The Scientific and Medical Network

Beyond the Brain XI Conference

21st - 23rd August 2015

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Introduction

We live in a time when it often seems as though materialism and a very mechanistic way of thinking about the world seems to have become the fashionable norm. Most of our relationships to business, each other and other nations seems to be driven by fear and controlled through a currency that we call money that is bartered in a kind of international gambling casino that is quite out of touch with the creative forces of life. It has to be acknowledged that the tiny little sensory windows through which we can see, hear, feel, taste and smell, are extremely limited in comparison to the infinite spectrum of energy and information that links everything together and transcends time and space. It was a revelation to be able to listen to people of intellectual standing who were able to talk authoritatively about ways of thinking that related to what it is to be a human being with a moral compass and an awareness of being a product and a part of the greater universe.

***Professor Richard Silberstein**, Swinburne University of Technology, Australia*
'The Creative Brain, a Post-Materialist Perspective'

Professor Silberstein talked about the creative brain from a post-materialist perspective. In his view, nearly all the people he listed (of which a great number were outstanding inventors, scientists, artists, politicians and military leaders), if they were around now, would be labelled as suffering from ADHD. Leonardo da Vinci created thousands of pieces of art and invented many different things but only completed 14 of them.

Studies using MRIs of the topographic areas of the brain that are associated with different kinds of activity indicate that ADD is associated with inspiration and greater creativity. It is also associated with dreaming and daydreaming, and an ability to connect with many other areas of the brain.

In his view, consciousness is not just to do with brain activity. The brain is simply the medium through which it occurs. He quoted statistical data relating to nine different pieces of independent scientific research on pre-cognition which collectively indicate (to a level of significance of 10^{11}) that precognition happens. Precognition is when we are aware of something before it happens.

This is not consistent with the generally accepted laws of physical science. In his opinion, "Consciousness may be an irreducible component of the universe, a channel to the deeper transpersonal connection to every bit of the physical world around us."

Dr Ulisse di Corpo and Dr Antonella Vannini
Syntropy and the Attraction of Love: a Possible Explanation of Non-Locality and Retrocausality'

Retrocausality is considered by materialist scientists to be inconsistent with the laws underlying unitary theories of the universe: the quantum theory and the relativity theory. Ulisse and Antonella pointed out that, although it is widely accepted that each of these theories is able to give a general explanation for certain observable, measurable realities in physics, they are irreconcilable. It has so far been impossible to unite these two different theories into one unitary theory.

They quoted a paper by Luigi Fantappie (1901 - 1956) - 'The Unitary Theory of the Physical and Biological World', first published in 1942 and suggested that we live in a super causal universe, governed by both causality and '*retrocausality',* and that life is caused by the future. This concept would explain 'BLACK HOLES' where the light cannot get out because it is going backwards in time. Although the presence of black holes explains a great deal about why the galaxies do not fall apart, mechanistic scientific theory as no explanation as to what they are and how they come to exist. Einstein used the term *'supercausality'*. Being aware of the conflict that this was to promote between science and religion, he chose not to pursue this path.

Ulisse and Antonella reported that there were a great number of other experiments which proved to a high degree of statistical certainty that precognition does occur and can be measured.

They suggested that:

- the brain is linked to consciousness: the visible, sensory, physical, causal, entropy, disorder, asyntropy, things that are objectively quantifiable
- the heart is more associated with the autonomic nervous system and the qualities of intuitiveness, syntropy, precognition, subjectivity, feelings, and super-consciousness, the invisible - it is a kind of life force that draws things together, creates evolution, order and complexity

'CONFLUENCE' is the joining together of these two opposites which could be described as a state of peace.

Prof Marilyn Monk
Conscious Constructive Control of the Self: Epigenetic Gene Programming and the Alexander Technique

What determines who we are:

- genes we inherit – nature?
- genetic reprogramming (genes can be turned on and off)?

