

## INTRODUCTION TO THE SPECIAL ISSUE

Seán Ó Nualláin Ph.D.

**ABSTRACT:** This is the introduction to the second special edition of *Cosmos & History* on Foundations of Mind (FOM), being the proceedings of the conference at the University of California, Berkeley held between 13<sup>th</sup> and 15<sup>th</sup> August, 2015. The sub-theme of this conference was A Dialogue of World-Views.

**KEYWORDS:** Foundations of mind; College fees; PI

The foundations of mind (FOM) project is actively producing solutions to 21<sup>st</sup> century crises in education and research and, through a new approach to mind and society, to resolving ecological and social concerns. It runs an annual conference – to date, at UC Berkeley – and an online college. It produces peer-reviewed work in neuroscience, HCI, cognitive science, biology and philosophy that have received the highest accolade of being accepted both to be taught for credit and formally academically sponsored at both Stanford and UC Berkeley. Indeed, in the case of these two great American institutions, the request for our participation has come from the most appropriate powerful source – the students themselves, who successfully petitioned the administrations.

We argue that it is obscene that students leave college carrying debt in the high five figures when the bulk of the coursework can be done for a fraction of the cost online, and when subjects so central to the future of technology (and indeed humanity itself) as cognitive science are available in only 17 US states. We have resolved this issue by producing a full online programme in cognitive science, the first such in the world including also our original Stanford courses endorsed at the highest level there.

We argue that it is ridiculous that the US is about to follow Europe and invest \$ billions in a massive neuroscience project that is doomed to failure. While in the EU over a thousand scientists signed a letter of complaint, the US Brain project is as bad. In particular, the naïveté about the stimuli on which the brain functions – in our

published work, we correctly point out that there is minimal structure – has resulted in crude linear models of the neuron.

While we have redressed this, using veridical computer simulations; we have also taken into account that symbolic behaviour arises from greater structure that the US Brain project can muster. Finally, the institutional configuration of current science, whereby a PI untrained in the cutting –edge of the discipline supervises up to dozens of students daily reminded of their PI's ignorance by browsing the web, is inefficient.

We work on enablement of human intelligence, from all levels beginning with the work on mentally and physically challenged that brought us to Stanford in the first place, to studying the extent to which reduction of the study of social forces at colleges to consideration only of how they are processed in the brain – independent of the aims of politicians and business magnates – cements an unequal and immoral power structure in society. Our work has always had a cultural and social component.

Finally, we believe that, while many interpretations of quantum mechanics (QM) are egregious, QM does allow for the absolute existence of human freedom. We also believe that the current damaging culture clash in US society between “New atheists” and their “religious “ opponents - who often are forced into inappropriate political stances by an intuition that there are sources of truth other than Victorian science - can be healed.

The intellectual keystone for this healing is precisely that by which we successfully have addressed problem in genomics and AI as well as neuroscience – the notion that ontological distinctions, differences in the level of being from the physical to the biological and onward – have computational as well as personal consequences. While this reparse of nature allows us do world-class research and education at a fraction of the cost of even the great American universities, it also allows us a broad church in which those who have never attended church are also welcome

FOM is an independent research association that seeks to examine mind both within and outside terms couched in contemporary psychology. This arises from an intuition that reducing social forces to their being framed solely in terms of how they are processed within the individual has achieved what politicians have been trying to do for centuries; denying that what they do is political. While the participation of APA psychologists in torture is in certain ways a logical consequence of this, there are more immediately pressing computational issues.

In particular, in order to be complete, techniques for studying mind must be formally adequate for the task, and must reflect the formal complexity of the higher achievements of mind. Thus, scalar descriptions like fmri cannot possibly be a

---

complete description of a system that works with 4<sup>th</sup> order tensor. Moreover, the very invasive techniques suggested by the “Brain” project will fall by the same sword.

With this in mind we focus on three separate and yet interrelated themes;

1. The refusal to reduce mind to the terms of whatever is contemporary academic psychological theory;
2. A radical assertion of human freedom;
3. A reappraisal on nature that stresses ontological distinctions

FOM is secular, non-partisan and its first two conferences were run without corporate or state funds. An unsolicited corporate donation was used to throw a party with free food and drink for the participants – and an Irish uilleann piper!

We insist on the right of free inquiry. We are also aware that humans have struggled with explaining mental action for thousands of years, and indeed that the products of mind are available around us as the arts, as science, and as social organization. In recent years, there indeed has been progress in neuroscience and in computer simulation of behavior. There also has been a growing sense through quantum mechanics that something is missing in our objective explanations of physical nature. This somehow seems to be linked with the mystery of subjectivity, why each of us feels that “I am”. Finally, there has been a surprising decline in innovation despite the hype of the Internet.

We believe that all these issues come from the same source. The proper scientific study of mind must assert that, even if we succeed in a final description of all mental process, democracy requires that we do not impinge on the dignity and autonomy of the individual. It reveres the attempt of the artists to aestheticize our daily experience, and of the spiritual leader to edify us. However, it also refuses to accept any premature closure on the central questions of its subject, be they claims that a solution to the so-called “hard problem” of consciousness will resolve all issues of mind, or that simplistic neural models and data provide explanations.

It argues that the study of mind as an informational and representational system rests on the shoulders of giants, not just in the mental sciences, but in physical sciences. So whatever models we come up with must reflect in complexity the capacity of the greats like Einstein. They must inherit from physics and biology the constraints and properties of those subjects – for the brain is after all a physical object. Yet it must also explain the structures and processes with which physicist and chemist have engaged the world.

