, energy, and resources on educating and consciously evolving human futures with all the wisdom that would entail.

*Professor Jennifer M. Gidley PhD is an author, psychologist, educator and futurist. Jennifer is a global thought leader and advocate for human-centred futures in an era of hi-tech hype and hubris. She is Adjunct Professor at the Institute for Sustainable Futures, UTS, Sydney and author of *The Future: A Very Short Introduction* (Oxford, 2017) and *Postformal Education: A Philosophy for Complex Futures* (Springer, 2016). As former President of the World Futures Studies Federation (2009-2017), a UNESCO and UN ECOSOC partner and global peak body for futures studies, Jennifer led a network of hundreds of the world's leading futures scholars and researchers from over 60 countries for eight years.*

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- 1 This article has been drawn from a recent book by the author: *The Future: A Very Short Introduction* (Oxford University Press, 2017), especially from Chapters 4 & 5.



A Farewell to Ice

Arctic climate feedbacks and their worldwide effects

Peter Wadhams

The changing Arctic

An enormous change has occurred in the appearance of our planet during the last two decades. The Arctic Ocean, which has an area of 14 million sq km (five times that of the Mediterranean), used to be full of formidably thick and rugged sea ice, winter and summer. Today the ice is thin and weak, and in summer it shrinks back to an area of only 3-4 million sq km, less than half of its summer area as recently as the 1980s. The media report extensively on the disappearance of the summer ice, but most people do not realize that even in winter the ice now has a character which is quite different from the recent past.

I first went to the Arctic in summer 1970, aboard the Canadian icebreaker "Hudson", which was carrying out the first circumnavigation of the Americas. After sailing around South America and up through Bering Strait we were to attempt a feat accomplished by only nine ships before us, a transit of the Northwest Passage. All along the north coasts of Alaska and the Northwest Territories, the Arctic Ocean sea ice lay close in to the land, leaving us a slot only a few miles wide to navigate and carry out our surveys. Sometimes the ice pushed right up to the coast and we had to break our way through, and eventually, when we were in the middle of the Northwest Passage, we had to be rescued by a heavier Government icebreaker, the "John A. Macdonald". In those days, a battle with sea ice in the Canadian Arctic was normal, even in high summer. In 1903-6 it took Amundsen three years for the first transit of the Northwest Passage, while the second ship, the Royal Canadian Mounted Police schooner "St. Roch", still needed two seasons, in 1942-4.

Today the situation is transformed. In September (the month of greatest ice retreat) a vast area of blue ocean surrounds the Pole. The 3-4 million square km of remaining ice is only half of the area in the 1970s-1980s and the average thickness has also halved, so the summer ice volume is only a quarter of what it was then. Warming of the Arctic is proceeding 3-4 times as fast as the rest of the

world, and this is causing the accelerated loss of ice which within a very few years will yield a completely ice-free summer Arctic.

The ice also looks different. In the past most Arctic ice was multi-year ice, several years old. It had a rugged and magnificent topography, with huge pressure ridges which blocked the paths of explorers and ships and which had keels reaching down 50 metres or more into the ocean. Today most of the ice is first-year; it grows during a single winter, reaches a maximum thickness of only 1-1.5 metres, and has only a few shallow ridges to break up the very flat ice surface. Ice which grows during a single winter can easily melt away during a single summer, causing what the US climatologist Mark Serreze calls the "Arctic death spiral". And the death of the summer ice is close.

Global impacts of Arctic change

The ice retreat is not just a curiosity of the Arctic. The global consequences are dramatic. Once ice melts, the **albedo** of the ocean – the fraction of solar radiation reflected back into space – drops from 0.6 (dirty summer ice) to 0.1 (open water only), which will accelerate warming of the whole planet. It has been estimated that the rate of loss of ice is causing a global albedo decrease which is adding a quarter to the direct effect of man-made global warming. Even this is an underestimate because the albedo effect is not confined to ice. We also see faster spring snow melt in Arctic coastal lands as sea ice recedes, due to warmer air masses moving over the coasts from the newly ice-free sea; in 2012 we saw a 6 million square kilometre negative area anomaly in June compared with 1980. Since the albedo of snow-free land is similar to that of open water (0.1), an anomaly of this size is equivalent in albedo to a sea ice retreat of similar magnitude. So if we put these two effects together the overall ice/snow-albedo feedback adds 50% to the direct global heating effect, showing how the Arctic has become a driver of, rather than just a responder to, global change. For every two molecules of greenhouse gas that we put into the atmosphere, the snow-ice feedback

adds the equivalent of one more molecule for heating the planet.

A second, truly global, consequence of ice retreat is its impact on **sea level rise**. The rate of melt of the Greenland ice sheet has greatly increased in recent years, due to warmer air moving over Greenland in summer from the open Arctic Ocean. Until the 1980s global sea level rise was due partly to ocean warming – which makes the water less dense so that the level stands higher – and partly to the retreat of mountain glaciers in places like the Alps and the Rockies. Then after the 1980s pools of melt water began to appear on the Greenland ice sheet, with much of the water disappearing down holes called **moulins** which bring it down to deeper levels or to bedrock. Here it lubricates outlet glaciers which began to accelerate until some of them are now moving twice as fast as before, depositing much more ice into the ocean as icebergs. In the record year of 2012 there was a time in July when 97% of the Greenland ice sheet surface was covered with melt water, and a gravity satellite called GRACE, which measures the mass of the ice sheet, is finding that 300 cubic kilometers of ice are now being lost per year. Greenland is now the biggest generator of global sea level rise and a similar melt is starting in Antarctica. The impact is very serious: official predictions by the Intergovernmental Panel on Climate Change (IPCC) are for a 60-90 cm rise this century, but most glaciologists are estimating 1 metre or more, maybe much more. This will have a disastrous effect on coastal cities like Miami, New York, Shanghai and Venice, as well as increasing the flood frequency on low-lying crowded coastlines like Bangla Desh. It is irreversible.

A third effect, and possibly the greatest immediate threat, is **seabed methane** feedback. This was mentioned by the Pope in his encyclical "Laudato Si". Removal of the ice cover takes away a vital air conditioning system for the Arctic. So long as some ice is present in summer, however thin, the sea surface temperature cannot rise above 0°C, since if the water warmed further it would lose its heat in melting some of the overlying

ice. With the ice gone completely, the surface water now warms up by several degrees (up to 7°C) by absorbing solar radiation, and over the shallow continental shelves this heat extends down to the seabed. This melts the offshore permafrost, frozen sediments which have lain there undisturbed since the last Ice Age. The thawing of offshore permafrost is like releasing the lid of a pressure cooker; it triggers the release of huge plumes of methane gas from the disintegration of methane hydrates (a compound of methane and ice) trapped within the underlying sediment. Methane has a greenhouse warming effect 23 times greater than carbon dioxide per molecule. An annual Russian-US expedition to the East Siberian Sea is already observing methane plumes welling up from the seabed, and this observation has been duplicated by Swedish and Norwegian work in the Laptev and Kara Seas.

Since offshore methane release causes general atmospheric levels of the gas to rise, it will give an immediate boost to global warming. One third of the Arctic Ocean is composed of shelves only 50-100 metres deep, so the area involved is huge. Russian scientists estimate that 50 gigatons (1 gigaton = 10^{12} tons) of methane could be emitted from the East Siberian Shelf during the next few years. I and two colleagues estimated that this emission, occurring over 10 years, would give an extra warming of 0.6°C worldwide by 2040, while an economic analysis by my

co-authors, using a model employed by the British Government, estimated a vast cost to the world of 60 trillion dollars over a century. This adds 15% to the overall cost of man-induced global warming, while the immediate temperature rise is likely to prove disastrous to our attempts to limit the rate of warming of our planet. This dire threat has caught most scientists unprepared, because significant summer retreat of ice in the shelf seas started only in about 2005, so this is a new phenomenon which has probably never occurred since before the last Ice Age.

A further huge threat to our planetary wellbeing is the likelihood that Arctic warming and sea ice retreat have been the cause of **extreme weather patterns** which have occurred over the past seven years, typically involving very cold or stormy weather in winter in certain parts of Europe and North America and very warm weather in others. The jet stream, the fast-moving boundary flow which separates Arctic from lower-latitude air masses, has slowed, because of the smaller temperature difference between low latitudes and the fast-warming Arctic. As the flow gets weaker the jet stream follows a wavier path, bringing cold air masses down to lower latitudes in the southward lobes and warm air to unusually high latitudes in the northward lobes.

The slow movement of these lobes enables prolonged persistence of a local weather

system in one mode, e.g. drought, flooding, cold weather or heatwaves. The biggest effects occur in mid-northern latitudes which is exactly the location of the planet's most productive croplands. If the effects persist, this could be a serious threat to global food production, with both direct consequences in the form of famine, and indirect in the form of social unrest in poor countries due to rises in food prices. With a rapidly increasing population, the world cannot sustain a check to its capability to produce food. Very serious famine is inevitable.

The final major feedback is one that may offer some benefit, but only to nations in northwest Europe. The **thermohaline circulation**, or "global conveyor belt", is a very slow circulation of the world ocean, not driven by winds but by the distribution of heat and precipitation over the oceans. It has been called a conveyor belt because there are surface and deep components, with areas of upwelling or sinking to connect them, like the cogwheels in a conveyor belt. In the Atlantic the surface current is part of the Gulf Stream, taking water from the tropics northeastward to bathe the coastline of Europe and then head further north still. Up in the Greenland Sea some of it sinks in a very small region at 75°N 0°W, and this is one of the main cogwheels of the conveyor. But it is a cogwheel that is failing; the sinking had been driven by ice formation in winter, with the surface water gaining extra density

Barney Revill



from the salt that is left in the water when ice forms. In this special region the extra salt was just enough to drive deep cylinders of sinking water called "chimneys".

But since 1998 no sea ice has formed in this region, and chimneys no longer form; the conveyor belt is failing. Because of this weakening, the European Environment Agency estimates that by the end of the century Britain, Ireland, Iceland and the French and Norwegian coastlines (and the NW tip of Spain) will experience "only" 2°C of warming, compared to a ruinous 4°C for most of continental Europe. This is good news for NW Europe, but not for tropical America, since the loss of this current will increase the temperature of tropical Atlantic waters, and hence increase the intensity of hurricanes.

The need for action

The global feedbacks created by Arctic ice retreat are of enormous importance for two reasons:-

They show the invalidity of arguments which point to the economic advantages of sea ice retreat in terms of easier marine transport and oil exploration. Each of these two benefits has been estimated to be worth billions of dollars – but the cost to the planet of the warming which makes them possible is measured in trillions of dollars.

They show that future climate warming cannot be modelled in a linear way based on the quantity of CO₂ emissions. The reality is that new feedbacks come into play at certain critical stages, which accelerate warming and may end up dominating the future pattern of global change. It is not quite a runaway warming such as that which removed the water from Venus, but we have pointed to two emerging feedbacks which pose big dangers – albedo feedback and methane feedback. So it may be that even if we reduce CO₂ emissions radically, the system may not respond – it is developing a momentum of its own.

A serious problem is that these effects were downplayed in the past by the very body, IPCC, which was established to warn the world of dangerous climatic change. Now, with the Paris Agreement of 2015, the legal onus is on every country of the world to reduce its carbon emissions such that global temperatures do not rise by more than 2°C – and if possible 1.5°C. My own conclusion, based on the way in which Arctic feedbacks enhance the warming rate, is that even a rapid reduction in CO₂ emissions will not work in time (a problem made infinitely worse by the insane global vandalism of Trump) so we must urgently consider emergency methods which could slow down the rate of warming and give us time to change to a new way of living on this planet. This means applying geoengineering techniques, repugnant as these are to many people including scientists.

Geoengineering can be thought of as a sticking plaster solution to our global problem. It consists of reducing the radiation absorbed by the planet, typically by spreading finely divided powder in the stratosphere, or more benignly by injecting fine water droplets into the lower parts of marine stratus clouds to make them brighter, that is to increase their albedo. It is not a permanent solution. It does nothing to halt the growth of CO₂ in the atmosphere, so as soon as the treatment is stopped the disease (rapid warming) breaks out with greater virulence. It also does nothing to halt the acidification of the ocean, another product of increased CO₂ levels, which will wipe out coral reefs and seriously impact marine life.

The only actual *solution* to catastrophic global warming, apart from an impossible appeal to mankind's better nature, is to find a way to *take CO₂ out of the atmosphere*. This is the ultimate technofix, and those wise souls who advocate that we live in closer harmony with nature find the concept appalling, because it would allow us to continue with all our bad habits such as continued fossil fuel use. But it is unavoidable. Various methods have been proposed, such as massive worldwide tree-planting; carbon capture and storage from coal-fired power plant exhausts; or even the exposure to the atmosphere of billions of tons of crushed olivine rock, which very slowly undergoes a chemical reaction in air involving absorption of CO₂. None of these can be scaled up in time. It is clear that a straightforward cost-effective and energy-effective method to take CO₂ out of the air has to be developed, and here is a true challenge to mankind. Can we persuade our politicians and scientists to have a new Manhattan Project, a focus for a massive worldwide research effort, to design an effective method of removing CO₂ from the normal atmosphere and turning it into a benign substance which can be stored or used? To my mind this is the most important challenge in science and technology today, since our very existence is at stake. We have created global warming and we ought to be able to stop it.

I have spent my entire scientific life from the age of 21 working on the science of sea ice and the polar oceans. What do these changes mean to me as I say a personal farewell to this magic landscape? Overwhelmingly I feel that this is a spiritual impoverishment of the Earth as well as a practical catastrophe for mankind. Our own greed and stupidity have taken away the beautiful world of Arctic sea ice which once protected us from the impacts of climatic extremes. Now urgent action is needed if we are to save ourselves from the consequences.

My personal testament on these changes is a book called "A Farewell to Ice" (UK: Allen Lane, US: Oxford University Press), in which I describe the decline of sea ice, its frightening worldwide consequences, and the measures which I believe we must take to save ourselves from the rapid climate change which is resulting.

Peter Wadhams is Emeritus Professor of Ocean Physics at the Department of Applied Mathematics and Theoretical Physics, Cambridge University. He has carried out research on sea ice and polar oceanography since 1969, encompassing more than 50 field trips on various vehicles including submarines. He was Director of Scott Polar Research Institute from 1987-1992. He now carries out his European Union research as a Professor at Università Politecnica delle Marche, Ancona, and until December 2017 he is Green Scholar at Scripps Institution of Oceanography, La Jolla, California.

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Three Horizons: Patterning of Hope

Bill Sharpe

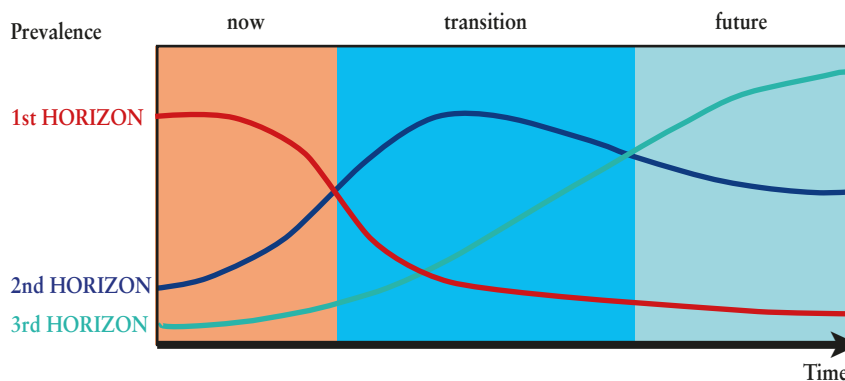
For over 30 years Bill has been involved in finding ways to think about the future, first as a research manager in the computer industry, and for the last 15 years working independently as a futures practitioner across all sorts of areas from sustainable transport to the arts, and the future of healthcare. The Three Horizons practice has grown from his work with the International Futures Forum (IFF) that seeks to foster practical hope and wise initiative in the most complex issues facing our society. Bill is speaking at the conference on Transformative Innovations for Health at the University of Westminster on November 18.

Summary

In every area of professional life, I meet people facing an existential crisis: as the complexity of the issues facing society grows, the organisational structures seem less and less able to cope; attempts to transform the system seem to work for a little while and then get defeated by the overwhelming pressure to sustain the present way of doing things; people experience a growing gap between their personal values and aspirations and the organisational life they must inhabit. In this context, Three Horizons is offering a way for people to restore hope and pursue the need for a transformational response in a practical way.

Three Qualities of the Future in the Present

How can people with widely varying backgrounds, expertise, and worldviews come to a shared vision of the future? How can we work constructively with the complex problems our society faces that defy any definitive analysis and demand that we learn our way together into the future respecting both our knowledge and our ignorance of what to do? Over the last few years the Three Horizons framework (Sharpe, 2013) has emerged as a way of helping people with these challenges.



Three Horizons is a way of working on transformative change, drawing attention towards systemic patterns rather than individual events or unexamined trends; it frames the discussion in terms of the shift from the established patterns of the first horizon to the emergence of new patterns in the third, via the transitional activity of the second.

A simple linear way of thinking about change places us in the present moment looking towards how we want things to be in future – placing the future outside the present moment, something that might or might not happen, and appearing in the guise of the unknown or unknowable and the risky. Yet we act with future intent all the time, linking what we are doing now to future outcomes. The central idea of Three Horizons, and what makes it so useful, is that it draws attention to the three horizons as existing always in the present moment, and that we have evidence about the future in how people (including ourselves) are behaving *now*.

By making these qualitative distinctions between the three horizons in the present, a lot of dynamics of change come into view quite naturally, and we are led to explore them in terms of the patterns of behaviour of those who are maintaining or creating them. This leads to the additional benefit, that we can reflect on our own intentions towards those patterns in the process of exploring the behaviour and intent that is revealed in each horizon.

Three Horizons thinking offers a way to find and shape our own intentions more clearly as we look over the first horizon of the known towards the second and third horizons of innovation and transformation towards the future. It transforms our perception of the future potential of the present moment by revealing each horizon as a different quality already existing in the present, and which might develop depending on how we choose to act – to maintain the familiar or pioneer the new.

The outcome of Three Horizons work is a map of transformational potential which enables us to act with more skill, freedom and creativity in the present, both individually and together.

H1: The first horizon

The first horizon describes the current way of doing things, and the way we can expect it to change if we all keep behaving in the ways we are used to. H1 systems are what we all depend on to get things done in the world. Throughout the day we make use of a myriad societal systems – shops, schools, banks, hospitals, transport – and most of the time we don't want, or need, to think about them too much; we all help perpetuate the system by taking part in it.

While we talk a lot about the pace of change, it is worth remembering that lots of things must stay the same for daily life to go on. Innovation and change in our H1 systems

is happening, but it is about sustaining and extending the way things are done now in a planned and orderly way; uncertainties and risks are to be eliminated or prepared for – the lights must be kept on.

Nothing lasts forever, and over time we inevitably find that our H1 ways of doing things are falling short – no longer meeting expectations, failing to move towards new opportunities, or out of step with emerging conditions. More than that, we have a sense that our H1 methods of improvement and innovation do not ever get us where we want to go and are just sustaining the old approach with its failings; that approach is losing its ‘fitness for purpose’.

H3: The third horizon

The third horizon is the future system. It is those new ways of living and working that will fit better with the emerging need and opportunity. H3 change is transformative, bringing a new pattern into existence that is beyond the reach of the H1 system. There will be many competing visions of the future and early pioneers are likely to look quite unrealistic – and some of them are. As we build our own Three Horizons map we bring our own vision to bear and take a view on how it relates to the visions of others and the trends that are playing out for all of us.

H2: The second horizon

The second horizon is the transition and transformation zone of emerging innovations that are responding to the shortcomings of the first horizon and anticipating the possibilities of the third horizon. New ways of doing things emerge in messy ways, brought about through some combination of deliberate action and opportunistic adaptation in the light of circumstances.

Entrepreneurs must judge the moment, and bring together ideas and resources to try a new way of doing things here and now. They live in an ambiguous territory where the old ways are dominant but the new is becoming possible; they can look to the past and fit in with familiar patterns of life, or try to become the seed that grows into the new. Entrepreneurship is hard and most attempts to do new things fail; it is much easier to serve the old systems, and established H1 players typically dominate.

Convening the future

So, from this simple Three Horizons framework we get three things:

- a way to look at the processes of change that encourages us to see deeper patterns of systemic change beneath surface events
- a way to make the future accessible in the present in the form of the intent and actions that are bringing it about
- a way to bring all the voices of continuity and change into play as part of the discussion, as expressed in their intent towards the patterns.

Three Horizons is a way to think about the future that recognises deep uncertainty but responds with an active orientation.

It allows us to understand more clearly how our own and other people's actions might shape the future we are exploring. This is especially important when we look at issues of broad societal concern, where we are all actors in the future. Here we are particularly concerned to find ways for the many different constituencies in society to come together to unlock the future from the dominance of old ways of doing things – ways that are no longer working for us.

Over the last few years many people have started using the Three Horizons framework as a way to work on their issues and in the International Futures Forum we've been talking to them about why it works. All of them speak of the way it separates things out in a helpful way and improves the dialogue, because people can see where they are and can avoid unnecessary confusion and conflict between the three horizons. It turns out to be quite natural, in almost any situation where people are working on some complex issue, to gently bring out the three ‘voices’ of the horizons:

- the managerial voice that is concerned with the first horizon responsibility for keeping things going;
- the entrepreneurial voice of the second horizon that is eager to get on and try new things (some of which won't work);
- the aspiration and vision of the third horizon voice that holds out for commitment to a better way and the opportunity that can be imagined in the mind's eye.

The Three Horizons approach is aligned with these three forms of awareness which everybody can adopt towards the future. By default, many people inhabit just one horizon in their work, and view other horizons with perplexity, misunderstanding or hostility. However, everyone has a natural capacity to work with the other horizons, and the core of Three Horizons practice is the flexibility to work with all three modes of awareness at the same time.

Once different groups are able to see which horizon dominates their thinking they can also see how it relates to the others. For example, a passionate H3 advocate for renewable energy may easily forget what it feels like to have H1 responsibilities for keeping the lights on, and in return the H1 thinker, dominated by current responsibilities, can regard the H3 protagonist as simply irrelevant to their pressing needs. The H2 entrepreneur may be drawing their inspiration from the third horizon, but is also having to judge when the time is right to challenge the H1 organisations for dominance, or instead to work with them.

Future consciousness and the patterning of hope

As people appreciate the positive contribution of each horizon they can move from holding ‘their’ horizon as a fixed mindset and instead use all three as flexible perspectives on the future. This is the core idea of Three Horizons – to make the shift from our simple, one-dimensional view of time stretching into the future and instead adopt a three-

dimensional point of view in which we become aware of each horizon as a distinct quality of relationship between the future and the present. We call the move into this multi-dimensional view, and the skill to work with it, the step into *future consciousness: an awareness of the future potential of the present moment*.

As people make this step individually they can also make it together – developing a shared culture of future consciousness that in turn opens up a greater freedom of action. Just as a sports team or a musical ensemble practise together to develop their collective skill, and in doing so enhance their personal potential as part of the whole, so we can develop our capacity for transformative change by seeing future consciousness as a collective practice and skill rather than purely individual.

Through our shared understanding of the patterns and where ‘we’ are within them we can act with shared hope, creativity and commitment, holding together as we navigate from the familiar to the new.

Three Horizons in practice

International Futures Forum is supporting the emergence of transformative culture through the provision of resources and expertise to support Three Horizons and related practices (www.iffpraxis.com). IFF's experience of Three Horizons has grown up over a decade of use; extended accounts of what has been learned are available in *Transformative Innovation in Education* (Leicester et al., 2013 - second edition) and *Humanising Healthcare* (Hannah, 2014). For those with an interest in futures techniques the background to the development of Three Horizons, and its relationship to other approaches such as scenario planning, can be found in (Curry et al., 2008).

Bill Sharpe is an Independent Researcher in science, technology and society, Member of International Futures Forum (www.internationalfuturesforum.com) and Visiting Professor, Digital Cultures Research Centre, University of The West of England. Reprinted from the *Journal of Holistic Healthcare*.

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Regenerative Business - The Way Nature Intended

Giles Hutchins

Here Giles discusses how 'today's businesses that embrace a living systems logic will be tomorrow's success stories.'

Over the last century, conventional commerce and industry has been a core contributor to our present environmental and social crisis. This mainstream business approach is born out of a flawed logic about how the world works. It is a logic that is being challenged by a growing number of forward-thinking business folk. For example, Ray Anderson, one of America's most admired CEOs, notes, 'we have been, and still are, in the grips of a flawed view of reality – a flawed paradigm, a flawed worldview – and it pervades our culture putting us on a biological collision course with collapse.'

Paul Polman, the CEO of Unilever, leads by example when demanding that business leaders snap out of old thinking about how the world works and move to a new model, a new logic, where the interconnectedness of business, society and the environment is seen as core to purpose-driven enterprise.

Being a passionate environmentalist from an early age, and engrossing myself in Schumacher's *Small is Beautiful* during my teens, I am only too aware of the immense

problems our wrong-headed business logic has created over the years. There is little doubt that our prevailing business logic alienates and undermines not only the majority of its employees through hierarchic control-based thinking, but also degrades our communities and more-than-human world through its myopic short-termism and self-centred greedy intent.

A new paradigm

Yet there is a new paradigm emerging in business which goes beyond mere 'green-washing' PR fluff. It is an embracing of a new worldview: a living-systems worldview for business, with huge implications for us all.

Over the last few months I have engaged with a wide range of thought leaders like the living systems theorist Fritjof Capra, the leadership specialist Prof. Peter Hawkins and the values-based business guru Richard Barrett. I have also engaged with a variety of CEOs and senior managers from a wide range of businesses. I have been heartened to find that many are patently aware of the now desperate need for a radically different approach to how we strategise and organise.

The 'new norm' of business is unceasing transformation, hand-in-hand with increasing stakeholder complexity. Put simply, business-as-usual is no longer an option. In fact, business-as-usual is very much part of the problem.

We now need to cultivate not just a different leadership logic, but also the learning systems that enable our leaders to embrace this new logic amid unceasing transformation and increasing day-to-day pressures.

A Shift of Logic

This short article explores this shift in logic now emerging in many organisations (literally thousands across the globe and rising). This article does not tackle the equally interesting development in business of transforming ownership structures such as a shift from shareholder ownership to membership or cooperative structures for instance. Here, we focus on the leadership and management logic within our organisations, regardless of whether they are shareholder owned, private, non-profit, etc.

The challenge we face today is not simply about digitisation, collaborative ways of working or leaner operations. Something much deeper, much more fundamental, is being demanded of us. As the well-respected business futurist John Naisbitt points out,

'The greatest breakthroughs of the 21st Century will not occur because of technology, but because of an expanding concept of what it means to be human.'

For example, when I asked the CEO of a global chemicals company what their most pressing challenge was, it was the need to transform the psyche of the company to one that embraces eco-systemic thinking where social and environmental drivers are ingrained into day-to-day decision making. For the CEO of a large professional services firm, it was transforming their world-of-work in a way that enables everyone to bring their 'whole-selves' to work so that the organisation becomes more purposeful, vibrant, connected and alive.

For the Head of Strategy of a global bank it was embedding a learning culture that is not just agile and responsive, but purposeful and all together more-human. For the CEO of a global consumer goods company it was to deepen their strategic intent to serve life.

More and more of our business leaders are waking up to the realisation that our organisations are actually living systems rather than machines. That these living systems are intimately entwined with the living systems of society and our more-than-human world.

Regenerative business

And for these living organisations to thrive in times of increasing uncertainty and volatility, they must learn to become regenerative. What do we mean by 'regenerative business'?

'The purpose of life is to live in agreement with Nature' Zeno, ancient Greek philosopher

Regenerative business seeks to create the conditions conducive for life, by operating in ways that embody the natural logic of life.

The control-based characteristics of conventional business separate the work functions from the management functions, creating silo-mentality and hierarchic bureaucracy that relies on a control-and-predict ethos of managing remotely by numbers. The organisation is perceived as a self-maximising machine struggling for survival in a dog-eat-dog world. This hyper-competitive control-based logic is not actually how life is. Vibrant ecosystems flourish through diversity, distributed decision-making, local attunement, and an evolutionary sense of purpose.

The emerging future of business encourages wholeness within ourselves, our systems, and our society. It's a radical departure from the traditional scientific management theory still served-up in many of our leading business schools today.

Yesterday's logic is now failing us. Enter, living systems logic: adaptive teams are empowered to make change happen at the local level, to self-organise and attune locally amid an ever changing environment. Leaders do not manage remotely through hierarchy but rather facilitate environments where learning, co-creativity and authenticity flourish. Decision-making is not hierarchical but distributed. The goal is to deliver on the purpose of the organisation, and in so doing a healthy profit follows. The organisation is viewed as a purpose-driven community intimately interwoven within the living systems of our wider world. Nothing is separate from anything else, everything is interconnected. This logic is the logic of how life really is. And it is simply good business sense, as hot-off-the-press research from The Global Lamp Index shows that organisations embracing this regenerative logic consistently out-perform their mechanistic counterparts.

Balancing divergence with convergence

Living systems logic informs us that we need a blend of 'divergence' and 'convergence' to thrive amid volatility.

'Divergence' through the inclusion of a diversity of perspectives from different people within and beyond the organisational boundaries (facilitated through generative dialogue approaches); empowered self-organising teams adapting to their local terrain, freed from cumbersome bureaucracy (facilitated through team dynamics); a participatory and exploratory cultural mind-set (fostered by a blend of appreciative inquiry and heart-based communication methods).

For example, the global network of social-enterprise community centres, Impact Hub, has check-ins at the beginning and end of every meeting for people to centre themselves and share in authentic and purposeful ways. A North American waste company regularly holds stakeholder dialogue sessions with a diverse group of stakeholders to ensure customers, suppliers, local activists, indigenous people, and community leaders are all involved in generative discussions about the strategy of the organisation. A London supermarket, Thornton's Budgens, holds sharing circles every few weeks for all employees, regardless of role, to openly share in an open-hearted and authentic way so that problems transform through empathy into improved ways of working. This helps the organisation deliver on its purpose of putting people and planet first, trusting that profit will follow, while creating a more vibrant work place for everyone involved.

'Convergence' is achieved through: a life-affirming resonant sense of purpose and clear strategic intent that guides and governs the over-arching direction-of-travel; and, a soul-based culture that underpins and infuses the day-to-day meeting conventions, management protocols and behavioural values.

As an example, the financial services provider Triodos makes money work for positive social, environmental and cultural change by investing in projects that enrich our world – all of Triodos's investment projects are open to public scrutiny, with the social and environmental credentials of every investment available online.

The chemicals company Pantheon Enterprises applies conscious chemistry to ensure all its products are biodegradable and non-toxic. It is committed to changing the chemical industry for the better through its conscious chemistry approach. As a culture, it encourages its people to become more empowered by engendering self-organised methods of management and decision-making. The legal services provider IACP's boardroom considers the impact all its decisions have on the next generation, our children, ensuring services to corporate and domestic clients actually transform conflict into breakthrough resolutions.

The 'divergence' provides the vibrancy, creativity and effectiveness, while the 'convergence' provides the mission-driven intent and soulful purpose of the organisation. Both together provide the aliveness, agility and purposefulness for the living system to thrive amid volatility. This coherence within the organisation informs the way it relates with its eco-system of stakeholders including society and the environment.

Regenerative life-affirming business is not a utopian dream; it is how life really is. It is our prevalent practices that are a delusory aberration. The rising interest in the B-Corp movement is symptomatic of this shift happening across the world in our business mind-set. To become a B-Corp companies voluntarily change their legal constitution away from a narrow focus on short-term returns for shareholders to creating value for all stakeholders including society and the environment.

The rising popularity of movements such as Conscious Capitalism, Teal, The Purpose Movement and B-Corps heralds the dawning of a new business logic; a deeper richer consciousness that expands not only our perception of organisations as living systems but also our perception of ourselves as purposeful human beings playing our part in an innately interconnected world.

*Speaker, adviser and author Giles Hutchins' latest book **Future Fit** (2016) is available on Amazon and all good book shops. He blogs at www.thenatureofbusiness.org and is Chairman of The Future Fit Leadership Academy www.ffla.co*

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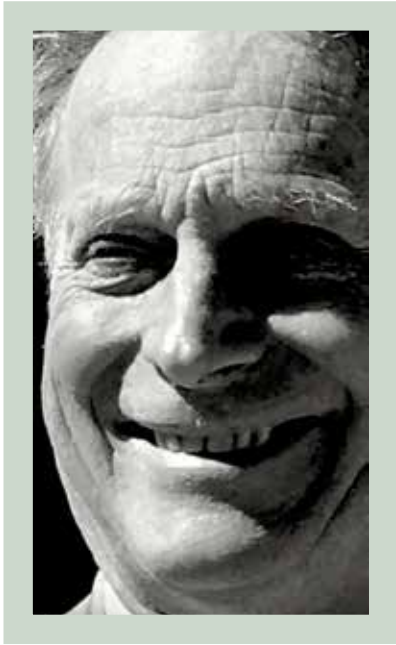
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Meet the Terminator

“If you bring forth what is within you, what you bring forth will save you. If you do not bring forth what is within you, what you do not bring forth will destroy you.” *Gospel of Thomas*

Paul Kieniewicz reflects on a Modern Devil

These days you'd think that demons, malevolent spiritual beings out there to trip us up, would have been consigned by most scientists to the dustbin of history along with "superstitions" and other religious ideas. They certainly wouldn't be a subject for serious scientific research. Well, apparently they are a subject of research, not as horned animals, but true to 21st century style, as malevolent artificial intelligences.

Recently, Stephen Hawking, Elon Musk and Bill Gates¹ sounded a warning that artificial intelligence posed the greatest existential risk to the human race. Along with other cyberneticists they are convinced that one day machines will become self-aware, conscious beings like ourselves, and when that day comes, the human race won't stand a chance. The warning reads not unlike an early script for *The Matrix*, where intelligent machines ended up wiping out most of humanity.

If that warning weren't enough, a recent paper by² Federico Pisono³, Roman V. Yampolskiy provides information on how to design a cybernetic demon that could obliterate the human race. Now that the plans are out there, no doubt someone will sit down and try to figure out how to do it. How to create a devil.

Why does contemporary science have so much trouble in getting rid of the devil? Since the Enlightenment there has been little difficulty in marginalising God to the extent that according to writers such as Richard Dawkins, there isn't much left for God to do in the universe. That doesn't seem to be the case for the devil, whose

return some in the AI community are planning for. One might rewrite Voltaire's well known saying to read, "If the devil did not exist man would have to invent him". Curiously cyberneticists don't predict that their work will give rise to an all intelligent, benevolent being, the sort that religions might have called God. They find it easier to create a devil.

What exactly is a devil? The Ultimate Terminator is an obvious example. However, the devil also resides "in the details". It's what comes out and bites us when we least expect it. It's in the law of unintended consequences. While we shine our light of reason on a problem, the devil resides in the things we have forgotten about, or regard as not worthy of our attention. Things we would like to forget.

And so it is with the rapid technological development of the past decades. The greatest and latest gadgets are marvellous. My iPhone connects me to all my friends regardless of where they are for a minimum cost. Except that there is a cost. For all our connectedness, many people feel a greater isolation because other forms of relationship have gone. The new global mind we call the Internet harbours

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¹ <http://observer.com/2015/08/stephen-hawking-elon-musk-and-bill-gates-warn-about-artificial-intelligence/>

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³ http://arxiv.org/find/cs/1/au:+Yampolskiy_R/0/1/0/all/0/1



terrorist networks too, organised crime, destructive viruses, and perhaps one day it will give birth to the Ultimate Terminator.

To this writer, it is clear that our modern culture is pervaded by a deep angst. Our technological growth, particularly in the information field, for all its advantages of creating global communication, has left us feeling afraid. We don't know where it is all leading to. An announcement of a new AI breakthrough such as a computer beating humans at a new game tends to make us afraid. Our movie culture reflects our cultural anxiety. The future that we envisage is not a benevolent one but a dystopian future of man pitted against machines, zombies or nasty werewolves. We visualize a society is in shreds, of "dog eat dog". The demons are certainly active. And there's a hero or heroine who works tirelessly to sort them out.

Having banished the notion of a God, our rational mind has become the supreme ruler of the universe. There's nothing we can't do --- cure diseases, travel to the stars, one day (hopefully) merge our consciousness with AI to become an immortal super being. But now at the pinnacle of our achievement we find that it's a bit lonely at the top. The universe we contemplate with our rational mind is more pointless than ever. Unsurprisingly we may end up creating the devil, because it's a fun thing to do. We may feel that we're in charge, but an enhanced moral sense is not a given.

An alternative view is that our feeling of control is only an illusion. That we are not in control, but that forces of which we are largely unaware control us. For most of us who view our rational mind much as the supreme deity, this is an uncomfortable admission to make. The poet Czesław Miłosz expresses it,

*What reasonable man would like to
be a city of demons,
who behave as if they were at
home, speak in many tongues,
and who, not satisfied with stealing
his lips or hand,
work at changing his destiny for
their convenience?*



This is not a particularly radical view among many historians, and among depth psychologists. C.G. Jung spent a lifetime researching the Archetypes --- psychological forces common to all of humanity that control us at a deep level. But for the past century much of depth psychology as expressed by Freud and Jung has been sidelined by modern psychology with its focus on how to fix problems. Easier to retreat to the position that we are in control. Evil is what terrorists do. It's other people who are the problem. The devil will one day disappear in the pure light of reason.

The problem with that view is that the devil does not cease to exist because we ignore him. Someone right now is trying to figure out how to build the Ultimate Terminator. Depth psychology teaches us that the devil that we don't know, that we refuse to get to know is the one that causes most mischief. The person we kill in a fit of fury, that turns out to be the son we never knew, still ends up being our son, --- killed by our hand. Our unconsciousness does not exonerate us.

In our technological progress we have lost touch with our inner world, with the forces that, unknown to us, inform our decisions. We ignore that world at our peril. To recognise it, to come to know it, is an imperative that may determine whether as a race we survive.

Paul Kieniewicz (SMN) is a geologist, astronomer and writer. He is the author of *Gaia's Children*, co-author with Andrew Glazewski of *Harmony of the Universe*.



David Bohm & Ilya Prigogine Centenary Meeting

London, June 24, 2017

Christos Sideras

The meeting started with introductions by David Lorimer and Bernard Carr, who explained how the work of Bohm and Prigogine went beyond the strict purview of conventional academic physics, to explore the links between the ideas of mind and matter. As David Lorimer suggested, both of these scientists thought 'beyond mechanism, predictability and linearity' and left room for a more open future. In addition to their broader take on physics, they also share a centenary, both of them being born in 1917, which this meeting celebrated. Both were honorary members of the Network.



The first speaker, **Paul Howard**, documentary maker, showcased the film he was creating, 'Infinite Potential: the Life and Ideas of David Bohm'. Some of the biographical information was covered during the earlier introduction, outlining how Bohm became involved in theoretical physics, going to Berkeley to do his thesis with Robert Oppenheimer. However, due to his involvement with communist groups, he was denied access to his own work and was unable to defend his own thesis, as some of his findings and calculations directly contributed to the Manhattan Project. With the help of Oppenheimer, he was nonetheless able to obtain his thesis and, after the end of the war, he went to Princeton, where he had discussions with Einstein. In the first year of his contract, he was arrested because he pleaded the fifth Amendment and as a consequence banned from the campus. McCarthy tried to make this clear legal, but

the Supreme Court ruled that the option was indeed legal, so Bohm was released. He then had to leave the USA in 1951, taking up a professorship in São Paulo, Brazil, instead. He later moved to Haifa, Israel, in 1955, but after a few years moved again, this time to England, eventually settling in London, where he was appointed to a Chair of Theoretical Physics at Birkbeck College, and developed his work on the implicate and explicate order, in collaboration with Basil Hiley.