Genetic reprogramming can still have an impact on future generations, including epigenetic modification from ancestors, pregnancy, birth and upbringing, all of which can affect us in many different ways. For example, example of this is found in the children born to Dutch women who were starved by the Nazis during the war. These children became obese as the result of epigenetic changes that their mothers experienced as a biological response to help them store and make the most of every bit of food that they were able to find.

In the modern world, many people eat too many high energy foods loaded with sugar, fat and refined carbohydrates, and deficient in essential nutrients. In addition, they undertook insufficient physical activity. This has resulted in one in three children now being labelled (in a medical sense) as obese. We still have the genes for growing feathers and producing reptilian scales.

She explained that we only express a tiny little bit of our genetic inheritance. We still have the genes for growing feathers and producing reptilian scales. Do we have a say in it? What regulates the epigenetic influences of turning genes on and off (Lamarckian inheritance) What about our inner environments?

IMAGINATION and BELIEFS bring about profound changes in our health and wellbeing. Our bodies are constantly changing in relation to what we are thinking, imagining or remembering. In fact, these thoughts can have as big a response neurologically and physiologically as the actual external physical environment. Many of the most prevalent diseases in our society today - such as cardiovascular disease, stroke, cancer, obesity, diabetes and depression - are mostly the result of lifestyle choices, and they are completely overwhelming the NHS. She asserted that we can change our responses. We are able to re-programme our genes via epigenetic processes that are driven by the mind. So why are such turning points so rare? What are the barriers to change?

- HABITS: behaving like stimulus response machines
- FAULTY SENSORY PERCEPTIONS: what is familiar feels right.

Marilyn believes that we do have some freedom. “We are what we think” and that we tend to get what we focus on. A directed mind is the most powerful resource that we have. It can be as powerful as any drug and certainly can enable us to change the future.

She was a living example to us all. She said that we should never use the ward “TRY” as it causes stress in the body. Being no spring chicken and despite suffering from a number of medical conditions, she had found the Alexander Technique enabled her to overcome much of the pain and disability in a way that enabled her to carry on with her life and work. Without it, she would have been confined to bed.

In her opinion, “Modern medical science does not give attention to people getting better. It tends to study what goes wrong”.

Professor Alfred Mele
Free Will and Neuroscience: What Do Old-School and New-Wave Studies Show?

With the help of a fascinating series of slides Professor Mele was able to build up a picture of the many interrelated factors that have a bearing on influencing how we think about things and relate to the choices, decisions, actions and responses that are influencing our behaviours from moment to moment.

All the interconnecting arrows involved in explaining the way in which our beliefs, the selection of information, the way in which it flows and the kinds of information that are involved in taking the actions that we do was clearly illustrated.
I have to admit that the amount of information presented and the speed in which the slides were shown did not give me the time to make notes that would in any way do this thought provoking presentation justice. But in summery they seemed to amount to:

INTENTION -> ACTION -> OUTCOME

These factors could in turn be influenced by MOTIVATION. Collectively thee elements could lead to a SENSE OF ACCOMPLISHMENT. At different stages in the process, the influences of CHOICE and BELIEF could have a directional effect on the outcome.

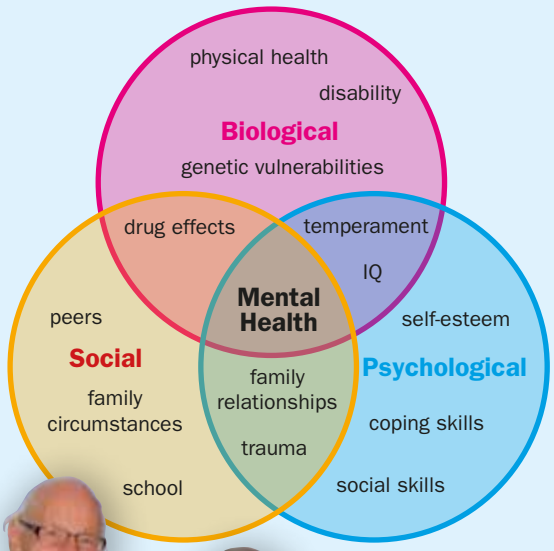
Dr Alison Armstrong, Present Minds
Paying Attention: How Mindfulness Relates to Habits

