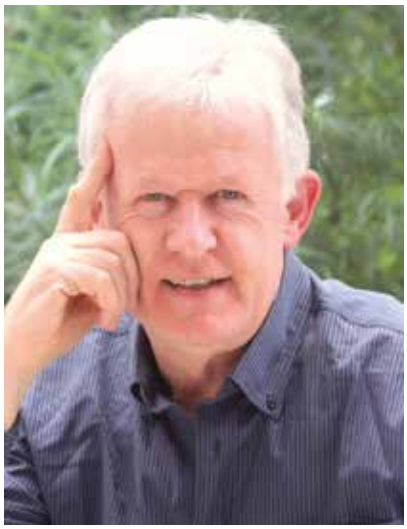
David Bohm & Ilya Prigogine Centenary Meeting

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 Paolo, 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, **Vasilieios 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 Poincare'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 interwining 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 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-Zhabotisnki 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."

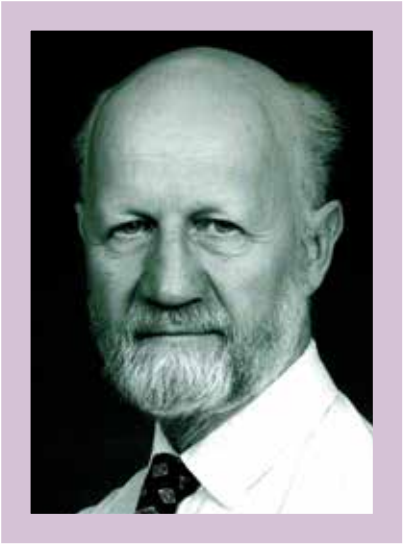
Peter Allen then shared what he deems to be his two good ideas, which are: (1) evolution occurs through structural instability, when novel actions, through internal heterogeneity, micro-diversity, error and so on, take place, allowing new populations and structures to emerge, and, (2) for the innovation 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.

Peter Hardwick and Janine Edge

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.*



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 as 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 Exeriences' (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 to 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 hyphi), 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.

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

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.*