During the documentary screening, clips were shown of **David Peat**, who recently passed away, explaining how Bohm was keen to 'open up the doors' to the discussions that were closed with the current canonical Copenhagen interpretation of quantum physics. However, this was not favorably received by most physicists and David Peat was saying in the documentary that even his mentor, Oppenheimer, was not supportive. He explained that Oppenheimer organised a conference after Bohm had left the USA to discuss some of his controversial papers and suggested to all the prominent physicists there that 'if we cannot disprove Bohm, then we must agree to ignore him'.

The sketch of Bohm through the documentary then, is of a man who was not liable to fall into convention for the acceptance of his peers, but was rather more interested in exploring this reality we share, 'this field' where 'we are all linked by a fabric' in ways we cannot readily comprehend. His work even went beyond physics in the strict sense to encompass such approaches to human understanding as the holographic brain, which he worked on with Karl Pribram, and his discussions on spiritual matters with Jiddu Krishnamurti.

His dialogues with Krishnamurti developed as he became interested in the idea of the unconditioned mind, thinking more about the relationship between equations and language. Tensions arise from the way most languages structure our world in concrete objects, as if it is a concrete object itself, as opposed to this other take on the world - one of continuous transformation and process. Bohm also became more interested in the idea of dialogue and how this can be critical to ongoing transformation, and how 'parking the conditioned view' can allow for this true transformative dialogue. Following the screening, Paul Howard explained that there is additional archive material of Bohm, and it is his hope, given sufficient funds, that this can at some point be included in the documentary.



The second speaker was author and educator **David Edmund Moody, Ph.D.**, who presented some highlights from his recent book, *An Uncommon Collaboration: David Bohm and J. Krishnamurti*. Moody pointed out that Bohm and Krishnamurti engaged in more than 100 recorded dialogues together over the course of a quarter of a century. As we had already heard a few things about Bohm, Moody began by telling us about the philosophy of Krishnamurti. The superficial impression of him as a New Age guru, according to Moody, is entirely misguided. Rather, Krishnamurti developed a radical and original philosophy of mind, one that entailed, among other things, a rejection of nationalism, organized religion, and all forms of authority in the psychological field. Krishnamurti considered that fame, pleasure, seeking psychological achievement, and even ideals are false, dangerous, or self-contradictory. He rejected knowledge as a source of psychological transformation, and said that all systems and methods of meditation are incapable of bringing about a truly meditative state of mind.

What Krishnamurti advocated or endorsed were relationship with nature, intelligence as distinct from intellect, and remaining with what is, inwardly, rather than indulging in any form of psychological escape. These were some of the features that attracted Bohm to his philosophy. The two men engaged in a series of creative dialogues, based upon their mutual interest in certain common themes. Foremost among these was a basic principle of quantum physics that inextricably links the observer of quantum events with what

is observed. According to Krishnamurti, a similar principle obtains in the psychological field, often expressed in his aphorism, "the observer is the observed."

In addition, Bohm maintained that the theory of relativity and quantum mechanics both reveal a quality of wholeness in the fabric of the physical universe. Somewhat similarly, Krishnamurti held that consciousness is divided and fragmentary due to our failure to understand the processes of thought, and that careful observation of oneself can result in psychological wholeness. More generally, he expressed the view that thought is inherently mechanical, limited, and prone to fragmentation in everything it does. Due in part to his immersion in the philosophy of Hegel, Bohm was highly receptive to these elements of Krishnamurti's teachings.

Moody concluded with some personal reminiscences of his relationship with the two men. He engaged in more than a hundred dialogues with Bohm, exploring the psychological issues that Bohm had discussed with Krishnamurti. Bohm was inexhaustible in his ability to sustain conversations of this kind, and was always lucid, insightful, and gifted with illuminating examples and colourful metaphors. Moody said the relationship between Bohm and Krishnamurti was an important chapter in the history of the twentieth century, and he felt honoured to write the story of their collaboration together.



The last speaker of the morning was **Basil Hiley**, emeritus professor of physics at Birkbeck College and David Bohm's collaborator for the years he worked there. He spoke on 'The Legacy of David Bohm: from Plasma Physics, through Quantum Mechanics to the Philosophy of Mind'. Someone in the audience commented that there were not only substantial similarities in the thought of Bohm and Prigogine, but that they also shared the same year of publication - 1980 - for their two important works, Ilya Prigogine's 'From Being to Becoming' and David Bohm's 'Wholeness and the Implicate Order'. Hiley's account of Bohm concentrated on his research interests, which spanned a number of domains: nuclear physics, plasma physics and the foundations of quantum mechanics, and his subsequent work on the Bohm-de Broglie approach.

This latter work suggests a particular interpretation of quantum mechanics, one acceding to hidden variables. He also had interests in relativity physics, in mind, matter and consciousness, as discussed from other perspectives in earlier talks. In outlining Bohr's ideas on Quantum Theory in 1951, Bohm saw four essential elements to the work: wholeness, that is, the indivisible unity of the entire universe, quantum non-mechanics, the thought-like qualities of quantum phenomena, and that hidden variables are not possible. And yet, only a year later he wrote a paper on quantum mechanics and hidden variables, following his own thinking rather than established opinion, to postulate how they could be used if they exist. There were various reactions to this view, mostly quite negative. As noted earlier, Oppenheimer felt it should be ignored. Heisenberg felt it was a return to the old materialist ontology. Pauli spoke of electrons 'like kindergarten children being guided by a teacher', whilst Rosenfeld wanted to protect the student readers from the 'confusion created by Bohm, Landé, and other dilettantes'.

Yet there were other later voices such as Bell, who wrote that in 1952 he 'saw the impossible done'. Indeed, there are a number of technical objections to David Bohm's theory that Basil Hiley briefly outlined, but it seems that the crux of the objections revolved around issues of ontology and physicists' philosophical stance. What is a particle, is the question: is it a localised entity, a total process or activity, an abstraction from the underlying process? These were some of the issues explored. Further, it was suggested that Bohm's theory was not popular with physicists, in part as there was, at first, no mathematical structure upon which he based his ideas. How to capture this idea of structure-process in the whole? Ideas from Dirac, Feynman, Whitehead and Prigogine were all brought together, in the making of a mathematics that describes this process of becoming, such as the movement of a particle from one place to another. The importance of non-commutativity was brought out, and the tool of matrix multiplication used, with the basic assumption that every process can be described, or adequately captured, by a matrix algebra. From this process, space-time emerges, evoking the thought of Leibniz, speaking of orders of succession and coexistence.

It was claimed that there are no such things as waves, just as there are no things as particles. Instead, it is all process. It was also suggested that, in a related fashion, Prigogine talks about 'super-operators' and only if the product can be factored in a certain way can you get quantum mechanics, otherwise you get irreversibility. The overarching philosophy is that, in this context of non-commutativity, not all orders can be made explicit together. We are not gods looking at nature, on the outside looking in; instead, we are inside looking out. Bohm's ideas of the implicate order tell us that quantum places are not happenings going on in space and time, but are process. The session ended with Bernard Carr briefly mentioning some exciting developments where the ideas of David Bohm are being tested.



Following the lunch break, Vasilios Basios, researcher in Brussels at the Department of the Physics of Complex Systems and Statistical Mechanics, spoke on 'Unfolding Complexity: Chaos, Patterns and Creativity', an encomium to his teacher and mentor Ilya Prigogine. As a man of great culture, Prigogine was interested in both pre-Colombian art and cycles. As his interest was not confined to simple oscillations, his work opened a path of understanding of the creative role of chaos comprising more chaotic and indeterminate oscillations. We had the opportunity to see such an example of an indeterminately oscillating object in the lecture which brought the explanation a more tangible flavour.

The lecture proper then began, explaining how Henri Poincaré, Prigogine's intellectual grandfather, was the first to look at the 3-body problem, the simplest complex system that we know, which could describe the oscillation of the moon around the earth and around the sun. He contributed greatly to philosophy and insisted that intuition is much more important than logic. Théophile Ernest De Donder was Poincaré's student, and also Prigogine's mentor, and De Donder was very much an introvert. Conversely, Prigogine was very much an extrovert and a communicator, often courting controversy, to the point that his position would have been at risk had he not already gained so much respect for his work.

Chaos is characterised by instabilities, which form the dynamical substratum of the behaviour of complex systems'. This brought in new ideas about equilibrium and the mechanistic idea of Laplace's demon was 'exorcised', leaving us with causality without predictability. The results are seen in such varied conditions as global climate, bird flocking and the stock market. Equilibrium is then shown to have a multiplicity of possible outcomes and not just stable or unstable, and the emergence of this structure is bottom-up, rather than hierarchical and top-down.

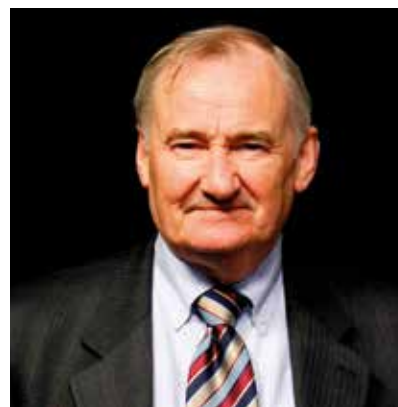
There is an intertwining of order and disorder and Basios showed how very similar initial conditions can lead to different results, dubbed the 'butterfly effect'. Interestingly, by reversing the equation one can reach the same origin or end from different places, and Basios suggested how this may relate to the idea of synchronicity. He then touched

upon the fractal archetype, self-reference and self-similarity, each part being the whole. He spoke about patterns, and how dissipative structures can sustain patterns. This is akin to Goethe's idea of morphogenesis, or the emergence of patterns.

What, then, do we know about patterns? In chemistry, it was deemed that reactions were irreversible. When Boris Pavlovich Belousov suggested that this modified law of thermodynamics predicts oscillating reactions in chemistry, he was ridiculed at the time – a classic case of 'theory blindness' that avoids seeing the evident beyond orthodox concepts. Yet, this was later experimentally proved by Anatol Markovich Zhabotinsky, showing at the very least that our fixations are not always justified. We then had a quick overview of Prigogine's overall contribution to our understanding of the world, including the science of open systems and the second law of thermodynamics, dissipative structures, self-organisation, and the emergence of patterns, constructive fluctuations and chaos, non-linear feedback and self-reference, emergence and irreversibility. Many of these principles are used and seen everywhere, across all scales of life.

One further interest of Prigogine was creativity, a concept that can bring the two apparently disparate cultures of the subjective humanities and the objective sciences together. A researcher in Prigogine's department, Jean-Louis Deneubourg, applied these ideas to social insects, looking at collective decision making and symmetry breaking, where very simple systems can have quite complex emergent properties. These ideas are also now seen in road traffic, but also Internet traffic, and there is now an interest in using these methodologies to predict turning or tipping points and events. When we look at emergence, then, there is a difference between the microscopic and macroscopic rules, though they clearly have to be 'compatible'. Basios mentioned Richard Strohmann on the coming Kuhnian revolution in biology, and also Dieterick Aerts who suggests that concepts are quantum entities.

In an interview with Emilios Bouratinos called 'The Heraclitus of Modern Science' in 1996, Prigogine said that 'you can't solve a non-linear problem with linear thinking', speaking against mechanistic, and reductionistic thinking, and Basios suggested we should allow non-paradigmatic thinking, metaphor and the living cosmos to come back to the centre of our thinking. He ended with a folk story as a narrative of emergence, the stone soup, that took place after the devastation of the 30-year war. Soldiers from different armies come to a village wanting food and shelter, but they were all turned away, as people had precious few individual resources. By cleverly enticing all the villagers together to contribute what little the each had with their promise of stone soup, the whole village was fed, through good ideas, good intentions, and perhaps a bit of necessity, being the 'mother of invention', ultimately through collectively nourishing food.



Our last speaker was Peter Allen, Professor at the Complex Systems Research Centre at Cranfield University, who spoke on 'The Complexity of Human Systems'. Lars Onsager, a physical chemist, studied systems near equilibrium, whilst Prigogine, coming a little later historically, wanted to create a physics far from equilibrium. He tried to show what laws must be obeyed but was not able to do so, as these systems are non-linear. As mentioned in the previous lecture, far from equilibrium systems gain some autonomy, and order can spontaneously occur in an open system, with a decrease in entropy. Thus the universe is not just decomposing but is also creative. Open systems can self-organise spontaneously. The smallest fluctuation can change the system, and as Allen suggested at his talk, self-organisation occurs when homogeneity becomes unstable, and non-linear interactions are driving symmetry-breaking changes in morphology.

This was shown through the Belousov-Zhabotinsky reaction, mentioned earlier, where the reactant, naturally switching from red to blue as explained, rather than continuing to oscillate, settles on a colour; and given more than one box of the reactant, it ends up making spatial structures. The question then becomes a bit more complicated. If the system is open in the way described, what then delineates a system? It is not so clear, and it seems so in physics and chemistry, that the only thing you can make definite statements about is something where you can do repeatable experiments. In this sense, science is only solid when not dealing with biology or people. In ecology, a computer model of interacting populations, looking at birth, growth, and death rates, is very far removed from the real life. The model simplifies down to a few species very quickly, whilst in reality, this does not happen, as there is micro-diversity.

So we can ask which assumptions are wrong? Some such assumptions are that there is a boundary around the system separating it from the environment, that there is adequate representation of the system's internal elements, or that the variables (as categories) are fixed stereotypes and there is no micro-diversity, no adaptive behaviours, no local knowledge. Other assumptions are that things occur at average rates, in linear (rather than non-linear) dynamics and, also,



Nobel laureate Prof Brian Josephson (centre)
with Richard Hellen and Tom Stedall

that we are looking at the system reaching equilibrium. The 'modelling' plan is to start with life's complexity, make successive assumptions, and reach simplicity. But these equilibrium or system dynamic models are much too simple – resulting from making too many simplifying assumptions. We need to consider the important effects of mutations, innovations and of microdiversity in order to understand how a system of populations or an organization may actually evolve over time.

An interesting description of this life evolving is that any such structures that arise are emergent in characteristics and functions. Where there are emergent characteristics, selection operates on the macrostructure, meaning it is partially blind to the microstructure. If that is the case, diversity can 'secretly' occur beyond the immediate control of 'selective forces'. This means that micro-diversity continues to increase selection forces hidden from the macrostructure, until some critical change occurs and a major evolutionary step occurs.

He then gave a very interesting quote from Edmund Burke from 1790 (found in Bryan Magee), which I copy here in its entirety commenting on human society:

"A developed society is so complex that a single mind cannot possibly understand it. It has come into being over many generations through numberless acts of initiative and organisation on the part of individuals and groups who have had to cope with reality. Its institutions and arrangements embody innumerable choices and decisions, balanced judgements arrived at through experience, preferences based on knowledge. [...] The whole thing is like a vast and complex organism; and it changes organically developing new capacities in response to need, and perpetually adapting to ever-changing circumstances. It is not at all like a machine which can be built from scratch from a blueprint, and whose working parts can be removed and replaced at will. Neither in

theory nor in practice could any one political thinker or any small group of political leaders wipe out a developed society and replace it with one that was adequate."

Peter Allen then shared what he deems to be his two good ideas, which are: (1) evolution occurs through structural instability, when novel actions, through internal heterogeneity, micro-diversity, error and so on, take place, allowing new populations and structures to emerge, and, (2) for the innovation to persist, it must take sustenance (energy, matter) from the environment – and so it must 'do something' for some part of the environment, or else it will fade away. In other words, the 'innovation must have some emergent capabilities if it is to survive. He also shared an interesting aspect of an economic market model. The model they initially designed did not run at all, as the initial investment led initially to a loss, and to a cessation of production that had been envisaged. It was at this point that they realised that expectations of results and profits, and – even more importantly, trust was necessary for things to get moving.

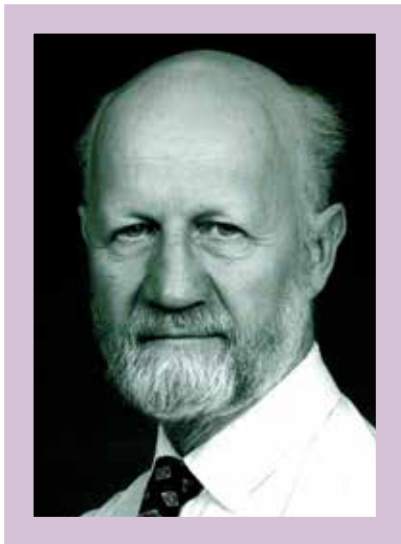
So it is the self-belief (unproven initially) that allows entrepreneurs to launch new products. In a sense, risk takers are needed for market evolution, and market structures do not reflect rational behaviour, but 'arise when self-belief gets lucky'. Interestingly, human reflexivity, awareness of the outcomes predicted by a model of market processes, would invalidate the model, as some of the agents involved would change their behaviour as a result of the outcomes predicted by the model – thus invalidating the model! This means that any model of a human system, if believed by some of the agents, will invalidate the original model. However, one could imagine a model that might include the 'learning' by some of the players. In any case, the model becomes part of the overall system! So in conclusion, because of this complex interaction between the world and a model of the world, different possible outcomes are possible and though not everything is possible, there is no single truth either. We therefore cannot truly understand history, we can only describe it. So we cannot predict the future. Another way of saying this is that the predictions of our models can affect the world being modelled, making it difficult to get a 'clean' system. Models of the world affect the world, becoming part of it.

This well-attended and engaging meeting touched upon a broad variety of topics and worked well for participants were from varied backgrounds. I have given a broad stroke outline of what took place, although there is of course much more to be explored at this juncture of ideas, and I can readily recommend the writings of the speakers, as well as those of Bohm and Prigogine themselves.

Christos Sideras works as a psychiatrist and studies philosophy, having done some neuroscience research. He is interested in psychoanalysis, movement practices, and a great many aspects of our living world.



Peter Hardwick and
Janine Edge



Mystics and Scientists 40 (2017)

Michael Langford

The fortieth annual meeting 'Mystics and Scientists' met at Horsley Park from April 7 to 9 under the general title 'The Continuing Quest for Unity and Integration'. The attendance of nearly 150 people was in itself a tribute to the quality of the speakers and organization. In order to indicate what went on I shall go through the programme in order, but it needs to be stressed that much of the value consisted in small gatherings and networking that took place outside the formal sessions I describe.

On the Friday evening, following an informal reception, Dr Paul Filmore (chair of the SMN) and Malcolm Lazarus gave an overview of the early days of the Network and of the Mystics and Scientists gatherings, leading up to this fortieth event – a highly symbolic one if we think of 40 as the last of five octaves. This was immediately followed by David Lorimer's summary of 'The Quest for Unity – the Continuing Journey'. The search for unity, or integration, applies not only to the theoretical level, where the different scientific disciplines are searching for a theory of 'everything', but also to the spiritual journey, from separation to wholeness in the inner life. For both, there is a process that is endless. [Later in the conference a speaker referred to Eliot's line: "the end of all our searching will be to return to where we began, and to recognize it for the first time". (Little Gidding). The evening ended with an introduction of the speakers. Following meditation or 'movement' exercises the Saturday sessions began with Ravi Ravindra (one of several professional scientists on the panel of speakers, and who has held many positions in both physics and philosophy, presently being an emeritus Professor of Physics at Dalhousie). Ravi's topic was 'Eternal Spiritual Wisdom and Modern Science'. Two themes that struck me (among the many present) were the concern with Western science (since the sixteenth century) with 'matter' at the 'lowest level', in contrast with the 'origin' of things at the highest level. The second was the surprising neglect, by many Western thinkers, of their own spiritual traditions, which frequently complement Eastern traditions. [As an example, Ravindra referred to Nicodemus coming by night to Jesus, and being told that if he wanted to understand he had to be 'born again'.]

The following session was led by Dr Jude Currivan, 'Restating and Reunifying Reality – Our In-formed and Holographic Universe'. In this talk Currivan (qualified in both physics and archaeology) brought together her personal experiences of a mystical kind from

a very early age, and interesting suggestions concerning how quantum and relativity theory could be harmonised within a universe 'informed and holographically realised' – the topic of her recent book. Among the themes was the idea of the universe being likened to a 'big breath'. On this view, 'consciousness is not so much something we *have*, rather it is something we and the whole world *are*.

The afternoon programme led people to make difficult decisions between rival sessions (all of which appear to have been appreciated), involving (i) a meditation workshop with Ravi Ravindra; (ii) Charlotte Lorimer's talk on Gustav Klimt (one of group of artists who exemplified a spirituality in which an integration between the arts, sciences and humanities was sought); (iii) a Movement Workshop (led by Meredith Dufton, which included exercises from the Taoist arts of chi kung and tai chi); (iv) a talk by Malcolm Lazarus entitled 'The Transformational Journey: My Psychospiritual Experiences' (which included an account of the work of the Wrekin Trust) and (v) a number of small group discussions.

Following tea there followed a lecture – thanks to a large version of the skype screen, beamed from Oregon – by Dr Fritjof Capra (author of the best-selling 1975 'The Tao of Physics'), titled 'Mystics and Scientists in the 21st Century – Science and Spirituality Revisited'. There were several references to his seminal book, the physics of which – Capra stressed – has never been disputed. The sense of 'oneness', which pervaded the human search for wholeness, was not identified with any one religion – since religions represented particular and limited insights within *historical* contexts, however, both religion and physics were concerned with the 'non-ordinary' – in particular the inner world and the subatomic world respectively. The lecture moved on to the implications of a proper understanding of the relationship of science and spirituality for ecology and then to the adequacy of the 'bootstrap' hypothesis -- brought to prominence in the 'Tao of

Physics' (that is, the impossibility of separating the scientific observer from the observed phenomena) – leading to the realization that the universe has to be seen as a dynamic web of interrelated events.

The Saturday programme concluded with an extraordinary musical presentation by the **Sheldrake brothers** (Merlin, the biologist and Cosmo, a multi-instrumentalist musician), involving voice, bones, guitar and accordion. The sense of unity and relationship between the brothers coloured an amazing diversity and originality of sounds, that – in a way – acted as a symbol for the whole gathering.

Following the opportunities for meditation or movement the Sunday presentations began with **Marilyn Monk** (emeritus professor of biology at UCL and the first scientist to provide empirical evidence for the phenomenon of epigenetics). Once again, a major theme was complementarity, in this case between (i) the reproducible nature of science, (ii) the subjective insights of the poet, and (iii) the interconnectedness experienced by the mystic – all of which comprised different way of knowing. If we look within, we might find that we are all three-dimensional beings. We should not seek to 'synthesize' these three kinds of experience (they are in truth, already 'reconciled') but we need to balance and understand them. The lecture went on to identify a number of barriers to internal change (such as habit and faulty perception) and contrasting ways of promoting helpful change (including a discussion of the Alexander technique). There followed an account of early work on slime mould (and the consequent emergence of the science of epigenetics) – important, among other reasons, as an example of a 'paradigm shift' in understanding – one that makes the 'mystery' of the universe all the greater.

The following session was led by **Merlin Sheldrake** (elder son of Rupert), a biologist concentrating – as his lecture indicated

-- on 'Underground Connections: Fungal Networks and the Wood Wide Web'. Here we were presented with, on the one hand, an account of how fungi have a kind of intelligence that integrates massive quantities of information (sometimes gathered from the tips of the hyphae), without there being any central nervous system or 'brain' – and on the other, an indication of how the web-like interconnectedness of the fungal world can teach us something about interconnectedness more generally. This was further illustrated by an account of how fungi shared information, and of fungal collaborations and examples of symbiosis, including an extraordinary tale of how parts of the fungi act – as it were – as either 'traders' or 'negotiators' with other flora or fauna.

There followed an 'Open Forum' with all the presenters at which a range of topics were discussed, including: (i) The use of LSD (with a general nervousness being expressed about 'short cuts' to genuine mystical experience, while admitting that some cultures have found ways of using drugs creatively. (ii) Interesting questions about whether consciousness can change the material world (with the phenomena of placebos suggesting that in some circumstances it might). (iii) The importance of the thought of Goethe. (iv) The relationship of consciousness to artificial intelligence (which was generally felt to be mechanistic, at least in its present forms). (v) The relationship of grace as a spiritual *gift* to the need for effort (or, as Ravi Ravindra stressed) the willingness to be changed. The gathering ended with poetry and tea.

Looking back at the whole event, two concerns arise for me, neither of which should be taken as a criticism of the speakers or of the organisation.

First, for the most part the speakers were 'preaching to the converted' as the saying goes. There is a somewhat upbeat emphasis, both in the *Network Review* and in gatherings such as this, an emphasis

which tends to assume that reductionist materialism, in its different forms, is basically in retreat, and that – intellectually at least – the fallibility and irrationality of hard core empiricists (and of the popular crowds that blindly follow them), has been exposed. The grounds for this optimism include the very nature of modern physics (when properly understood), and the awareness of ancient and rich traditions of understanding gathered from many spiritual traditions.

Living in academe, as I do, and also in a broad social context, I have to say that this optimism (as I would call it) does not seem to be shared by most of those whom I meet. Personally, I am convinced of both the fallibility and irrationalism of both popular culture and (perhaps surprisingly) of many highly intelligent academics (both in the sciences and in the humanities), but I don't think it is the case that the kinds of insights commonly accepted at SMN gatherings are generally shared. I suggest, therefore, that we have to do more to reach out to a wider audience, using language that can be grasped both the contemporary reductionist scientist and by the ordinary person.

My second concern is related. At typical philosophy conferences keynote addresses are challenged by those with very different opinions, both by other speakers and from the floor. At its best this leads to lively exchanges and a clearer understanding of the issues, even though -- at its worst -- there can be bruised egos and unnecessary rancour. I am definitely not suggesting this model for SMN conferences – which would indeed be paradoxical, given our search for 'unity' at many levels. The model of a typical academic conference is definitely not what I want to introduce. However, there could be more place for a friendly version of "I'm, afraid I still don't see what you're getting at" or "I'm afraid that I really don't agree with that way of putting things"; expressions I occasionally heard in small groups but almost never in open forums.

I wonder – to be provocative – whether, at a future gathering, one keynote speaker who represents the all too common 'overarching physicalism' (as I would call it) of our age might be invited to debate their general position with an SMN representative at *one* of the sessions. I recognise two difficulties here. The first is finding a person who, while representing such an overarching physicalism, is prepared to enter into an eirenic debate. (I see little value in a point-scoring boxing match.) The second is that, for some delegates, even such an eirenic debate would introduce a somewhat disturbing element into the proceedings. Nevertheless, I for one, would welcome such a session if it were handled in a creative way.

Michael Langford was a student of Isaiah Berlin in Oxford and is a Professor of Philosophy, emeritus, The Memorial University of Newfoundland; and now, in semi-retirement, teaches part-time in the University of Cambridge's Faculty of Theology.



Richard Irwin, Marianne van Mierlo, Kevin Tingay and Charlotte Lorimer



Correspondence

Culture, Conflict, Credibility and Curiosity

Tim Houlding, t.houlding@btinternet.com

In his presentation to the 2016 “Mystics and Scientists Conference” at Horsley Park, Surrey, Professor Tom McLeish FRS spoke passionately about a “theology of science”. He pointed to science’s need for a deep cultural narrative. He noted, with regret, how, in his view, the relationship between science and religion had become distorted and spoke of his vision of a theology of science that is participative, relational and co-creative.

The cultural impact of the amazing technology that science has brought us is obvious. The usually very good TV science documentaries, the stunning photographs of our beautiful planets brought to us from the various solar-system probes, the extraordinary advances in health-care and awareness of our imperilled Earth make an obvious cultural impact. There are shadows, however. The debate between scientists and religionists has undoubtedly become very polarised, some would say militarised. On the one hand, whilst scientists might cling to the ethos that they make their science vulnerable to verification and falsification through experiment, there is often a strident, dismissive tone. On the other, religionists may claim that eternal truths have been captured in unchanging ancient scripts - sadly, that strident, dismissive tone may emerge here too.

There is no doubt that science has lost its intimacy as far as we subjective experiencers are concerned. Of the so-called four fundamental forces, only two, gravity and electro-magnetism (light), are accessible to us; the strong and weak nuclear forces remain in an obscure hinterland. The greatest scientific theories of the twentieth century, Special and General Relativity and Quantum Mechanics, are extraordinarily difficult to understand and their fundamental insights deeply counter-intuitive. In addition, the domain of science is just as exposed to assumptions, belief systems and fashions as other human pursuits. Sir Roger Penrose’s recent book “Fashion, Faith and Fantasy in the New Physics of the Universe” is a must-read for all scientifically-oriented folk. Here, you will read that none of String Theory, Inflationary Theory nor the Holographic Model are a done-deal, in his very eminent and considered opinion.

I believe that a fundamental problem is that neither the science camp nor the mystical camp is prepared to acknowledge the assumptions each makes. In a recent private exchange with a Vedantic Guru, I found I could not penetrate the assumption that the “absolute truth” is undeniably expressed in certain ancient narratives. Somewhat similarly, even in the best descriptions of difficult concepts and theories in

science, some fundamental questions are never posed, some deep assumptions are never spoken of and the requirements for degrees of “fine-tuning” are obfuscated. In addition, we need to be aware that the “shut up and calculate” ethic runs very deep in science, but is rarely admitted.

In our earnest searches for wide and deep models which help explain our remarkable place in the Universe, both science and mysticism may fall into “paradigm-traps”. Quite recently, SMN members were presented with a holistic model which attempted to alloy mystical insights with some newish ideas in science, namely the Holographic Model and concepts of Shannon (information) Entropy. Problematically, the Holographic Model is one of the most reductionist concepts in physics, which purports that all the information within our whole Universe is compressible on to a digital, two-dimensional “worldsheet” at the edge of our Universe. Sadly, the author of the holistic model had profoundly misunderstood some basic tenets of physics and had misshapen them to fit what was otherwise a very enchanted mystical model. To bridge the divide, we need credibility on both sides.

So, where do we go from here? This questions brings me to the SMN in particular. The SMN has done heroic work in providing a platform for bridging the divide between the objective theories of science and the subjective experience of being human. To me, curiosity is key. There can be no fundamental paradoxes, of course, in our exciting journeys through experience and theory, although that may be how it often feels. I would, therefore, seek a platform within the SMN where we feel encouraged to pose questions that feel fundamental to us. Sometimes, I feel that the SMN conferences may be a little too didactic and pedagogic. To me, there is a very great “wisdom in the room” within the SMN that is not always honoured. Would it be possible to devote a full session within the main conferences to inviting deep, fundamental questions from the floor? We may benefit from not necessarily needing “answers”, but enjoying, with humility, loving imagination, integrity and competence, the deep searches of our fellow travellers.

Network News

APPOINTMENT OF DIRECTORS, 2017

At the Annual Meeting in Plymouth in July, Jacqui Nielsen, Richard Irwin and Paul Kieniewicz were re-elected. Dr Edi Bilimoria gave notice of his resignation. Dr Joan Walton was co-opted.



Joan is Senior Lecturer in the School of Education at York St John University, teaching Research Methods on the Masters programme, and supervising doctoral students. She is particularly interested in exploring the ontological and epistemological contexts within which approaches to research are located. This has led to her taking an active interest in the phenomenon of consciousness, which, to quote Christian de Quincey, is 'our deepest mystery and our most intimate reality'.

In collaboration with colleagues from both western and eastern cultures, Joan is researching different ways of understanding consciousness. This also leads to a meaningful dialogue about various interpretations of science and spirituality, the relationship between them, and the significance of this discussion for the ontological and epistemological foundations of social and educational research. She draws on a wide range of disciplines, including quantum physics, biology, transpersonal psychology, and diverse spiritual traditions, to inform her research.

BLAKER FUND TO SUPPORT RESEARCH INVITATION TO APPLY - EXTENDED NOTICE

The Trustees of the GB Blaker Charitable Trust have requested that the grant, and the interest arising from it, shall be used to fund educational programs, in line with the charitable objects of the SMN Trust and SMN, particularly for young people aged approximately 15-30. Note especially that the intention is that the funds shall be used purely to support such educational programs in science or medicine.

All those who wish to be considered for a grant in the range of £500 to £5,000 are requested to apply by 31st October 2017 to the Chair, Dr Paul Filmore – chairman@scimednet.org for guidance on application.

MEMBERS' NEWS



Honorary Member Dr. F. David Peat (1938-2017)

F. David Peat was born in Liverpool and was awarded a PhD at Liverpool University before moving to Canada. For a number of years, he carried out research in theoretical physics but his constant desire to find "the question that lies behind the question" led to an encounter with the physicist and philosopher David Bohm, whom Einstein had described as his "spiritual son". The two remained friends and were working together on a second book at the time of Bohm's death. David is the author of *Quantum Potential*, a biography of David Bohm.

In 1979 Peat decided to focus on writing and was author of over twenty books that deal with such topics as Jungian synchronicity, creativity, chaos theory, quantum theory and the Native American universe. In 2007 Pari Publishing brought out his scientific autobiography *Pathways of Chance*. Peat also organised meetings of artists and scientists, and scientists and Native American elders.

In 1996 Peat moved from Canada to the medieval hilltop village of Pari near Siena in Tuscany. There he and his wife established the Pari Center for New Learning, which had a huge cultural and economic impact on the local community.

The Center is dedicated to education, learning and research. It fosters an interdisciplinary approach linking science, the arts, ethics and spirituality. Above all the Pari Center for New Learning is dedicated to the principle of "the spirit of place". Housed in a medieval village it becomes an ideal location in which to pause and think about the future and the values, meaning and direction of our contemporary society. The heavily wooded countryside and the traditional farming methods of Pari's inhabitants also remind us of the importance of ecological considerations in a world that has become increasingly obsessed with progress and consumerism.

The Pari Center favours a gentle approach to learning that emphasises human interaction in simple, pleasant surroundings without the intrusion of unnecessary technology. Its philosophy and approach is described in the book "Gentle Action"

■ David Lorimer writes:

David Peat has been an honorary member of the Network since 2007, when we held a memorable Continental Meeting in conjunction with his Pari Center. He spoke at a number of Network Events and was due to take part in the centenary conference for David Bohm and Ilya Prigogine, reported above. As mentioned in the first paragraph above, David was never satisfied with conventional thinking and was always looking for what was beyond and outside the box. Reading his autobiography, his inquisitive approach and passion for science becomes apparent at an early age. Paul Howard spoke about David at the centenary meeting, where we also held a silence in his honour to celebrate a creative and courageous life.

TONY PRITCHETT – AN APPRECIATION

I was in touch with his wife, Maureen Doolan, who related the following apposite story surrounding David's death: "It was pointed out to me that David died on the same day as Carl Jung. I think he would have liked that. But more interesting is that David always told the story of Jung and the scarab beetle when teaching his synchronicity course. It was finding a scarab beetle in Siena that led us to Pari (a long story that he also liked to relate). Anyhow, a few moments after he died, our son-in-law, Andrea, found a scarab beetle on the stairs - the first to our knowledge that had ever entered the house. It was lying on its back desperately trying to right itself. He turned it over and it flew out of the open window." A wonderful parable for his soul taking flight for the next stage of his journey.

■ Diana Clift writes:

Like everyone who knew him, I was terribly shocked to hear that Tony Pritchett died suddenly last week. Tony was a stalwart of the Scientific and Medical Network and the Society for Psychical Research and many other groups exploring "weird stuff". I met him first through our mutual interest in crop circles nearly 30 years ago. Since he joined the Network in 1993 he was a regular at all our residential events and especially the continental meetings.

He was a great worrier and would fuss about everything, forever asking questions. I particularly remember how he would look at a menu in Greek or Czech and ask me which items were wheat free...as if I had the faintest idea!



He was also well known for videoing everything at these events, which was intrusive and annoying at the time but actually resulted in some great moments being captured for posterity: such as Eileen Lwin being hoisted onto a donkey to climb the steep cobbled streets of Hydra to the idyllic setting of our Network meeting in 1995, and highlights of the 1999 Frenchman's Cove Event in Jamaica with speaker Dean Radin, including precious last glimpses of Hermod Sverre, who was killed in an accident just days later

I am so pleased that Tony made it back to Frenchman's Cove this year. He loved it and had a great time. I shall treasure memories of him dancing to a reggae band on a warm tropical night in January!

I just can't imagine Network events without Tony. He was diagnosed with prostate cancer more than 20 years ago and treated it with all manner of alternative techniques. He always travelled with a range of potions and devices. Apparently they worked for him. He held the condition in check and didn't seem to age much in all that time. Although he was nearly 80, he was planning to go to all the upcoming Network events at home and abroad. I think the Network was like family to him.

It's not well known that he was a brilliant scientist and engineer, a pioneer in computer animation and biofeedback research, who never got the recognition he deserved. He was the first to admit that he was hopeless at self-promotion and diagnosed himself as having Asperger's syndrome. Most of us knew him as a great Network 'character'. Fussy and exasperating certainly, wacky and eccentric for sure, but warmhearted, loyal, and a very dear friend.

He will be dreadfully missed...



■ Suzette van Hauen Drucker writes:

It is hard to understand that Tony will not be there any more. He seemed like a cat with nine lives, and maybe, unbeknownst to us, during the many years we knew each other, he just started on the last of those lives.

I was his health consultant for 30 odd years, a job which, apart from health issues, involved answering questions on anything from UFOs, free energy and politics to the latest medical reviews of research and treatment of chronic

illnesses. He had a voracious appetite for information and knowledge, preferably scientific, spiritual or leading edge mind-body therapies, or the possibility of integrating all of these areas.

A consultation with him was never boring, and it took no little effort to persuade him to stick to the presenting health issues.

He might have become a brilliant, albeit somewhat absent-minded researcher or scientist. But maybe his role in life was more importantly that of keeping me and all his other friends and whomever he met on their toes - to never stop questioning information and to always be open to new ideas and new view points.

Tony will be poking my shoulder, if ever I should fall asleep in the comfort of established knowledge - quite a legacy to leave behind.

I will miss him very much.

Dr Philip Kilner - Emerson College and Goethean Science



Emerson College in East Sussex was founded by Francis Edmonds in 1962, inspired by the approaches to inquiry, creativity and education of Johann Wolfgang von Goethe, Ralph Waldo Emerson, John Ruskin and Rudolf Steiner. The college hosted the Network's 'Wider Horizons' seminars in the 1970s and 80s. It remains an enriching place of communal striving and personal discovery; a venue for a lively variety of workshops and courses. I'd qualified in medicine when I studied sculpture and flow here in 1979. Questions of flow in relation to heart form and

function led me back into mainstream cardiovascular research. Having retired now, I'm in Emerson again with on-going interest in Goethe's phenomenological approach to natural science. While analytical approaches tend to proceed through theoretical explanations and measurements, Goethe's approach begins free, as far as possible, of preconceptions, and moves through repeated, accurate, inclusive observations towards informed, enlightening discovery.

Emerson College homepage: <http://www.emerson.org.uk> Goethean Science page: <http://www.emerson.org.uk/goethean> An 11-week programme next early summer: <http://www.emerson.org.uk/designing-for-life>

LOCAL GROUP REPORTS

LONDON GROUP



CLAUDIA NIELSEN
0207 431 1177
claudia@cnielsen.eu

To read reports from other meetings, go to the REPORTS page of the London Group page of the Network's website. If you don't live in London but wish to be advised of London events, please drop me an email and I shall add your e-address to the circulation list.

■ May 2017

This month we welcomed Keith Ward who spoke at many SMN conferences but not yet to the London Group. **PROF KEITH WARD** is a philosopher and a priest in the Church of England. He is the author of over 25 books and numerous articles and has in the past taught philosophy, religious studies and theology. Amongst many other posts, he was Regius Professor of Divinity at the University of Oxford. His talk this evening had the intriguing title, *Stephen Hawking nearly talks about God* and it addressed the content of Hawking's book *The Grand Design* (Bantam, 2011) in which Hawking asks questions such as when and how did the universe begin? Why are we here? Is the apparent 'grand design' of our universe evidence for a benevolent creator who set things in motion?



Two aspects of Hawking's explanation caught Keith's attention: 1) space-time, the reality of our universe, does not come from nothing, but comes from a quantum vacuum. In other words, it depends on something beyond it. 2) Quantum vacuum is not empty, but is full of 'stuff', understood as energy. This means that the reality beyond space-time has qualities, it has non-material laws. Laws of nature require wisdom, intelligence. So, what he is saying, is that the universe depends on something eternal, beyond time, with laws that are necessary. In other words, the material world is dependent on non-material reality.