MINDFULNESS: PAST < - > PRESENT < - > FUTURE:

- present moment awareness
- attention
- empowering
- self-sufficient
- improves judgment
- facilitates choices
- Is secular but of religious origin
- BIOPSYCHOSOCIAL*
- relates to mind, body and environment

PRE-CONTEMPLATION < - > CONTEMPLATION < - > PREPARATION < - > ACTION < - > MAINTENANCE

The biopsychosocial model of health



Professor Richard Davidson
Educating the Mind and Heart: Perspectives from Contemplative Neuroscience

Altruistic behaviour changes the brain. It improves people's health physically and biochemically. Markers for inflammation were much less for meditators.

"Memories are constructs. You can go back to them and change their variance."

Research on 'delayed gratification' - the Marshmallow Experiment being the classic, most well-known study on this subject.

Hard work and determination is a much better predictor of academic success than measures of IQ.

The quality of self-control in children was a good predictor of future health and happiness as well as material success. One study found that, by the age of 32 years, such children were on a yearly basis an average $65,000 better off than their counterparts who had not learned these habits as children.

People who went through a quality pre-school programme of 'kindness education' for 12 weeks improved their ability to cope with delayed gratification and made significant improvements in their school grades compared to controls. The qualities of compassion and perseverance both improved.

It was estimated that $1 spent in this way was resulted in a $7 saving of public investment. The authorities refused to respond or to take this evidence on board.

The Divided Brain and its Deeper Meaning: The SMN in Jamaica, 2016

Alison Elliot

Frenchman's Cove has never been simply an exotic holiday resort. It was the setting for a film of *Lord of the Flies*; it was a hideaway for those burdened with the pressures of celebrity status; it was the place where Ian Fleming wrote his first James Bond novel; and, for over a decade, it has been the setting for an annual conference hosted by the Scientific and Medical Network. After a couple of hurricanes and decades of mixed fortunes, it has an air of shabby chic, but the accommodation is still generous and the setting is still spectacular – lush vegetation, expansive parkland, herons and egrets dotted over the grass and Caribbean waves lapping its beach.

The 2016 conference was led by **Iain McGilchrist**, author of *The Master and his Emissary*, which is a study of the way in which the two halves of our brain work together, the dominance of the particular functions of the left hemisphere, and the reflection of that imbalance on our thinking about social and cultural matters. Iain himself has a big brain: he has the distinction of having three times been a Fellow of All Souls, Oxford, and his academic interests have ranged from English Literature to Neuroscience. His first loves were philosophy and theology and he spent twenty years as a psychiatrist. He was therefore well placed to lead a wide ranging and rich discussion over the eight days of the conference.

To begin with, he set about pinning down the different functions served by the two hemispheres. This isn't straightforward, because the brain operates as a whole and, in normal circumstances, the hemispheres work together. However, in certain clinical cases, such as stroke patients, the dominant features of the hemispheres become apparent because one hemisphere is not functioning normally, and Iain used cases from his clinical experience to illustrate the points he was making.

A strong picture emerged of the different difficulties stroke patients had, depending on which hemisphere had been impaired. From the evidence, you could see that the left hemisphere dealt with rationality, while the right dealt with reason; syntax was the province of the left, while poetry and metaphor needed the right; the right conjured up the big picture and took account of context, while the left got on with sorting out logic. This was neatly summed up in the reactions to a false syllogism: *all monkeys climb trees, porcupines are monkeys, so porcupines climb trees*. People with a right hemisphere stroke, who were relying on their left brain, thought the conclusion must be right, because the form of the argument was OK, while left hemisphere patients concluded it was wrong, because they did a reality check and realised that porcupines are not monkeys.

Once you recognise that these differences adhere to a pattern, you begin to see that many of the difficulties we encounter in contemporary Western civilisation look suspiciously like a situation where our left hemispheres have become too dominant, as if they have forgotten that they need the balancing properties of the right. Art, music and religion are often regarded as optional extras to lives dominated by rules, logic and a universalism that does not value the particularity of human experience. In the remaining sessions, Iain explored several dilemmas, often with a philosophical slant, within this framework.

For example, where do we look for truth, and what light is shed on the search by this dominance of left hemisphere thinking? For many people, science has a monopoly on delivering truth, with its emphasis on precision and on verifiable measurement – all good left hemisphere qualities. This is OK as far as it goes, but there are limits to the kinds of questions science can answer; it cannot answer questions of purpose, which are more the province of the right brain. Even objective recording of data is problematic. It relies on adopting the decontextualised perspective of a nobody, which is a very specialised way of thinking and requires to be reinterpreted before it can be taken further. Reason itself is bookended by intuition and is often used to justify assumptions that we do not realise limit our understanding. A more balanced approach to truth sees it as an encounter, something we pursue, rather than possess, and this calls for the broad perspective of the humanities.

This need to escape from the limitations of left brain thinking was then taken up in a session exploring God, time and space. Iain described the left brain as a hall of mirrors, from which there is no immediate exit. But systems-thinking tells us that explanation needs to be contextualised, whether we are dealing with community issues or physics. The two hemispheres deal in different kinds of knowledge, variously captured by the distinctions between *connaître* and *savoir,* or between *mythos* and *logos* and it is important to be able to move smoothly from the one to the other.

Overvaluing one kind of knowledge is not a recent phenomenon, as he demonstrated through an analysis of classical paradoxes, such as Achilles and the tortoise, the ship of Theseus and the Cretan liar. A paradox is an indication that you need to adjust your cognitive set and these paradoxes can be resolved by recognising that the whole is not just the sum of its parts, an illusion to which left brain thinking is susceptible. Indeed, clinical studies indicate that perceiving movement as flow, rather than a sequence of points is a hemispheric difference.

In the next session, Iain challenged the adequacy of regarding the brain as a machine, rather than as part of a whole person, emphasising again the limitations that the machine metaphor imposes on our understanding of life. For a machine, a proposition and its opposite cannot be entertained together, but life and nature are characterised by abundant diversity, where incompatibility of ideas and experiences can be creative of new things. Life is a dance, not a set of rules.

Finally, in much the same vein, Iain championed the power of the negative. Out of depression and adversity can come something positive; boundaries which are not too rigid can sustain freedom; beautiful sculptures such as Michelangelo's prisoners are formed by taking material away, not by putting it together; evolution can be seen as the outcome of failed experiments. The asymmetry of the brain is important because it allows for the slight imbalance that enables development to begin.

As you can see, the topic of the conference set the scene for rich discussion, both in the scheduled sessions and over meals and excursions. The day started with opportunities

for meditative exercises and there were additional papers presented on Jungian archetypes and crop circles. As participants, we had a wide range of backgrounds and interests – various forms of psychology, finance, renewable energy, biochemistry, medicine, organic farming – and bonded well over the nine days we were together. Conversation flowed smoothly over lunch at the beach café, in the bus that took us into Port Antonio to raid the cash machine, and in restaurants in the evenings. We danced to live music in Woody's Burger Bar, watched mesmerised by the humming birds at Goblin Hill, relaxed on rafts as we were punted lazily down the Rio Grande River and got totally wet negotiating the waterfall at Reach Falls, despite being so elderly! After dinner, we congregated in one of the villas, sang to Di's guitar, drank Pina Coladas and Rum Punch and tried to learn rounds and madrigals. All parts of our brains were fully exercised!