Later in his book, describing the two slit experiment, Hawking points out that the observation by consciousness of the experiment, will determine a particular outcome, i.e. particle behaviour, which is different from the wave behaviour when the experiment is not observed. This shows that consciousness has an effect on the outcome of this experiment. This conclusion leads him to state that *we* create history by our observations, rather than history creating us. The philosophical approach that is best aligned to this conclusion is Idealism. Until the collapse of the wave, which is the term used to describe the outcome of the experiment, the status is one of probabilities. Bringing into his argument the concept of Mind, Keith pointed out that Mind is intentional. Consequently, asks Keith, in the quantum world of probabilities, might the universe be a creation of God's observation? Might God have created the universe by actualising probabilities through intentional observation? He started the talk by saying that he would talk not about what Hawking thinks but about what he writes. He knows Hawking is an atheist, but in his writing, there are clear indications that God, or Mind terminology could find a place in it!

■ June 2017



This month we welcomed back Bernard Carr who spoke to the group a few times in the past. **PROF BERNARD CARR** is Professor of Mathematics and Astronomy at Queen Mary University of London and is a former chair of the SMN. In his talk, entitled *Facing up to Mind and Spirit: Do we need a Post-Materialist Science?* Bernard started by telling us how he found out about his personal life's passion. When sent to his room for being a naughty boy in boarding school, he read books and out of those, three fundamentally determined his future: Bertrand Russell's *ABC of Relativity*, Dunne's *An Experiment with Time* and Rampa's *The Third Eye*. These books underlie his three passions: science, psi and Buddhism, and his talk this evening brought all three together.

With the use of the Uroboros, Bernard showed us the history of the advance in scientific knowledge towards the very large and the very small scale. He explained in detail the various milestones in the progression towards what we know today. On the small scale end, we find the search for a theory that unifies all the forces, the M-theory and at a macro-scale we speculate the existence of a multiverse. This narrative demonstrates the triumph of physics. However, in this quest, one element is missing: consciousness. And this is what his lecture explored. Without consciousness, the physical reality is only a mental model. Scientists are looking for a theory of everything but how can that be achieved without the consideration of consciousness, our subjective experience?

Bernard argues that we must move away from the matter-centric perspective and include mind in our models. And, he says, the bridge between mind and matter is psi. Psi includes phenomena such as telepathy, clairvoyance, precognition, psychokinesis etc. Psi has the potential to explain Quantum Mechanics and vice-versa. We heard about entanglement and evidence for the non-locality of mind from psi experiences, giving us a glimpse into the holistic fabric of reality. As well as what we call the paranormal, psi includes also spiritual experiences and creativity. It is recognised and expressed by many artists that their creativity comes "through" them, rather than being the creation of ego. The evidence seems to point to mind having access to other levels of reality, explained by the principles of non-locality. Bernard's "cri de coeur" is that we need an extended physics which will connect matter and mind, and an extended transpersonal psychology to connect mind and spirit. And connecting the extended physics and the transpersonal psychology is the new paradigm proposed.

■ July 2017



We welcomed Ornella Corazza this month to hear her presentation on the research she has done into *Near Death Experiences (NDEs) in Japan*. **DR. ORNELLA CORAZZA** is a medical anthropologist, author of *Near-Death Experiences: exploring the mind-body connection* (Routledge 2008). She held fellowships at the 21st Century Centre of Excellence (COE) on Death and Life Studies at the University of Tokyo and this evening Ornella explained the different perspectives the Japanese have on what it means to be a

human being, through the lens of Near Death Experiences. We were told about the ubiquitous phenomenology of an NDE from the reports of people who have experienced it. The sense of peace, being out of their bodies, entering the darkness, or tunnel, seeing the light and entering that light, in the presence of friends and family who had died, entities and sometimes people from sacred traditions. Reports of life review is often present. People who have had those experiences invariably mention the realisation of a sense of mission they have to accomplish in this lifetime. She also mentioned ketamine and its effect which are similar to NDEs which help explain the attraction young people have however, as she explained, not knowing how to integrate these experiences in their lives can have serious consequences to users.

Whereas in the West the experience of an NDE involves leaving the body behind, in Japan the interpretation is very different. The unity of the mind-body connection is an aim to be cultivated during a lifetime. This is the teaching of Ornella's master Yasuo Yuasa. The contemplation of the cherry blossoms in the Spring, which involves people looking at them for hours, is an example of the meditation on the meaning of being embodied, as well as the impermanence of life. The mind-body connectivity is externalised to include others and the environment. A human being is a being within a context and the whole context participates including the ground of being, which is called Bashi. The visible Bashi is the connection with the lived reality and the invisible Bashi is the ground of being, or cosmic consciousness. Whereas in the West the experience on an NDE is of disconnection from the physical body, in Japan the experience is of an embodied connection with the invisible Bashi, expressed in imagery for instance of rivers which typically is associated with death, the Torii gate, the symbol of the perennial connection with the transcendental, or the Shimenawa, the belt around a tree indicating that the tree is itself a divinity.

■ August 2017



August brought Olly Robinson who presented a fascinating *Introduction to Sacred Geometry and Mystical Mathematics*. Dr. OLIVER ROBINSON is an ex member of the SMN Board of directors, now a consultant, as well as a senior lecturer in psychology at the University of Greenwich. His book *Paths Between Head and Heart: Harmonies of Science and Spirituality* is due to be published in 2018. This evening he showed us hidden patterns in both geometry and mathematics, which bring to light

inbuilt harmony and beauty. Although a meaningful explanation of those patterns goes beyond our understanding, their uncovering is awe inspiring.

Sacred geometry, we were shown, point to forms as a source of intuition into spiritual truth. When present in works of art and architecture it gives them a sense of sacredness. Olly recommended the book *A Beginner's Guide to Constructing the Universe* by Michael Schneider as a comprehensive guide for an exploration of the topic. We had an insight into the nature of the humble point: it is the start of everything and yet, in itself has no physical form. It manifests the unmanifest. It is the arrival of the second point which allows a line to come into being expressing certainty and directness, or a curve, the source of infinite possibilities. One point can be the centre of a circle and two points can create the overlapping of two circles. The multiplicity of circles creates harmonious forms and Olly showed us the importance of the number 6 and its multiples in geometric forms originating in circles in nature as well as in the symbols of sacred traditions.

On mystical mathematics Olly showed us the mystery of the digital root, which involves adding up the digits of numbers until a single digit (between 1 and 9) is achieved. For example, we found out that by dividing the number 360 on a continuous basis for as long as we'd like allowing for the expression of the fractions in full, the digital root of all the digits of the resulting numbers will be always the number 9. Other interesting patterns emerge in such an operation. We heard that the digital root in the Vedic Square are an indication that the mysteries hidden in mathematics were already being explored by the ancient people of Vedic times in India. And time was devoted also to the exploration and examples of the Golden Ratio, the proportions which universally denote beauty and which are frequent in nature. It was a fascinating evening and I for one, will be looking forward to learning more when reading his book next year.

SYDNEY GROUP

JEAN AND DAVID INGMAN

■ Beyond Duality - Towards Transformation Part 2. Lindsay Mell, 20th May 2017

There were six people present and five apologies.

Lindsay's presentation was about Vasubandhu, a Buddhist monk who lived in the 4th century BCE and a philosopher who was considered one of the most influential thinkers in Indian Buddhist philosophy.

Lindsay talked about how all things, being subject to causes and conditions, could therefore be impermanent, from this perspective, because change would be logically impossible. All things persist for only a moment. Vasubandhu shared such a view and established Momentariness, things must self-destruct because of cause and effect. Each moment is different but giving the appearance of continuity as illustrated by the apparent motion on a movie screen.

Vasubandhu, had philosophical problems and like his forbears had to account for continuity, memory and karma, across many lifetimes, which was difficult to reconcile with the doctrine of impermanence.

Lindsay then went on to talk about Vasubandhu's disproof of a creator god. The 8 Eightfold path, right speech, right action, right livelihood etc. The world is inconsistent with a single creator from Vasubandhu's perspective. Vasubandhu postulated that things are not caused by a unity god but by one of god's many desires. Everything depends on mind or many minds. Vasubandhu was an idealist, everything dependent on mind, everything is mind. Lindsay continued with a discussion of the 8 consciousnesses, starting with the mental storehouse consciousness and the seeds of experience, universal ontological idealism.

Vasubandhu was only an idealist in the realm of conventions. Appearance being all there is and all that appears being a false construction of self.

A very interesting discussion followed regarding these concepts and included David Bohm's Implicate/Explicate, and the question "Are we living in a hologram"? The gestalt consciousness concept of how realities and personalities are created as outlined in realityandyou.com seemed to have much in common with Vasubandhu's theories.

Vasubandhu agreed with the Mahayan tradition, each moment is new, the previous has gone, it has moved to a different dimension but reality is still connecting through continuity, the process of linking. The afternoon was extremely interesting with plenty of interaction and discussion taking place for which we thank Lindsay.

■ Scientific and Medical Network Sydney Group August 26th 2017.

David Ingman presented a paper: *The Interconnectedness of Universal Consciousness. The Self as a projection of multiple individual Consciousnesses*.

Those of you who read Erwin Laszlo's review of "You are the Universe" by Deepak Chopra and Menas Kapatios in the last Network Review will find the complementary aspects of this presentation fascinating. Ervin states "If the cosmic consciousness is a hologram (meaning that the universe itself is a hologram) your consciousness and mine is a fractal of the universe." This resembles the concept outlined in the paper that we are participants in conglomerations of consciousness, within universal consciousness, each immersed in and experiencing the manifestation of their desired intention.

Below is a link to the full presentation.

<http://realityandyou.com/2017/08/30/talk-the-interconnectedness-of-universal-consciousness-the-self-as-a-projection-of-multiple-individual-consciousnesses-31st-august-2017>

SMN IN NORTH WALES

KEITH BEASLEY

The local group for North Wales, as part of our reaching out to a wider community of kindred spirits, has evolved into *Bangor . . . Beyond*. The group now has a *Meetup* presence (a global online place to inform anyone about public meetings) which has proved highly beneficial in finding new members.

We have also been holding weekly 'Unity' gatherings in the 2 Dragons Garden (as featured a few years ago) in Bangor University's Botanic Gardens. This combines a shared experience of reflection with open discussion on a topical theme (e.g. How to respond to extremists). The approach seems popular, having attracted quite a few new faces, and offers those attending opportunities to share insights, concerns or inspirations. By encouraging and enabling intellectual, experiential and a deeper sharing, our intent is to 'practice what we preach' and demonstrate the sort of group/community that the world so needs today.

Contact via *Bangor . . . Beyond Meetup*:
www.meetup.com/Bangor-Beyond/



The 2-Dragons Garden at Bangor University's Botanic Garden, photo by Keith Beasley

MEMBERS' ARTICLES AND ARTICLES OF INTEREST

Available from the editor or through links – dl@scimednet.org

SCIENCE

- **Before The Big Bang: Towards a Scientific Revolution**
 Frank Parkinson (8 pp.)
 Much of our current scientific thinking about microscopic physics and cosmology is probably wrong and will have to be discarded. Maybe in the future there will be a major revolution in physics that will revise our whole idea of realityWhat we now regard as "the origin of the universe" may be the temporal threshold of worlds beyond our imagining.
 – Heinz Pagels, *Perfect Symmetry: The Search for the Beginning of Time* (1992)
- **Morphogenetic Fields in Embryogenesis, Regeneration and Cancer: Non-local control of complex patterning**
 Michael Levin (19 pp.)
- **"In Space" Or "As Space": Three Dimensions or Not?**
 Charles Smith (4 pp.)

MEDICINE-HEALTH

- **Cancer Cell Reprogramming: Stem Cell Differentiation Stage Factors and An Agent Based Model to Optimize Cancer Treatment**
 P.M. Biava et al
 (12 pp. from *Current Pharmaceutical Biotechnology*, 2011, 12,)

PHILOSOPHY-RELIGION

- **Awakening in the Holy Spirit**
 Anne Baring (6 pp.)
 (address on 850th Anniversary of Bogomil/Cathar Meeting in 1167 – highly recommended)
- **The Cosmic Context and Gnostic Foundation for All Our Lives**
 Paul Hague (2 pp.)
- **Aristotle's Categories of Cause – the case for a fifth proximal cause**
 L. R. B. Mann (11 pp.)

PSYCHOLOGY-CONSCIOUSNESS STUDIES

- **Fear, Pain, Denial, and Spiritual Experiences in Dying Processes**
 Monika Renz et al (14 pp. from *American Journal of Hospice and Palliative Medicine*)
- **Inter Dimensional Time Travel: A Trans Personal Experience and A Changing Life Long Perspective - A New NDE Perspective**
 Cindy Massey (7 pp.)
- **An Evaluation of the Leading with Compassion Recognition Scheme**
 Yvonne Sawbridge and Alistair Hewison (34 pp.)
- **Cracking the Hard Problem of Consciousness**
 A.K. Mukhopadhyay (15 pp.)
- **The Ladder of Cognition: Abstract Operations, Molecular Biology, Systems Science**
 Mukhopadhyay AK (15 pp. from *Annals of Psychiatry and Mental Health*)
- **The Science of Spiritual Psychology**
 A K Mukhopadhyay (2 pp. from *Psychology and Behavioral Science*)
- **Life and Consciousness – The Vedantic view**
 Bhakti Niskama Shanta (12 pp.)

GENERAL

- **Ubiquity University - A digital-first social learning and innovation platform**
 Peter Merry with Griffin de Luce (20 pp.)
- **Transformative Education and the Future of the Species**
 Frank Parkinson PhD (7 pp.)
- **What is the Main Obstacle to Creating "Inclusive Prosperity"?**
 Prabhu Gupta (5 pp.)
- **Creating Future-Fit Organizations with Super Coherence**
 Giles Hutchins (12 pp.)

ONLINE ARTICLES BY ANTHONY JUDGE

- **Envisaging NATO Otherwise -- in 3D and 4D?**
 Potentially hidden faces of global strategy highlighted through polyhedra
<https://www.laetusinpraesens.org/docs10s/natologo.php>
- **Refining the Value of Sustainable Development Goals**
 In quest of the systemic coherence of global attractors
<https://www.laetusinpraesens.org/docs10s/refine.php>
- **64 Questions for the Environmental Conservationists of the World raising the question as to why they are not effectively addressed**
<https://www.laetusinpraesens.org/docs10s/enviques.php>
- **Reframing the Square Wheels of Global Governance**
 Transcending vain hopes of squaring the circle in global decision-making
<https://www.laetusinpraesens.org/docs10s/squares.php>

NEWS AND NOTICES

HEART OF LIGHT

David Lorimer writes: Heart of Light is a new initiative supported by the One Spirit Alliance (www.onespiritalliance.net) and building on the idea of the Silent Minute (see Review Section for more information on Wellesley Tudor Pole) by suggesting an attunement at 9 PM local time while also lighting a candle. I was recently in the Bulgarian mountains with Colum Hayward of White Eagle Lodge and other disciples of Peter Deunov, and there we used one of his formulas: "In the fulfilment of the will of God is the power of the human soul" (repeated three times), then, after a pause, a formula from White Eagle: "in the light of the Star, I am aligned with the Love and the Will of God." (also repeated three times). If you would like to be part of this movement, please see further details at www.heartoflight.org. Doing that is both a way of supporting the project and also of making a commitment in yourself to do the attunement each night – or whenever you can.

MONIKA RENZ WORKSHOP IN LONDON DYING – A TRANSITION

Readers may recall my enthusiastic reviews of Monika's books so it is exciting that Max Mackay James is arranging for her to come to London over the weekend of October 7-8.

■ Monika writes:



The dying do not simply have to let go as is often said. They also have to find a new awareness of time, space, and body, in a new connectedness with some fundamentally other mode of existence. Letting go and losing control is a spiritual path towards finding.

The perception of the dying is different, of a special intensity and sensitivity. Participants on this **Dying: a Transition** workshop will explore this 3-stage model (pre-transition / transition / post-transition) both experientially and with critical reflection, including the evidence base.

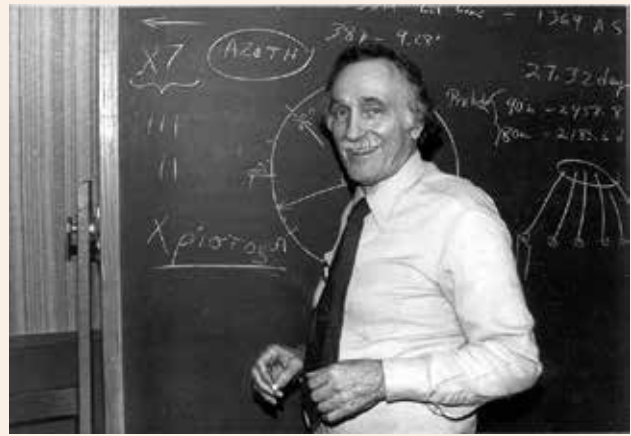
Enhancing our sensitivity to the altered perception of the dying by music-assisted active imagination. Letting go is an art of releasing and a gift of grace at the same time: it involves enduring 'empty-handedness' and the pain of 'no-longer-being-able-to'.

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Details: max@consciousageing.org www.diealog.co.uk

TOLSTOY ON LOVE

The longer I live — especially now when I clearly feel the approach of death — the more I feel moved to express what I feel more strongly than anything else, and what in my opinion is of immense importance, namely, what we call the renunciation of all opposition by force, which really simply means the doctrine of the law of love unperverted by sophistries. Love, or in other words the striving of men's souls towards unity and the submissive behavior to one another that results therefrom, represents the highest and indeed the only law of life, as every man knows and feels in the depths of his heart (and as we see most clearly in children), and knows until he becomes involved in the lying net of worldly thoughts... Any employment of force is incompatible with love.



■ Greg Mallozzi writes:

Once a top name in both science and medicine, Dr. Andrija Puharich put his career and reputation on the line to research the unknown, becoming one of the most controversial figures in modern science. Considered too far out or too ahead of his time, Puharich's work delved into psychic healing, psychic phenomena, consciousness and the reaches of the human mind. This film is the never been told story of a man whose research and theories have both baffled and inspired people around the world, including his colleagues, his family and even top intelligence agencies. What did he really know? Why was his life's research suppressed by establishment science and academia? Only now, decades later, the implications of his research in these areas are beginning to be taken seriously. Incorporating never-been-seen photographs, home movies, unpublished papers and manuscripts, personal journal entries and interviews with family, friends, colleagues and everyone in-between, this film will be a unique look into one of the most controversial yet fascinating figures of the 20th Century.

More info and donations can be given through this site directly: www.puharichfilm.com

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SCIENCE-PHILOSOPHY OF SCIENCE

■ The Observer and the Observed

Paul Kieniewicz

■ QUANTUM NONLOCALITY AND REALITY – 50 YEARS OF BELL'S THEOREM

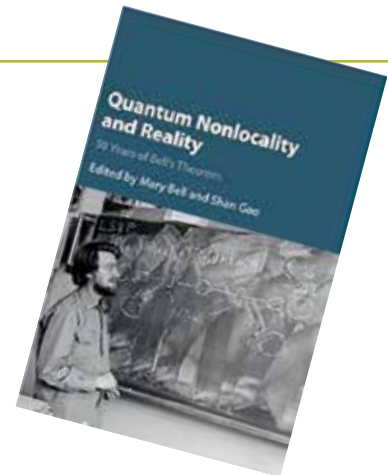
Edited by Mary Bell and Shan Gao

Cambridge University Press, 2016, 441 pp., £ 82.99 - ISBN 978-1107104341

Fifty years ago John Bell published a ground-breaking paper, in which he suggested that quantum physics is nonlocal. In this highly technical book, physicists present their views on Bell's Theorem and what is meant by nonlocality. Several alternative versions of quantum mechanics are also discussed, in particular that of David Bohm.

The implications of Bell's theorem and non-locality are a hot topic not only among physicists but in New Age circles. Many people talk about the "quantum mind", multiple realities, about the nature of consciousness in the same breath as Bell's Theorem. It is often said that quantum mechanics implies the existence of consciousness, or that consciousness can affect quantum processes. Another view is that that "we create our own reality". Our own universe. Unfortunately, most of those views are unwarranted extrapolations of Bell's Theorem. The Theorem is extremely subtle, and has been misunderstood even by specialists in the field. It has far reaching implications in areas that are only now starting to be explored.

In standard quantum physics, it is said that the observer's presence changes the result of an experiment, through wave-function collapse. That the observer is separate from the apparatus. This view lies at the heart of the Copenhagen Interpretation, still regarded as the foundation of quantum physics. A photon for example, is said to behave like a wave or a particle, depending on the experiment that is being performed. Whether or not it is being observed. The circumstances in which we find the photon are key to its nature. Einstein disagreed with this view, just as he also disagreed with the



statistical interpretation of the Schrodinger wave function which states that a particle does not have a well-defined path and momentum. Also, he could not accept the apparent separation of the observer and the experiment. Neither did John Bell, who felt that though the Copenhagen Interpretation gave the correct results, the theory lacked clarity. Whereas physicists generally adopt a view dubbed "For all practical purposes" (FAPP) that allows them to remain vague about what an electron is, Bell felt that we would gain additional results and insights if we understood the physics more clearly. Elementary particles are real objects. He called them beables. Beables are not depended on the observer. We know macroscopic beables such as an electric or magnetic field. What kind of beable is a quantum particle? Bell was convinced that we are dealing with a real entity and not a mathematical figment.

Early on in his career, Bell was drawn to the work of David Bohm. Bohm was also dissatisfied with the separation of the observer and the experiment. He viewed quantum behavior as deterministic and not random or statistical. In his paper, Sheldon Goldstein quotes Bell,

"But in 1952 I saw the impossible done... Bohm showed explicitly how parameters could indeed be introduced... with the help of which, the indeterministic description could be transformed into a deterministic one. More important, the subjectivity of the orthodox version, the necessary reference to the observer could be eliminated..."

Bohm's view was that the photon is simultaneously both a wave and a particle, a view also expressed by De Broglie. Its journey from point A to point B follows a definite trajectory, but one that is steered by its quantum potential. Quantum potential

is an extra non-local term Bohm introduced into the Schrodinger equation. It does not depend on space or time. Its presence is responsible for the odd trajectories of photons as they pass through two slits in the Young's interference experiment, resulting in the commonly observed interference pattern. In Bohmian mechanics the photon does pass through either one slit or the other, not (as per the Copenhagen interpretation) through both. In short, Bohmian mechanics is deterministic but nonlocal. Where is the observer? He is inseparable from the experiment. As Bohm's friend J. Krishnamurti expressed it, "the observer is the observed." This is the fundamental difference between Bohmian mechanics and the Copenhagen Interpretation. As Basil Hiley explains in his chapter, a particle does have a defined position and momentum. This does not violate the uncertainty principle, as that principle refers only to the limits on measuring the position and momentum.

This view has been long dismissed by most physicists because it was viewed (incorrectly) as implying the existence of hidden variables. Many physicists from Von Neumann to Bell himself have proved that such variables do not exist. However, the quantum potential as described by Bohm does not imply hidden variables. Today, experiments to measure Bohmian trajectories have been successfully performed that confirm the theory's predictions, as a result of which more physicists are taking another look at Bohm's mechanics.

Bohmian mechanics is also nonlocal --- allowing for "spooky action at a distance". It was this feature that Bell described in his theorem, also known as Bell's Inequalities. What is an inequality? $\frac{3}{4} > 1$ is an inequality. It is also an inequality violation because it is untrue. In his lucid chapter, quite readable by the non-specialist, Jean Bricmont describes Bell's Inequalities and why those lead to nonlocality.

Take two particles that are produced together with opposite spins in a magnetic field. According to quantum mechanics, if you measure the spin of particle A, you immediately know the spin of particle B, regardless of how far apart those particles are. Possible explanations are:

1. The spin values, up or down, of both particles are predetermined.
2. There is some form of instantaneous action between A and B regardless of their separation.

Bell proved that option (1) leads to an internal contradiction, assuming that the particles obey the rules of quantum mechanics. This implies that the particles do communicate instantly. Einstein found this even harder to believe. In a 1942 letter he wrote:

It seems hard to sneak a look at God's cards. But that he plays dice and uses "telepathic" methods (as the present quantum theory requires of him) is something I cannot believe for a moment.

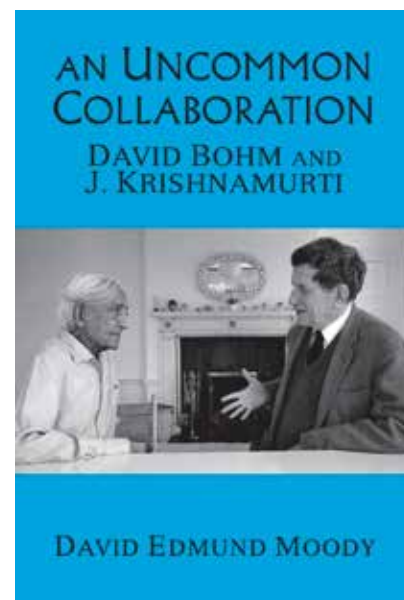
However, Bell's Inequalities were borne out by experiments in the 1970s and 80s by Freedman and Clauser, Aspect, Orsay and others. Marco Genovese summarises those results, implying that nonlocality is real.

If particles can communicate instantly over large distances, what is the mechanism? Standard physics offers no explanation. Bohmian mechanics offers a mechanism, because quantum potential, an integral part of the theory, is already nonlocal. But Bohmian mechanics is not the only explanation for apparent nonlocality. Lev Vaidman and Travis Norsen describe the Many Worlds Interpretation. If we accept that events happen simultaneously in many worlds, we can explain Bell's result, and still avoid an unexplained action at a distance. However, the mathematical details of the Many World Interpretation are yet to be worked out.

Is a nonlocal world incompatible with relativity? The answer is by no means trivial. Even though a message cannot be conveyed instantaneously using entangled particles, information is transmitted --- faster than the speed of light. By measuring one particle's spin, the second particle's spin is instantly established. That counts as cause and effect. Shan Gao explores describes nonlocality and its apparent incompatibility with relativity. Does nonlocality mean that at some fundamental level there exists a preferred Lorentz frame of reference, analogous to the aether? Is there a possibility for superluminal signaling? Gao points out that if a preferred frame of reference does exist, it should be detectable by experiment. The Cosmic Microwave Background could be such a frame. What if an entangled microscopic particle has conscious awareness? Conceivably that particle could manifest its awareness, of its spin, by an action detectable by a measuring device. This could make superluminal signaling possible. While Gao admits that his hypothesis is highly speculative, he suggests that nonlocality should cause us to rethink the possible existence of a preferred frame of reference. One has to ask whether Bohm's Implicate Order could be such a frame of reference.

This reviewer is left with the impression that there is no consensus on the implications of Bell's Theorem. Everyone accepts the results of the experiments, and most feel that nonlocality is real. But there is no agreement on what that means. More conservative voices feel that standard quantum mechanics can accommodate nonlocality. That nonlocality has no practical meaning except to philosophers. But many others express a certain queasiness, that perhaps the Copenhagen Interpretation is limited or plain wrong. David Bohm may have been right all along. Perhaps some predictions of relativity must be questioned. The far reaching implications of Bell's Theorem clearly remain yet to be seen.

Paul Kieniewicz is a geologist, astronomer and writer. He is the author of Gaia's Children, co-author with Andrew Glazewski of Harmony of the Universe.



Intelligence and Insight

David Lorimer

AN UNCOMMON COLLABORATION

David Edmund Moody

Alpha Centauri Press, 2017, 300 pp., \$24.99, p/b - ISBN 978-0-692-85427-3

The author is surely correct in describing the collaboration between Krishnamurti (1895-1986) and David Bohm (1917-1992) as uncommon, since, as he points out, most collaborations take place within the same discipline. There is no doubt that they were both men of genius, deeply concerned with the human situation, its limitations and prospects. It is useful to think of Krishnamurti as a psychological philosopher, or even as a philosopher of mind; David Bohm is as much a philosopher as a physicist, and he was someone with a subtle and probing mind always trying to reach the ground or root of an issue. In that sense, both men were radical thinkers.

Bohm learned of Krishnamurti's work through reading *The First and Last Freedom*, with a foreword by Aldous Huxley. He wrote to the publishers and the two men met in London, leading to a total of 144 recorded dialogues, some of which were published in two volumes, *The Ending of Time* and *The Future of Humanity*. David Moody is in a unique position to write this book, having worked closely with both men when he ran Krishnamurti's Oak Grove School - and he had scores of long walks with Bohm, where he was able to absorb as well as probe his ideas. The book gives useful biographical background of both men and their interactions, looking in more detail at central themes in their dialogues, with some useful appendices, three of which feature David's own dialogues with Bohm.

One of the concerns that brought the two men together was wholeness, incorporated in the title of Bohm's best-known book,

Wholeness and the Implicate Order (1980), which I read in 1983 after hearing Bohm speak at the Mystics and Scientists conference. Both men addressed thought and its fragmentation, of which more below. For Bohm, this was associated with the mechanistic and reductionist approach of science analysing things into discrete, separate units. This gave the wrong basis, which they both felt should be the ground or undivided wholeness, from which the explicate order of separation arises.

In his 1980 book, Bohm used as a point of departure undivided wholeness, which both relativity and quantum theory have in common. Undivided wholeness means dropping the primacy of the mechanistic order and seeking a deeper ground of reconciliation where 'both relativity and quantum theory are to be derived as abstractions, approximations and limiting cases.' (p. 173) Bohm speaks further about this elsewhere in the book, where he points out that, like Newton's theory, relativity is based on the idea of perfect continuity, while quantum theory violates continuity by definition. This makes one wonder whether the polarity of continuity and discontinuity can be resolved at a deeper level, as Bohm proposed. Even more interesting is the point at which theory breaks down, which Bohm feels is at the Planck length of 10^{-33} - this involves constants from relativity, gravitational theory and quantum theory. The structure of the electron has only been investigated down to 10^{-16} , so Bohm points out that there is a long way to go. He states that fluctuations in the gravitational field increase with shorter distances, so at 10^{-33} space and time become indeterminate. This sheds new light on scientific hypotheses as approximations by defining an absolute limit to theoretical validity.

The dialogues draw a distinction between intelligence and thought. Intelligence gives rise to insight, which, it is argued, is beyond the operation of thought. While thought is tied to time and the ego, insight 'is neither matter nor a material process; it is instantaneous, a flash of light, a form of pure perception.' (p. 124) Bohm adds that 'the operation of intelligence is the absence of movement of thought.' (p. 200) This leads to a more detailed consideration of the nature of thought, which runs through the volume. The thinker or observer introduces what both men felt was an artificial division in consciousness; they maintained that the thinker is the thought, the observer is the observed, and that the very existence of the thinker is created by thought. Some of the most interesting conversations explore the relationship between the ego, time, becoming and the ground. To live from the ground is to be undivided, while the ego living in time is trying to become something other than itself, a paradoxical aim. My only question in this respect was that Krishnamurti makes no space for the witness aspect of consciousness.

More generally, thought as a system - including feelings and the state of the body - is the source of our most intractable

problems. As Einstein also observed, problems cannot be resolved with the same kind of thinking that originated them, and it is interesting to wonder if he actually discussed this question with Bohm while they were together at Princeton. Krishnamurti expresses the view that our civilisation is highly cultivated but also barbarous, so the question becomes: can we in fact go beyond our conditioning? Bohm tried to do this with his practice of dialogue in which assumptions are consciously suspended as we try to reach a deeper understanding of other people. A greater awareness of the limited nature of thought and therefore of fixed positions would help enormously in addressing our pressing global challenges.

Appendix 4 is a fascinating dialogue on physics and the laws of nature, in which it becomes apparent that Bohm is very well informed in pre-Socratic philosophy, which is probably the origin of the search in physics for one basic underlying principle - for Thales this was water. More generally, Bohm sees physics as the systematic study of nature using reason, observation and experiment. He regards the essence of the universe as mathematical relationship and stresses that the essential principle of the physical world is contained in equations rather than verbal concepts. Theories are symbolic structures, interpretations that can be tested by experiments, the primary function of which is to answer questions raised in theories.

David Moody has rendered a huge service to studies of the Krishnamurti/Bohm dialogue, not only for his clear and sympathetic elucidation, but also for the way in which he engages readers in this same quest for understanding human consciousness - after all, we all have our own thought systems that require more rigorous self examination.

■ Aim-Oriented Empiricism

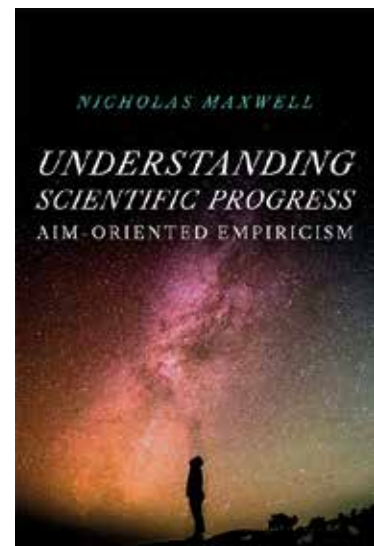
David Lorimer

■ UNDERSTANDING SCIENTIFIC PROGRESS

Nicholas Maxwell

Paragon House, 2017, 216 pp., \$24.95, p/b - ISBN 978-1-55778-924-2

Willis Harman, the first President of the Institute of Noetic Sciences who devoted the last few years of his life to exploring the metaphysical foundations of modern science, used to say that philosophy of science is to scientists what ornithology is to birds, a discipline that seems to have no relevance to practical working scientists. Since it was first formulated by David Hume, the problem of induction has been insoluble. Hence Nicholas Maxwell's statement that, despite the astonishing progress of natural science and improving our knowledge and understanding of the universe, philosophy seems to have made no progress at all in understanding how this progress of science is possible. He quotes CD Broad as saying that induction is the glory of science but the scandal of philosophy, and Whitehead that the theory of induction is the despair of philosophy - yet all our



activities are based upon it. By this he means standard empiricism, of which more below.

Maxwell - now 80 - has been contributing to the philosophy of science for 50 years, and nearly 50 of his articles are cited in the bibliography. His 1984 book, *From Knowledge to Wisdom* was favourably reviewed in *Nature*, and the reviewer, Christopher Longuet-Higgins, described his work as revolutionary in terms of our intellectual goals and methods of enquiry and that there were too many symptoms of malaise in our science-based society for Maxwell's diagnosis to be ignored. (p. 181) However, it does seem to have been ignored in the intervening period, which I think has a great deal to do with the massive resistance he refers to among scientists in acknowledging the necessity of underlying epistemological and metaphysical assumptions effectively denied by standard empiricism with its insistence that evidence alone determines what theories are accepted and rejected in science.

This technical but important book addresses these issues and provides a coherent solution. It is inevitable that science has to make metaphysical assumptions concerning the knowability and comprehensibility of the universe. This means that the claim that evidence alone determines the acceptance or rejection of new theories is false. Theories also have to be unified, simple and explanatory - hence disunified theories, however appealing empirically, are discounted. Induction and underdetermination mean that theories cannot in principle be verified by evidence, and in practice 'scientists invariably choose that theory which is the simplest, the most unified, or the most explanatory.' (p. 3) This means that we need a new conception of science that solves the philosophical problems of progress - and this is precisely what this book proposes in terms of 'aim oriented empiricism'.

Given that science must inevitably make metaphysical assumptions, the best and most rigorous scheme is what Maxwell calls

presuppositionism. By acknowledging that science makes a persistent metaphysical assumption concerning unity (eight criteria are articulated in great detail) it is by definition more rigorous than any standard empiricist conception that denies this. Moreover, it corresponds to the principle of intellectual integrity and making assumptions explicit so that they can be critically assessed. In a key chart on page 67, Maxwell adopts a hierarchical scheme whereby the most general metaphysical assumption is expressed at level 7 – that the universe is partially knowable – moving down through six levels including the notions that the universe is comprehensible in physical terms towards accepted fundamental physical theories and their relationship to empirical data.

An important point is that the blueprints describing the composition of reality are always changing, so that, historically, they turn out to be false and provisional. Ether was abandoned in favour of fields then quantum entities, culminating in the current standard model, which will in turn prove to be inadequate. Maxwell agrees with Popper that our knowledge is conjectural, but criticises his adherence to standard empiricism and his uncritical attitude towards criticism itself. He argues, correctly in my view, that his aim-oriented empiricism facilitates the critical assessment and improvement of metaphysical assumptions related to the improvement of knowledge.

One of the reasons for scientific resistance to acknowledging metaphysical assumptions is the reluctance to acknowledge that there is an element of faith in science. This becomes clear with dogmatic atheism and scientism, whose assumptions should also be subjected to sustained critical scrutiny. Maxwell is correct in saying that dogmatic religion does not have this self-critical element. Equally, he is aware of the limits of the physicalist approach in its implicit denial of qualia, meaning, value and free will. He asks how our human world imbued with the experiential, consciousness, free will, meaning and value can exist and best flourish, embedded as it is in the physical universe (p. 168). His answer is that physics describes only a highly selective aspect of existence: no physical statement can predict or describe experiential features, leading to the so-called hard problem of consciousness.

In the final chapter, Maxwell extends his analysis by formulating a corresponding aim-oriented rationality with a structured chart implying value and political or humanitarian assumptions on page 175. This addresses the aim of how to achieve a civilised, good world, about which people have very different ideas. Here, level 1 is human experience rather than empirical data, and the basic currency is actions or possible actions. We live in an era where science and technology have in fact brought about 'almost all our current grave global problems: rapid population growth, destruction of natural habitats and rapid extinction of species, the lethal character of

modern war, the development of extreme inequalities of wealth and power around the globe, pollution of earth, sea and air, and most serious of all, the impending disasters of climate change.' (p. 180) Science has enabled us to learn more about the nature of the universe, but we have a long way to go in learning how to become more civilised or 'wiser by increasingly cooperative rational means'. Maxwell has a great deal to offer with these important ideas, and deserves to be much more widely recognised than he is. Readers with a background in philosophy of science will appreciate the rigour and thoroughness of his argument, while more general readers will find his aim-oriented rationality a promising way forward in terms of a future sustainable and wise social order.

■ Bridging Conventional Science with a Holistic Science of the Spiritual

Dr Michael Evans

■ ANTHROPOSOPHY AND SCIENCE - AN INTRODUCTION

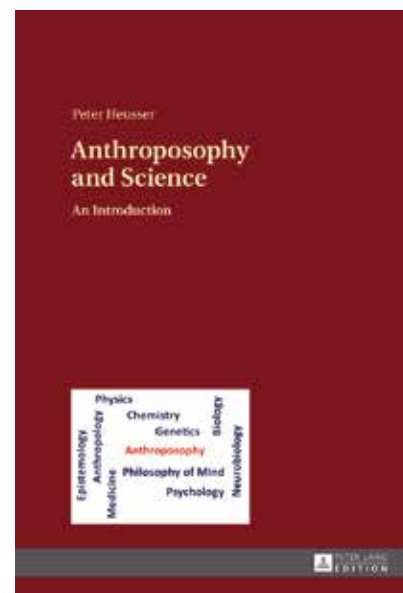
Peter Heusser

Peter Lang, 2016, 368 pp., £45, h/b – ISBN 978-3-631-67224-2

"Anthroposophy and Science" is a remarkable state-of-the-art milestone in exploring the relationship of natural science with spiritual science as originally represented by Rudolf Steiner (1861-1925). The book reflects the author's high standard of scholarship and reviews the latest concepts in physics, chemistry, biology, genetics, medicine, neurobiology, psychology, philosophy of mind or cognitive science, anthropology and epistemology, all in their relationship to anthroposophy. To write an up to date overview of one of these fields is a significant task, but to provide a comprehensive overview of them all is a magnificent achievement of a very high order.