On returning home, the discussions stayed with many of us. The idea of left brain thinking being too dominant offers a new way of conceptualising social and political challenges and I found myself seeing it everywhere, in the regulations for essay marking, in the sterility of the debate about Europe, or in a performance of *The Crucible*. Our discussions at the conference had not embarked on exploring how, as a society, we might escape the imbalance that Iain's analysis had identified. Yet, on my return, I was glad to find places where many of the problems we had identified were appreciated and steps were being taken to resolve them. For example, the International Futures Forum has developed a framework for considering how transformative innovation can be introduced into systems that are locked in a dominant model of thinking and action. And a recent study of co-production in public policy design echoed many of the critiques of power and the emphasis on relational processes that kept recurring in our conference discussions. These are examples from my professional world, but I expect other conference colleagues have also found the ideas of the Jamaica interlude resonating in their own lives. It was a hugely enriching experience and thanks are due to David Lorimer, Di Clift, Iain McGilchrist and the Scientific and Medical Network for making it possible.

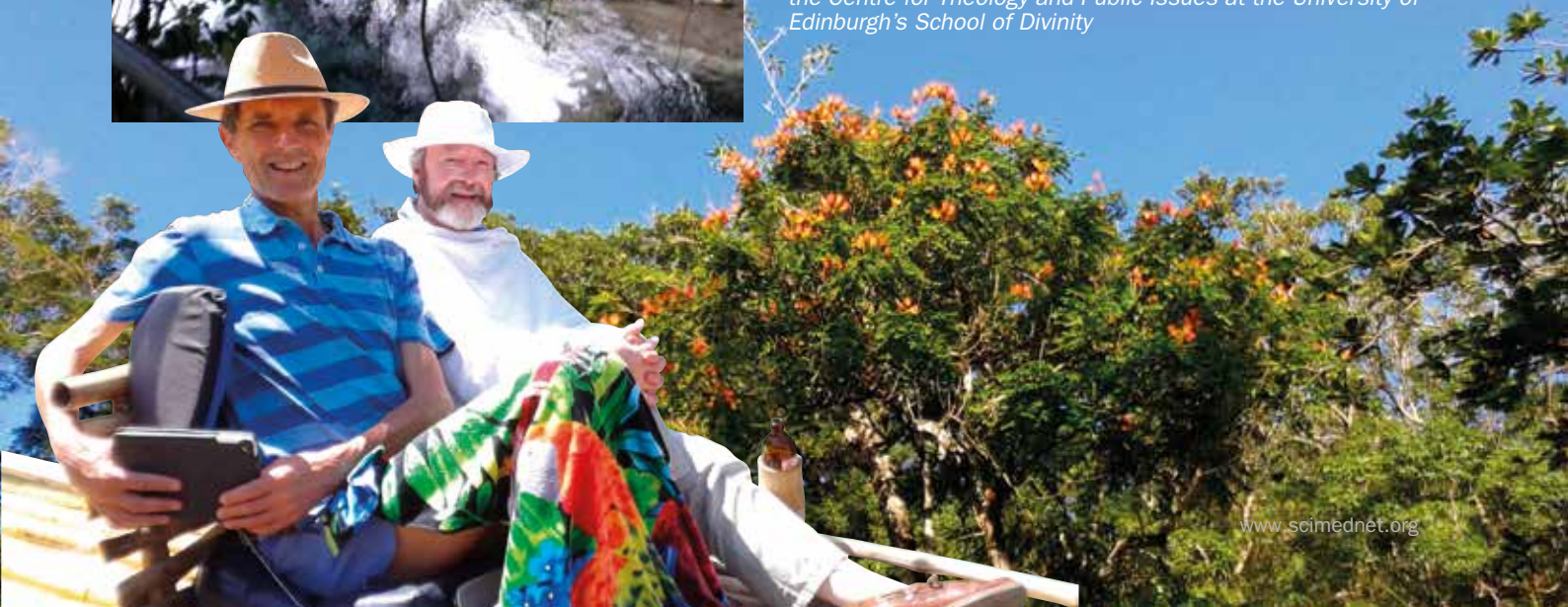
McGilchrist, Iain, *The Master and his Emissary: the divided brain and the making of the Western world*, 2009, Yale University Press, New Haven and London