The reductionist materialistic world view not only characterises conventional natural science, but our current whole world culture and understanding. To penetrate this thinking and really explore alternatives I found exciting and even disturbing! I became aware of how deep this reductionist science sits in my own consciousness, in spite of 50 years' study of anthroposophy.

The fundamental realisation expressed in Steiner's *Philosophy of Freedom* is that world reality meets us through the combination of sense perception and thought. A modern philosopher Nagel points to the realisation that the world is intelligible and includes human beings with intelligence. (Nagel, T. 2012 *Mind and Cosmos. Why the Materialist Neo-Darwinian Conception of Nature is Almost Certainly False. Oxford University Press, Oxford.*) So intelligence has a double part in existence. The realisation that the universe is lawful and potentially



understandable is implicit in ordinary science. So thought and the laws of nature are part of the natural world. Thought itself is not a physical object. Steiner equates thought, intelligence and spirit. In which case we can say that spirit is the foundation of the material world and every layer of existence including the phenomena of life, sentient beings (animals) as well as human beings who think about the world.

As the starting point of knowledge (epistemology) is thought and perception, theories of sensory physiology or neuroscience have no primary role in epistemology, as they are themselves the products of thinking and sense perception. Neither can atomic theory be assumed to be a primary reality, (based on non-perceptible atoms) which often used in science as a basis for rejecting the prime reality of perception.

A fundamental and recurring theme of the book is the way Peter Heusser considers the various levels of complexity in the world. He points out that with higher levels of complexity new characteristics and lawfulness emerge, which would not be predictable from the most complete knowledge of the characteristics of the constituent parts. Indeed, many of the characteristics of the parts disappear or are "sublated" in the more complex structure. The simplest physical and chemical example is water H₂O a combination of hydrogen and oxygen. Detailed knowledge of hydrogen and oxygen, he says, would never lead to a prediction of the characteristics of water and the laws of hydrodynamics. So the qualities of water cannot be reduced to the qualities of its component parts in spite of the fact that without hydrogen and oxygen water could not exist.

At a more complex level, proteins in living organisms although composed of a series of amino acids, have characteristics which cannot be extrapolated from knowledge of the amino acids and their sequence. For example, their tertiary structure which is

critical to their functioning as enzymes cannot be predicted from the amino acids and their sequence alone. So on the one hand, new properties emerge – the concept of *emergence* and on the other the properties of the components to a significant degree submerge or are *sublated* in the qualities of the new structure and its functioning.

Historically a Swiss Physician Troxler 1780-1866 (Beethoven's physician) observed that behind the sense perceptible phenomena of life was a real but not directly perceptible something, behind feelings a real not directly perceptible soul (Seele) and behind human self-conscious thought a real not directly perceptible spirit (Geist). *He attempted to sketch out a medical anthropology that would understand development, physiological functions and pathological processes as not simply physical interactions but as the expression of a harmonious or disharmonious interaction of material-physical, bodily-living, soul and spiritual forces in an organ or organ system.*

He went on to predict that in future a new sense was needed to develop, for the reality that stands behind life phenomena and the development of cognition of soul and spirit. He called such cognition anthroposophy as distinct from anthropology. A name with Steiner would subsequently use for his perceptions and researches. Troxler gave an opening address at the opening of the University of Berne where he became the first professor of philosophy. Biographically, I found it interesting that Peter Heusser shared one of the first chairs in Integrative Medicine with responsibility for the subject of Anthroposophic Medicine at this same University of Berne.

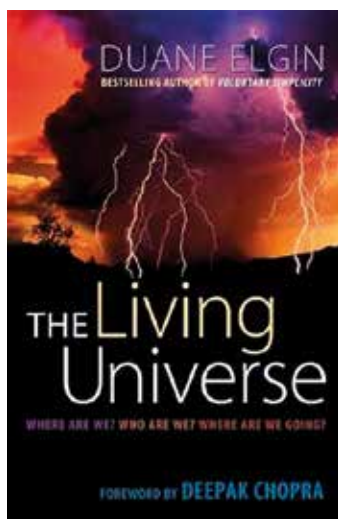
The fundamental perspective of anthroposophic medicine is based on asserting the reality alongside the physical material body (Körper), the living body (Lieb), the soul (Seele) and spirit (Geist). These emergent phenomena are described with reference to other western thinkers.

The work is referenced as expected of an academic paper and points to advances in natural science that make sense of many of Steiner's puzzling statements as well as the many way anthroposophy can holistically contextualise and make sense of the findings of natural science. It also provides a rational and philosophical framework that can integrate conventional and complementary approaches to medicine.

Reference

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Dr Michael Evans is a retired NHS GP based in Stroud, Gloucestershire, now teaching doctors in the UK, the Philippines, Mainland China and Taiwan holistic and spiritual approaches to medicine inspired by Anthroposophy.



■ A Cosmic Connection

David Lorimer

■ THE LIVING UNIVERSE

Duane Elgin

Berrett-Koehler, 2009, 230 pp., \$15.95, p/b – ISBN 978-1-57675-969-1

Duane Elgin is author of *Voluntary Simplicity* and *Awakening Earth* – here he sets out his understanding of a living rather than a dead universe and its implications for how we see ourselves and our future. It is based on three fundamental questions: Where are we? Who are we? Where are we going? The Renaissance view incorporated the idea of an Anima Mundi and indigenous cultures assume an animistic universe, but since the 17th century the West has been dominated by the mechanistic metaphor implying a deanimated Nature and a fundamentally non-living and purposeless universe. Anthropomorphism is often criticised, but, as Rupert Sheldrake suggests, the modern scientific picture is in fact mechanomorphic – we project onto the universe our mechanistic understanding and explain ourselves in terms of this.

Duane defines a living universe as ‘a unified and completely interdependent system that is continuously regenerated by the flow-through of phenomenal amounts of life energy whose essential nature includes consciousness or a self reflective capacity that enables systems at every scale of existence to exercise some freedom of choice.’ (p. 12) He argues, correctly in my view, that how we see ourselves is a critical cultural factor and that the idea of the living universe will create a new sense of relationship with the Earth and the universe. He provides a very useful table on pp. 30-31 contrasting a dead with a living universe. In this view, consciousness is a living field of life energy providing reflective capacity, and we are fundamentally spiritual beings having a bodily experience. Ethically, because everything is alive and interconnected, ‘whatever I do to the world I ultimately do to myself.’ Duane then discusses the nature of the living universe in more detail, including the flow of energy, continuous regeneration and sentience throughout.

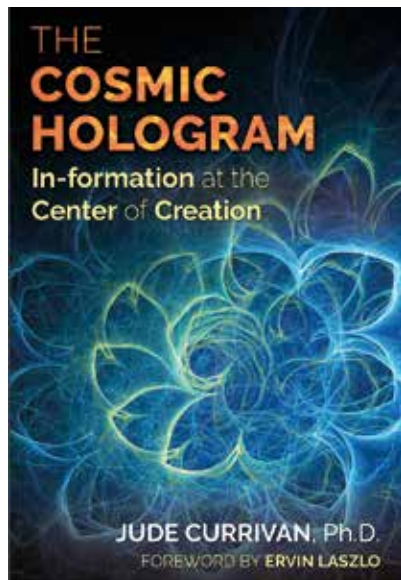
In the 1970s, Duane was involved in the government-sponsored SRI parapsychology programme, and this gave him the opportunity to explore his intuitive connection with some of the experimental apparatus. He calls this ‘cosmic feedback training’, implying an empathic connection with the universe and an extension of consciousness far beyond the range of physical senses. The effects are sometimes very subtle, and the fundamental relationship is not one of dominance, but rather participation. This gave him a felt sense that there is a field of consciousness pervading the universe, which is consistent with the definition of a living universe already cited.

The second part explores spiritual traditions and the idea that spirituality is intimacy with a living universe. He also looks at the idea of the Mother Universe as the ultimate beyond description, articulated variously as God, Brahman and Tao. He sees our identity as embodying three paradoxes: unity with diversity, knower and known, being and becoming. Consistent with insights from modern physics, his understanding of reality is one of vibrations, frequencies and harmonies, and the body is a biodegradable vehicle for acquiring soul-growth; when we leave the world, we take away ‘the distilled knowing-essence of our passage to life’ – I think this is spot on. He sums this up as follows: ‘at the heart of life is a simple task: to become intimate and forgiving friends with ourselves and to grow ourselves as a stream of light, love, music and knowing. (p. 113)

The third part asks where we are going. At one level, life seeks to connect with itself, know itself and grow in an evolutionary process to higher levels of self-organisation. This also suggests the task in front of humanity, which Duane sees as a heroic journey from the limited thinking self through reflective and oceanic to what he calls flow consciousness characterised by the toroidal form as we awaken to a conscious living universe. He suggests a further collective scheme from separation to initiation to communion, similarly to Thomas Berry. The supreme test of our time is to ‘learn to live in balance with the Earth, in peace with one another, and in gratitude to the living universe.’ (p. 139) However, this involves dealing with what he calls ‘adversity trends’ as our ecological, economic, political, cultural, psychological and spiritual systems enter into a crisis of adaptation, quite possibly bringing about a world scale systems crisis, which we are already beginning to see, as it becomes increasingly clear that our current systems are radically inadequate.

The last part sets out a blueprint for action in terms of co-creating our story of awakening, cultivating reflection and reconciliation, living simply and sustainably, creating new kinds of community, and becoming media conscious citizens of the Earth. The current breakdown is an opportunity for breakthrough, but this is by no means guaranteed as we can either ‘pull together in creative cooperation or pull apart in profound conflict’, only to have a totalitarian order imposed from above

and maintained by violence and force. As I was reading this book, it occurred to me that many of the vital words in this respect begin with r: rebirth, renewal, renaissance, regeneration, restoration, reconnection, reconciliation, reciprocity and refinement. The value of this book lies in its setting out the necessary transformative vision for a positive future, but also in spelling out exactly how we can help bring this about.



■ The Perfect Recipe

Gunnel Minett

■ THE COSMIC HOLOGRAM: IN-FORMATION AT THE CENTER OF CREATION,

Jude Currivan, Ph.D. (SMN) Foreword by Ervin Laszlo (Hon SMN)

Inner Traditions, 2017, 256 pp., £12.99, p/b -, ISBN 978-1620556603, 272 pages, £12.99.

Jude Currivan, Ph.D., is a cosmologist, futurist, and planetary healer with a master's degree in physics from Oxford University and a doctorate in archaeology from the University of Reading. In this book, Jude Currivan set out to answer not only the question of how the universe came into existence but also why.

The book examines recent research to show how our Universe is 'in-formed' and holographically manifested. Currivan uses the metaphor of a recipe in which every part plays its role. It is not just a question of having the correct ingredients. It is also important how they are put together and the container in which they are mixed, etc... to achieve the perfect result. She writes: "Information..., literally in-forms all that we call physical reality, and from the innate instructions, conditions, ingredients, recipe, and container of the in-formation that make up the cosmic hologram, enables the outcome of a Universe that nurtures the evolution of complexity and ever more self-aware consciousness - makes a Universe that is perfect for us." (p. 112)

With numerous examples, Currivan illustrates how the universe came into existence. In particular, she emphasises the importance of in-formation. She concludes: "Our Universe appears to have come into being perfectly balanced, yet inherently unstable." (p. 119)

According to Currivan, this means that the fundamental nature of reality is based on the unity of consciousness in the universe. We are, in effect, co-creators of the universe rather than mere inhabitants of it. She supports this insight by reporting experiences of cosmic awareness. She compares this with the Eastern concept of maya. This claims that the physical world is, in reality, 'illusory', i.e. that what we perceive as real is in fact our perception of it being real. She explains that we have "...arrived at the perspective that we're each individuated microcosms of the holographic intelligence of our Universe and ultimately of the infinite and eternal mind of the Cosmos." (p. 215)

She also claims that we are at an historic turning-point from which, on the one hand, we may face the man-made destruction of our planet, or, on the other, we may be able to use our understanding of how and why the Universe was formed to create a better future for all of us. She points to ancient wisdom as a good guide to help us find the right way forward. This will require an open attitude to studying and learning from anecdotal evidence of non-ordinary events and realities.

Gunnel Minett is author of *Breath and Spirit*.

MEDICINE-HEALTH

■ A Light Shining in Darkness

Larry Culliford

■ SADNESS, DEPRESSION, AND THE DARK NIGHT OF THE SOUL: TRANSCENDING THE MEDICALISATION OF SADNESS

Glòria Durà-Vilà

Foreword by Professor Roland Littlewood

Jessica Kingsley Publishers 2017, 358 pp., £24.99, p/b - ISBN: 978-1-7859205-61

As a trainee psychiatrist in South Australia, forty years ago, I was sent to work in one of the 'back wards' for women in a large state mental hospital. On arrival, the nurses asked me to see an elderly Irish Catholic woman; as a favour, it seemed, because her mental health was stable. The two of us sat together in a small, darkened interview room for twenty minutes or so. I found the experience peaceful. All I had to do really was listen, and occasionally to encourage flow in the ensuing, essentially one-sided, conversation. The river of words – of which, regrettably, I now remember not one – eventually slowed to a trickle and then dried altogether, at which point we rose simultaneously and left the room. The final heartfelt words I heard as we parted were

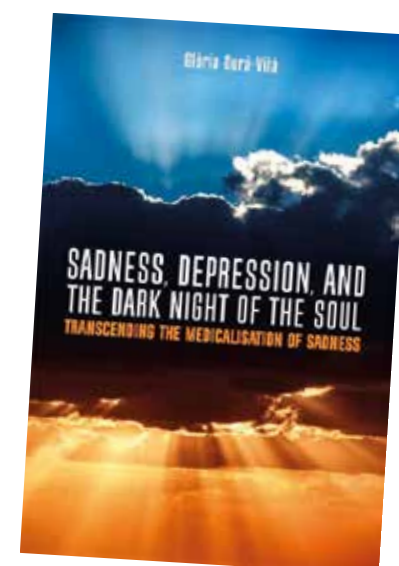
these, 'Thank you, Father'. This child of God had very likely used me to make her final confession, for she died a little while after.

The nurses indulged the Irishwoman's religiosity as harmless, but I could see how a routine of prayer and worship, however low key, might offer an effective antidote to the encroaching melancholy of old age after a barren, restricted and potentially meaningless life. This poignant episode was one of a number of encounters with patients – both medical and psychiatric (for I had earlier been a GP for two years) – persuading me of the importance for clinicians of taking full account of the spiritual dimension of people's lives. Thinking and later writing about this, discussing it with colleagues (doctors, psychologists, nurses, social workers, hospital chaplains and other clergy of my acquaintance), also with a Buddhist monk I encountered at the time, served only to convince me further.

In the late 1990s, groups of similarly minded professionals, meeting each other at SMN conferences, joined to initiate the 'Spirituality and Psychiatry' Special Interest Group (SIG) of the Royal College of Psychiatrists, and the 'Transpersonal Section' of the British Association of Psychologists.¹ These developments led eventually to publications and policy statements, but still attempts to publish articles on spirituality as relevant to psychology and psychiatry were being rejected by journal editors, who frequently asked the impatient rhetorical killer question, 'Where is your evidence for these assertions?' It would have been wonderful to have Glòria Durà-Vilà's excellent book to hand then.

'Sadness, Depression, and the Dark

1 Those particularly involved included SMN members Andrew Powell, the late David Fontana, Sarah Eagger, Peter Fenwick and Julian Candy.



Night of the Soul: transcending the medicalisation of sadness is an account of a detailed, extensive and informative piece of qualitative research conducted by the author, a bi-lingual Spaniard, living and working as a practising psychiatrist in London. It reports a study designed to explore the conceptualisation of 'deep sadness and consequent help-seeking behaviour', through analysis of data gathered from interviews with 57 practising Catholics in different parts of Spain.

Four groups of people on different religious pathways were involved: contemplative monks, contemplative nuns, lay theological students, and Roman Catholic priests. 'Carrying out this research was a wonderful and exciting experience for me', the author writes impressively. Her enthusiasm for the task, and for even-handedly discussing her findings, shines through on every page. This book was a genuine pleasure to read, the bonus being that many of my own thoughts and experiences over long years seemed substantially verified within its pages.

At the heart of Durà-Vilà's thesis is the idea of two types of 'deep sadness' – one pathological, one salutary – that sometimes overlap. One is a mental illness, not a reaction to identifiable challenges or loss. It is characterised by hopelessness, risk of self-harm, and requiring psychiatric intervention and physical treatment. The other reflects the notion of a spiritual aspect to human suffering, and the understanding that times of intense sadness often represent a normal and valuable aspect of spiritual growth, a condition (usually temporary) sometimes referred to as 'The Dark Night of the Soul', during which the subject remains 'hopeful in the middle of hopelessness' and is not at risk of self-harm.

A corollary of this dichotomy, also sensitively explored here, is a divergence of views and allegiances. On one side, there is an essentially worldly and commercial, science-based, pharmaco-medical community, ignorant and intolerant of the ways and wisdom of religious people. On the other is a more spiritually orientated, faith-based congregation, wary of secular formulations and pharmaceutical remedies for 'meaningful sorrow', the leaders of which admit lack of training on matters pertaining to psychiatry and mental illness. Those in each camp, the author concludes, would do well to examine their own weaknesses, with the aim of improving the service they offer people in distress, rather than entrench themselves in fixed positions and blame the others.

The fixed position of psychiatry, Durà-Vilà tells us, depends on a diagnostic classification system, 'deeply embedded in all aspects of psychiatric research and practice', that fails to tease out normal from pathological forms of sadness. This system is unlikely to change, she regretfully predicts, but adds more

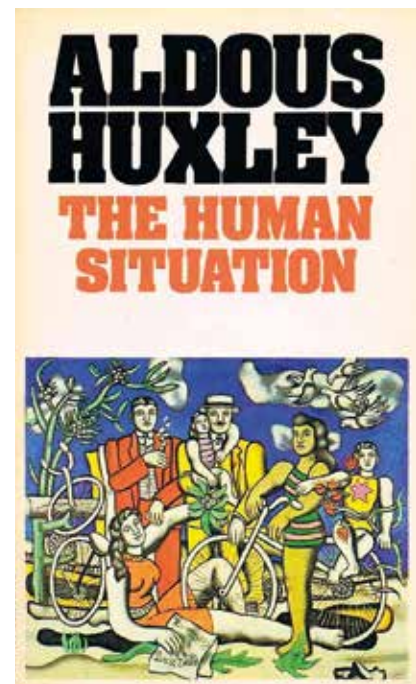
hopefully that conscientious doctors and other professionals who give sufficient consideration during assessments to the personal, social, cultural and spiritual dimension of patients' lives, rather than applying an inflexible, 'tick-box' medical model for diagnosis and treatment, overcoming constraints of time and resources where necessary, will contribute to progress and general enlightenment by setting examples of 'good practice' for others to follow.

The book is divided into three parts: 'Setting the literary and historical contexts' (chapters 1-3); 'Unfolding the narratives of sadness and spiritual growth' (chapters 4-7); 'Stepping beyond the monasteries' and the parishes' walls' (chapters 8-11). Chapter 10, 'The clergy's role in assisting those suffering from sadness and depression', offers a warning that, as well as ignorance about psychiatric matters, 'Neglect of their own spiritual development' often prevented clergy from providing optimum spiritual support for those in need of it'. The final chapter, 'A framework to differentiate normal sadness from depression', intelligently encapsulates and develops the author's research and its constituent themes, offering relatively simple, useful, and indeed meaningful, guidance to clinicians seeking to help those who are deeply sad, clinically depressed, or experiencing something of both conditions.

I found the book is worth reading particularly for Durà-Vilà's evocative description of her subjects and their ways of life, and for the revealing testimonies concerning their own 'Dark Nights' of the religious people interviewed, especially the contemplatives. It is worth noting her point that, 'In the Dark Night, the suffering is not over the loss of God but rather the loss of prior notions of God' (p45).

To be divested of false or incomplete notions (whether of God or anything else), obviously serves to promote personal, intellectual and perhaps spiritual maturity, however painful the process. Durà-Vilà has done her readers a great service in exploring and lucidly explaining the subtleties of the debate, showing clearly the opportunities for growth and new wisdom involved in looking at problem areas like this 'from both sides'. I have no hesitation in recommending this thought-provoking and encouraging book to as wide a readership as possible: mental health professionals adrift of religion and spirituality; religious people adrift of psychiatry and mental health issues; plus anyone concerned with human suffering, with how to manage one's own emotional pain, and how to help others in similar distress. Such essential questions are at stake.

Larry Culliford is a retired psychiatrist and author of several books on spirituality, including 'Love, Healing & Happiness', 'The Psychology of Spirituality' and 'Much Ado about Something'. For details, see Larry's website: www.ldc52.co.uk.



PHILOSOPHY- SPIRITUALITY

■ Realistic Idealism

David Lorimer

■ THE HUMAN SITUATION

Aldous Huxley

Chatto & Windus, 1978, 261 pp., £4.95, h/b – ISBN 0-7011-2143-2

Aldous Huxley (1894-1963), brother of Sir Julian Huxley and grandson of TH Huxley, was one of the most brilliant intellectuals of his generation and author of some 40 books, including the classic books *The Perennial Philosophy*, *Brave New World* and *Island*. I first read this book in October 1978, so nearly 40 years ago, and it consists of a series of 16 lectures given at the University of California, Santa Barbara in 1959. Given that two of the books above depict his dystopia and utopia, I thought it would be interesting to reread the book, and I was not disappointed. It is said that one could infer from the topics of Huxley's conversation which volume of the Encyclopaedia Britannica he had recently been reading. In the first lecture, he apologises for being someone of 'encyclopedic ignorance', by which he really means that he is a generalist who is able to make unusual connections between different disciplines.

His first plea is for an integrated education, which he thinks should be based on fundamental human problems considered from a number of different angles. This would enable people to build bridges, as he himself does in these lectures as a man of letters. He feels it important to bring together the three worlds of abstractions and concepts, immediate experience and objective observation, and the world of spiritual insight. He returns to this theme in the final lecture where he recommends a training of

the mind-body in perception, in imagination, and in the use of language.

In this first lecture, he refers to the growth of technology and the 'technicisation of every aspect of human life'. In a lecture on the future he thinks that the most important mechanical advances will be connected with computers, mentioning an early version of a device for searching back numbers of scientific periodicals – something now routine. It would have been difficult for him to anticipate the Internet, but he does refer to Werner von Braun forecasting that satellites may be connected together into a kind of electric relay 'which will permit TV programmes to be globally transmitted at any moment' (p. 107) - not a prospect that he relishes. He is concerned, though, that such technological progress might strengthen the hand of the powerful minority against the majority. This is the case for instance in surveillance technology although the Internet is also a powerful driver of freedom and democracy.

His discussion of the environment has proved prescient. At the time of the lectures, the world population was 2.8 billion, and he devotes two lectures to the planet and the population explosion, forecasting that population will double in less than 50 years – it has now in fact tripled in just under 60 years since the lectures. He anticipates an increasing proportion of people living in cities, which he is concerned will leave them devoid of contact with the natural environment. So far as the planet as a whole is concerned, he remarks that humans have been increasingly 'a profound geological force' - indeed, since 2000, we now refer to the Anthropocene era. He likens us to parasites, and not very sensible ones at that, as we seem intent on destroying our own habitat. He catalogues the disappearance of species, the erosion of topsoil, the felling of forests and overgrazing - remarking that 'it is quite fantastic what the goat has succeeded in destroying; it includes the whole Mediterranean basin.' (p. 25) He concludes that 'the combination of human destructiveness and population increase is an enormous and frightening fact.' This is still true.

Huxley shows extensive knowledge of contemporary psychology, and notes the significance of Abraham Maslow and Fritz Perls, along with the implications of the teaching of FM Alexander for posture. In a lecture on the unconscious, he argues that the work of FWH Myers is much more illuminating than that of Freud. However, I found his most interesting observations related to the different temperaments represented by the body types of endomorph, mesomorph and ectomorph. He quotes the work of WH Sheldon and is critical of the classification in Jung's work on psychological types independently of the type of the body: the extrovert mesomorph is very different from his endomorph counterpart. It seems that this aspect is still largely neglected in modern psychology.

A number of lectures are devoted to political and religious themes, where Huxley's interesting starting point is a discussion of language: 'it is on the one hand the mother of science and philosophy, and on the other hand it begets every kind of superstition, prejudice and madness. It helps us and it

destroys us; it makes civilisation possible, and it also produces those frightful conflicts which wreck civilisation.' (p. 171) He observes that totalitarian regimes regard things and people as illustrations of key words – usually prejudicial. The same applies to war propaganda persuading people that those on the other side 'are the concretisation of very bad abstractions.'

This same issue is found in the history of symbol-manipulating religion, which he analyses in terms of myth, creed, and theology. This leads him to contrast the religion of direct acquaintance with the divine with the religion of belief systems. He is extensively acquainted with the history of mysticism and its often heretical status within orthodox circles. As we know only too well, religion as a system of beliefs has always been an ambivalent force, and Huxley notes that the strife-producing quality of religion as a system of theological symbols has not only brought about jihads and crusades, but internal friction and hatred within religions. He would be sad but not surprised to see the spread of terrorism, fundamentalism and fanaticism. Interestingly, he wonders why many otherwise open-minded scientific people refuse even to consider the evidence amassed by parapsychology, for instance by JB Rhine. He answers that the facts 'just don't make sense in terms of the worldview which we accept as more or less axiomatic.' This is still true today.

He sees much more promise in the mystical approach cultivating a sense of unity and solidarity with the world, as well as love and compassion. He quotes Eckhart's remark that what is taken in by contemplation is given out in love. He continues this discussion in the lecture on the natural history of visions, which he starts with the question: why are precious stones precious? His answer is that they remind us of transcendent visions, which he had some experience through mescaline in the 1950s, which he wrote up in a book called *The Doors of Perception*. He writes that the highest common factor in the visionary experience is that of subjective light – 'an immense white light of extraordinary power.' (p. 227) He would have been very interested in the advances made in the study of spiritual experience and near death experiences, where this light is frequently mentioned.

Huxley is sanguine about human political prospects. In a lecture on war and nationalism he comes back to the role of language and a conceptual system, remarking that 'war is conditioned by human symbol systems, and in our modern life symbol system is that of nationalism' - this is still largely true. He laments the extraordinary and paradoxical spectacle of unprecedented skill and knowledge being poured into projects leading to misery, servitude and death. He puts the point poignantly that preparations for war have always led to war and, given the role of armaments in the US economy, 'preparation for death has become the basis of Western prosperity'. (p. 82) He quotes a book he wrote in 1946 called *Science, Liberty and Peace* where he argues for the necessity of shifting the whole attention of politics from the unsolvable problems of power to the solvable and even more urgent problems of

human needs. Alas, we are still waiting, while the production of armaments and the pursuit of power are given priority.

This still leaves an important role for what Huxley calls realistic idealism or idealistic realism rather than a utopian idealism devoid of practical suggestions. Writing in 1958, President Sukarno issued an impassioned plea to draw back from the edge of moral bankruptcy and use science for peaceful purposes (p. 88). For Huxley, this means bringing together love and knowledge: 'love without knowledge is largely impotent, and knowledge without love is frequently inhuman. In the world as we see it today there is obviously a great deal of loveless knowledge and knowledgeless love - not to mention a good deal of both knowledgeable and unfortunately very knowledgeable hate floating around.' (p. 249)

He places his hope not only in education but also in cleansing the doors of perception: 'if we habitually saw the world as infinite and holy, we should obviously find it a great deal less necessary to go in for bullfighting, attacking minorities or working up frenzies against foreign peoples.' He continues: 'let us hope that sooner or later we shall find some method by which, combining awareness with trainings in good feeling, we may increase the sum of human decency and make the realisation of many of our latent potentialities possible.' (p. 253) This is a profoundly humanitarian vision that we can all share. Huxley was a great visionary with a deep understanding of human nature, and these lectures represent the culmination of 50 years of thought. When asked what advice he would give people, he replied that it was a little embarrassing after so much study that the best advice he could give was that people should be kinder to each other. Typically, this is both wise and humane.

■ Vision in Action

David Lorimer

■ LIGHT UPON THE PATH

Paul Fletcher

Chalice Well Press, 2015, £10.99, p/b – ISBN 978-1-906810-08-5

As President of Wrekin Trust, founded by Sir George Trevelyan in 1971, I attended a closing celebration of its work at Hawkwood College last month. There I met Paul Fletcher of the Chalice Well Trust and he kindly gave me a copy of this book of unpublished writings of Wellesley Tudor Pole. Much of the book is based on correspondence with Sir David Russell, who was a great benefactor of my own university at St Andrews, but about whom I knew nothing except his connection with a successful local paper mill. Tudor Pole and Russell corresponded a period of decades, and the archive is lodged in the University. This involved a huge labour of love on Paul's part, mirroring the prodigious output of WTP himself, writing up to 200 letters a day (and we think we are swamped by emails!). I felt a personal connection here, as Sir George was a spiritual mentor for myself, and had been in his turn mentored by WTP. Then also a connection with Russell who, towards the end of his life, wrote that 'what we are

here for is the development of what one might call Mind, which includes sympathetic understanding, imaginative purposes and all these qualities include and mean.' (p. 249)

WTP – as he was called - lived from 1884 to 1968, and was a mystic and visionary in action, who influenced many leading spiritual figures of the day, and is perhaps best known as the originator of the Silent Minute during World War II. The book draws on his unpublished writings in a chronological sequence and contains many gems of spiritual advice. Even as a young man, he writes about the critical factors of will, concentration and control and the importance of concentrating attention on the thought of oneself as the I am based on the reality of the one Self and Spirit - offering oneself in service to the whole. His experience during the First World War was decisive, and resulted in his book *Private Douding*, a post-mortem account of a soldier taken down as heard, although WTP recognises that he cannot even prove the reality of his source to himself. In any event, he transcribed the following inspiring words: 'if you will dwell in peace, learn to love deeply. Never cease loving. Love God by pouring yourself away. Love your fellows by giving them all you possess of light and truth. Love LOVE for her own blessed sake. Such love will bring you nearer heaven.' (p. 37) This also illustrates how WTP served as a bridge between the worlds while he emphasises the critical importance of spiritual work during our human lifetime.

One chapter is devoted to the discovery and significance of what came to be known as the sapphire blue bowl - representing the Grail cup - in 1906. The importance of this for WTP is that the cup of communion and fellowship should have been the central symbol of Christianity rather than cross. For him, the Sign of the Cross represents duality and sorrow, while the Sign of the Cup stands for unity and joy while also representing the feminine. The idea of companionship and fellowship is expressed in the Chalice Well Trust which he founded and which continues to this day. WTP thought that Glastonbury, Iona and an unspecified other location in the Western Isles were the key spiritual power points of the British Isles and formed part of a new energetic dispensation of the Light, embodying spiritual renewal in Britain. This vision was very much shared by Sir George and I remember getting a sense of it when sitting with him on Glastonbury Tor during Harmonic Convergence in 1987.

As I mentioned earlier, WTP is best known for his role in the Big Ben Silent Minute during World War II. This is an expression of what he called the Inner or Spiritual Front, and was inspired by a conversation in December 1917 when another officer received the message that, although he himself would not survive, WTP would live to witness an even greater and more vital conflict. Here, this officer and others like him could form part of an unseen army by using a special time of silence 'to give us our opportunity', observing that the power of Silence is greater than you know and

can form a channel between the visible and invisible worlds. For WTP, silence can become the gateway to the eternal Mind. He put in an immense amount of work in setting this up, including some 10,000 communications and 1,000 interviews, bringing the BBC, the King and Churchill on board. Eventually, millions of people were taking part. Later, in a letter to President Eisenhower, he reports that a staff officer of the German Intelligence Corps told him that during the war 'you had a secret weapon for which we could find no countermeasure and which we did not understand, but it was very powerful. It was associated with the striking of Big Ben at 9 PM each evening. I believe you called it the Silent Minute.'

WTP developed a further iteration of this impulse with the Lamplighter Movement along with Sir George Trevelyan (p. 290) and invoking the power of the Archangel Michael. I believe such an impulse is necessary in our own time, so as to harness the healing power of positive intent, and to this end I am working with the One Spirit Alliance on a parallel Heart of Light idea, also using the 9 PM silent minute in your own time zone - interested readers can email me for details. I will end this review with some words written to Rosamond Lehmann, whom I met through the College of Psychic Studies in the 1980s. WTP remarks that wisdom is not made up of a mess of theories, speculations and metaphysical intricacies. Many earnest pilgrims and students of the path of knowledge find themselves swamped and lost in by-ways leading to cul-de-sacs: 'the spiritual road to progress is a simple one and is not cluttered up by masses of non-essentials.' There is much rich spiritual nourishment in this book, which gives an intimate glimpse into the life, work and world of a remarkable spiritual visionary in action.

■ A Conscious Servant

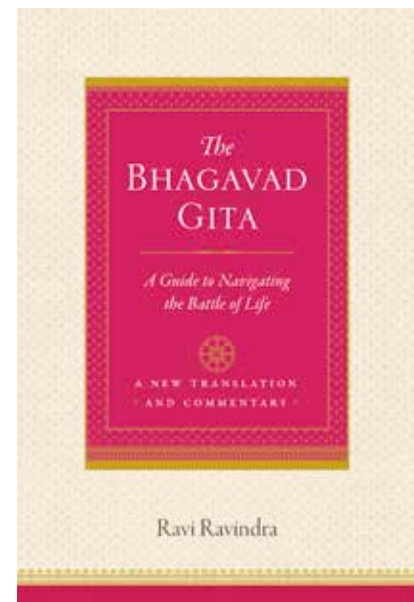
David Lorimer

■ THE BHAGAVAD GITA

Ravi Ravindra (SMN)

Shambhala, 2017, 302 pp., \$19.95, p/b – ISBN 978-1-61180-410-2

The Bhagavad Gita, according to Ravi, is perhaps the single most important text to emerge from India. I have a number of editions, including those by Juan Mascaro and Radhakrishnan, and this is a hugely valuable addition to scholarship around the Gita. At the recent Mystics and Scientists conference, Ravi remarked how rare it was for people to be both scholars and seekers, which he is. Having been a professor of physics, philosophy and comparative religion, he has now intensified his work as a seeker, although both the scholar and the seeker are represented in this text. Ravi first became aware of the Gita when he was 11 and was struck when his father read out the 19th verse of the seventh chapter: 'At the end of many births, a wise person comes to Me, realising that all there is is Krishna. Such a person is a great soul and very rare.' His father said to him that he could tell him these words but did not really know what they meant, and wished



for him to find a teacher or teaching so that he could understand its real meaning. This has surely shaped his quest.

In 7:3 we read: 'Among thousands of human beings scarcely one strives for perfection, and among those who strive and attain perfection, scarcely one knows Me in the full truth of My being.' This is a reminder that most of us spend our lives on the horizontal, material dimension without establishing a real vertical connection with the spiritual level. We may do so for a while, but are subject to many distractions as the monkey mind leaps between the branches. This tension typifies the central metaphor of the Gita, namely struggle and battle between the higher and lower within ourselves. One of Ravi's teachers was Jeanne de Salzmann, about whom he wrote in his book *Heart without Measure*, and who is extensively quoted here. She spoke a great deal about the higher or finer energy and the role of the human being and the body in channelling this as a contribution to evolution. In this respect, the question what do I serve is a critical one. As Ravi observes, we are capable of transcending self-will and becoming an instrument of Krishna or Christ. Salzmann remarks that energy cannot be without relationship: 'if it does not serve I intentionally, then it automatically serves the ego.... Unless there is the I, there is only the ego. One recognises the presence of I from the fact that I wishes to serve.' (p. 109) Elsewhere, she is quoted as saying that we can either be an unconscious slave or a conscious servant.

In the West, there is much talk of freedom, but for Ravi the most important freedom is not for the self but from the self, which is *vairagya*. We each have our *svadharma* or responsibility in accordance with our *svabhava*, or essential nature or inner calling. In this sense, we can all make our own contribution to order in the widest sense, both through mindful attention characterised by yoga and through right action. Here we come to one of the fundamental teachings of the Gita, action without attachment to the fruits of action. Taken one stage further,

this becomes sacrificial action, and Ravi characterises sacrifice as central to the spiritual life of transformation. In this process, we can move from unconscious reaction to conscious response.

One of the hallmarks of Ravi's translation and commentary is the width of his erudition. He quotes liberally and extensively from East and West as well as from sages like Plotinus and the Cloud of Unknowing. He sees self-transformation as the sole purpose of all spiritual disciplines, and remarks that all spiritual teachings in India, unlike the biblical ones, are insight oriented, in other words involving *jnana* or what we in the West would call *gnosis*. It is significant that the Gnostic Gospels have made a comeback as this element was largely excluded from the canonical texts. I think he is right in saying that Krishna, as opposed to Christ, is primarily a teacher rather than saviour, although this is also the view of Gnostics, who spend time on opening the eyes of the spirit.

Beyond gnosis, though, is perhaps the state of unknowing referred to by Ravi: 'an open mind is passionately searching and always unknowing.... True religious mind is silent, free of fear and self-importance, innocent, open, and vulnerable, full of wisdom but unknowing, willing and able to be surprised.' (p. 122) As the mystery deepens, 'it is known but there is no one who knows it.' Ravi distinguishes scientific from spiritual mysteries, which he regards as unsolvable: 'they call for a radical transformation of our whole being, including the mind, so that we may come to a different level of the mind.' (p. 204) Here, the mystery can be lived and dissolved as action, knowledge, meditation and love support each other in an ever finer and finer quality of being of the searcher (p. 251).

In response to the verse cited by Ravi's father, the Yogi sees the Self and everyone and everyone in the Self (6:29). Thus they can become impartial, beyond attachments to knowledge, action and indolence, corresponding to the three gunas of *sattva*, *rajas* and *tamas*, extensively discussed in this edition. This translation and commentary is the result of over 60 years of reflection and practice and is essential reading for both scholars and seekers since the central elements of the spiritual life are universal in all times and all places. We are all engaged in a struggle at some level, but it is our responsibility to choose that level consciously and work on refining our being and actions. The French writer Buffon once said that 'le style, c'est l'homme même' - a person's style expresses their essence, and in this respect I was struck by the Hasidic story about a man who was asked whether he visited his master to hear his words of wisdom. "No", he replied, "I want to see how he ties his shoelaces." Everything we do manifests our being, but the question is how consciously we act. Studying this book can enhance and refine our capacities to help make us more conscious servants.

PSYCHOLOGY-CONSCIOUSNESS STUDIES

■ A Postmaterialist Psychology

David Lorimer

■ THE OXFORD HANDBOOK OF PSYCHOLOGY AND SPIRITUALITY

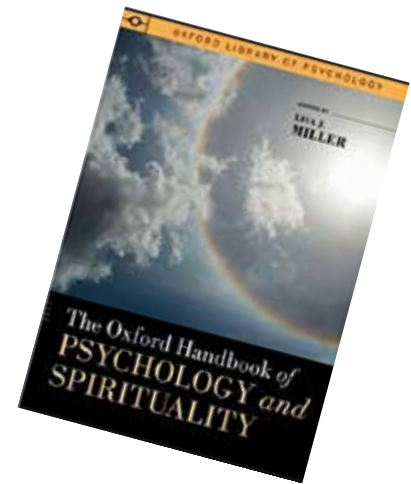
Edited by Lisa J. Miller

Oxford, 2012, 634 pp., £52, p/b – ISBN 978-0-19-935734-5

This is a landmark volume, especially given the fact that it has been published by one of the world's leading university presses. It forms part of the Oxford Library of Psychology, a series designed to review major sub-disciplines with breadth, comprehensiveness and exemplary scholarship; it also combines a searchable online facility. Significantly, though, only two of over 60 contributors from outside the United States.

In her introduction, Lisa Miller remarks that the handbook is at the cutting edge of an expanded psychology that directly addresses the broadened set of ontological assumptions and a view that spirituality is fundamental to the human constitution. In one sense, it continues the work of William James after a long diversion by taking the human mind as part and parcel of a living spiritual reality, which leads to an expansion of psychology 'by a Copernican magnitude' in the direction of postmaterialism, 'a science beyond the limitations of exclusive ontological materialism and mechanism.' This takes consciousness as fundamental and the fabric of reality.