Durose, Catherine and Richardson, Liz, *Designing Public Policy for Co-production: theory, practice and change*, 2016, Policy Press, Bristol and Chicago

International Futures Forum, www.**internationalfuturesforum**.com/

Dr Alison Elliot OBE

Alison Elliot *has an academic background in mathematics, linguistics and psychology. She has represented the Church of Scotland in various ecumenical contexts, concerned particularly with issues of the interface between religion and social policy, and has chaired the Scottish Council for Voluntary Organisations. She is currently Acting Director of the Centre for Theology and Public Issues at the University of Edinburgh's School of Divinity*



Report on AHSSSE/ SMN conference

27th June 2015

John Franklin

The Scientific and Medical Network joined with the Alister Hardy Society for the Study of Spiritual Experience in an Open Dialogue on the theme, *Science, Religion and Spirituality: Moving towards a Post-Materialist Paradigm?* at the Catholic Chaplaincy in St Aldates, Oxford on Saturday 27th June 2015. The speakers were **Prof. Bernard Carr,** Professor of Mathematics and Astronomy at Queen Mary University, Chairman of the Scientific and Medical Network, and author of *Universe or Multiverse?* (Cambridge University Press); and **Prof. Jeff Astley**, Hon. Professor, Department of Theology and Religion and Professional Fellow of St. Chad's College Durham University and Alister Hardy Professor of Religious and Spiritual Experience at Glyndwr University, Wrexham. The day was opened by **Rhonda Riachi** and **Rowena Rudkin**, the Chairs of the AHSSSE Oxford & Cotswold Group and London Group, who welcomed the speakers, the chairs for the day, **Dr. Peter Fenwick** and **Andrew Burns**, and guests.

The conference was based on a report, a *Manifesto for a Post-Materialist Science,* which resulted from the findings of a group of internationally known scientists from a variety of scientific fields who had come together to challenge the materialist worldview at an Inter-national Summit on Post-Materialist Science in February 2014. This summary report asserted that mind represents an aspect of reality as primordial as the physical world, is fundamental in the universe, and cannot be derived from matter and reduced to anything more basic; that minds are apparently unbounded, and may unite in ways suggesting a unitary one Mind that includes all individual, single minds; that the evidence suggests the survival of consciousness following bodily death - and "that scientists should not be afraid to investigate spirituality and spiritual experiences since they represent a central aspect of human existence", which was the view of Sir Alister Hardy FRS, which led to his founding of the Religious Experience Research Centres that bear his name. (*The conclusions of the International Summit were published in the Scientific & Medical Network Journal, Network Review, Summer 2014*)

In addressing the subject, Prof. Jeff Astley, speaking first, in his talk *Beyond Science and Nature? Beyond Belief?*, explored what has been called 'The New Frontier of Religion and Science' – the territory marked out by developments in neuroscience, and by the metaphysical and theological claims about non-material transcendence. He related this debate to arguments about the nature of spiritual and religious experience, and other challenges posed by reductionist interpretations of science.

Bernard Carr, in an illustrated talk which followed, *Can Science Accommodate Mind and Spirituality?* argued that, indeed, it should. Modern physics claims to be close to a "Theory of Everything" and this would underlie all science in a reductionist perspective. But this neglects consciousness, mental and spiritual phenomena usually assumed to be beyond science. However, indications from physics itself suggest that consciousness is a fundamental rather than incidental feature of the world, and that some sort of post-materialist scientific paradigm is required to accommodate this.