Miller argues that postmaterialist spiritual psychology can live alongside work conducted from a materialist perspective, adding that 'materialist science merely needs to make its assumptions clearer as it sustains a vital place abreast work conducted from other ontological contexts'. The word 'merely', though, is a big ask, even if the limitations of materialism are becoming more evident, at least to authors in this volume. Significantly, the author organised a student lecture for some of the contributors at Columbia University Teachers College and when they entered the largest available theatre, they found it full to overflowing. Later, students remarked that 'this is the [postmaterialist] education that we want; the old scientific models feel dead to us... I already assume a spiritual reality, most of us do, so now what? We want to learn from this perspective.' (p. 3) Miller concludes that the science in this handbook 'shows our universe to be alive, guiding and so very sacred. The scientific perspective that all consciousness is one and sacred may reawaken our appreciation of living beings around us, all life.'



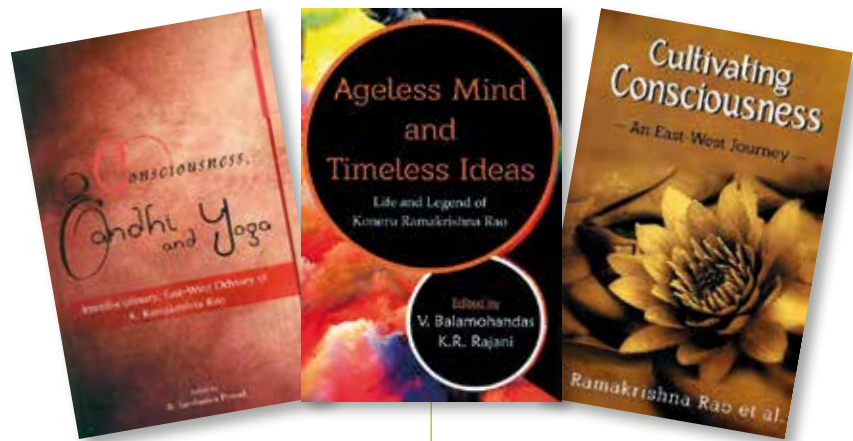
The volume consists of ten parts with 38 essays. There are sections on epistemological and ontological assumptions in history and culture, personality and social psychology, spiritual development in relation to family and culture, prayer and intentionality, mindfulness therapies, physical health and spirituality, positive psychology and spirituality, the brain and spiritual experience, then sacred consciousness and healing in terms of a postmaterialist spiritual science. Each chapter contains an abstract, coverage of its area, suggestions for further research, and extensive references. All this expands and redefines the philosophy and psychology of spirituality and religion. One of the essays in the first part is very useful in spelling out theoretical and epistemological foundations for the field, with an emphasis on methodological, epistemological, ethical, and ontological metaphysical presuppositions. This is an excellent analytical piece about what the authors call positivistic naturalism, and it is interesting to note that the corresponding ethical assumption is primarily instrumental.

The essay on good and evil in religion contains some interesting work on core virtues, moral foundations and value categories across a number of different traditions, contrasting self-transcendence with self-enhancement, love with hate, selfishness with service, and empathy with self-absorption. The paper on religion and altruism could have brought in the seminal work of Pitirim Sorokin written up in *The Ways and Power of Love* in the 1950s. In the context of my other work on character education, I found the essay on spiritual development in adolescence of great interest, as well as another on spirituality and positive youth development. This last essay provides a framework of developmental assets for young people and a useful definition of spiritual development in terms of connectedness, meaning, purpose and contribution. Clinicians will find a great deal of interest in the volume, including essays on spiritually sensitive psychotherapy, spiritual aspects of Jungian analytical psychology and the transformation of Eastern meditative disciplines into Western psychotherapy. There is good coverage of positive psychology and spirituality as well as the role of spirituality in relation to resilience and positive emotions.

The section on the brain and spiritual experience contains essays by Andrew Newberg on transformation in brain structure and spiritual experience, neuroimaging and spiritual practice by Mario Beauregard and the psychology of near death experiences and spirituality by Bruce Greyson. All three are well worth close reading as they are the result of many years of research and reflection. Bruce refers to the NDE as posing an inescapable challenge to the materialistic model of mind-brain identity by asking how 'complex cognition, sensory perception, and memory can occur under conditions such as cardiac arrest in which physiological models of mind deem it impossible. (p. 525)

In the final section, there are contributions from Stefan Schwarz and Larry Dossey on nonlocality and healing, then an extensive and quite technical paper by William Tiller on knowledge, intention and matter, where he distinguishes between the knowledge pathway of *logos* as physical science and *mythos* for what he calls psychoenergetic science. He draws on great deal of research, adding information and consciousness to the physical equation of mass and energy. Gary Schwartz provides a thorough analysis of materialism and the mind-brain problem and evidence pointing towards the separation of mind from brain in relation to experiments and experiences for survival. A greater spiritual reality with consciousness as the key, he argues, will require a revision and expansion of psychological definitions of mind, its operation, limitations and potentials – probably in terms of building on the William James filter model. However, Gary is also aware that the politics and indeed the social psychology of science makes progress in this direction challenging. Amit Goswami covers some of the same ground, highlighting paradoxes and anomalies of materialist science, concluding that scientific materialism is not a valid metaphysics for science before advancing his own view of a new science within consciousness. Ethics, he states, will be based on a metaphysics that fundamentally recognises the interconnectedness of all humans, which I myself argued in my book *Whole in One* (1990), shortly to be republished as *Resonant Mind*.

In her conclusion, Lisa Miller returns to some of the themes raised in her introduction relating to a broadening of ontology, and articulating a postmaterial view where human science sees human mind as an extension of the fabric of universal consciousness - a 'consciousness-driven science'. She writes that the fact that 'consciousness exists in states other than matter expands our notion of the human brain and is the linchpin of a post-material psychology.' (p. 612) Consciousness is in us, through us and around us. Taken as a whole, the volume is a powerful argument for an expanded ontology in psychology, and I hope it will be avidly read by students and younger psychologists in the field so as to encourage them to become part of the necessary expansion and transformation of the discipline. General readers will also find a great deal of valuable material, although they will be more drawn to particular essays in terms of their own special interests. This is truly a landmark and potentially revolutionary volume that deserves the widest possible readership.



■ An East-West Odyssey

David Lorimer

■ CONSCIOUSNESS, GANDHI AND YOGA (CGY)

Edited by B. Sambasiva Prasad

DK Printworld, 2013, 360 pp., \$40, h/b – ISBN 978-81-246-0715-2

■ AGELESS MIND AND TIMELESS IDEAS (AMTI)

Edited by V. Balamohandas and K.R. Rajani

DK Printworld, 2016, 186 pp., \$20, h/b – ISBN 978-81-346-0847-0

■ CULTIVATING CONSCIOUSNESS (CC)

K. Ramakrishna Rao et al.

DK Printworld, 2014, 380 pp., \$40, h/b – ISBN 978-81-246-0717-6

Gowri Rammohan is right when he observes that Dr K. Ramakrishna Rao is to Indian psychology what Dr S. Radhakrishnan is to Indian philosophy in bringing the depth and richness of classical Indian thought into a contemporary context. Radhakrishnan was the first Professor of Eastern Religions and Ethics at Oxford and subsequently President of India and a recipient of the Templeton Prize. He has had a very considerable influence on my thinking over the past 40 years. Ramakrishna Rao deserves to be equally well-known to readers for the scope of his contribution to psychology, philosophy, parapsychology, yoga, mysticism and education. Like Ervin Laszlo and his time twin Stanley Krippner, he was born in 1932 and has made extensive scholarly contributions over a period of 60 years. He first visited Duke University and the parapsychology lab of JB Rhine in 1958, at the age of 26. Rhine had a formative influence on his thinking, and he was closely involved with his work over many years. He has held many distinguished positions, including Vice Chancellor of Andhra University, President of the Parapsychological Association, President of the Indian Academy of Applied Psychology, President of the Asian Congress of Philosophy and currently Chancellor of the Gandhi Institute of Technology and Management University (GITAM).

These three books are complementary in their coverage of Ramakrishna Rao's life, thought and central concerns. The first celebrates his 80th birthday with 17 contributions from colleagues around the world, while the second is a Festschrift of reflections and reminiscences of his life. The third volume was first published in 1992, and the new edition contains four new and authoritative essays by Ramakrishna Rao on yoga, Vedanta, Buddhism and East-West approaches to consciousness.

A good place to start is the definition of consciousness, which depends equally on context, academic discipline and culture. Rao states that consciousness in the Indian tradition is more than an experience of awareness, but rather a fundamental principle that underlies all knowing and being. The cognitive structure does not generate consciousness, but rather reflects, limits and embellishes it. It is the source of our awareness or the light which illumines the things on which it shines. (AMTI, p. 38). In his conclusion to the final essay in the third book, he characterises the Western scholarly tradition as equating consciousness with the mind and defining intentionality as its essential characteristic. The goal is rational understanding of what consciousness or mind is, and the focus is on the phenomenal aspect. By contrast, the Indian approach does not distinguish between consciousness and mind, characterising consciousness as such or pure consciousness as non-intentional, while mind is intentional. Critically, the goal is one of developing practical methods for transformation via the realisation of consciousness as such. (CC, p. 348) Rao believes that humans enjoy dual citizenship of the phenomenal and transcendental domains of consciousness, but it is striking how the transformational impulse is generally absent from the Western tradition, except more recently in humanistic and transpersonal psychology. The West is mainly concerned with knowing, while the East addresses both knowing and being.

Rao was 15 when India gained its independence in 1947. However, Indian education was still fundamentally influenced by the Western worldview, and indeed more specifically by science, especially emphasised by Nehru. There has been a tendency, also present in early anthropologists, to assume that the Western way of knowing is inherently superior,

which disregards the thousands of years of sophisticated philosophy in India, China and elsewhere. In the 19th century, Lord Macaulay stated the aim of education as cultivating Indians who were English in taste, in opinions and intellect. However, this comes at the cost of denigrating and distancing Indians from their native culture while privileging those of the West, and arguably results in a crisis of philosophical identity. In particular, Rao argues that by providing a more expansive context, Indian psychology can throw light on and resolve some of the major challenges confronting psychology, namely the consciousness puzzle, the enigma of cognitive anomalies, and the development of human spirituality.

In elucidating these topics, Rao has exhibited a commendable intellectual courage in the face of academic pressure to dismiss or ignore parapsychology. He identifies the limitations of scientific materialism with respect to both parapsychology and spirituality. He was Director of the Institute for Parapsychology in Durham, North Carolina from 1976 to 1984, and Executive Director of the Foundation for Research on the Nature of Man (also founded by the Rhines) from 1988 to 1994. He has published extensively in both fields, always with the aim of connecting them in his pursuit of 'wisdom aimed at transforming the person and society.'

CGY gives a comprehensive overview of the whole range of Ramakrishna Rao's work in psychology, yoga, parapsychology, applied psychology, philosophy and Gandhian studies. The essays are written by experts in the respective fields and make for highly stimulating reading across a wide range of issues. Max Velmans compares his reflexive model of consciousness with the Body-Mind-Consciousness Trident model advanced by Rao. This is a thorough and very instructive chapter highlighting both similarities and major differences while situating his own contribution within the Western tradition. Max provides a detailed comparative table (pp. 120-121) and highlights the importance of perspectival switching between first and third person accounts of causality.

The essay on the search for authentic self provides an illuminating contrast between Western and Eastern approaches. The authors see this as a process of becoming through being, which in the West focuses on the development of personality – 'being true to oneself' – while India emphasises an inner orientation. They discuss Sri Aurobindo and Mahatma Gandhi as case studies of people who transformed themselves in order to achieve a greater, selfless purpose. In these cases, authenticity is a process of transformation or self-transcendence rather than a narrower self-fulfilment. This makes for fascinating reading, with extensive quotations from both authors. The more holistic Indian approach also relates to community, responsibility and shared goals – it is much less individualistic and requires a degree of detachment.

A major strand of Ramakrishna Rao's work is Gandhi's applied spirituality, informed

by the philosophical principles such as *satyagraha* (truth force, a form of spirituality in action). Rao is deeply concerned by the extent of violence in our societies and equally impressed by the way in which Gandhi and others have addressed this through nonviolence. Rao writes about this himself in the final essay of AMTI, where he relates his own model to Gandhi's life, epitomised by an acute tension between higher and lower aspects of his nature. Thus, we have a constant and fundamental choice of orientation, where practice of yoga and meditation can play a critical role.

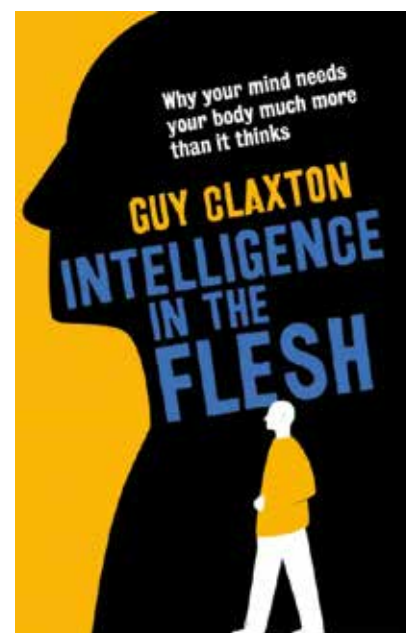
CC originates in a conference held to celebrate the centenary of the birth of Louisa Rhine in 1991. It contains many classic contributions, including an essay on metaphysical foundations of modern science by Willis Harman, with a critical commentary by Stephen Braude, an exposition of Whitehead's understanding of consciousness from David Ray Griffin, epistemological issues covered by Eugene Taylor, the importance of balancing Yin and Yang, feminine and masculine in science, an essay by Michael Grosso on imagination and healing as well as contributions from Robert Jahn and Brenda Dunne from Princeton. An interesting theme is the relationship of psi to the unconscious and subliminal perception as it presents an immediate form of knowing often only subsequently verified or falsified. Of course, a huge amount of research has been published since the first appearance of the book in 1992, but it still provides many pertinent reflections.

Many people are put off the ideas of Whitehead because of their difficulty and the fact that he invents new terminology to replace what he considers to be defective or incomplete ideas. His point of departure is experiential events, or occasions of experience, so the stuff of the mind is experience rather than consciousness. Griffin argues that consciousness itself is not efficacious, but the human mind as a whole – with its unconscious depths as well as its conscious surface – is the most powerful actuality on the face of the planet. He also discusses whether consciousness is a blessing or a curse, quoting Whitehead as saying that the function of philosophy is the self correction by consciousness of its own initial excess of subjectivity. He sees consciousness as selectively obscuring the totality, which philosophy has to seek to recover. This gives a fresh insight into the field.

Ramakrishna Rao's own contribution the body of the volume discusses some conceptual and methodological issues, covering definitions, the relationship between conscious and unconscious, philosophical approaches by Descartes, Husserl and Sartre, issues of upward and downward causation, first and third person perspectives and the role of meditation. However, his new essays on yoga, Vedanta and Buddhism are masterly expositions of these traditions and their relationship to modern psychology. His final essay, as mentioned earlier, is a wide-ranging consideration of Western and Eastern approaches also covering Western

phenomenology and existentialism. It provides a fitting summation to the themes covered in all three books.

Ramakrishna Rao's prodigious output over the last 10 years has amounted to over 5,000 pages, including the magisterial *Cognitive Anomalies, Consciousness and Yoga*, which I reviewed for the Journal of Consciousness Studies. He is an interdisciplinary giant who has integrated his ideas across many disciplines, while never losing sight of the fundamental importance of wisdom, the process of spiritualisation, and applied spirituality addressed to the fundamental challenges of our time.



■ Busy Bodies make Clever Bodies

Olly Robinson

■ INTELLIGENCE IN THE FLESH: WHY YOUR MIND NEEDS YOUR BODY MUCH MORE THAN IT THINKS

Guy Claxton

Yale University Press, 2016, 344 pp., £12.99, p/b - ISBN 978-0300223477

The work I do as an academic is really rather unhealthy. It involves countless hours of staring at computer screens, tapping away at keyboards, with my eyes and body stuck in a fixed and rather unnatural posture. Even when I am away from the computer, my attention at work is usually in some cognitive matter, and hence away from my body and environment. This combination of heavy-duty rationality and a lack of bodily movement is tailor-made to cause imbalance. I use dancing to help solve this problem. I go out as regularly as I can to '5 Rhythms' classes, or other ecstatic dance workshops, to help feel physically alive, vital, real, present and full of emotion. Every workshop feels like a

remembering of my true embodied self and a temporary release from the fictional junk of my cognitive self-concepts.

Given this passion of mine, I was excited to read Guy Claxton's book *Intelligence in the Flesh*, which synthesises his ideas on how intelligence is a function of the whole body. Claxton relays how society has become more sedentary over time, and its pastimes ever more disembodied. Even things that used to involve complex bodily action, such as cooking, for many now simply involve ripping off a lid and putting a tray in a microwave. Meanwhile, psychology and philosophy have been taking intelligence away from the body for some centuries now. Intelligence tests typically require little if any bodily work or physical activity and instead emphasise abstract reasoning or memory. In sum, culturally and academically, we have been displacing the body as the foundation of wisdom or cleverness. We need to reclaim the wisdom of the body – this is the core message of the book.

For Claxton, the body is the basis of all intelligence. Reason comes from nowhere else, in his view. There is no Platonic realm, no Higher Source, no mind or soul distinct from the complex operations of body. We have evolved physically, we are made for action, and there is no dividing line between brain and body. It is all one intelligent system. The mind and consciousness 'well up' out of the body's working.

The whole discussion of how *brain* and mind relate, says Claxton, is mistaken. The *body* is the mind's substrate, not just the brain. Thoughts, feelings, intuitions, values and concerns all are expressions of total bodily events that incorporate the nervous system, immune system, circulatory system and more. Our blood sugar changes in response to thoughts, our thoughts respond to bacteria in our intestine. Hence studies show that people make better decisions when they rely on their physical intuition – their gut feelings. The brain is more like a chat room than a directorate.

Feelings and emotions are the glue that keeps the embodied system together. They bring the whole organism into a kind of action-focused alignment, and demand expression. If feeling is not properly expressed, it becomes confused and loses its natural wisdom. Any divorce of thought from feeling creates a kind of 'clever-stupid' intelligence (which, in my experience, is all too common in academia).

Thinking, from the Claxton's embodied cognition theory, is a series of stories that the body constructs about what is going on in its inner depths. There is no other unconscious than the unconscious depths of the body and our lack of conscious access to its finer workings. This does not leave room for an unconscious that is akin of Jung's model or Huxley's. There is no extended 'Mind at Large' beyond our conscious bubble. The unconscious is just the operation of matter and physical information beyond our ken.

Claxton's materialism, while not leaving much if any room for God, transcendence

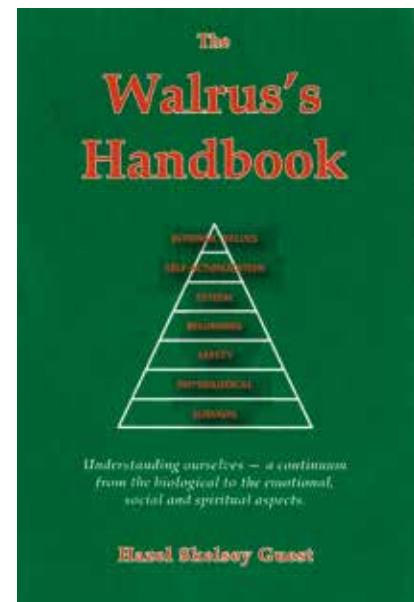
or paranormal phenomena, does provide for a spiritual sense of unity, albeit a radically immanent one. We are one with the cosmos, being not rational souls inserted in the physical world, but integral parts of the material whole. We flow out into the world beyond our skin. To open to the wisdom of the body means opening to its porous nature – accepting that it has no clear edges. Every breath in draws atoms from the world into us, and every breath out expels atoms from one's inside into the outside world. Every learning event draws information in, and every sentence spoken sends it out. Embodied intelligence works with this in adaptive and functional ways. Tools and technologies become seamless parts of systems that include the physical body, while information flows seamlessly inside and outside the body, connecting us intimately with the world and each other.

In the final two chapters, the book discusses whether and how embodied intelligence can be taught, and what it means for education. Why do we make children sit stock still through class, says Claxton, when intelligence benefits from moving around and from gestures? And then we pathologise those kids who want to move around as having an attention deficit disorder! This is such an important message, and one that needs to be echoed throughout the education system, including higher education, where we have also forgotten the power of learning through action. Claxton calls for a New Materialism, which embraces the importance of making, doing and moving in the physical world.

Claxton considers various ways that we can rehabilitate our somatic intelligence – he briefly reviews the effects of biofeedback, mindfulness meditation, exercise, tai chi and dance. I did feel a little short changed that dance only got about half a page of coverage, and exercise only three pages. I felt the book missed out on a chance of extensively exploring the research that is out there on the benefits of exercise, yoga and dance. And given Claxton's expertise on Buddhism, I was hoping for a bit more on spirituality in the book.

Overall, Claxton's basic thesis is important and convincing. We *must* learn to re-engage with our bodies and their extraordinary capacities. Like him, I believe that the whole body is indeed the locus of feeling, memory and thinking. However unlike Claxton I am not a materialist, and I don't share his view that the physical is all there is, when it comes to intelligence and consciousness. I expect that is also true of many readers of the Network Review, given that the Scientific and Medical Network is in large part about exploring alternatives to scientific materialism. But if I was going to read a book that had a philosophically materialistic foundation, it would be this one. It shows just how healthy and wise materialism can be.

Olly Robinson is Senior Lecturer at the University of Greenwich and author of "Paths Between Head and Heart: The Seven Harmonies of Science and Spirituality", to be published in 2017 by O Books.



■ Remedy for a New Era

Gunnel Minett

■ THE WALRUS'S HANDBOOK, UNDERSTANDING OURSELVES - A CONTINUUM FROM THE BIOLOGICAL TO THE EMOTIONAL, SOCIAL AND SPIRITUAL ASPECTS

Hazel Skelsey Guest (SMN)

Archive Publishing, 2016, 229 pp., £19.95, p/b - ISBN 978-1-906289-29-4

The year 2016 marked the beginning of a new era - the Post-Truth Era. And only a couple of days into 2017 we have learnt about 'alternative facts'. This describes a new trend, where people are becoming indifferent to whether the information they are given and/or pass on is true or false. This applies in particular to social media and propaganda spread by ruthless politicians and people willing to do anything to take advantage of people's ignorance for their own benefit. The need for independent data with confirmed validity has all of a sudden become less important. This new trend is completely opposite to a tradition that is as old as human history, to turn to elders for their wisdom, accumulated over a life-time of learning, research and fact-testing.

This is why this book feels so reassuringly different and old-fashioned in the best possible senses. In it the author is sharing her knowledge of human behaviour and the psyche, which she has acquired over a lifetime as a teacher and psychotherapist. To illustrate both psychological, emotional, social and spiritual aspects of human life she relates them to two theoretical frameworks; firstly, Maslow's very well-known *Hierarchy of Needs*, that illustrates which of our inner forces impel us to act in a certain way, and secondly, to the *Scale of Responses* and *Sequential Analysis* from the

lesser known Jungian psychotherapist, Dr Ian N Marshall, to highlight our reactions, i.e. how and why we respond in a certain way in a specific situation.

The first part of the book focuses on Maslow's theories, particularly his later, revised hierarchy of needs which includes intrinsic values. By illustrating the theory with anecdotes from her own practice, as well as current world events, this account becomes very accessible and entertaining, even for those with no previous knowledge of this field. Drawing on this clear and well tested theory of the human psyche helps clarifying behaviour that otherwise can be misunderstood or misinterpreted. In particular, in these times of turmoil and friction between people from different backgrounds who are trying to live together in a shrinking world, it can be a great help to see how much we really have in common rather than being alienated by our differences.

We have things in common, not just with other human beings, but also with other animals. The author points to animal research which has established many similarities between us and other species. There is, of course, an ongoing, intense and important debate on animal welfare and environmental issues. So it's particularly helpful, given that 'environmental deniers' have recently been elected to powerful positions in the world, to see how much we can learn from studying other species. (The arguments presented in the book has received recent backing from TV programmes showing animals in the wild, displaying emotions such as grief and loneliness which were previously thought to be unique to human beings. It also shows how much animals learn their behaviour from each other.)

The second part of the book focuses on Dr Ian Marshall's *Scale of Response* and *Sequential Analysis*. This too illustrates how human behaviour is influenced by the environment: basic reactions can be positive or negative depending on outer circumstances - something to remember before we judge behaviour in others which might seem to come directly from some sort of inner evil rather than desperation and despair in a hopeless situation.

The title of the book comes from Lewis Carroll's book *Through the Looking Glass*: 'The time has come, the Walrus said, to talk of many things'. It refers to the fact that the author decided to present the wisdom acquired over a lifetime of experience and research, at the age of 87. In this new era of Post Truth, to be willing to take time to collect thoughts and experiences, and share it with the rest of the world, is something to be appreciated and treasured by all. Something we all should be doing when we feel we are approaching a more mature age, as a gift to future generations.

On the positive side, our new information age has made it much easier to share our knowledge with others. Publishing a book no longer requires the mediation of a publisher. It can easily be achieved in the form of

electronic books which are accessible online in all parts of the world. In fact, I think elders sharing their wisdom is so important that organisations such as SMN, which represents a different, more thoughtful and serious approach to research and fact-based knowledge, should lead this initiative and encourage its member to follow the example of Hazel Skelsey Guest by writing down the wisdom they have accumulated over a lifetime. Furthermore, it is certainly high time to try to counter the Post-Truth era, which seems to be taking over our world. Otherwise future generations may struggle to find their way back to a more balanced outlook on life.

■ Emancipatory Enaction

David Lorimer

■ PARTICIPATION AND THE MYSTERY

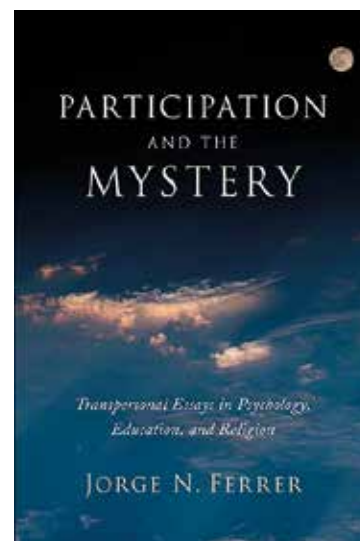
Jorge Ferrer

SUNY Press, 2017, 376 pp., \$95, h/b – ISBN 978-1-4384-6487-9 (paperback forthcoming)

Jorge Ferrer is Professor of East-West Psychology at the California Institute of Integral Studies, author of the seminal *Revisioning Transpersonal Theory: A Participatory through Vision of Human Spirituality*, and co-editor of *The Participatory Turn: Spirituality, Mysticism, Religious Studies*, both of which were reviewed in these pages. Jorge is the foremost theorist of participatory spirituality and, as such, these brilliant new essays are required reading for anyone seriously interested in spirituality, psychology, religion, mysticism, philosophy of science and education. There are nearly 100 pages of notes and references. The three parts are devoted to transpersonal psychology, integral education and some reflections on spirituality and religion, particularly a critical engagement with the work of Stan Grof and Ken Wilber.

The first essay on participatory spirituality defines its approach as emerging from 'human co-creative participation in an undetermined mystery or generative power of life, the cosmos, or reality' (p. 10) - in an appendix he explains his use of the term undetermined to distinguish it from indeterminate and to leave open the possibility of determinacy and indeterminacy within the mystery. Likewise, he has substituted the word 'mystery' for 'spirit'. The participatory approach denies the existence of pre-given ultimates and/or single traditions but is also critical of post-modern reduction of religion to a cultural-linguistic artefact - this means that the approach is essentially enactive and co-creative. Jorge provides a useful map of participatory spirituality with different forms of co-creation - transpersonal, interpersonal and intrapersonal, each with its principles, challenges, tests, regulative goals and direction. (p. 12)

This provides an excellent theoretical framework as well as three practical tests that can be applied to any spiritual tradition: the egocentrism test relating to the overcoming of self-centredness in practitioners, the dissociation test addressing the extent of fully



embodied integration, and the eco--socio-political test 'assessing the extent to which spiritual systems. The ecological balance, social and economic justice, religious and political freedom, class and gender equality, and other fundamental human rights.' (p. 203) I agree that this approach invites 'a more nuanced, contextual, and complex evaluation of religious claims' based on results rather than any a priori conditions.

The second essay on transpersonal psychology, science and the supernatural is a penetrating analysis and critique of the tendency within psychology to try to align itself with science by claiming a metaphysical neutrality or agnosticism. It is apparent that Harris Friedman, editor of the *Wiley-Blackwell Handbook of Transpersonal Psychology*, is trying to restrict the field to exclude the existence of transcendent realities, which is an implicit acknowledgement of orthodox naturalism and a denial that science also contains metaphysical assumptions; indeed, naturalism is itself a metaphysic. Jorge sees this in terms not only of Western ethnocentrism, but what he calls epistemic colonialism that critically filter traditional supernatural claims and claim to be the final arbiter on their validity. Jorge argues for a critical but sympathetic engagement with other worldviews and ways of knowing. He is also right in criticising what he calls cognicentrism, both in education generally and psychology particularly. More on this below. He steers a middle course between both perennialism and scientism, both of which commit transpersonal psychology to a single metaphysical worldview - either transcendentalist or naturalistic. The participatory approach is open to multiple metaphysical possibilities and state-specific insights (p. 62).

The chapters on integral education assert that modern Western education 'emphasises the development of the mind's rational and intellectual powers, paying little attention to the maturation of other ways of knowing.' (p. 55) This is a good definition of cognicentrism and highlights the lack of development in kinematic, emotional, aesthetic, intuitive and spiritual intelligences. In this respect,

Jorge could have drawn on the work of Iain McGilchrist on the implications of left and right hemisphere thinking for culture, but this reference is missing from his coverage. Integral education is also transformative and demanding at different levels. Jorge describes the work of Marina Romero and Ramon Albareda addressing body, vital, heart, mind and consciousness in a co-creative process of unfolding learning and enquiry. This makes very interesting reading, especially the incorporation of the vertical dimension reconnecting education with transformation and spirituality. As Jorge points out, expanded intellectual understanding does not equate with genuine integral knowledge; the former can remain lopsided and exclusively mind-centred.

This leads on to the incorporation of embodied spiritual practices and the overcoming of disassociation from the physical and alienation from nature and the feminine. Embodied spirituality takes in all human dimensions as equal partners; its goal is integration rather than sublimation, which includes listening to the body as a source of spiritual insight, the resacralisation of nature, sexuality and sensuous pleasure, and rediscovering the mystery in its immanent manifestation rather than simply seeking the transcendent beyond the body and the world. All this is in the service of liberation. These insights are incorporated in the chapter on teaching mysticism from a participatory perspective, perhaps the most wide-ranging methodology I have read about anywhere and which is at once integral, experiential and transformative. These methods are further elaborated in a chapter on embodied spiritual enquiry as a radical approach to contemplative education.

The critical chapters on Stan Grof and Ken Wilber provide readers with a useful participatory view by questioning the privileging of a non-dual monistic metaphysics with a pre-given ultimate spiritual reality. Jorge's approach, as indicated above, is enactive, co-creatively bringing forth new insights which are bound to be culturally conditioned in some respects. He uses the analogy of the ocean of emancipation having different shores, which also allows for new evolutionary spheres to develop, which do not apply a hierarchical scheme, as advanced by Wilber. As Tim Freke points out in *Soul Story* (see his article and my review in the last issue), these realms must have developed alongside cultural evolution. The final chapter discusses religious pluralism and the future of religion, with a number of scenarios that let a thousand spiritual flowers bloom, intrinsically valuing diversity and mutually respect. Thus one can achieve a sense of belonging to a common spiritual family committed to spiritual individuation and responsible transformation of the world in ecological, sociological and political dimensions.

One other concept new to me was that of 'open naturalism' as a result of realising that the dichotomy of naturalistic/supernaturalistic is itself problematic and arises from the theology of mediaeval Christianity. Modern scientific naturalism is particularly

committed to rejecting any supernatural causes, agents or principles. Open naturalism allows a more expansive view that is free from materialism and reductionism and is therefore open to the plausibility of subtle dimensions of reality. Similarly, Jorge questions the sharp distinction between transcendent and immanent, preferring the use of the word subtle. I found it useful to question these widely accepted dichotomies as a way of loosening up categories. After all, the participatory integrates subjective and objective in its approach. Overall, the volume is highly stimulating and thought-provoking in articulating a participatory perspective across a number of disciplines and challenging us to become more integral, embodied and responsible.

■ Rethinking the Science of Consciousness

David Lorimer

■ TRANSCENDENT MIND

Imants Baruss and Julia Mossbridge

American Psychological Association,
2017, 249 pp., \$69.95, h/b – ISBN
978-1-43382-77-3

It is encouraging that such a radical book has been published by the American Psychological Association as it goes way beyond conventional psychological thinking, as is apparent in the first sentence: 'we are in the midst of a sea change. Receding from view is materialism, whereby physical phenomena are assumed to be primary and consciousness is regarded as secondary. Approaching our sites is a complete reversal of perspective: according to this alternative view, consciousness is primary and secondary.' (p. 1) Imants Baruss is Professor of Psychology at King's University College at Western University Canada, where he has been teaching undergraduate courses about consciousness for nearly 30 years. Julia Mossbridge is an experimental psychologist and cognitive neuroscientist at the Institute of Noetic Sciences and a visiting scholar at Northwestern University. The reversal of perspective referred to will be familiar to many readers, although they might find the confident tone overoptimistic in view of the evident strength of resistance and the social psychology of confirmation bias.

With over 35 pages of references, the authors draw widely on research and consider the full range of parapsychological phenomena implying a shared mind, rethinking time, separation of mind from brain, direct mental influence and openness to the transcendent mind of the title. There is no doubt in my mind that if one applies William James's principle of radical empiricism there is ample evidence to justify a fundamental reversal in our understanding of consciousness, but very little of this literature is read by mainstream neuroscientists, whose working hypothesis remains that brain produces mind. Such is the general prejudice that member and Nobel laureate Brian Josephson received a note from a conference organiser that due to his research interest in the paranormal,

his presence would not be appropriate at a scientific conference. He subsequently learned, incredibly, that it was feared that his presence might damage the career prospects of students attending.

The authors give a brief history of materialism, which they show has been transcended by physics itself. They take considerable trouble to define various meanings of consciousness as referring to subjective events suffused with existential qualia that occur privately for a person (p. 15). They detail not only evidence for phenomena anomalous in terms of materialism, but also strategies for approaching the area, which they subject to critical scrutiny. They feel that materialism as a philosophy is like a dyke holding back the water of knowledge. They rightly point out the close correlation between beliefs about consciousness and reality in terms of worldviews. The overall approach nicely balances open-mindedness with rigour.

In looking at shared mind, they review evidence for remote viewing, telepathy and psychokinesis. Some readers may be familiar with the CIA parapsychology programme at Stanford Research Institute, which lasted from 1973 to 1995. During this period, 1,215 remote viewing trials were performed, and already in 1996 statistician Jessica Utts concluded that 'using the standards applied to any other area of science, it is concluded that psychic functioning has been well-established.' Yet, more than 20 years later, sceptics still claim that there is no evidence for psi - in this respect they resemble the cardinals who refused to look through Galileo's telescope. In discussing the theoretical basis of shared mind, the authors could have referred to the extensive work of Ervin Laszlo on the Akashic field, and, historically, New Thought ideas about a universal mind, for instance in the work of Thomas Troward.

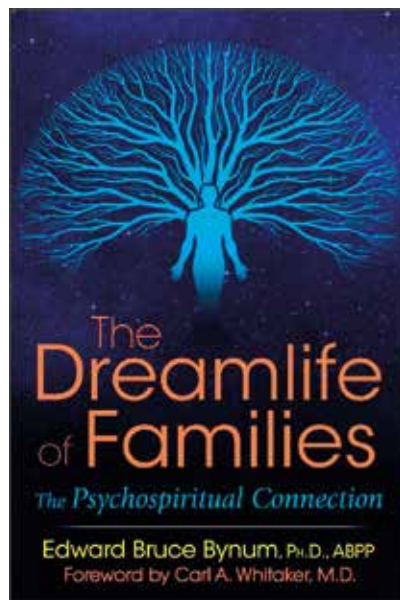
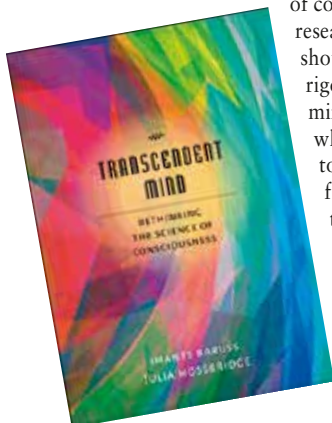
Moving on to their treatment of time, the authors discuss its centrality to consciousness and experience as well as evidence for pre-sentiment, precognitive dreaming and precognitive remote viewing. Interestingly, they consider the implications of the life review for our understanding of time, as this seems to compress a lifetime into a few seconds. Then we can also experience timeless states, which I would not personally interpret as time 'coming apart'. This leads them to postulate a deep time distinguished from subjective apparent time. The next chapter looks at evidence for contact with the dead, including spontaneous cases and mediumship, and they consider the relative merits of superpsi versus survival as a plausible explanation. In their treatment of near death experiences, the authors point out the paradox that 'the less the brain is able to function properly, the more vivid the experiences that are occurring' and in this respect they could have cited the Auckland Geddes case as an argument in their favour. Of course, mental functioning in the afterlife implies mind without any brain, not just mind separable from the brain.

Various forms of direct mental influence are investigated, including random event generators, remote healing, poltergeist activity, macro-PK and the extraordinary case involving the rapid disappearance of Anita Moorjani's terminal cancer following her NDE. They also discuss the 'fictitious ghost' Philip, ostensibly created by a group of Canadian researchers, but I have always wondered if someone on the other side was in fact having a joke at their expense. The next issue is reintegrating subjectivity into consciousness research, where the authors point out that first person observation is in fact at the core of science, and that careful observation is a skill to be learned, to which they devote a separate section. They also cover phenomenology, psychophysics and psychophysiology as well as arguing for self-development in consciousness researchers.

Finally, we come to the title of transcendent mind from a post-materialist perspective. One of their core contentions is that conditioned ways of thinking have displaced empirical evidence, hence the need for this book to define a new scientific footing for consciousness research. In considering a possible explanatory model, they quote the filter theory advanced by Aldous Huxley, whom they wrongly call an American writer, but, oddly, they make no mention of William James's seminal lecture on immortality where he discusses in detail the philosophy of a filter model, some of which he derives from the much less well-known work of Oxford philosophy don FCS Schiller, whose 1891 book *Riddles of the Sphinx* is perhaps the most comprehensive statement. They themselves advance what they call a flicker-filter model based on the sequence of nows where a more permeable filter would open up access to material in deep consciousness.

Finally, the authors suggest ten guidelines for future research in consciousness based on a deeper questioning and a more open yet systematic and rigorous approach, which also has clinical implications. Interestingly, they recommend self-development as necessary for deepening one's understanding of the nature of consciousness and reality: we ourselves need to open up and evolve. This book is a very thorough investigation

of consciousness research that should appeal to rigorous yet open-minded scientists who are prepared to engage fully with the evidence and think through its implications for the nature of reality.



■ "Life is but a Dream"

Gunnel Minett

■ THE DREAMLIFE OF FAMILIES, THE PSYCHOSPIRITUAL CONNECTION

Edwards Bruce Bynum, PhD, ABPP

Inner Traditions, 2017, www.