The talks were followed by a dialogue between the two speakers in which they questioned each other on points of relevance ending up agreeing that a post-materialist scientific paradigm and a change of perspective is required.

The afternoon was open to questions and contributions from the floor, put to a Panel comprising the two speakers and Dr. Peter Fenwick and Andrew Burns. Led and chaired by Dr. Fenwick, a most stimulating and interesting discussion ensued.

***John Franklin** AHT.*

Note: Since this conference, the AHSSSE has been merged into the Alister Hardy Trust, its activities and membership now continuing under the name AHT.

Professor Jeff Astley – Beyond Science and Nature? Beyond Belief?

Prof. Astley is an academic theologian with a long-established interest in the debate about the frontier between science and religion. His lecture was a critically supportive response to the Manifesto for a Post-Materialist Science, the outcome of an international summit in February 2014. The conclusions of that summit had been published in the Network Review (Summer 2014) and were distributed to the Oxford conference attenders.

Prof. Astley's opening remarks addressed the meaning of his title and the generally difficult relationship between theologians and scientists. Like other prepositions, 'beyond' indicates direction rather than position. Other key words like 'transcendence' and even 'supernatural' are also often matters of degree. Theologians and scientists have different methods and theories, and theologians are now cautious about commenting on the work of scientists. But when

scientists stray into the area of metaphysical beliefs, this sounds to theologians like a call to arms. The Manifesto for a Post-Materialist Science argues against the concept of nature as something merely material or physical and argues, like Christian theologians from their own perspective, for a place for mind – even if (in this world) it is not wholly distinct from matter.

Ian Ramsey, Professor of Philosophy of Religion in Oxford in the 1950s and 60s, wrote of the existence of a range of 'Mores' – in a pattern, a person, a moral imperative or God – that we may discern as transcending the medium through which they are revealed (a medium which provides the metaphors or models, from what we see 'with our eyes of flesh', for what cannot be literally seen or spoken of). Like para 16 of the Post-Materialist Manifesto, Ramsey insisted on acknowledging 'the empirical' and taking a view that is 'inclusive of matter', while finding room for mind and spirit as well as 'part of the core fabric' and 'a basic constituent' of the universe. This differs from the critiques of evolutionary theory from religious conservatives or sneering social scientists based on an unworthy contempt for the material and our 'brute origins'. Such a viewpoint is equally out of place in scientific understanding as it is in the Abrahamic religions.

Our basic debate is between the 'moreness of mind' recognised by post-materialism and the 'nothing buttery' of a scientific materialism. Prof. Astley is firmly of the former persuasion: for him, mind matters; it is the most familiar and meaningful feature of our lives. Soul, Self and Mind all relate to subjective experience. The 'hard problem of consciousness' is 'how does it feel like to be me?' And how does that sense of being me relate to the grey jelly inside my skull?

Philosophers and theologians down the ages have tussled with the mind-body problem. In recent times, John Searle has argued for a 'first person ontology' that is not reducible to any third person ontology. But his biological naturalism equates the status of consciousness with other system-level emergent properties such as solidity or transparency: powers that are entirely caused by the physical elements of the system. The Christian philosophers and scientists Nancey Murphy, Warren Brown, Malcolm Jeeves and Arthur Peacocke embrace a similar 'non-reductive physicalism': a form of monism for which physical reality is the only substance. In their perspective, too, consciousness emerges through the organisation of parts of the body (brain) at higher levels of evolution, but it is essentially an organization of the physical.

Prof. Astley commented that some of these views lie close to the 'double-aspect' theory of Spinoza and what others call 'neutral monism' – a 'duality without dualism'. It may even imply a pan-psychism (the view that all matter involves some sort of consciousness), although Thomas Nagel complains of this position's 'faintly sickening odour of something put together in a metaphysical laboratory'. Keith Ward has argued that in reductive physicalism, the physicalism 'has in effect been given up', and some sort of dualism 'seems inescapable'. In any case, theists must allow for the possibility of at least one consciousness existing without a body, namely God. For Prof. Astley, it seems that substance dualism is still hanging on, 'if only by theistic fingernails'.