InnerTraditions.com, 275 pp., £14.99, p/b - ISBN

Although we still have a lot to learn about dreams, why we have them and what they mean, we can conclude that they play a big part in our lives. As this book points out, they often represent a true expression of our innermost thoughts, a version that is uncensored by the conscious mind. They can also express our connection with others, family and friends, past and present in ways we normally would not perceive them. Dreams can also solve problems of all kinds both past, present and future ones.

From perhaps a somewhat unexpected environment, I can give a personal example everyday 'problem solving' via dreams from my own past history when I worked in a bank. Despite an otherwise very conservative environment, we had a well establish method of solving mistakes we had made during the day, which usually meant the embarrassing situation of giving customers too much or too little money. When we could not find where we had made the mistake, we were told to go home and sleep on it. Mostly this had the effect that the person in question came back the next morning having 'remembered' in a dream where they had made the mistake.

In his book, Edward Bruce Bynum presents a comprehensive and integrated view of traditional dream analysis and family psychology both from a clinical science approach, but also drawing on old traditions from Africa, China and India and from parapsychology. He explains and illustrates with numerous examples how our individual

unconscious is part of a larger collective or family unconsciousness and how dreams can express this.

One of the really positive aspects of the book is that it approaches our interest in dreams both from a current and historical angle: it points to the way we lived in (extended) family groups and the role dreams played there. This ancient way of life may often be dismissed as superstition based on ignorance ('now we know better'). But, as the author points out, even if we now live more isolated lives, and have more individual freedom, the extended family can often have a positive effect on our inner wellbeing. We seem to have a need to get so close to others that we can share both their conscious and unconscious life in the form of dreams.

However, going back to closer family ties doesn't necessarily mean returning to the biological family. Such a return to closer family ties would probably demand an impossible amount of change in our modern societies. But an 'extended family' does not have to be biological. As Steve Minett describes in his book *Gazing at the Stars*, well managed family constellations aimed at providing the optimal environment for child care can be a very good solution for adults as well as children.

Bynum's book is full of recorded dreams that reflect both major and minor events in our lives such as illness, birth and death and medical emergencies, that all seem to have a special effect on our dreamlife. These dreams can also be simultaneous shared dreams, telepathic or precognitive dreams. Regardless of the fact that these types of dreams may not have an explanation within our current scientific paradigm, they most certainly appear often and strongly enough to be taken seriously, which is exactly what this book is doing.

ECOLOGY-FUTURES STUDIES

■ Will it be Enough?

Chris Thomson

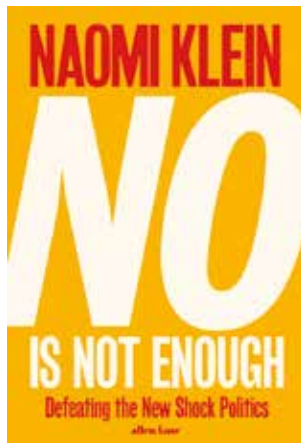
■ NO IS NOT ENOUGH

Naomi Klein

Allen Lane, 2017, 288 pp., £12.99, p/b - ISBN 978 - 0241320884

Living in the Catalan Pyrenees, it is easy to forget about the outside world. The seasons come and go. Wildlife is very evident. Beauty and peace are ever-present. And people here in the country go about their lives, peaceably, more or less as they always have. All feels well with the world.

Of course, all is not well with the world. A greedy, amoral narcissist occupies the Oval Office. That alone is serious cause for concern. To make it worse, he has surrounded himself with very rich men who see it as their mission to undo much of the genuine progress made in the last 100 years or so. As Naomi Klein says...



"The goal is all-out war on the public sphere and the public interest...In their place will be unfettered power and freedom for corporations...The people who already possess an absolutely obscene share of the planet's wealth are determined to grab still more."

The situation is so serious that Noam Chomsky has started referring to the Republican Party as "the most dangerous organisation in human history", because it is recklessly, but deliberately, bringing the world closer to nuclear war and environmental disaster. One way or another, this is going to affect you and me, even if we live in isolated places. Trump and his cronies have just made it very personal.

In her latest book, Naomi explains why Trump is in the White House, and she then goes into detail on the great damage that neoconservatives and neoliberalism are doing to the world. Although it can be depressing read at times, because the damage is so deep and widespread, the book keeps holding out hope in the form of the many local and international initiatives being taken to counter Trump and all that he stands for. That said, there were moments when I wondered whether the book's title should have been "Will it be Enough?" I will return to this theme shortly.

It is important to note, as the author points out, that Trump is not an aberration. On the contrary, he is the ideal figurehead for the corporations and the elite. He provides false hope for one half of the population and a convenient target for the other half. Indeed, Trump is the logical culmination of three important trends – neoliberalism, brands, and reality television. The first of these should need no explanation. Suffice to say that it can summarised (in the style of Orwell) as "private good, public bad". The other two trends may need a little explanation.

Although Nike and Apple and other big companies sell things, much of their value is in their brands. Thus, when people buy their products, they are to some extent buying into a fantasy. This is why, for example, Nike is able to sell very ordinary trainers for up to \$300. Naomi goes into some detail about the way Trump is using the Presidency to continue to promote brand Trump (as well as those of his family). This partly explains

the Trump phenomenon. Another part of the explanation is reality television. If you know anything about The Apprentice, the TV programme that Trump hosted, you will know that it was largely about humiliating the "losers", of which there were many, and glorifying the one "winner".

There were no rules – the norms of decent discourse were nowhere to be seen. Insults and lies were the norm. This is exactly how Trump behaved during the election campaign, and how he continues to behave in office. It is the most plausible explanation for his precocious lying, and for the fact that he seems to be able to do this with impunity. Any other President would have been impeached by now. Not Trump, as he continues to entertain his followers and, it has to be said, much of the media. It is no coincidence that he was once involved in professional wrestling, which surely has to rank as one of the most fake activities of all time.

Now, all this would be comical, were it not so serious. And it is very serious indeed. Noam Chomsky is also fond of telling us about the Doomsday Clock, an assessment by some eminent people of how close we are to annihilating ourselves. The Clock has never been so close to midnight. What makes the situation even more urgent is that we have "a parcel of rogues" in the world's most powerful rogue state pushing the minute hand ever closer. So, what do we do? Many of us feel impotent, given the scale of the problems and given the quantity of money and power ranged against us. One thing is clear, as the book's title suggests – just protesting is not sufficient. In Naomi's view "two crucial things have to happen. First, we need a firm grasp on how shock politics work and whose interests they serve...Second, we have to tell a *different* story from the one the shock doctors are peddling."

It was at this point in the book that I began to have doubts. A lot of people have been telling different stories for a long time. To give just one example, the New Economics Foundation has been describing and promoting a different kind of economics and a different kind of society since its inception at the end of the 80s. There are countless other examples of "different stories". All of us can think of many. Yet the fact is that inequality continues to grow, materialism is as rampant as ever, military spending is huge while welfare is cut and, to crown it all, the biosphere is more threatened than ever. This is not a counsel of despair, but one does wonder at the combined effect of the many different stories. Are they making sufficient impact? One, not unreasonable, ray of hope is that this latest power grab by the elite is so naked that the small boy will not be alone in noticing that the Emperor has forgotten to dress himself. Perhaps the Trump phenomenon is so outrageous that it will cause many to wake up. I hope so, and perhaps they will, but people tend to fall asleep again rather too quickly.

Much of the book is an uncomfortable narrative on how those in power are damaging individuals, societies and this planet. Many of you will be familiar with this narrative. The aftermath of Hurricane Katrina is just one

of hundreds of horror stories – incidentally involving the current Vice-President – in which the insatiable greed of the rich caused untold misery for the poor and the vulnerable. In my view, Naomi really gets to the point when, talking about the 2008 financial crash, she says:

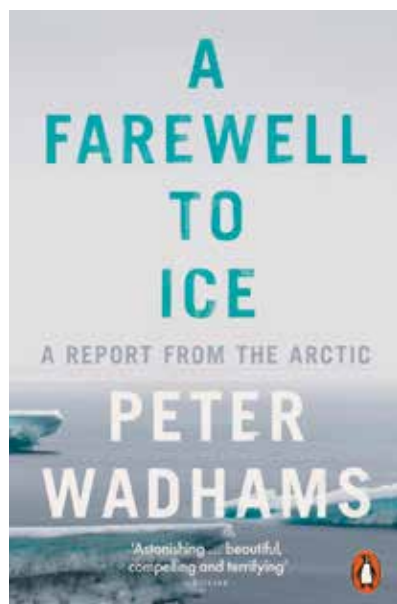
"When the failures of the current model revealed themselves in a manner more spectacular than at any point since the Great Depression, we did not collectively seize that moment to grasp the whole of history and swerve...The bottom line is that in 2009 too many of us were waiting for change to be delivered from on high. And by the time most of realised how inadequate that change was, the window had closed."

And the remedy? Short of a miracle, in which humanity as a whole suddenly becomes wise and intelligent, there is no magic cure. Naomi describes some of the many initiatives that have taken place since the WTO protests in Seattle in 1999. Some of these have been successful within their own limits. However, the fact remains that there has, to date, been no massive supervening movement on the scale required to stop neoliberalism and neoconservatives in their tracks, and replace them with something that reflects our true humanity. Perhaps the Leap Manifesto (<https://leapmanifesto.org/en/the-leap-manifesto/>) described towards the end of the book will the new beginning that we all long for. One can only wish.

Although Naomi writes well, is a powerful campaigner, and makes some compelling arguments, I remain doubtful. The bottom line for me is: do we have the will, and do we have the strength? Speaking personally, I am not sure. Would I give my life, literally, for this cause – the survival of humanity? I suspect that things would have to feel even more desperate. All of us have our breaking point. That much is clear. But few of us have been put to that ultimate test. If we hope to reverse the damage and create a better world, what we do will have to be unprecedented, given the unprecedented nature and scale of the challenges. This almost certainly means that we will have to be stronger and more determined than we have ever been. All this puts me in mind of some lines from one of my favourite poems, "On A Raised Beach", by Hugh MacDiarmid...

*"Let men find the faith
that builds mountains
Before they seek the faith
that moves them.
Men cannot hope to survive
the fall of the mountains
Which they will no more
see that they saw their rise
Unless they are more
concentrated and determined,
Truer to themselves
and with more to be true to,
Than these stones,
and as inerrable as they are."*

Chris Thomson is the author of *Full Spectrum Intelligence*.



■ Emit Now, Remove Later?!

David Lorimer

■ A FAREWELL TO ICE

Peter Wadhams

Allen Lane, 2017, 240 pp., £20, h/b – ISBN 978-0-241-00941-3

Peter Wadhams was Professor of Ocean Physics at Cambridge from 1992 to 2015, and has devoted his entire career to the study of the Arctic, making more than 50 expeditions to both polar regions. As such, we should take his 'report from the Arctic' very seriously as it is based on research and first-hand experience, not just on extrapolating computer models. Readers can consult his own literally chilling summary in the Articles section. In contrast with the first pictures from 1969, photographs from space show the top of the world in northern summer as blue rather than white. I have been following the Arctic debate for a number of years, and think it is right to assert that the sea ice situation is the canary in the mine of planetary climate change.

The book begins by explaining the background of the Arctic, the nature of ice, the history of ice on planet Earth and the modern cycle of ice ages. It is striking that previous geological changes took place over thousands of years, while the current global warming to 404 ppm of CO₂ in the atmosphere has occurred in less than 100 years. The average concentration of CO₂ during interglacial periods is 280 ppm, falling off to 180 ppm during ice ages. Peter then explains the nature of the greenhouse effect and the direct correlation between adding carbon dioxide to the atmosphere and temperature rise (p. 52). Greenhouse gases produce 'radiative forcing' that upsets the natural thermal balance of the planet, while 'Arctic amplification' explains why changes due to global warming happen first in the Arctic.

Peter then moves on to the history of Arctic sea ice melt back, using his own data both

in terms of extent and thickness. Even by the 1990s, the ice thinned by 43% relative to the 1970s and the overall pattern is inexorably downwards, as illustrated in a chart showing what he calls the death spiral of Arctic ice. A further factor - precipitated by open water - is that wind can further break up the ice. The history is illustrated with useful comparative charts. The key question is whether we have passed the tipping point in terms of the possibility of substantial multi-year ice cover to reform. Peter thinks we may well have, and is critical both of scientists who rely on models rather than data, and more seriously of the IPCC 2013 report, which relies on a linear rather than nonlinear analysis and contains some dubious statistics (p. 90).

His next chapter explains eight forms of positive feedback that are likely to accelerate the melting effects. The most serious of these are ice-albedo and snowline retreat feedbacks, whose combined effects amplify the radiative forcing effect of CO₂ by 50%. Then we should not forget ocean acidification feedback, which has already had a catastrophic effect on marine life and coral reefs. Arctic methane is described as a catastrophe in the making that could potentially lead to a further temperature rise of 0.6°C by 2040. As Peter points out, this is surely a case where the precautionary principle and proper risk analysis are urgently required. It is also possible that this could be amplified by permafrost melt. Some of our disruptive weather patterns seem to be due to increased meandering of the jet stream, also related to Arctic warming. The mechanisms are by no means clear, and Peter cites a number of models and references. However, disruptive weather is likely to exacerbate volatility in food production, especially as population is forecast to increase to 9.5 bn by 2050 and 11.2 bn by 2100.

There is a very interesting chapter on the Antarctic, where Peter explains their very different situations and ways in which sea ice is formed. The advance of sea ice in that region is often cited by sceptics as a criticism of global warming, but the situation is in fact more complex with regional variations, and it is likely that changing wind patterns are a critical explanatory factor. The Pacific sector has in fact warmed twice as fast as the rest of the continent so that while the western sector is shrinking, the eastern sector is growing, resulting in a slow net growth. However, this does not alter the fact that it is the Arctic feedbacks that will determine the rate of global warming.

Peter now turns to the state of the planet, arguing that CO₂ at 404 ppm is already too high for non-destructive climate change, especially as carbon emissions are not even beginning to slow. He returns to the question of population, showing that the population of Africa is anticipated to quadruple between 2015 and 2100, even though it is already in a situation of not being able to feed itself. Personally, I find these projections extraordinary, precisely for that reason. Peter rightly notes that our current financial and economic system cannot lead to a sustainable

equilibrium society. The magnitude of the challenge is illustrated by asking how long it would take to reduce current CO₂ levels from 404 ppm to 280 ppm if we stopped emitting CO₂ altogether. Due to the survival time of the gas, it would take 45 years to bring the level down even to 350 ppm, so further increase looks inexorable, not least because carbon remains in the atmosphere for 100 years.

So what can be done about it? An important part of Peter's recommendations is the urgent need for a new Manhattan Project to clean up our atmosphere. He references the important 2009 geo-engineering report from the Royal Society explaining two possible approaches of solar radiation management and carbon dioxide removal. SRM in terms of stratospheric aerosol spraying is at best a sticking plaster, as he points out, since it does nothing about the causes of global warming nor does it affect ocean acidification. More seriously, it requires constant application and the toxic chemicals fall back down to earth, which may also have an effect on water and food. In my review of *Experiment Earth* in the last issue (p. 54), I cited evidence that this may already be occurring, and will ultimately result in white rather than blue skies. Peter also discusses carbon drawdown and the possibility of direct air capture, which is not yet been developed. He also mentions new forms of nuclear power using pebble bed and thorium reactors. The need for geo-engineering is a drastic prospect, but Peter feels this will need to start by 2020, especially as there is little or no prospect of any serious reduction in CO₂ emissions. He points out that the Paris Agreement will still leave us with a warming of at least 2.7°C even if all national commitments are honoured, which is vanishingly improbable. There are no plans for immediate action, 'and no date set for achieving carbon balance except between 2050 and 2100', when current politicians will either be retired or dead.

In his last chapter, A Call to Arms, Peter states that it is not enough to reduce carbon emissions, hence the need to remove dioxide from the atmosphere. Interestingly, he quotes a speech by Margaret Thatcher to the UN in 1989, for which he provided the text - even then, he was warning of runaway climate change through feedback amplification. As readers will be aware, the political situation is further complicated by well funded institutes denying global warming and attacking leading scientists like James Hansen. In the UK, Nigel Lawson's Global Warming Policy Foundation plays a leading public role, and Peter Lilley called Peter a 'well-known alarmist' after he himself had published a report funded by the above foundation recommending no action on climate change and ignoring the Stern review. Although there are small actions that we can take as individuals, I was persuaded by Peter's analysis that we should all be vocally supporting his proposed new Manhattan Project to undertake a colossal scientific and technical research programme on clean energy as well as technologies for carbon dioxide removal. As a citizen of planet Earth, this book is compulsory reading.

■ The Courage to Hope

David Lorimer

■ A WORLD BEYOND GLOBAL DISORDER

Edited by Fred Dallmayr and Edward Demenchonok

Cambridge Scholars 2017, 316 pp., £52.99, h/b – ISBN 978-1-4438-9882-9

The title of this remarkable collection of essays gives the lie to the oft heard phrase 'New World Order' which is in fact a form of disorder based on militarism and unipolar global hegemony on the part of the United States, even if this is now being challenged by China and a resurgent Russia. In June 1963, President Kennedy gave a commencement address at the American University where he stated that war need not be inevitable and questioned the routine demonisation of enemies. More remarkably, in answer to his rhetorical question about what kind of peace he sought, he replied: 'not a Pax Americana, enforced on the world by American weapons of war; not the peace of the grave or the security of the slave. I'm talking about a genuine peace: the kind of peace that makes life on earth worth living; the kind that enables men and nations to grow and to hope and build a better life for their children; not merely peace for Americans, but peace for all men and women; not merely peace in our time, peace in all time.' One can't help thinking that Kennedy's assassination might in some way have been linked to these sentiments, especially given the military and foreign policy record of the US since that time. [See my review of *The Paradox of our National Security System* in Books in Brief below.]

The speech is quoted in a powerful contribution by former Congresswoman Cynthia McKinney. Former because of her passion for truth, justice and peace. She was taught to be unruly by her father, and in Congress was part of every hot button issue that came across her desk. Because she tried to align her values with her behaviour, her talk with her walk, she became more than an irritant, she became dangerous, with a powerful array of status quo opponents. Here she advocates not war leadership, but peace leadership, like former Congressman Dennis Kucinich. She quotes Stephane Hessel's line "Indignez-vous!" - We should be indignant and outraged about the shambles that is happening in the world – disorder by design. Hence her recommendation that it is time for us collaboratively to interpose our vision and our directed action onto the warmonger's plans. 'We need to give them more resistance than they are getting from us now.' And engage not in a clash, but in a dialogue of civilisations.

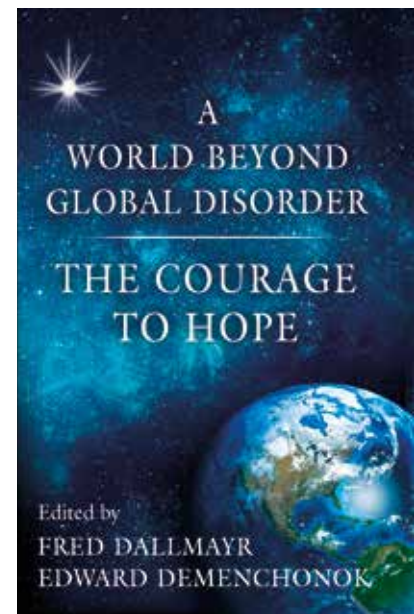
The subtitle of 'The Courage to Hope' reflects the title of a book by theologian Paul Tillich 'The Courage to Be'. In this case, hope is not an escape, but an existential position, the courage to hope in an apparently hopeless world, genuine rather than foolish hope. Hope may require patience and needs to be embodied in acts of love and compassion.

The book itself is located at the crossroads of hopelessness and hope - on the one hand with a full awareness of the grimness of our global situation, not only military, but also environmental, and on the other a determination to work for a better and more cosmopolitan future. The contributions come from a variety of disciplines and cultural backgrounds, including China, with an essay on spiritual humanism and another on Muslim ethics in an era of globalism. Then the longest and final essay is by Demenchonok entitled 'World in Transition: From a Hegemonic Disorder toward a Cosmopolitan Order'.

The first essay by Richard Falk on a new geopolitical realism for the 21st-century is a masterpiece of brevity and insight. He rightly contends that 'a state-centric world order has shown its inability to find sustainable solutions to nuclear weapons and climate change at the global end of the spectrum and address severe and prolonged situations of criminal injustice in Syria, Palestine etc.' Nation states are incapable of responding to global challenges, and global solidarity is helpless against preventing genocidal violence and crimes against humanity. The old geopolitical realism is still based on hard military power where law, morality and people are fundamentally irrelevant. The current global political leadership still treats this old geopolitical realism as the basis for rational behaviour, but this is manifestly inadequate with its focus on narrow national interest rather than planetary responsibility. Falk sketches the outline of a new geopolitical realism where war and militarism can no longer generate security and stability in an era when species vulnerability has become the signature reality. Structural reforms must be brought about so that global and human interests become primary. Then the development of political will to regulate the world economy on the basis of the values of justice, sustainability, self-determination, and ethical and ecological consciousness.

A telling example of global disorder is addressed in an essay on the use of drones as a means of random, extrajudicial killing of suspects. Daniele Archibugi focuses on three major problems: the status and rights of the target, the authority for the killings - decisions are often made by intelligence agencies or unaccountable bureaucratic bodies - and 'collateral damage' aka killing of innocent people. I agree with the author that these killings are war crimes fuelled by amoral power, and also that they represent the triumph of technology over humanity. It is very clear that this whole area needs international regulation, ultimately with a view to banning drone killings. In addition, such technology could easily get out of hand and be used by terrorist groups.

Edward Demenchonok articulates a cosmopolitan ideal as a realistic alternative to the current militarised and unipolar global hegemony. Cosmopolitanism would free the world from any hegemonic domination and the idea goes back at least as far as essays by Kant in 1784 and 1795. The cosmopolitan



ideal is an alternative to a conflicted state-centric international system, which needs fundamental restructuring to remove the privileges of the Security Council and create a consensus of all nations as free and equal under the rule of law. This is necessarily pluralistic and morally excludes violence and domination. The urgent task is to develop viable alternatives to hegemonic domination. The author outlines the distinctive characteristics of a New Cosmopolitanism based on diversity, democratic principles, ethics, dialogue and transformation. There is also huge work to be done to articulate and embody these ideals, but this essay, and the book as a whole, makes a very constructive point of departure. Demenchonok warns that a cosmopolitan order will not come about automatically – 'all the great democratic achievements have been the result of people's struggles for their legitimate interests.' However, in this context, the cosmopolitan ideal can become a guiding and mobilising force that will only come about from the grassroots, as our current political leaders are hostages to short-term political and financial interests. And although the need for positive transformation has never been so urgent, the task has never been so difficult, so it is important to raise awareness as a preliminary to more coordinated action.

■ 'Politics is Fate'

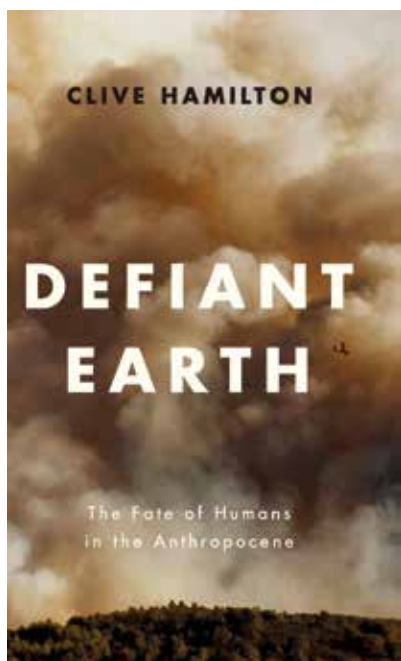
David Lorimer

■ DEFIANT EARTH

Clive Hamilton

Polity Press, 2017, 184 pp., £14.99, p/b – ISBN 978-1-50951-975-0

The author of this important book is Professor of Public Ethics at Charles Sturt University in Australia and author of *Requiem for a Species* about how and why we resist the truth about climate change. Subtitled 'the fate of humans in the Anthropocene', this book spells out the implications of this new geological epoch defined by the new discipline of Earth



Systems Science and which acknowledges humans as a geological force. Progressive thought in the humanities has been trying to cut humans down to size, but Hamilton shows that our freedom and power nevertheless confer great responsibility.

The first chapter spells out that this new geological era is a real rupture with the past that has created a convergence of human and geological history as a result of the impact of human activity on the Earth System as a whole. Hamilton argues that this represents an ontological shift in human self-understanding. Paradoxically and despite our technological power, we have become more vulnerable as climate becomes less predictable and controllable. The upward trend recorded by the insurance industry is a significant indication of this. Humans are both separate from and embedded in nature, and the history of modern science has been one of masculine striving for control and domination. Correspondingly, we do have freedom, but are also subject to necessity in terms of natural laws. Hence, the use of our freedom is a central issue, both collectively and individually.

The title of this review comes from a remark made by Napoleon to Goethe. Hamilton contrasts the attitudes deriving from Bacon and Goethe respectively. Bacon referred to science mastering and subjecting nature, which has been a driving force ever since and is embodied in the eco-modernist approach that greets the new era as a sign of our ability to renovate and control nature. A statement from the Breakthrough Institute claims that 'humans appear fully capable of continuing to support the burgeoning population by engineering and transforming the planet' (p. 63) A paradigmatic example would be solar geo-engineering aimed at controlling the global climate system and regulating the

amount of sunlight through solar radiation management. For Hamilton, this is a 'last-ditch attempt by eco-modernists to impose order, to exercise mastery, to regulate the planet as a whole in the interests of humans. (p. 72) He further notes, correctly, that this technology carries the implicit promise of protecting the prevailing politico-economic system and sidestepping the necessity for fundamental change or a 'socio-fix'.

By contrast, the narrative of Goethe's Faust illustrates overreach and hubris where human creativity is a gift that also tests our character in making sure that ethical progress keeps up with technological progress. If the development of Bacon's attitude represents the forces of neglect, against these are ranged the forces of care. The former embodies power-hunger, greed, growth fetishism, hedonism and psychological weaknesses, while the latter stands for self-restraint, respect for the natural world, love of one's children, and the desire for civilisation to flourish (p. 124). In other words, domination and exploitation versus living in harmony with nature. He sums the situation up masterfully on page 135, where he lists the forces on the side of responsibility and care, including scientific insights into the Earth's physical limits, evidence of ecological disruption, the logic of long-term self-interest and the political power of environmentalism. Against this is ranged an economic structure driven by the profit motive, the enormous political power of corporate interests, the seemingly insatiable demand for material affluence, along with 'human weaknesses of wilful ignorance, apathy, evasion and denial.' The Anthropocene meets globalisation, the World Economic Forum meets the World Social Forum, freedom meets power and responsibility.

Hamilton makes a clear distinction between anthropocentrism as a scientific fact and a normative claim: we now inhabit the Earth System driven by interconnected cycles and forces, where human activity modifies many of the processes and has - perhaps irreversibly - disrupted some of these, which means that we cannot revert to the Holocene. Oceans are one third more acidic, while humans represent 30% of animal biomass on the planet, domestic animals 67%, and other wild animals only 3% - a figure I found quite shocking. Our collective power is very considerable, even if we feel disempowered at an individual level. However, encouragingly and in spite of the fact that the measures were inadequate - see my review of Peter Wadhams' book - the tension between North and South shifted in the Paris Climate Summit of 2015 to a rhetoric that humankind must act as a whole in response to the question: how can we all live together on this Earth?

In spite of denials and resistance, we can no longer avoid planetary responsibility, especially given that we are now more aware than ever of our impact on the

Earth in the present, and by implication in the future. Curiously, in this respect the book makes no mention of population, which is not even in the index. This is manifestly a key impact in addition to rising consumption and requires the empowerment of women, especially in Africa. The most significant overall contribution of this book is the call for a different kind of orientation to the Earth, 'one in which we understand deeply our extraordinary power and unique responsibility.' (p. 152) The forces of neglect represent business as usual, a form of wanton neglect as both reckless and self-indulgent, and this is the default momentum unless sufficient resistance is engendered. This is where politics is unavoidably central, but awareness and outrage provide the fuel for action, otherwise we just remain passive passengers and betray the future of our children. Hence the pressing need for more people to become activists and bring together the forces of care. This book articulates why this has become urgent and necessary.

GENERAL

■ Language is Us – and Us Alone

Lance Butler

■ WHY ONLY US: LANGUAGE AND EVOLUTION

Robert C. Berwick and Noam Chomsky
MIT Press, 2016, 224 pp, £15.95, p/b – ISBN 978-0-262-03424-1

This is not a book for the faint-hearted and, unless there has been some serious brightening-up in recent years, readers able to understand its every paragraph will be very few in number.

Berwick and Chomsky (yes, I was surprised too, for this is the very Chomsky who rose to controversial prominence sixty years ago and is now nearing ninety) want to report on where we are now in the vexed matter of when, how and why language evolved biologically. I think that they could have done it more clearly for the general public, but in the event they have chosen to speak to fellow-researchers in their discipline. For this reason they take no prisoners and often seem happy to exclude the rest of us. Their book is awash with the special terms of their many disciplines, many of them unexplained, and the sense of being excluded from a small esoteric club is constantly being sharpened as we read. Take this sentence as a sample:

Very, very little systematic abstraction-layer circuit design knowledge, from dataflow architectures, to pipelined CPU designs, to asynchronous processing, has yet to make its way into cognitive modelling practice. (p. 133)

All perfectly true no doubt, but how many readers will know what each and every one of these monsters actually is? The contrast between the rhetorical flourish at the start of the sentence (the repetition of 'very') and the brain-freezing specialist register of the rest of it is a tiny glimmer of amusing light discernible among these opacities. And there are pages and pages like this.

However, leaving the problems posed by this highly-academic register aside, one is able to discern something very useful here. Thus: we know that language evolved at some point and we know that language has been a *sine qua non* of human development ever since, but there are problems: how could so complex a feature of being human have developed in the very short evolutionary time-span available for it? Was there no language among hominid populations? Among Neanderthals? Is there any real language among primates such as chimpanzees? To quote the title of this book: *Why Only Us?* (I don't know why the publishers have omitted the question-mark from this obviously-interrogative implied clause.) Is there a gene for language? What is it about the development of the brain of *Homo sapiens* that permitted language to emerge?

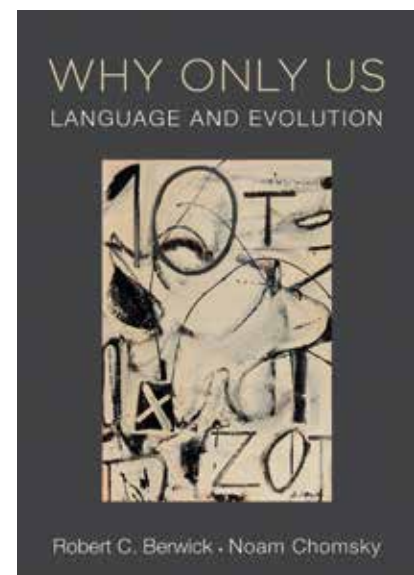
I could not possibly rehearse the compacted, even clotted, arguments that sustain Berwick and Chomsky's answers to these questions, but it does seem that they have done the work for us by reviewing and assessing all the relevant research and scholarship in the area. They leap polymathically from biology to game theory to linguistics to anthropology and philosophy in the most impressive manner and even if we cannot follow them we can perhaps believe that they know what they are talking about after what amounts to a *century* of thought and work, which is what they have amassed between them.

Here are some of their answers, as they present them, opaquely for we outsiders but tentatively and modestly it has to be admitted.

1. Human language is very special. Songbirds and chimpanzees do not really have 'language' in our advanced sense of the term. The term 'language' is simply not suitable to describe the abilities of even the best-educated ape.
2. There was no real 'protolanguage' among hominids and Neanderthals. They may have done the communicating of animals (roaring, birdsong, mating calls) but they show no signs of a second-degree consciousness of language such as we find among early men in cave-paintings and the like.
3. This is because real human language is NOT a matter of simple 'communication' as is assumed by most biologists. Nor is language *referential*: it doesn't simply indicate pre-established entities within the world but rather creates the world we inhabit.

4. Instead of these external orientations language evolved as an *internal* matter, an 'internal mental tool', a way of organising the new *thoughts* being experienced by early man. Language does a great deal more than merely communicate, notably in internal spheres such as planning, calculating, daydreaming and poetry.
5. 'Externalisation' – that is speaking and writing – come second to this internal process and may not even be a necessary consequence of it.
6. Language evolved NOT in a slow, gradual, pure-Darwinian way but very quickly, probably as a result of some minor mutation in the brain that pulled various of its capacities together.
7. Subsequent language *development* is another matter entirely and is not 'evolution' as such. The history of language from the beginning is inexorably dependent on that first mutation, that chance concatenation of circumstances in the brain. Since then nothing much has changed in the Basic Property of the brains of language-users. A Martian might easily see all the planet's languages as dialects emerging from this same basic ability. Little or no actual biological evolution has occurred in our linguistic abilities since they came to us.
8. Real language arrived on the scene about 80,000 years ago, before the exodus from Africa and the diaspora of *Homo sapiens* across the world which took place about 60,000 years ago. As a result of this point and the preceding one we may conclude that we all belong to the same family, *Hom sap*, in the sense that we all have the Basic Property that makes language possible – aboriginal Australians, Africans, Chinese, Amerindians and Caucasians alike.

All these ideas have come forward in recent decades because of advances in the study of the brain and in the study of fossil and other records and, of course, because of work in linguistics. In spite of its dense and at time rebarbative nature I found myself surprisingly inspired by this book once I had waded through it. First because, in spite of its high and exclusive professionalism, it shows the very best of interdisciplinary thinking at work: perhaps only great brains like the brains of these two authors, along with that of Steven Pinker say, could have put together biology, anthropology, linguistics and many other considerations to come up with an authoritative synthesis. Not only do they remind biologists, for instance, that they need to keep up with advances in linguistics before pronouncing on the evolution of language, they remind all of us that a monocultural approach to matters human is almost bound to miss something important or simply fail to understand what is going on.



Second and following from this, it is wonderful to feel some of the great currents of modern thought coming together. Berwick and Chomsky are happy to quote Saussure though they come from a very different school, and they sound like Derridians in their description of how language formed the world of early man and how it forms our later world too in just the same way. Great minds think alike, as they say.

Thirdly and finally, my feeling of inspiration after reading this book is based on its provision of something scientific and palpable to hold on to in our endless political arguments: I am not an obsessive egalitarian but it is very nice to learn that at a deep level all humans are the same because they all have the same real language capacity. Language is so much the heart and soul of everything we do as humans that this easily trumps a large number of more superficial differences.

Lance Butler worked in the English Departments of the University of Stirling and the University of Pau for forty-five years and has now retired to Perthshire where he is working on a book on Etymology.

■ The Discovery of a Gene Design Machine

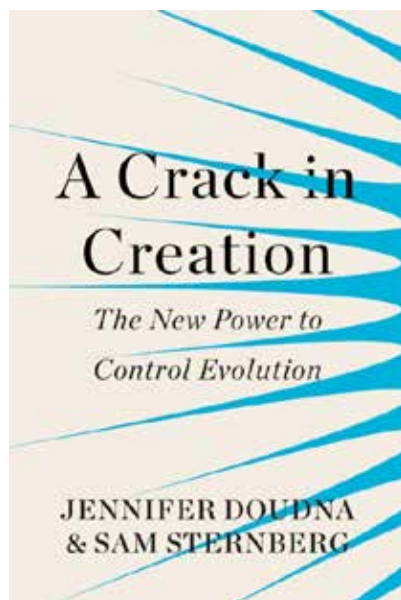
Janine Edge

■ A CRACK IN CREATION – THE NEW POWER TO CONTROL EVOLUTION

Jennifer Doudna & Samuel Sternberg

The Bodley Head, 2017, 285 pp., £9 p/b
- ISBN 978-1-84792-381-3

The spectacular advance in gene editing technology (known as 'CRISPR') has recently attracted significant attention in the media and this book is on how it came about. I consider it a must read, not least because of the huge implications for our environment



and society. The cover calls it 'potentially the most powerful and dangerous' of all human discoveries and this may be no exaggeration.

It is also of interest to those looking beyond the technical science. First it shows how CRISPR occurs in nature and there is an intriguing story at the beginning about a spontaneous healing of a genetic disease. Secondly Professor Doudna, the main pioneer of the CRISPR technology, writes the book in the first person and we are taken on her personal journey complete with her dreams and emotions. Lastly Doudna is a scientist who has decided to engage fully in the moral, ethical and even spiritual implications of her discovery, even asking questions such as - 'Will we be transgressing divine laws if we use this technology'?

The book divides into two halves. The first part, entitled 'The Tool', is a detailed description of how the CRISPR gene editing technology was discovered and works. Doudna starts from first principles on what is a genome, chromosome, gene and DNA, and how genetic information is passed from DNA to RNA (produced from the DNA template) to protein. It quickly progresses to an in-depth account of a naturally occurring process in which bacteria acquire immunity to viruses. CRISPR stands for 'clustered regularly

interspaced short palindromic repeats' found in bacteria which were discovered to be strands of identical DNA taken from a virus which previously infected the bacteria. When the virus strikes the bacteria again, the CRISPR generate RNA strands from the stored DNA and combine each one with a protein called Cas 9. The RNA acts like a guide taking the protein to the offending DNA sequence in the virus and the Cas9 acts like a weapon to snip that sequence out. The virus is thus disabled.

In June 2012 the CRISPR discovery was published by Doudna and others together with a suggestion that this natural process could be harnessed for genome editing. The next 5 years saw an explosion research all round the world which involved combining RNA with the Cas-9 protein to enable a genome to be edited almost like a piece of text, including adding in strands of DNA. This has shown the potential use of the CRISPR technology to treat genetic diseases (sickle cell anaemia, cystic fibrosis and muscular dystrophy to mention just three), lower the risk of or cure many other conditions and to edit virtually any gene in any cell, plant or animal, for any purpose. This includes germline cells which, when so edited, have the potential to continue for all future generations.

The second part of the book is entitled 'The Task' and is about the enormous implications of CRISPR and how Doudna has personally orientated her life from scientist to international coordinator of the effort to agree a way to contain the use of the CRISPR technology. This is no easy task. Only one month after Doudna and her colleagues published an article asking scientists to refrain from human germline cell editing, an article was published in April 2015 describing experiments carried out in a Chinese university to edit the beta-globin gene in 86 human embryos, with a view to preventing the genetic blood disorder known as beta-thalassemia. The ethical issues are not straight forward. If this technology is available, when could it be right to use it?

On this point, it is interesting to learn that apparently every person experiences roughly one million DNA mutations throughout the body per second. Which leads back to the story about the spontaneous healing at the beginning of the book. It concerns a woman

with WHIM syndrome which is a potentially deadly immunodeficiency disease caused by a single incorrect letter among some six billion total letters of DNA. The patient found herself suddenly cured at the age of 38. It transpired that a stem cell in her blood (from which all other blood cells in her body originated) had undergone a spontaneous shattering to the chromosome which harboured the mutated gene. This particular case was highly unusual but apparently scientific literature is peppered with cases of genetic diseases being cured through spontaneous editing of a genome. CRISPR technology enables this to be done on purpose – and for the benefit of many, it could be argued.

So how is CRISPR different from previous genetic tinkering such as Dolly the sheep cloning, gene splicing and test tube babies? The answer is CRISPR is much, much more accurate, quick to carry out, cheap and relatively easy. Even undergraduate biology students are using it, as shown in a TED talk given by Doudna which can be found on YouTube. The ease of use of CRISPR has led to some alarming (for me) experiments, including altering the DNA of an African elephant to make it more like a woolly mammoth and humanising the DNA of pigs to make their organs more suitable for human organ transplants. The knowledge needed to use the CRISPR technology is now widely available.

So what are the risks? If it goes wrong it could play havoc with our environment, not to mention the evolution of the human species, even if used in good faith. It is almost impossible to predict the unforeseen circumstances. And what if it is used for nefarious purposes - genetic terrorism and eugenics to name but two? On the plus side it could, for example, aid food production in a rapidly changing climate, eradicate horrific hereditary conditions, cure other diseases and modify the genes of mosquitoes so they can no longer carry malaria. So it seems we all need to know and participate in discussions about the CRISPR technology - which is what, more than anything else, Doudna advocates in her book.

Janine Edge is Chair of the Network Trustees and works as a legal mediator.





David Lorimer

Note: many of these books are now available in downloadable electronic form

Books in Brief

SCIENCE-PHILOSOPHY OF SCIENCE

■ Mass

Jim Baggott

Oxford 2017, 346 pp., £20, h/b.

In this informative and readable account, the author traces the history of mass from the Greek atomists to quantum fields. He shows how modern developments have undermined comfortable preconceptions and given us a completely different perspective on the world. Most of what Baggott writes about has occurred in the last 100 years, and he writes compellingly about these developments with five-point summaries of the end of each chapter. A key insight is that the mass of an object should be understood as a behaviour rather than a property: 'something the object *does* rather than something it *has*.' Ultimately, he explains that mass is in fact a secondary quality: 'there is no such thing as mass, there is only the energy content of quantum fields.' In elaborating the features of the standard model, he nevertheless points out that it is full of explanatory holes and that scientists are forced to speculate. However, at the end of a century of extraordinary progress, we are humbler than our 19th-century forebears in admitting the extent of what we do not yet know about 'the reality of things-in-themselves.' It is possible, however, that this phrase may put us on the wrong track by implicitly denying a more fundamental role to consciousness in the overall scheme of things.

■ The Oxford Illustrated History of Science

Edited by Ivan Rhys Morris

Oxford 2017, 435 pp., £25, h/b.

Surprisingly, this book claims to be the first fully illustrated global history of science, and is written by leading experts in the field. It is an excellent volume in two parts: the first is about origins of science in various parts of the world. This covers the eastern Mediterranean, ancient China, mediaeval Christian and Islamic science, science in the pre-modern East, the scientific revolution of the 17th century, and Enlightenment science. The authors relate the development of science to social conditions as well as to the overall definitions and shifts in world view. It is fundamentally the story of how we have tried to make sense of the world, and it is interesting to see the role played historically by astrology in various different cultures,

which compares with sympathetic magic. Universities emerged at a time when the curriculum was still dominated by Aristotle as well as the Church, but they gradually became more autonomous and important centres for scientific development associated with questioning traditional authority. Patrons also played a significant role before the more widespread availability of public funding for science in the 19th century. The second part is about the practical aspects of science - including medicine - and the institutions and communities that have developed. It includes chapters on fieldwork, the changing definition of life, mapping the universe cosmologically, the role of theory, and the ways in which science has been communicated. Theoretical differences, such as between Einstein and Bohr, have given rise to widespread debates as we try to formulate a more unified and coherent vision, while accommodating new forms of knowledge and research. The possibilities for communicating science have of course expanded enormously, but so has the complexity and extent along with accompanying ethical issues. This is a highly readable and informative volume.

■ The Physicist and the Philosopher

Jimena Canales

Princeton 2017, 479 pp., £18.95, p/b.

The protagonists in this fascinating book are Einstein and Bergson, who engaged in a high-profile debate in Paris on April 6, 1922. The main bone of contention was the nature of time in Einstein's relativity, but the debate goes wider in showing up tensions between science and philosophy. Sir Herbert Dingle was probably correct in lamenting that a scientist 'understands what he is doing about as well as a centipede understands how he walks.' For the philosopher, science always presupposes metaphysical assumptions, of which the scientist himself is rarely aware. In this case, Bergson wanted to insist on distinguishing the psychological experience of time from time as understood by relativity, and he has often been accused of not understanding the science. Einstein insisted that psychological perceptions of time were off the mark and did not correspond to anything concrete. Philosophers were divided: Whitehead was sympathetic - as was Eddington - while Russell was very critical, accusing Bergson of being anti-intellectual with his emphasis on intuition. We can now see, as in the work of Iain McGilchrist, that we should appreciate the differing roles of the left and right hemisphere in our thinking.

Einstein and Bergson were both public figures. It is easy to forget how famous Bergson was before the First World War – when he gave a public lecture in New York it was said that he was responsible for one of the city's largest ever traffic jams. Einstein became a much more substantial media figure later in his career, but it is interesting to note that they both took political stances – Bergson tried to persuade the American president to enter World War I sooner, while Einstein is famous for his antinuclear campaigning, along with Russell. The split described can also be seen in the contrast between continental and analytical philosophy, and between those like Bergson who took psychical research seriously and those who dismissed it out of hand. In this connection, it was interesting that there is no mention of non-locality in relation to the speed of light. The word is not in the index, nor is John Stewart Bell, and yet non-locality has something to contribute to the debate. In the Postface, the author discusses the changing views of Ilya Prigogine to Bergson, who found him sympathetic in his explanation of aspects of temporal development that had been unexplained by Einstein. Prigogine was critical of Einstein's views about the arrow of time as an illusion, since it left no real space for creativity and novelty as explained by Bergson. Reading this book makes one realise how widely the implications of this debate were felt, and that they are still relevant to the relationship between science and philosophy today.

■ Darwin's Unfinished Symphony

Kevin Laland

Princeton 2017, 450 pp., £27.95, h/b.

This is a very impressive interdisciplinary work about cultural evolution that draws on the author's research over a 30-year period about the ways in which culture drives the development of the human mind, addressing the fundamental question about how evolutionary processes have resulted in our unique human heritage. It covers social learning across many species in terms of imitation and copying, showing how 'the learned and transmitted activities of our ancestors shaped our intellect through accelerating cycles of evolutionary feedback.' In other words, culture has been a fundamental driving force mediated by its co-evolution with genes. In this respect, I was surprised not to find any mention of epigenetics in the index, as this deals with gene expression shaped by lifestyle and therefore culture. It also seemed to me that the author has not fully absorbed the implications of Gaia theory articulated by Lovelock and Margulis where organisms and environment are closely intertwined rather than the latter exerting selection pressure on the former to adapt in certain specific ways. This systems way of thinking has yet to permeate biology.

The two parts address the foundations of culture in terms of copying, imitation, innovation and creativity, then evolution of the mind, the need for accuracy in social

transmission, the origins of language and the foundations of cooperation. There is a fascinating chapter on the evolutionary roots of the arts, especially rhythm and dance. We have enormous adaptive plasticity, which we are now coming to appreciate also in relation to the brain. The argument for the culture drive hypothesis is entirely convincing in my view, and nicely illustrated in a diagram on page 129 where one can appreciate the feedback loop between high fidelity copying and the evolution of larger brains. Agricultural settlement is another key staging post enabling the development of civilisation and more specific shaping of the environment to human use. This effectively creates a congenial niche as well as an upsurge in innovation and greatly increased population; as we know, however, each advance brings its own corresponding challenges. Settlements provide new opportunities for cooperation - including trade - but also for rivalries. In our current situation, it has become crucial to enhance our capacity for cooperation on a larger scale beyond the nation state. These thoughts were developed by Kropotkin and others in terms of mutual aid, a feature also emphasised by Margulis and more recently by Elisabet Sahtouris. The author remarks that the scale and complexity of human cooperation is unprecedented, but we now need to take things to the next stage, and this book provides the necessary evolutionary background and understanding.

■ Spiritual Science in the 21st Century

Yeshayahu Ben-Aharon

Temple Lodge Press 2017, 297 pp., £22.50/ p/b.

Ben-Aharon is a spiritual scientist, philosopher and social activist living in Israel, who is also the co-founder of the Global Network for Social Threefolding. The book consists of 13 lectures given in the arts of the world from 1997 to 2012 on a wide variety of topics: spiritual science in contemporary philosophy, changing self-love into world thinking, the working of Christ in apocalyptic conditions, Israeli civil society and the global melting pot of the clash of civilisations, the global initiation of humanity and education. The author is exceptionally well informed across a number of disciplines, and an important consideration is the spiritualisation of thinking, taking as a point of departure Steiner's Philosophy of Freedom, ultimately representing not analysis but transformation, and wrestling with the riddle of spiritual nature of the human being in relation to the problem of immortality. The author shows himself a realist in political terms and has no illusions about the current world order with its pragmatic power-seeking. However, he has faith in the ultimate power of love and talks about a spiritual rather than technological singularity when we finally identify with our higher nature. In addition, we can transcend narrow nationalism by embracing our identity as global citizens and transform our educational systems so that people take more responsibility for our collective future. A stimulating volume.

■ The Mystery of Emerging Form

Yvan Rioux (SMN)

Temple Lodge 2017, 188 pp., £16.99, p/b.

This book builds on the work of Rudolf Steiner, and especially his Calendar of the Soul, where the constellations of the Zodiac are illustrated by Imma von Eckhardstein and reproduced here. Trained in biology, Yvan's perspective is very different from the objectifying gaze of modern science and draws on two important concepts from Aristotle: his *hylomorphism*, where 'beings and things (*ousia*) are compounds of matter and form emerging out of nature's rhythms' (and our own perception); then *entelechy*, the active spirit directing matter into form. In this book, spirit is 'a conscious intelligent activity or intention that makes the fabric of the kingdoms of nature.' (p. 3) This same creative intention works within us, coordinated by what the author calls a rhythmic purpose resonating with the Zodiac constellations. Each of the 12 chapters follows a similar structure, unfolding from simple to more complex and self-conscious life forms. Perceptually, the formative force is not behind the form, but, according to Goethe, 'comes into view through manifestation', even if our limited senses cannot grasp it as a whole. This is a subtle journey of sequences of unfolding forms all expressing the one life.

MEDICINE-HEALTH

■ Spiritual and Religious Competencies in Clinical Practice

Cassandra Vieten, PhD and Shelley Scammell PsyD

New Harbinger Publications 2017, 229 pp., \$49.95, p/b.

The last 20 years have seen considerable developments in the relationship between spirituality and health and in spiritual literacy for clinicians – the existence of the special interest group in spirituality and psychiatry within the Royal College of Psychiatry is indicative of this phenomenon. Although the Christian background of the US is somewhat different to that of Europe, the 16 research-based guidelines about how to navigate the spiritual and religious domains of clients' lives are equally applicable. A survey of 300 psychologists revealed that 80% of them thought that psychologists should receive training in spiritual and religious competencies, while 70% of them said that they had no such training. The rationale for such training is very strong, especially as clients wish to address such issues and that spirituality and religion are links to psychological well-being.

The three parts divide the 16 competencies into attitudes, knowledge, and skills, the most important of which is demonstrating empathy, respect and appreciation for clients. Psychologists also need to understand the increasing spiritual and religious diversity

among their clients, and can be considerably challenged by beliefs that they personally find uncongenial, as some of the case histories demonstrate. It is here that becoming more self-aware about your own beliefs and their role in therapeutic relationships is critical. Other important areas include knowing the difference between spirituality and psychopathology, eliciting spiritual resources, knowledge of legal and ethical issues, ways of taking a spiritual history and acknowledging your own limits. This is essential reading for mental health professionals, but is also accessible to the general reader. The book also contains provisional training guidelines and a list of resources related to specific competencies.

■ Common Sense about Health

Dr Peter Mansfield (SMN)

Scholars' Press 2017, 214 pp.,
\$39.90, p/b.

Peter is a physician of rare integrity and moral courage, who has never hesitated to set out his views and enter into controversies where necessary, while at the same time providing exemplary avenues for the cultivation of real health rather than the management of disease - the focus of much modern medicine. He was inspired by the Peckham Experiment in community health of the late 1930s as well as other pioneers in natural health. Here he sets out his own philosophy of health as well as resources and a variety of recommended approaches. He explains his four axioms: the relationship between essence and substance or principle and form, wholes and wholeness, affinity, relationship and order, and health and creation. From this he derives an overall dynamic of the creation of larger wholes as critical to health. The reverse of this is the emergence of unease, disease then disorder and a state of diminished vitality.

Providing the enabling conditions for the creation and maintenance of health is therefore his main aim, which he has achieved through the Templegarth Club and Good HealthKeeping (www.goodhealthkeeping.co.uk). The book then covers a number of resources for health, including sunlight, air, water, food, cleansing, and also adventure, purpose, belief and sleep. Then the final section summarises the contributions of various traditions of medicine, including homeopathic, anthroposophical and Chinese, along with the role of water treatments and manipulative therapies. This is full of good practical advice, and I commend Peter's approach as a refreshingly frank distillation of his views and experience.

■ Paleo in a Nutshell

Geoff Bond

SquareOne publishers 2017, 168 pp.,
\$15.95, p/b.

Geoff Bond originally qualified in applied sciences and has written extensively on living in harmony with nature and embodying 'the lifestyle that nature designed for us in Palaeolithic times.' He has read widely, as well as studying tribal societies. It is evident, as Sir Robert McCarrison observed a hundred years ago, that the modern refined diet is strongly correlated with the diseases of civilisation, which were absent in the Hunza people he studied. So in order to recover our health, we need to review our lifestyles and learn from these long-lived people. Geoff's approach is based on the hunter gatherer, who ate 75% plant and 25% animal matter as well as taking a lot of exercise. He stresses the importance of an alkalising diet rich in micronutrients and fibre, which is low in sodium and high in potassium.

His chapter on how things went wrong explains the problems with cereals, potatoes, sugar, dairy and beans. He produces his own pyramid based on these insights and gives an owner's manual as an overall guide, dealing in detail with 12 separate food groups, giving colour coding to desirable and undesirable foods. He then explains how to adopt this way of eating so we are no longer so dependent for fuel on carbohydrates. Overall, this means replacing grains, legumes and sugars with leafy greens, vegetables, fruits and nuts. This involves a fundamental review for most people, but the potential benefits for a healthy lifespan are priceless. Geoff helps by providing recipes and resources (his own website is www.thebondeffect.com). Based on my reading of many different approaches, it seems more important to avoid refined and processed foods as the positive benefits of individual approaches are less clear. I also wondered about how the Ayurvedic approach might square with this, with its three types of vata, kapha and pitta requiring different kinds of nutrients. Having said that, I think it is certainly worthwhile to move in the Paleo direction, especially from a public health angle. This is an excellent introduction.

■ A Most Clarifying Battle

Landis M. F. Vance

O Books 2017, 127 pp., £9.99, p/b.

The late Landis Vance was a chaplain, scientist and educator who examined research into illness, suffering and spirituality, and movingly articulates her own rollercoaster experience of cancer where the treatments as a whole took a huge toll, with cytotoxic chemotherapy nearly killing her on more than one occasion. She depicts 'the inner landscape of suffering' and the loss of control that often results from the patient - medical system interaction. Even in the face of such suffering, one can still live a full life, even though full of challenges to one's habitual way of functioning and relationships with friends and family. This is particularly the case when

the cancer extends over five or more years. The journal entries in the second part bring this vividly to life, with repeated CT scans and a rhythm of remission and relapse, hope and fear, leading to the realisation that one may achieve healing without a cure. Sometimes, treatment options are agonising as one has to make a decision while fearing the consequences. Readers will be inspired by the courage, persistence and tenacity of the author, as well as by her lucidity and compassion.

■ Network Medicine

Edited by Joseph Loscalzo, Albert-Laszlo Barabasi and Edwin K. Silverman

Harvard 2017, 436 pp., £33.95, h/b.

Subtitled 'complex systems in human disease and therapeutics', this volume builds on big data, genomics and quantitative approaches to network-based analysis. The book goes beyond the model of identifying singular molecular defects as the cause of disease to a consideration of the inherent complexity of human diseases, a lack of understanding of which has led to inappropriate treatments with adverse side-effects. The new network medicine embraces this complexity at many levels but stops short of considering the role of the mind in influencing molecular processes. Chapters include coverage of epigenetics, metabolomics, microbiomics, systems pharmacology and systems approaches to clinical trials. The number of elements and levels of complexity are mind-boggling and this book provides an excellent technical introduction to the field for specialists rather than the general reader.

■ Where God and Medicine Meet

Neale Donald Walsch and Brit Cooper MD

Rainbow Ridge Books 2016, 186 pp.,
\$16.95, p/b.

Neale Donald Walsch is well known for his Conversations with God series, and here he is in dialogue with a young doctor who was also one of his students. The dialogues consider human life, the body and health in a wider framework, integrating the physical with the spiritual; then the second part is a series of questions and answers on a number of topics including dementia, prescriptions, death and spiritual healing. Overall, the book is a timely reminder of some of the core messages of Conversations with God: that life is primarily a spiritual experience of being, that we are here to help and heal each other in a spirit of Oneness, that what you resist persists, that gratitude is a powerful policy, and that life goes in cycles, renewing and expressing itself in new forms. Quality of life is more important than quantity, and we need to tune in to our soul agenda beyond our immediate physical preoccupations.

PHILOSOPHY- SPIRITUALITY

■ Science and Religion – an Impossible Dialogue

Yves Gingras

Polity Press 2017, 249 pp., £27.95, p/b.

As the subtitle suggests, this book questions the fashionable emphasis on dialogue between science and religion by arguing that they are social institutions giving rise to incompatible ways of knowing and rooted in different methodologies and forms of knowledge. It is both a historical and sociological study going back to Copernicus and Galileo and building on the work of Durkheim on the growing autonomy of science. The author's fundamental position is that the methodological naturalism of science excludes any entity transcending nature given that 'all sciences must explain the world by natural principles, immanent to nature.' (p. 165) So there can be no supernatural causes, and the world has been justly disenchanted by the autonomisation of natural science - God has moved from the centre to the periphery. The perspective of institutions is indeed important, as they constitute shifting power relationships, and the author is certainly correct in his analysis that the Church still hangs onto epistemological and ontological power and authority, diminishing though it is. Science, however, also uses its corresponding power to exclude unorthodox and heretical views.

An important issue concerns the limits of science, which the author sees as the limits of our current horizon. He seems to share the view of Peter Atkins in the limitless power of science to explain everything in natural terms, including consciousness. The author traces the recent emergence of a new phase of science – religion dialogue, much of which has been supported by the John Templeton Foundation; this is critically discussed at length (p. 153 ff.) in terms of both prizes and programmes. Readers should note that American views on evolution are not reproduced in Europe. Many well-known books and thinkers are reviewed in the chapter on 'dialogue' between science and religion, along with the political implications of the Templeton Prize, for instance in the case of Martin Rees. The final chapter pits belief versus science, and in his conclusion - betting on reason - he does admit that methodological naturalism as the basis of science cannot itself be demonstrated even if he regards it as a good bet. He sees this as validated by the consequences and results it produces, although reason need not be confined to naturalistic premises when it can in fact operate on a wider philosophical basis than argued here.

■ Dawkins' God

Alister McGrath

Wiley Blackwell 2015 (2004), 192 pp., £15.99, p/b.

Alister McGrath is the professor of science and religion at Oxford, author of more than 20 books and trained both as a theologian and biophysicist. This is probably the most intelligent, comprehensive and articulate book addressing the extensive writings of Richard Dawkins on God and atheism. The author expresses his admiration for Dawkins as a scientific populariser, but also his dismay as he gradually evolves into crusading atheist fighting the straw man of blind faith as he defines it. McGrath's knowledge of Darwinism and theology is exceptionally thorough, so he is able to describe the rise of Darwinism as a scientific theory and the selfish gene view introduced by Dawkins in 1976. Then there are chapters on faith in relation to evidence, proof and rationality in both science and religion, the blind watchmaker and the question of design, Dawkins' use of the meme cultural Darwinism, and finally a critical analysis of his book *The God Delusion*. He shows that Dawkins has caricatured faith in a way unrecognisable to sophisticated theologians, that science itself has limits and that it does not necessarily lead inexorably to atheism or even agnosticism. The inventor of this term, TH Huxley, insisted that 'the God question could not be settled on the basis of the scientific method', hence his anti-dogmatic position. Anyone wishing seriously to engage with the new atheism should read this very thorough book.

■ Primates and Philosophers

Frans de Waal et al

Princeton 2017, 209 pp., \$17.95, p/b.

This fascinating book by one of the leading primatologists examines the biological foundations of morality as it grows out of primate sociality while remaining within a framework of random natural selection. After an editorial introduction, Frans de Waal provides the main essay, which is followed by four commentaries and a response by de Waal. His case is based on extensive field observation and takes the broad view that humans are basically good, corresponding to the theology of Matthew Fox of original blessing as opposed to the orthodox view of original sin. The biological equivalent of this is what de Waal calls the Vener Theory espoused by TH Huxley, Richard Dawkins and others and expressed philosophically by Thomas Hobbes: that we are basically selfish and that altruism is a veneer. It becomes apparent from the commentaries that this thesis is somewhat overstated, but it does capture an important point set out in a table on page 22.

De Waal acknowledges the pioneering contributions of Kropotkin's *Mutual Aid* and the work of Edward Westermarck. He sees empathy as an evolutionary mechanism found in primates and favouring the survival of both individuals and the group. This is in the first instance empathy as a form of emotional contagion, but can in humans

develop into sympathy and of course a much more complex moral system where we aspire to expand the circle of morality beyond our immediate kin. In philosophy, these ideas were developed by Francis Hutcheson and Adam Smith in the 18th century. In his comment, Peter Singer distinguishes between the proposition that human nature is inherently social and shares patterns of behaviour with other social mammals and the idea, which he does not defend, of human ethics deriving entirely from nature and social mammals. In the final part, de Waal modulates his view and provides a useful table of three levels of morality, comprising moral sentiments, social pressure, and judgement and reasoning, while continuing to advance his case that human morality elaborates upon pre-existing biological tendencies. This is an informative and accessible discussion to an important topic.

■ Pandeism – an Anthology

Edited by Knud Jon Mapson

iff Books (John Hunt) 2017, 462 pp., £19.99, p/b.

Few readers will have heard of the term 'pandeism', the proposition that the Creator of our Universe created by becoming our Universe, but this extensive anthology fills the gap. The three parts cover fundamentals of pandeism, its philosophical implications and some criticism and analysis from other views. The editor provides a brief history, in which many familiar names such as Newton, Leibniz and Spinoza appear. Elaborating on the basic definition, Encyclopaedia Britannica notes that pandeism 'attempted to unite aspects of Deism with pantheism. Since God becomes the universe in the act of creation, 'there is no theological need to posit any special relationship between God and creation; rather, God is the universe and not a transcendent entity which created and subsequently governs it.' In other words, God expresses him/herself through conscious lifeforms and is therefore immanent rather than transcendent. This corresponds to Whitehead's notion of the consequent or evolutionary nature of God as opposed to the transcendent. There are also parallels with New Thought and the idea of an omnipresent universal mind, and there is a contribution from William Walter Atkinson (1862-1932).

There are many good analytical essays in this volume, which require some philosophical background on the part of the reader. Bernardo Kastrup provides an interesting idealist slant, while Alan Dawe gives a proof of the pandeist theorem that if God exists, then God is identical to the Universe. Mapson argues that theism requires more assumptions than pandeism, while Dan Dana, arguing from a scientific perspective, finds even pandeism unparsimonious. Zoltan Istvan takes an upbeat view of transhumanism in contrast to what he calls 'deathism', supporting technological enhancement of human biology. Apart from one reference, love is conspicuous by its absence, and experience of the divine as love is the basis of mystical theism. A stimulating collection articulating an interesting viewpoint.

■ Heretics!

Steven Nadler and Ben Nadler

Princeton 2017, 179 pp., £18.95, p/b.

Set out in a highly original cartoon strip form, this book tells the story of the birth of modern philosophy and political freedom in the 17th century, featuring not only the best-known characters like Galileo, Descartes, Hobbes, Spinoza, Locke, Leibniz and Newton, but also less well-known contributors like the Jansenist Arnauld, Henry More, Lady Anne Conway and Elizabeth of Bohemia. All these people challenged existing religious and political authority, as well as each other, and the narrative format provides not only a commentary but also typical exchanges between these philosophers. Ancient ways of making sense of the world are discarded in favour of natural philosophy and the emergence of materialism that has come to dominate modern thinking. Most of the key books were on the Inquisition index, and many of these leading thinkers were exiled or persecuted. The book moves around Europe with specific dates and encounters, finishing in Geneva with Voltaire in 1755. The author could have mentioned his *Philosophical Letters* of 1734, which resulted from his exile in London and studying of Newton. Voltaire praises the English virtue of toleration and attacked the Church for holding up the progress of knowledge. Not surprisingly, the occult side of Newton is not mentioned, and the emphasis on reason and evidence needs to extend beyond the materialistic approach of our time, otherwise the new orthodoxy just gives rise to a new form of heresy. Having said that, this is an entertaining and informative read.

■ Sabarthez – Berceau de l'Humanité

Ritman 2012, 287 pp., 20, p/b.

A historic event took place recently at St Felix en Lauragais near Toulouse. In this small town a congress was arranged in 1167, presided over by the Bogomil bishop from Constantinople, Nicetas. A number of people decided to hold a commemorative 850th anniversary bringing together mainly French and Bulgarians, but also some Dutch people including Joost Ritman, the founder of the Ritman Library of philosophy and esotericism in Amsterdam. This contains 30,000 volumes, and is a tremendous resource to scholars in the field. The library arranged an exhibition in Tarascon sur Ariege in 2012, and this book is the accompanying illustrated volume in French and Spanish. The reason for the title referring to the cradle of humanity is the existence of a number of prehistoric caves dating back to before 10,000 BC. It might have been more accurate to say a cradle of Europe, but the other association is with the Cathars, who retreated there after the fall of Montségur in 1244. The most interesting caves are off the beaten track and were researched by a number of scholars, including Antonin Gadal (1877-1962).

The book contains many fascinating articles, some autobiographical, others on the history

of the region and aspects of the more esoteric stream in Catharism. These include women in the spiritual tradition of Christianity, the Bogomils as a spiritual influence in Europe, the relationship of Cathars and Troubadours to other traditions and Cathars and the origins of Protestantism. There is an emphasis on gnosis and the idea of a church of love, which is still very much alive among some locals. Gadal also relates to the real story of Rosicrucianism as a triple alliance of light. The neo-Bogomil teaching of Peter Deunov also features, as does the history of druidism in the area. It is a richly illustrated and informative book for those who read either French or Spanish.

■ Teilhard de Chardin on Love

Louis M. Savary and Patricia H. Berne

Paulist Press 2017, 234 pp., £20.99, p/b.

This is an extensive book explaining Teilhard's philosophy and practice of love, which he prophesied would eventually be harnessed as an energy. In the foreword, Ilia Delio sees a death of love associated with modernity and its impersonal approach. In the Teilhardian view, love is the core relational energy of evolution towards more being and greater fullness based on attraction and connection. The authors summarise this as the Law of Attraction – Connection – Complexity – Consciousness as repeating stages in life. There is a gradual shift from a focus on knowledge to one on love based on the premise that God is indeed Love. The second practical part gives more detailed advice and exercises for committed partners, parents and children, friendship and teams. This culminates in a theology of love and what they call omega love. This is a mystical Christian path where one becomes more acutely aware of the personal contribution we can make. There are, however, many more accessible stages of development described in the book.

■ The Unbearable Wholeness of Being

Ilia Delio

Orbis Books 2013, 230 pp., £17.99, p/b.

This book takes up the themes of the previous one using the thought of Teilhard de Chardin as a springboard. The author is a Senior Fellow in Science and Religion at Georgetown University and is exceptionally well informed in scientific, philosophical and theological terms. She begins by analysing the decentring process following the demise of mediaeval theology and the rise of a mechanistic universe. Her discussion of wholeness and nature includes the work of David Bohm on the implicate order, as well as systems biology and holons as we try to go beyond the mechanistic metaphor. Her vision is a journey towards wholeness and love and she argues that we need a new evolutionary vision of God, quoting not only Teilhard but also Paul Tillich and Raimon Panikkar. Her theology is more traditional with respect to the cross as a symbol of kenosis (emptying), vulnerability and transformation. Perhaps the most important insight is her analysis of the breakdown between knowing and loving, also

extensively discussed by Seyyed Hossein Nasr in his seminal Gifford Lectures, *Knowledge and the Sacred*. She would like to see this link reformed, and defines wisdom as knowledge deepened by love. This is an inspiring vision quite at odds with the impersonal and mechanistic prospect of trans-humanism with its emphasis on manipulation and control and a transition from the I-Thou relationship (Martin Buber) to the I-Phone link. The intimacy of I-Thou is surely of a different and vastly more significant order. It is a worthy and inspiring goal to reconnect love with knowledge in the pursuit of wisdom.

■ Spiritualise your Life

Allan Armstrong (SMN)

Imagier Publishing 2017, 198 pp., £12.50, p/b.

With the publication of so much eclectic work in the field of spirituality, it is refreshing to have a clear statement of the essential disciplines of spiritual life relating to traditional Christianity. This path requires real dedication and is a lifelong process of 'patient ferment'. The first part gives a different theoretical and practical slant on meditation, beginning with the chemistry of stress and the need for techniques of relaxation, then moving on to the nature of concentration, conceptualisation and controlled imagining. All this is simply and lucidly explained, with excellent practical step-by-step guidelines. Next comes the art of this kind of meditation itself, beginning with reflection on the day's events in relation to what Allan calls the transient self, with a focus on mind, imagination and will at various levels. The second part covers the nature of prayer, helpfully explaining its various forms, especially the importance of interior prayer for our personal development and in relation to the cultivation of virtues. Allan devotes a chapter to the beatitudes and to contemplative reading or *lectio divina*, with its four stages of *lectio, meditatio, oratio* and *contemplatio*. He also explains the stages of the Devotio Moderna method and the daily rhythm of prayer. Finally, he selects some themes for meditation consisting of well-known passages from the Bible. Allan has distilled over 40 years of practice into this guide for spiritual practice, and anyone wishing to deepen their knowledge of Christian meditation and contemplation should read this book.

■ Instant Presence

Enza Vita

Watkins 2017, 178 pp., £10.99, p/b – www.enzavita.com

The author of this illuminating and very direct book is an Italian living in Australia, who publishes the InnerSelf newspaper and website. She understands spiritual enlightenment as an ever present reality available to us, one which we fail to realise since the 'searching for "it" outside myself had separated me from the very thing I was seeking' - in other words the sense of separation inherent in the ego is itself the obstacle to be set aside rather than overcome: 'ego just means the identification with a

separate entity. Awareness is what we are. Ego is what we believe we are.' (p. 85 - a brilliant formulation) In a normal state of consciousness, we find ourselves in a dualistic impasse, a trance of separation. We just need to realise that 'you are the awake, boundless, omnipresent consciousness that is right here, right now.' (p. 7) She distinguishes awareness as timeless and eternal, which gives birth to consciousness as the background for the appearance of the body-mind. Being awake is our natural state of being, and it is important to note that 'awakening arises through the mind, not from the mind.' (p. 71)

Striving and orientation towards the future are additional forms of separation, so Enza recommends 'no practice practice': real meditation lies in letting go of control: 'we are just resting in what is happening moment by moment.' (p. 83) Being present in the moment means that living well is also learning to die, every day, every moment. This means simply being as we are, being present with what is already present. It also means paying attention rather than reading books, including this one! One story in the book made me laugh out loud: a king is given a gift of two falcons. He arranges for them to be trained, and while one makes great progress, the other cannot be moved from its branch. Finally, a farmer is brought in, and the next day when asked by the King how he had made the bird fly, he simply replied that he had cut off the branch on which the bird was sitting! So Enza reminds us that we are born to fly, rather than spending our lives sitting on a branch.

■ The Buddhist Voyage beyond Death

Ven Master Hsin Tao

Cambridge Scholars 2017, 150 pp., £52.99, h/b

I imagine that few readers will have heard of the work and teaching of the Chinese Buddhist monk Hsin Tao, but this book is a real jewel. Born in 1948, Hsin Tao put himself through an intensive training, including two years in a cave and meditating in a graveyard. This is not for the fainthearted. The fundamental truths of Buddhism are clearly articulated – suffering, emptiness, impermanence - but also the cultivation and promotion of self-less-ness and goodness. Life and death alternate as we are reborn in new though impermanent forms with opportunities for further transformation: 'death and rebirth is one thing. Death itself means the rebirth of life'. (p. 39) Hsin Tao translates some teachings into modern metaphors, for instance the memory matrix and the idea that death is a change of channel. It is this memory matrix that is reborn, and we are constantly sowing new seeds as thoughts as we create and recreate ourselves. Individual lives are like files or folders.

He has a very interesting teaching on time and space, which he says appear different at first sight but in the end are not so different: 'space is unmoving time and time is moving space.' We can easily get caught up looking at changes in time, 'rather than

looking at the stillness of space, an unmoving space.... which is also emptiness.' This sense of emptiness and spaciousness seems to correspond to pure consciousness. The first part is devoted to deathless spirituality, then the second to death and dying, and the third to the creative now. Some of the valuable teaching about death and dying is given in the form of a dialogue, along with the lessons in detachment that we will have to undergo. Hsin Tao emphasises the importance of preparing for death, which few of us address. In his view, meditation is a key preparatory practice that can also bring us to a state where our mind is more ordered and less fluctuating. This means that we will be able to face death with greater equanimity. The ultimate development is that of the bodhisattva embracing all sentient beings. This is precious teaching for our time.

■ The Magdalene

Lars Muhl

Watkins 2016, 244 pp., £8.99, p/b.

This is volume 2 of the Grail trilogy reviewed as *The O Manuscript* in the summer issue of 2015. While I would urge you to read the whole book about Lars' initiation in the landscape of Montsegur, this volume is specially concerned with Mary Magdalene. Lars vividly recreates her putative initiation and training in Egypt, building on what we know from the Gnostic Gospels and the Therapeutae in Alexandria. This parallels the continuing gripping story of his own spiritual development, but its fundamental message is the power of the sacred feminine, also associated with sacred sexuality and holy union, which is depicted towards the end of the book in the intimate relationship between the Magdalene and Jesus. This itself is a further form of initiation, and the recovery of sacred sexuality in the West would be enormously significant in psychological and cultural terms. It also means men and women working together, as also represented historically by the Cathars and still present in this area as people walk the path of love - see also my review of Sabarthez above.

■ Stress and Freedom

Peter Sloterdijk

Polity 2017, 60 pp., £9.99, p/b.

I reviewed Peter Sloterdijk's book on self-formation in the last issue, and here he takes a historical view of the concept of freedom from ancient Greece to the present era. He argues that political communities arise 'in response to a form of anxiety or stress' and applies this to the Greek polis with its concept of *eleutheria*. Central to the book is a discussion of Rousseau's *Reveries of the Solitary Walker*, which I read while studying French in the 1970s. His was a 'felt existence' expressed by the modern individual as a subject free of stress in the natural world. This situation makes him useless in a utilitarian sense and a forerunner of loafing, which is no use to society as a whole. Sloterdijk further argues that the notion of reality is a construct of modernity by defenders of objectivity, reminding readers

that the solitary Rousseau was also the author of *The Social Contract* and the notion of general will. For Sloterdijk, the origin of freedom lies in noble disposition, generosity and liberality in the sense of sympathy. This is a highly original reading of the genealogy of freedom.

■ The Happiness Philosophers

Bart Schultz

Princeton 2017, 437 pp., £32.95, h/b.

The last 20 years have seen the rise of positive psychology and virtue ethics as well as the development of a scholarly industry around happiness, for instance in the work of Richard Layard. This philosophical biography vividly describes the lives and works of the great utilitarians whose maxim was the greatest happiness of the greatest number. The author brings to life the personalities of these pioneers, most of whom were passionate social reformers as well as philosophers: William Godwin, Mary Wollstonecraft, Jeremy Bentham, John Stuart Mill and Harriet Taylor, then finally - and perhaps more surprisingly - Henry Sidgwick. The author explains that 'the great classical utilitarians were fascinating people, brilliant and complex, and as intrinsically interesting as great artists. Inspired, weird, provocative and controversial, they were neither as complacent nor as naive as their followers - or their critics.' In addition, they were all concerned with philosophy as the art of living as well as penetrating exploration into the central issues of life. One can read about Bentham's articulation of the many simple pleasures of life, and about the extraordinary education and capacity of John Stuart Mill, who began studying Greek at the age of three and by the age of nine was reading in the original Virgil, Cicero, Euclid, Newton, Sophocles and Euripides. At 13 he was reading Plato's dialogues, again in the original, along with several Latin books of logic. He writes how his mental culture was fundamentally shaped by the approach of Socrates in terms of probing, precision and analysis. Later in the chapter, one also comes to appreciate the enormous contribution of Harriet Taylor, Mill's wife.

Schultz is also the author of a biography of Henry Sidgwick, and this provides the longest chapter, perhaps the one of most interest to readers here. Sidgwick made his reputation with his *Methods of Ethics* and held the Knightsbridge chair of philosophy at Cambridge, subsequently occupied by CD Broad. He was one of the earliest figures to resign his college fellowship because he could not subscribe to the 39 Articles of the Anglican Church, and his whole approach is one of radical doubt, also applied to his pioneering work in psychical research. He was the founding president of the SPR and was married to the formidable Eleanor Balfour, sister of Prime Minister Arthur Balfour and the first Mistress of Newnham College. The author devotes considerable space to Sidgwick's involvement in psychical research, describing his relationships with other pioneers such as Myers, who was also a fellow of Trinity

College. Although others were convinced by the same lines of evidence, Sidgwick was ultimately unpersuaded by the evidence for personal survival, which led him to scepticism about the foundations of ethics and caused him great despair. While not agreeing with this conclusion myself, I can certainly respect the extraordinary intellectual integrity displayed by Sidgwick and his openness to unpopular avenues of research mostly ignored by his successors. This book deserves to be widely read by the intellectual successors of these 19th-century pioneers.

■ Ultimate Questions

Bryan Magee

Princeton 2017, 132 pp., £10.95, p/b.

Bryan Magee has had a long and distinguished career as a philosopher, music and theatre critic and BBC broadcaster, where he hosted a series on central questions in philosophy. Now in his 80s, this is his philosophical testament reflecting on the human predicament and the limits of knowledge. It is clearly and fluently written from a broadly humanist perspective that rejects transcendence and sees in religion an unjustified evasion. His position is a questioning and radical agnosticism, where he wonders if we actually have the equipment to go beyond a limited sensory understanding. He shows no sign of being acquainted with the literature of mysticism and survival of consciousness and, although he has a sense that consciousness transcends the material world, this does not affect his view of death most probably as oblivion.

Movingly, he experiences the prospect of death in terms of grief and loss, summarising his view as: 'I know that I have a persisting self for as long as I am in this world, but I am unable to fathom its inner nature, and I have no idea what happens to it when I die.' (p. 119) Magee's horizons are an illusory security of faith on the one hand and a full acknowledgement of ignorance on the other, but without considering the possibility of gnosis as a deeper way of knowing. He speculates that even when we depart from the world we will be in the same state of ignorance and uncertainty, which is not consistent with the survival literature (for instance as studied by CD Broad – see also Private Dowding below). I don't personally see this as 'grasping at the supernatural' but rather as a way of extending our knowledge and reducing our ignorance. Nevertheless, this is a moving and profound reflection on life.

■ Mirror, Mirror – The Uses and Abuses of Self-love

Simon Blackburn

Princeton 2014 209 pp., \$19.95, p/b.

This subtle and erudite study explores the history and nature of self-love, showing that narcissism, vanity, pride and self-esteem are more complex than they seem, and in fact have numerous good and bad forms. As Blackburn ironically puts it, everyone deplores narcissism, especially

in others. The fundamental theme is how we position ourselves among others in the social world. He explores hubris, self-esteem, pride, respect, temptation, sincerity and authenticity, drawing on a vast range of reading including Erasmus, Cicero, Rousseau, Hume, Kant and particularly Adam Smith with his work on moral sentiments and empathy. He shows how modern advertising such as L'Oreal's slogan 'because you're worth it' in fact implies that we are not worth it until we buy their product and enhance ourselves in the process. This tour of the social self necessarily leaves readers more self-aware as well as better informed and greatly entertained in the process.

PSYCHOLOGY-CONSCIOUSNESS STUDIES

■ A Psychohistory of Metaphors

Brian J. McVeigh

Lexington Books 2017, 233 pp., £52.95, h/b.