Today, however, many theologians hope for the re-creation of the whole person in a different space-time universe, rather than the survival of a disembodied soul. This is despite the coherent conceptualisation given to the latter view by another Oxford philosopher, Henry Price, who argued that we may experience and act in an afterlife in ways analogous to our experiencing and acting in our dreams. In his *Evolution of the Soul*, Richard Swinburne defends a 'soft dualism', despite the high level of correlation between brain events and mental events in this life: 'mere correlation does not explain', he insists. Price suggested that the soul might work like a light bulb, which in life requires to be screwed into some external power source to function, but may be moved to another 'socket' (reincarnation, resurrection) or even be powered by God without any physical brain at all. Such ideas are consistent with the interactionist dualism supported by Sir Karl Popper, Sir John Eccles, Sir Roger Penrose and others (some of whom argue for a mechanism for mind-brain interaction based on quantum mechanics). Dualism is still a live option, then, though a minority one.

Moving on to consider religious experience, Prof. Astley said that there was now an impressive body of evidence to support Alister Hardy's sense that this is a significant aspect of 'the natural history' of human life. Although Hardy did not think that we should ever have 'a science of the inner essence of spirituality', he would have rejected the current claims of a 'neurotheology' that identifies the causes of such experience entirely within the brain. But could the same argument not be made for our sense experience, with the conclusion that the world around us is unreal?

But the problem of the objectivity of religious experience is more difficult than it is for sense experience, as we cannot apply the same tests against illusion. Nevertheless, Swinburne, William Alston and others have convincingly argued the case for the rationality of beliefs based on religious experience. Prof. Astley listed four particular points of difference between sense experience and religious experience that should still give us pause.

1. Spiritual experience is not universal; perhaps because it may requires a special capacity in the receiver.

2. People may also have to be in a special 'spiritual condition' to have religious experiences, though this goes against much evidence from survey work – unless human need or distress may be regarded as a spiritual condition.

3. Agents are free to perform or withhold revelatory experiences, hence such experiences may not be repeatable or testable in laboratory conditions. For this reason, an exact science of the activity of the mind will probably never be possible.

4. Agent explanations are always incomplete: we ask *why* as well as how they happen. We expect to find personal intentions, purposes and motivations behind such experiences.

Prof. Astley pondered the application of the above to reductionism: as a *research strategy* that understands higher levels through knowledge of lower ones. He welcomed John Searle's claim that there is no such thing as 'the scientific world'; there is just a world that we must do our best to explain. Therefore '"science" does not name an ontological domain; it names rather a set of methods'. And science implies no metaphysics. Raymond Tallis thinks that philosophical positions such as behaviourism confuse a methodological decision – to make science easier or more fruitful or more scientific – and a discovered truth about the world'. Whatever can be caught by the scientific net cannot be God; yet positing a 'God of the Gaps' to explain explanatory puzzles in nature can lead to bad science and bad theology – as, for example, with Intelligent Design Theory.

Can science 'do subjectivity'? This is not seen to be the job of science as currently constructed, and Prof. Astley still wonders whether it should be the task even of a reconstructed science. According to the theologian John Haught, there may be no objection to 'the fact that science itself cannot talk about subjectivity' as long as we can make room for it with a 'stereoscopic' philosophical vision (such as was embraced by Whitehead, Teilhard de Chardin, Polanyi or Lonergan) that 'embraces both the inside and the outside of things'. This wider empirical *approach* is one that would be more honest, objective and true to the facts. We want researchers to be open: observing effects, and even accounts of unusual causes, with an open mind. But we don't want to endorse gullibility, but rather *critically* openness. For a window stuck open is as bad as one that is stuck closed.