Subtitled 'envisioning time, space and self through the centuries', this is an extraordinarily interesting book building on the work of Julian Jaynes about the emergence of interiority or what the author calls 'the inward turn'. We think in terms of metaphors, images, mentalities and frames, which all depend on visualisation and spatialisation, regardless of form. For the author, the transition from what he calls a cosmic to a scopic worldview in modern times is central. He coins the terms 'introcism' and 'introsopic' (think of telescope and microscope) to characterise the inner world of these worldviews. Time goes from cyclical to linear, which also entails the emergence of the idea of progress and future. Soul is now understood as mind, qualities are quantified, while our instruments open up new spaces. Interestingly, the development of perspective is also understood as a form of interiorisation, although associated with geometry and measurement.

It is characteristic of modernity to question authority with its unshackling and emancipatory ethos that saw the rise of capitalism, science, technology, industrialism, national statism, market forces, democracy, bourgeois lifestyle and civil society. The self is redefined in terms of conscious interiority involving self-authorisation, self-narratisation, self-autonomy, individuation and self-reflexivity. This emergence is fascinatingly paralleled by the appearance of words with the self prefix from the 16th century onwards. For instance, self-love appears in 1563, self-knowledge in 1621, self-interest in 1649 self-esteem in 1657 and self-determination in 1683. We have to wait until 1775 for self-important and 1795 for self-respect. It would be fascinating to know if parallel concepts emerge concurrently in different European languages. The scope of

the book is very wide in dealing with well-known and less well-known figures in the history of psychology (e.g. Fechner, although there is little coverage of William James). Towards the end, the author considers the therapeutic turn and forms of self-idolatry in various forms of narcissistic display. Given the nature of conscious interiority, the author might have extended his analysis to mystics who take this process to the next stage, while also finding the root of the self in the universal, for instance in Teilhard or Thomas Merton. There is also no mention of the cultural contribution of Iain McGilchrist. The book is nevertheless a significant contribution to our understanding of psychohistory.

■ Living from the Centre Within

Michele Rae

Paragon House 2017, 196 pp., \$16.95, p/b.

Michele Rae is a transformational coach trained in a wide range of disciplines who was also a minister. In this book she synthesises many aspects of neuroscience, mind-body science and consciousness studies into an evolutionary path of co-creation, living from the calm centre within. She distinguishes three main levels of consciousness: I am Individual, I am Interconnected and I am Infinite. This also provides the progressive structure of the book as a journey from our present condition of consciousness to a more illuminated state. Each chapter contains an invitation to practice along with some questions for reflection. The author has a good grasp of the key qualities of the old and emerging paradigms (see diagram on page 24). Readers must first accept the invitation to the transformational journey with its accompanying practices - including nonviolent communication - and expanded self-awareness. The author provides useful summaries of the three states in terms of qualities and leadership style. The book is accessible, informed and practical.

■ Love and the Evolution of Consciousness

Karen L. Rivers

Lindisfarne Books 2016, 323 pp., \$28, p/b.

This profound book is inspired by the work of Rudolf Steiner and the less well-known Valentin Tomberg, the anonymous author of the seminal *Meditations on the Tarot*, which I read at the recommendation of Bede Griffiths. It is a map for the development of selfless love through a process of inner transformation and purification, which also represents redirection of human interest from the self-centred to the community centre. As a psycho-spiritual text, it engages fully with the shadow, here called the double, using the terminology of Steiner and incorporating his two aspects of evil characterised by Lucifer and Ahriman representing respectively the opposing forces of egotism, then hardness of heart and materialism. In this general context, the role of evil is to bring good to development. Following chapters on these aspects and their

transformation, there is a long discussion of the karmic double web of destiny involving thinking, feeling and willing, then a key chapter on, and forgiveness. There are helpful charts (e.g. pp. 158-9) enabling readers to understand the process more deeply. As Llewellyn Vaughan-Lee observes, the shadow teaches us the lesson of humility: 'having experienced the depths of our own darkness we can never judge another person, nor can we be frightened by the darkness.' The appendices discuss the 10 Commandments of Moses, the eightfold path of the Buddha and the nine Beatitudes of Christ, as well as quoting the Golden Rule in different traditions. The last appendix is the most important: a meditation course for inner development involving a weekly cycle over a number of months as a way of really internalising heart thinking and undertaking the metamorphosis of the will through the path of love. This is the fruit of a lifetime of thought and practice that should be widely read.

■ Find and Follow your Inner Compass

Barbara Berger

O Books 2017, 105 pp., £8.99, p/b.

This practical book has a simple message, that we should tune into our Inner Compass and pay attention to our emotions as a link to the Universal Intelligence. We instantly know whether or not we are in the flow and aligned with our deeper sense of purpose. When we go against this by failing to trust our emotional sense of the situation, things often go badly wrong. In a world when we are brought up to seek outer approval rather than follow the inner compass, we can easily be motivated by pleasing other people and from a fear of disapproval. The author shows us how to manage this so that we become self-referred rather than other-referred. Interestingly, she relates this to democracy in remarking that parents need to realise that each child has a right to be who they are, with their own link to the Great Universal Intelligence. Indeed, as she points out, our evolution depends on it since pioneers always listen to and act on this Inner Compass.

■ The Psychic and the Spiritual

John White

White Crow Books 2017, 154 pp., £11.99, p/b.

John White has a long career as an author and educator, and was director of education for the Institute of Noetic Sciences in the 1970s. He is the author of 18 books on a wide variety of topics. Here he brings together 15 essays on understanding the difference between the psychic and the spiritual. Perhaps the fundamental point is that 'psychic development is not the same as spiritual growth', and indeed many spiritual traditions specifically discourage psychic development for this reason. The author knew many leading psychics and thinkers personally, including Uri Geller and Andrija Puharich, and writes authoritatively throughout these essays; he is not afraid to admit where he has made a few mistakes. Some chapters in the second part also look at meditation and mysticism, and it is

a useful observation that the goal of mysticism is not goodness as such, but self transcendence, while also recognising the value of virtuous conduct. A wise and considered book.

■ Mindfulness and Education

Edited by Tamara Ditrich, Royce Wiles and Bill Lovegrove

Cambridge Scholars 2017, 341 pp., £57.99, h/b.

This volume is the outcome of a conference on mindfulness, education and transformation held in Australia in 2014, and as such mainly reflects work in the southern hemisphere. There are 12 chapters in three parts: conceptualisations and research about mindfulness, mindfulness and settings, and mindfulness in tertiary and related settings. One important theme is the secularisation of mindfulness by abstracting it from its original Buddhist context, which implies the development of compassion and a corresponding ethical framework. In the West, mindfulness is often associated with a therapeutic context. Some chapters are more directly concerned with a critical review of evidence, while others integrate mindfulness with local traditions and practices. There is an interesting article on the impact of teachers meditating in a school setting where results seem to indicate a transformative effect not only within the teachers, but also in the school community. In the university context, mindfulness can help students with emotional regulation, self-efficacy, decentring (detaching from one's thoughts) and deautomatisation of reflex behaviour patterns, also associated with self-control and corresponding to Buddhist equanimity. This is an important volume for anyone interested in the relationship between mindfulness and education.

■ Before Consciousness

Edited by Zdravko Radman

Imprint Academic 2017, 339 pp., £19.95.

This is an authoritative volume on the role of the non-conscious in relation to consciousness as the prior basis from which mentality germinates and which is critical to our understanding of the mind as a whole - the non-conscious is ontogenically prior in evolution. Much of the philosophy of mind is in fact a philosophy of the conscious mind and is as such 'conscious-centred'. It is interesting to reflect that just as the vast majority of matter in the universe is dark, so our consciousness is like the tip of an iceberg with the rest underwater. The first part covers relationships between conscious and unconscious aspects of the mind, the second the role of the non-conscious in perception, decisions and thinking, while the third is devoted to the unconscious sophistication of skills in terms of habits and skills, with a particularly interesting chapter on the role of the non-conscious in sport performance, which could equally be applied to the arts. Personally, I am a much better putter on the golf course if I leave things to my non-conscious aspect, although paradoxically, the thought of avoiding a bunker frequently means that you finish up in it! This volume

is a valuable addition to the literature on the wider nature of the mind and consciousness.

ECOLOGY-FUTURES STUDIES

■ Money Changes Everything

William N Goetzman

Princeton 2017, 600 pp., £14.95, p/b.

Subtitled 'how the development of finance over thousands of years enabled the growth of civilisation', this is a fascinating book of magisterial scope, which must surely be the definitive history of the topic, beginning as it does with the Sumerians and bringing the analysis right up-to-date. The first two parts look at the history of finance in Europe and China, with extensive coverage of Athens and Rome. The book enables the reader to think about finance in a new way, as enabling value to be moved backwards and forwards in time (think of mortgages) as well as a means of mitigating risk, allocating resources and fostering growth. Finance represents a system of thought and quantification. One comes to appreciate the critical nature of finance in relation to cities, which is also reinforced by the nature of contracts and law. It is quite startling to see a 10-year growth plan for a dairy herd showing expected future profits dating from 2400 BC. The establishment and maintenance of Roman Empire required a complex system of finance, and it was also very interesting to learn how closely wealth and political access were linked - senators had to have very considerable private means in order to be eligible for office.

The chapter on China shows the regressive effect of bureaucracy, which arguably prevented a corresponding industrial revolution to that which occurred in Europe, partly because of the fragmentation of political power - a parallel argument can be made for the Enlightenment (see my review of Joel Mokyr's book on the culture of growth on p. 70 of the last issue). The third and fourth parts are devoted to the more recent history of finance in Europe, beginning with the Templars, and the emergence of global markets. While financial innovations have developed to solve economic problems of time and geography, they have inevitably engendered new challenges, as we have seen only too clearly in the last decade. There is an excellent discussion of the importance of Fibonacci (see also my review of Keith Devlin's book on p. 61 of the last issue) and the discovery of chance and working out of probabilities. The emergence of corporations, for instance the East India companies, is related to exploration, and the operation of markets is described, including history of various bubbles. The tremendous value of this book lies in its broad historical sweep that enables readers to understand the present in the light of past history.

■ Ethics for a Full World

Tormod V. Burkey

Polity Press 2017, 179 pp., £12.99, p/b.

This brilliant and concise book is essential reading in facing the global problematique and galvanising the necessary political action. The main title highlights a key theme, that the global emergencies facing the planet are symptoms of a common problem, namely that the world is full, with humanity having already exceeded several planetary boundaries. This is an unprecedented situation and the implicit ethic is one of anthropocentrism, while the author calls for a biocentric ethic reflected in the subtitle: can animal lovers save the world? He argues that the world needs to be saved *from* humanity rather than *for* humanity. He asks why we are not acting to save the world and, interestingly, draws on the work of the behaviourist BF Skinner who noted that, from an evolutionary point of view, we are programmed to react to the immediate rather than the remote. From a planetary perspective, we have to do better than putting health warnings on cigarette packets.

Overall, the pace of change and the complex interdependencies of our ecological system have exceeded our ability to cope and we drift along with business as usual, making the best of a bad job. Our institutions and political systems are not fit for purpose, and politicians on a five-year electoral cycle have no incentive to fix things before a disaster supervenes. Our current practices are in fact robbing our children of a sustainable future, yet individually we are mostly too busy (in my case writing reviews like this) to prioritise the necessary cooperation that is the only real hope, and that can now be mediated via the Internet. Indeed, many petition sites bring huge numbers of people together in a common cause. The final chapter describes a possible process for we can translate ideas into effective action, outlining all the necessary components. As the author points out, 'largely, we know what needs to be done, but have no idea how to get humanity to do it... political systems are geared so that no major changes will occur.' This is especially dangerous when applied to irreversible tipping points. This is a passionate, galvanising and compelling call to informed action.

■ Systemic Crises of Global Climate Change

Edited by Phoebe Godfrey and Denise Torres

Routledge 2016, 332 pp., £110, h/b – ebook £27.99.

Subtitled 'intersections of race, class and gender', this is an edited volume of 49 international, interdisciplinary contributions on climate justice and inequity. The contributions are not simply essays, but include pictures and poems as ways of conveying the issues. The distinctive intersectionality approach uses the social categories of race, gender and class of the subtitle to deepen analysis of social issues. Hence, in the foreword Jacqui Patterson

recalls her experience of working with women in sub-Saharan Africa who experienced sexual assault as a result of climate-forced migration brought about by drought or resource wars. She characterises climate change as 'a manifestation of the convergence of historic global patterns of domination, extraction and oppression' emerging from the history of capitalist colonisation where natural resources were acquired and exploited, resulting in the impoverishment of the many and enormous wealth among the few. She gives coal as a specific example with huge casualties due to black lung disease and vast annual subsidies for an industry central to global warming.

The book is structured in five parts, beginning with chaos and going through the four elements as symbolic of the underlying issues. Reading the essays and poems gives the reader a powerful and different lens, especially on the assumed primacy of hegemonic masculinity represented by capitalism. The metaphors continue with the use of the term Anthropocene as an extension of the Western paradigm exemplified in colonial conquest in this arresting passage referring to metaphors of 'white, masculine, sexual domination of a dark, feminine (sometimes promiscuous, sometimes virginal) and forced to give way to the thrust of (white, male, phallic) penetration, including military invasion, occupation, and resource exploitation.' (p. 25) One can appreciate the parallels here with the masculine scientific revolution bringing about a mechanistic world picture based on separation from and mastery of nature as the feminine. Another essay explores whiteness, masculinity and the conservative media denials of climate change and sexism - just look at the White House. The female body is highlighted in relation to reproductive rights and population questions, while R.D.K. Herman draws on Hawaiian culture to contrast indigenous and more feminine worldviews with masculine dissection, analysis, mastery and conflict. (p. 90) All this points to the necessity of profound systemic change, which Chris Williams argues involves building organised resistance in every workplace, community, school and farm across the world fighting for social justice and equality for all. This is represented by the element fire involving mobilisation, heat and transformation. The book sends a powerful message of theory and praxis, scholarship and activism in its structural and intersectional analysis of global climate change.

■ The Global Energy Trap and a Way Out

Frank Parkinson (SMN)

Matador Books 2017, 257 pp., £10, p/b.

This important book not only provides a clear account of the energy and climate crisis, but also an interesting and quite feasible solution to it. Modern industrial civilisation is built on energy derived from fossil fuels, which is driving unsustainable global warming that threatens further and more extreme disruption of the global climate. We cannot in fact afford to use all the fossil fuels still in the ground if we are to contain temperature rise.

The exponential rise in population over the last century has been permitted the existence of cheap and abundant energy also applied to agriculture, so we now face overpopulation, potentially catastrophic climate change, exhaustion of mineral resources, food and water shortages, peak oil and energy shortage – this last problem is likely to become particularly acute in the UK, where one third of energy generation capacity will be lost between 2012 and 2020. All these challenges are clearly explained in the first part, where the author also analyses the geopolitical aspects of oil in relation to the Middle East. He is sceptical about the capacity of wind to plug the gap, as its unreliability and lack of storage potential means that there has to be a central backup. We need a revolution in energy storage.

The rest of the book explains Frank's ideas for addressing the global energy trap. Already in 1897, Tesla was emphasising the need to evolve means for obtaining energy from inexhaustible stores using perfect methods that do not involve consumption and waste. He thought that the realisation of this idea was close, but he came up against the interests of the oil and energy industry, who favoured macrogeneration and centralised distribution in order to maximise their profits. The fact that Tesla's ideas were not pursued is tragic. Frank puts forward two radical microgeneration concepts, the E-Plus house that generates more than consumes, along with what he calls K-gen as a meta-system using collection, conversion, concentration, conservation, and control to achieve a very smart grid. He explains the various components in some detail, and the scheme looks extremely promising if only it were taken seriously, which he points out is really a question of imagination, motivation and mobilisation of human effort. There are increasing signs that these global challenges are being taken more seriously, but, as argued in many books reviewed on these pages, our current mind set, time horizon and institutions are quite inadequate to the scale the challenge. Books like this serve to raise awareness and clarify ideas about potential effective policies and actions.

■ Mental Penguins

Ivelin Sardamov

iff Books (John Hunt) 2017, 224 pp., £14.99, p/b.

Subtitled 'the never-ending education crisis and the false promise of the information age', this important study explores the social and educational consequences of digital immersion for modified brain structure and intellectual capacity. The author teaches political science at the American University in Bulgaria and has trawled both neuroscience and educational theory in developing the view that we need to bring back a focus on what he calls 'deep reading' as the way of developing an integral understanding of a particular discipline. Many students arrive at University having never read a whole book, as extracted information is available on the Internet as a shortcut in writing essays. Digital immersion and multitasking are

associated with unrelenting overstimulation, resulting in 'continual partial attention' rather than the sustained attention required for deep reading or true listening. This also happens at meetings, as I am sure readers will recognise, as people check emails while participating.

This situation is in fact nothing short of an addiction and its academic implications are just beginning to emerge more clearly, although the issue goes back to the work of Marshall McLuhan on TV (larger screens and HD lead to further overstimulation and desensitisation). Reading proficiency has correspondingly declined, and 40% of incoming first-year students at American colleges have to take at least one remedial class in reading, writing or maths. Given the work of Iain McGilchrist, who endorses the book, it is interesting that the author writes about the chronic overengagement of the analytic network - left hemisphere - and the corresponding withering of the intuitive network - right hemisphere. The result is that many students are caught in concrete thinking detached from any larger frame of reference. As mentioned above, the author's prescription is deep and intensive reading - what he calls reading-centred learning starting in elementary school and leading to an expanding personal frame of reference. He explains how he encourages his students along these lines and reflects that Huxley rather than Orwell was right in speaking about our almost infinite appetite for distractions, and fearing that there would be no reason to ban books as no one would want to read one. This book is essential reading for education departments around the world and anyone concerned with the future of education and the development of our children.

■ Profits and Sustainability

Geoffrey Jones

Oxford 2016, 442 pp., £30, h/b.

This engaging and authoritative history of green entrepreneurship shows that its origins go far further back than most readers will realise, to the mid-19th century. The author traces the often eccentric lives and ideas of green pioneers in organic food, vegetarianism and energy, including Rudolf Steiner, who impacted food, agriculture, medicine and design. Wind energy in its modern form goes back to the 1850s, and by the end of the First World War Denmark had 250 electricity producing wind turbines, while the first solar company was formed in 1892. The book proceeds chronologically through the 1930s to 1950s, then to the rise of green business in the 1970s, including recycling and ecotourism. Since the 1980s, the growth of green businesses has been accompanied by a major shift in attitudes towards the natural environment and a corresponding proliferation of green institutions and certifying agencies. Another chapter is devoted to green finance, such as the Triodos Bank, and government initiatives, then the features and limits of corporate environmentalism. Many of the original green entrepreneurs were motivated by

romanticism, but they were also the historical originators of a sustainable world for the future. Reverting to the title, the author concludes that profits and sustainability have been hard to reconcile but the whole process has brought into the foreground the need to address major ecological issues and redirect policy, especially in relation to food, agriculture and energy.

■ Rethinking the Oceans

James Alix Michel

Paragon 2017, 227 pp., \$24.95, p/b.

This book is unusual in being written by the serving president of the Seychelles, who is passionately involved in promoting the idea of in blue economy based on the sustainability of the oceans. Politically, he represents the Small Island Developing States, many of whom are vulnerable to sea level rise resulting from climate change. The book is exceptionally well informed both theoretically and practically, and contains many beautiful small photographs to illustrate the text. Michel is fully aware of the challenges facing the oceans in terms of overfishing, waste and specific exploitation of species such as whales. He also points out the growing pressure on our land resources and, as an island dweller, turns very naturally towards the sea. Coastal regions potentially under threat not only represent ports and fishermen, but also widespread tourism, not to mention the fact that many major cities are situated on the coast. Michel's love of the sea and dedication to the cause of the blue economy shines throughout the book with his optimistic outlook. However, he does not underestimate the challenges of the sustainability transition, although it will clearly take more than inspiring rhetoric to shift the entrenched interests within our current system.

DEATH AND DYING

■ The Transformative Power of Near-Death Experiences

Dr Penny Sartori and Kelly Walsh

Watkins 2017, 256 pp., £10.99, p/b.

I read the manuscript of this remarkable collection of transformative near death experiences a few months ago and found it a powerful and transformational read. The many different accounts converge on some key themes of self-love, acceptance, forgiveness and renewal. Underlying all this is the realisation of Oneness and deep interconnectedness characteristic of love. This is exactly the experience and message of the well-known books by Anita Moorjani and Eben Alexander, both of whom endorse the book. There is a foreword by Mick Collins, whose new book I have also endorsed and who sees the content of this book as a love letter from God. Then there is a profound prologue by Neale Donald Walsch: his own experience converges with the core message of the book: 'I am not my body, I'm totally loved and absolutely perfect just as I am, I am one with everything, and everything is really

simple. The reality of an interpenetrating spiritual world shines through the narratives and we are reminded that a deep intuitive knowledge is available to all of us. Ultimately, this involves a re-identification with a deeper aspect of the self and the realisation that there is no separation between us. Although such messages have appeared in previous books, including my own *Whole in One* and *Lessons from the Light* by Kenneth Ring and Evelyn Elsaesser, the appearance of this book is particularly timely view of the widespread search for meaning. Readers cannot fail to be deeply touched by these narratives.

■ What Happens When We Die?

Margarete van den Brink and Hans Stolp

Temple Lodge Press 2017, 144 pp., £10.99, p/b.

This is a very well informed book meshing the understanding of Steiner with modern death and near-death studies, also by bringing in a Gnostic perspective. In addition, it is based on the personal experience of the authors, although it is not always clear which voice is speaking in the first person. Historically, they see the loss of the category of spirit and the reduction of the human being to soul and body as a regrettable development in A.D. 869, and describe seven steps to the world of light in the post-mortem state. They see the purpose of life as the greatest possible manifestation of the higher self with its consciousness, love and wisdom. They then outline their understanding of the path through the spirit realms, ultimately leading to a cyclical process of ascent and descent. The context of the life review is the question: what have you done with your life? The final chapters are devoted to the connection between the dead and the living and the ways in which the living can provide spiritual nourishment for those who have passed on. This all amounts to essential knowledge missing in the churches, who need to reconnect with people's experience. On a personal level they see as important the development of gratitude, trust and openness to the future. A profound reflection of life and death.

■ Jesus and the Near-Death Experience

Roy Hill

White Crow Books 2017, 218 pp., £11.99, p/b.

This book follows up the author's earlier work on psychology and the near death experience, focusing this time on encounters with Jesus during the NDE. He also brings in two other perspectives: a little-known book by Julian of Norwich, called *Showings*, which she recounts what would now be called an NDE and written in 1393; and the gnostic gospels - especially those of Thomas and Philip - where Christ is known in the centre of our being. To this he adds his own revelatory experiences and perspective as forms of divine communication leading to

spiritual discovery that is shared with the reader. The all-pervasiveness of love and light is a central theme, also reflected in Julian of Norwich. She asked about the Lord's meaning and receives the response: know it well, love was his meaning. Who reveals it to you? Love. What did he reveal to you? Love. Why did he reveal it to you? For love. Remain in this, and you will know more of the same.' As with other books in the field, transformation is of the essence, and sometimes the questions are disarmingly direct. How have you helped others? What did you learn in this life? In what way did you give of yourself? We are told that God evaluates the human heart, and on page 139 there is a comprehensive list of themes related to spiritual transformation, which again the seasoned reader will recognise from other sources. It is significant that Gandhi is quoted as saying that Christianity has yet to be lived in its essence, although many saints have done just this. The point is both emulation but also in terms of one's unique personality and circumstances.

■ Quand les D funts Viennent à Nous

Evelyn Elsaesser (SMN)

Editions Exergue 2017, 225 pp., 18, p/b.

Evelyn has been involved in research into the near death experiences for more than 25 years, and in this important study she addresses what has come to known as after death communications, which gives us another angle on death, dying and the survival of consciousness. It is full of illuminating case histories and builds up a detailed account of their phenomenology and impact. Because of her background, Evelyn is able to situate these in a wider context, and includes interviews with other specialists on the consequences of ADCs for the grieving process, all of which has wider educational implications. She discusses parallels between the various experiences surrounding death. In considering the authenticity of such experiences, Evelyn points out that this is not an isolated phenomenon and that different types of experiences are arguably consistent and self-reinforcing. It also seems that not only can the living help those who have passed on, but the reverse also applies. The relationships continue to evolve, but take on a different form. This book is sure to be translated into English in due course, and I will let readers know. In the meantime, francophones can learn a great deal from this careful and considered study.

■ Private Dowding

Wellesley Tudor Pole

White Crow Books 2012 (1917), 91 pp., £11.99, p/b.

Readers can learn more about the remarkable life of Wellesley Tudor Pole in the main review section. This book originates from his time as an officer during World War I when he found himself communicating with a recently killed soldier, Thomas Dowding. There was huge interest in mediumship during that period, with so many young men

being killed, including Raymond Lodge, the son of the physicist Sir Oliver Lodge, resulting in a highly evidential account. This book describes Dowding's death and experiences in the immediate aftermath in a vivid manner and contains a number of lessons about life, for instance the need to love deeply, 'love God by pouring yourself away. Love your fellows by giving them all you possess of light and truth.' This involves the emptying of one's self of self. A second series of communications occurs two years later, and there is an instructive chapter on the passing of Major P. Readers may also be interested in *Writing on the Ground*, one of WTP's final works on his perception of the life of Jesus, elements of history including Atlantis, key questions for human life and his reflections on the Baha'i faith, especially his encounter with Abdu'l Baha. It finishes with the reflection 'the more love we reflect and share with one another, the greater will be the supplier available to us.'

GENERAL

■ #republic

Cass R. Sunstein

Princeton 2017, 310 pp., £24.95, h/b.

Harvard law professor and bestselling author of *Nudge* has produced another game changing book about divided democracy in the age of social media. Although his thesis of fragmentation and polarisation is best illustrated by his chapter on polarisation entrepreneurs on terrorist sites, he argues convincingly that the issues are far more widespread, and affect us all. He quotes John Stuart Mill, writing in 1848, that it is essential for us to be exposed to people and ideas dissimilar to ourselves, what Sunstein calls competing perspectives. Facebook holds out the prospect of the Daily Me newsfeed based on filtering one's preferences and views, but this process creates 'echo chambers' of self similarity and group identity based on like-mindedness. This can be a self-reinforcing process as we become less open to arguments from a different perspective. Sunstein gives the telling example of the polarising issues of GMOs and climate change, where the dominant scientific position on the former is mainly espoused by Republicans, while on the latter it is by Democrats.

This shows how prior ideological commitments tend to shape our views, with, as David Hume observed, reason being the slave of our passions and reflecting our confirmation bias. The author draws an important distinction between our roles as citizens and consumers in relation to free speech and free choice. His proposals encourage a commitment to public forums and democratic deliberation or deliberative democracy, where we are exposed to opposing viewpoints and serendipitous encounters in order to encourage us out of our self-created information cocoons. As Benjamin Franklin observed when referring to the American Constitution, its status as a republic must be carefully guarded and nurtured. As the author's colleague Lawrence Lessig remarks,

we need a public informed enough to govern itself in order to uphold democratic ideals. Essential reading for our time.

■ The Paradox of our National Security Complex

Richard Otto

Chronos Books (John Hunt) 2017, 359 pp., \$32.95, p/b.

This is a chilling and well-informed book, written by an attorney, about how secrecy and security diminish liberty in the US and threaten their democratic republic. The author uses the term 'national security complex' for what Eisenhower initially called the military-industrial complex. It describes the evolution of this system, then other chapters discuss JFK's quest for peace, the controversy surrounding his assassination and the role of dissenters in uncovering government secrets. As the author points out, annual military expenditure in the US is of the order of \$1 trillion, along with a significant proportion of the research budget also devoted to military projects, representing a significant diversion of labour and financial resources to maintain and even enlarge this colossal war machine. Furthermore, the US is the leading exporter of military hardware and weaponry used by governments to oppress their people and bomb their neighbours. Paradoxically, the corresponding escalation in global violence produces not only the refugee crisis we are witnessing, but also brings further insecurity in its wake. The author is surely correct in saying that the pursuit of the politics of power and empire building have led to the sacrifice of their image as a defender of liberty.

American exceptionalism seems able to overlook the barbaric track record of the CIA, which, since the 1950s, has been involved in sabotage, covert paramilitary operations, assassinations and murders, kidnapping, overthrowing of legitimate governments and dissemination of propaganda. A former director called it the department of dirty tricks, and it is based on secrecy, and almost complete lack of oversight and the notion of 'plausible deniability', for instance in false flag operations. It is nothing less than an official criminal organisation, and no overall assessment of American foreign policy should omit the CIA and associated agencies such as the NSA in its consideration of the nature of the US government. It has infiltrated the powerbase, and hawks are hugely influential in formulating government policy. It is clear from the author's analysis that JFK was pursuing a foreign policy deeply uncongenial to these people, who then orchestrated not only his assassination, but also framed the cover story of the lone assassin used as a basis for the Warren Commission. Forensically, it is clear that the six bullets came from four different locations and three different directions. The use of the term conspiracy theory is invoked to debunk other approaches, not only in this instance, but also in relation to 9/11, which the author does not cover. I refer readers to the forensic books on this topic written by

theologian David Ray Griffin, also reviewed in these pages. The author quotes the slave activist Frederick Douglass as saying that 'power concedes nothing without a demand. It never did and never will.' So one may agree with the author that the CIA must be reformed into an intelligence gathering agency as originally intended by President Truman in 1947, and that its clandestine operations should be terminated, although one cannot see this happening within the existing power structures. Such a deep reform would require a revolution of human consciousness and a commitment to implement a new vision; this can only come from the grassroots, but I regarded as a moral imperative at least to articulate such thoughts.

■ Face and Mask – A Double History

Hans Belting

Princeton 2017, 270 pp., £37.95, h/b.

This ground breaking interdisciplinary study is the first cultural history and anthropology of the face across the centuries, between cultures and in the media. It begins with an analysis of the relationship between face and mask (one is reminded of masks in Greek theatre as persona - sounding through) as well as roles as masks, whether in theatre or real life. The mask appears to have originated in cults, while the portrait conveys the face as representation, so that, in a sense, the portrait itself is a mask. In this respect, the author's discussion of van Eyck, Rembrandt and Francis Bacon is fascinating. More recently, faces are used as icons, for example Mao, Marilyn Monroe and Einstein. Once again, there is an element of mask, while the face cannot finally be portrayed in its dynamic movement.

■ Face Value

Alexander Todorov

Princeton 2017, 327 pp., £27.95, h/b,

This book is a nice complement to the one above with its extensive reporting on studies about the face, with an emphasis on the irresistible influence of first impressions, based on neuroscientific findings. We all makes snap decisions based on these first impressions, which can underlie important decisions such as who to vote for. Using composite faces shown in various different but similar frames - a morphing continuum, and we tend to associate particular features with dominance, criminality, attractiveness, competence and trustworthiness. Readers can conduct their own experiments while reading the book to see if they agree that personality can be read from faces - this has its own dedicated brain area. The author also makes the interesting observation that, from most of our evolutionary history, we have lived in small groups where we do not have to rely on appearance information to draw inferences about character. At any rate, readers will emerge with greater self-awareness from this study, even if we all continue to trust first impressions.

■ Temenos Academy Review 2016

Temenos 2016, 284 pp.,
no price given, p/b.

The annual Temenos Academy Review is always a feast of wisdom, and this year is no exception. It provides about 20 articles on a wide variety of topics, then some extensive book reviews along with a few poems and icons. Among the articles that struck me were Shelley and the India of Imagination by Kathleen Raine, whose letters to Robert Graves are also featured. Then Reimagining the Grail Quest: the Grail of Compassion. This is a journey of seeking, which is about finding ourselves as well as understanding that we are part of something larger in terms of moving from isolation to belonging. We transform through seeing ourselves in the other and by the opening the heart. The article on the icon tradition takes up some of the same themes, culminating in transfiguration. One understands that making an icon is a form of prayer. Joseph Milne provides an analysis of David Abram's critique of Plato, while another highlight is Grevel Lindop writing about Raimundo Panikkar and his beautiful being as well as exquisite scholarship. Reflecting on the Church, Panikkar he thinks there is much to be forgiven in its history, but remarks that forgiveness demands repentance. There are also appreciations for the late Suheil Bushrui, the editor of the speeches of the Prince of Wales.

■ Heav'nly Tidings from the Afric Muse

Richard Kigel

Paragon House, 2017, 577 pp.,
\$27.95, p/b

This is an eye-opening biography of Phillis Wheatley (1753-1784), who arrived in the US at the age of around seven in 1761 as a slave on a ship where 25 of the 96 passengers died en route. She began writing poetry in her teens, and published her first book at the age of 20. She is called the poet laureate of the American Revolution and was a literary sensation in her day, not only as a black American, but also as a woman. Significantly, a large group of distinguished men had to provide an attestation that she was indeed in the author of these sublime works, especially as racism was rife even among thinkers like Hume and Kant. A judgement by Lord Mansfield in England changed the status of slaves and rippled out into the colonies. Slavery was much less widespread in Boston than in the South. Wheatley was also a pioneer in the emancipation movement and wrote eloquently about freedom. In 2003, statues were unveiled in Boston not only for Phillis but also Abigail Adams and Lucy Stone. As well as learning in detail about the life of this remarkable woman, the reader gains a great deal of background information on this revolutionary epoch.

■ My Heart is too Big for my Pacemaker

Shane Jagger

Beshara 2017, 31 pp., no price given, p/b

This short of book of poems is written by a long-term resident of the Sufi centre at Chisholm House in the Scottish Borders. The poems are all short and direct with a beautiful evocative tone and simplicity of language. I can do no better than quote one here and find space for one or two others elsewhere in this issue:

EARLY

*Sweet calmness in the early hours
before dawn*

*Black Velvet sky is starless tonight
and an air of comfort enfolds the
possibility of a glorious day
my mind once again at rest*

Soon these hours will pass

*and the hum of busy comings and
goings of the day will begin*

This time is magical

*before the fray, peace fills the room
sweet calmness in the early hours
before dawn*

A precious gift

ALSO RECEIVED:

■ Unsolved!

*The History and Mystery
of the World's Greatest Ciphers from Ancient
Egypt to Online Secret Societies (also
contains a chapter on ciphers from beyond
the grave)*

Craig P. Bauer

Princeton 2017, 620 pp., \$35, h/b.

■ Three Stones Make a Wall – the Story of Archaeology

Eric H. Cline

Princeton 2017, 455 pp., £27.95, h/b.

■ Morning Homilies IV

Pope Francis

Orbis Books 2017, 149 pp., £14.99, p/b.

■ Your Behaviour – Understanding and Changing the Things You Do

Richard H. Pfau

Paragon House 2017, 384 pp.,
\$24.95, p/b.

■ Emotional Rescue

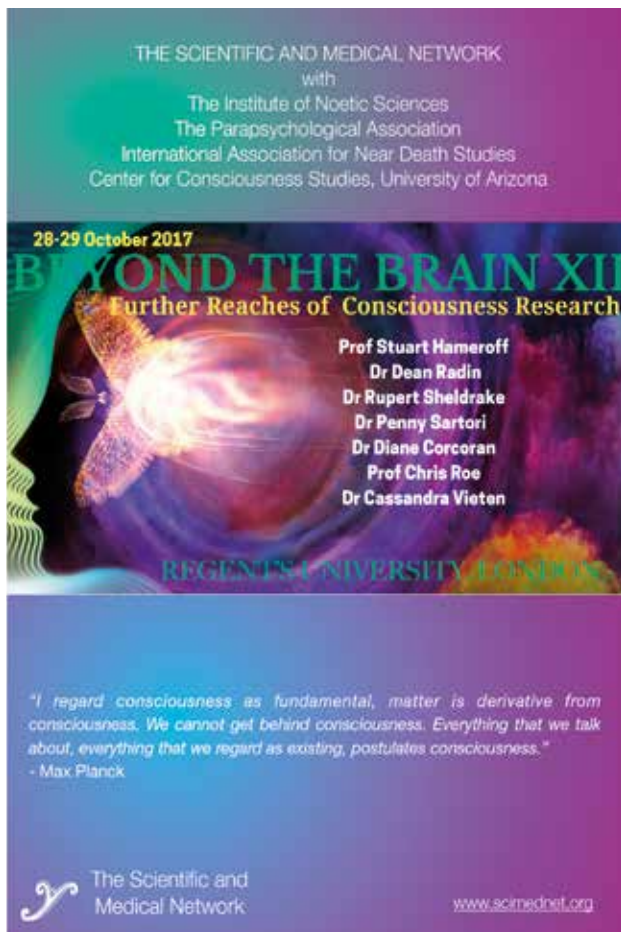
Dzogchen Ponlop Rinpoche

Tarcher Perigee 2017, 253 pp., \$15, p/b.

■ We Know All About You – the story of surveillance in Britain and America

Rhodri Jeffreys-Jones

Oxford 2017, 290 pp., £18.99, h/b.



Seneca on Time and Life

It is not that we have a short time to live, but that we waste a lot of it. Life is long enough, and a sufficiently generous amount has been given to us for the highest achievements if it were all well invested. But when it is wasted in heedless luxury and spent on no good activity, we are forced at last by death's final constraint to realise that it has passed away before we knew it was passing. So it is: we are not given a short life but we make it short, and we are not ill-supplied but wasteful of it... Life is long if you know how to use it.

You are living as if destined to live for ever; your own frailty never occurs to you; you don't notice how much time has already passed, but squander it as though you had a full and overflowing supply — though all the while that very day which you are devoting to somebody or something may be your last. You act like mortals in all that you fear, and like immortals in all that you desire... How late it is to begin really to live just when life must end! How stupid to forget our mortality, and put off sensible plans to our fiftieth and sixtieth years, aiming to begin life from a point at which few have arrived!



The Scientific and Medical Network is a leading international forum for people engaged in creating a new worldview for the 21st century. The Network brings together scientists, doctors, psychologists, engineers, philosophers, complementary practitioners and other professionals, and has Members in more than thirty countries. The Network is a charity which was founded in 1973 and became a company limited by guarantee at the beginning of 2004.

The Network aims to:

- *challenge the adequacy of scientific materialism as an exclusive basis for knowledge and values.*
- *provide a safe forum for the critical and open minded discussion of ideas that go beyond reductionist science.*
- *integrate intuitive insights with rational analysis.*
- *encourage a respect for Earth and Community which emphasises a spiritual and holistic approach.*

In asking searching questions about the nature of life and the role of the human being, the Network is:

- *Open to new observations and insights;*
- *Rigorous in evaluating evidence and ideas;*
- *Responsible in maintaining the highest scientific and ethical standards;*
- *Sensitive to a plurality of viewpoints*

Network services

- *Network Review, published three times a year*
- *Monthly e-newsletter for members with email*
- *Promotion of contacts between leading thinkers in our fields of interest*
- *A blog discussing current and controversial topics and science, medicine and spirituality (<http://scimednet.blogspot.com>)*
- *A website with a special area for Members including discussion groups*
- *Regional groups which organise local meetings*
- *Downloadable MP3s from our conferences*

Network Conferences

The Network's annual programme of events includes:

- *Three annual residential conferences (The Annual Gathering, Mystics and Scientists and Beyond the Brain alternating with The Body and Beyond)*
- *Annual residential conference in a Continental European country*
- *An open day of dialogues on a topical subject*
- *Evening lectures and specialist seminars*
- *Special Interest Group meetings on themes related to science, consciousness and spiritual traditions*
- *Student concessionary rates and some bursaries available*

Joining the Network

Membership of the Network is open to anyone who wishes to explore some of the most difficult questions of our time in concert with a community of like minds. Student members must be studying towards a first degree engaged in full-time study.

Subscription Rates

Membership of the Networks costs £60 (with printed review). Please contact the office for further details. £36 electronic and undergraduate student membership free.

Membership Applications

To request a membership application form, please contact:

**The Network Manager,
The Scientific and Medical Network,
151 Talgarth Road,
London W14 9DA, England
Tel: +44 (0) 203 468 2034**

Email: info@scimednet.org

www.scimednet.org