Finally, we remain open to the idea that reality is an entangled nexus and that we cannot truly perceive without changing it. That has of course been accepted in physics

since the 1930's; but the consequences may be quite different than you imagine. We invite you to our conferences, courses and workshops to explore this

At this conference, we have a dialogue between many world views, not all of whom are in these proceedings. We have a thoroughgoing dualism by Henry Stapp; at the other extreme, researchers from the lab of the late Pat Suppes have continued his lifetime's project of axiomatization to the point, if necessary, of introducing negative probabilities to preserve the ethos of objective description. We have an emanationist system, originally introduced into the west by Plato's Timaeus, represented in Jacob Needleman; the view that a reality underlying all forms can directly be reached is represented by non-dualism/advaita

The task of re-enchanting nature has been taken on by Stuart Kauffman; his work is resonant with Frijof Capra's campaign for a "Systems view of Life". Finally, the issue of what constitutes a magisterium, a teaching authority, is taken on by my own work seeking a reparse of nature, based on reflecting ontological divisions. A further issue is how this can be reflected in the academy to produce graduates unsaddled by punitive debt, technically accomplished, yet free of the notion that their use of certain phrases has granted them an entrée into understanding of their society without further effort

There is a very good description of the conference here;

<https://cynthiasuelarson.wordpress.com/2015/08/30/reparsing-nature-at-foundations-of-mind-ii/>

## **The account below gives a session by session outline of the themes:**

### METAPHYSICS

#### *Living the Quantum Paradigm*

This session invites interdisciplinary dialogue and exercises addressing the underlying philosophy and logic of quantum physics, and approaches to living in accordance with quantum principles. Questions about the nature of reality require inclusion of quantum physics beyond the historical "shut up and calculate" approach, which has provided multiple interpretations of quantum physics without agreement on the philosophical quantum paradigm foundation. Whereas quantum physics challenges scientists to comprehend whether, how, or where a boundary between classical and quantum physics may exist, philosophy promotes critical thinking and clarity about

arguments, terminology, and ideas. Scientific philosophy can lead the way toward development of new theoretical approaches and alternate interpretations, while finding conceptual weak points in theories and arguments.

Experiential approaches to living in accordance with quantum principles provide unique opportunities for appreciating the feeling of levels of consciousness and the dream-like nature of reality. In Vedanta, the body is a synonym for sensations and the mind for thoughts; both are presented to consciousness, the fundamental eternal reality. Yet exercises are also proposed to maintain this insight, which otherwise does not persist.

#### *Session on Ontology*

It is our belief that much grief, and waste of taxpayers' money, could be avoided with an appropriate re-parse of nature that acknowledges there are rifts between the quantum and classical physical realities, and further ontological discontinuities at the biological and intentional thresholds. It is further our belief that the relative failure of the HGP, and imminent debacle of both the Obama and “Blue brain” neuro initiatives, are due to precisely this unwillingness to cater to ontology. Moreover, even incessant crawling of the web has failed to yield anything other than at best mediocre results in machine translation.

Finally, this tendency manifests itself in the social sciences with psychologism, the reduction of exigent social dynamics to cognitive and other psychological theories of how these forces are processed. This has led on the one hand to the non-engaged intellectual; on the other, to bewildering interpretations of postmodern thinkers geared mainly to giving instructors a free pass.

This session invites papers that address technical issues in science and the arts under this rubric. Consider the question of authentic political engagement. In particular, the latter category of papers may explore the fact that reality is related to consciousness and yet transcends it, As we act, we become aware of being objects in a social space that yet can be magicked away in a classroom.

#### *In the absence of theory, return to Villa Serbelloni?*

Several decades before the HGP was initiated, a diverse group of scientists convened at Villa Serbelloni to tackle the troubling lack of theory in biology. The solutions they proposed were various, from an untroubling emphasis on hierarchy to a reinstatement of Aristotelian material and final causality to a network-based approach to the interaction of metabolism and genetic code. It is fair to say that the HGP to its cost –

and that of the public who paid for it – ignores these guidelines. Is it time for a fresh period of reflection?

## SCIENCE

### *Session on Probing subjectivity with neuroscience; non-invasive probes into subjectivity*

While a century ago dreams were regarded as revelatory of true psychic dynamics, a later generation took to drugs for that same purpose. A new ethos is stressing invasive methods that essentially involve consent forms being signed by patients already stressed by imminent surgery.

While the results have been mixed, the fact remains that there already exists an array of tools that can shape experience without the risks of drugs or surgery. This session will investigate these tools, like TMS and EEG, and their results. It will feature discussion of synchronized gamma and whether it indeed is the signature of consciousness that many claim it is.

### *The Real Madrid Model for universities; superstar academics, free transfers*

A new model on the university is being developed in Europe and Russia; superstar academics are to be flown in as adjunct profs, if only for a few months a year, and tenure is to be excised along the lines successfully implemented by Thatcher and Major. An executive is to be created that removes power from the academic community to centralize it into fewer and less accountable hands. While this model reached its nadir in Ireland in the aughts, other countries are now emulating it. This panel attempts to dissect it and propose alternatives.

This is particularly relevant as the 50th anniversary of the free speech movement at Berkeley comes to a close. In keeping with the themes of this conference, Mario Savio was “interested in the connection between quantum mechanics and free will.” (Cohen, 2009 P 275)

### *Quantum entanglement, negative probabilities and neural oscillations; the sublime final achievement of the great American polymath Patrick Suppes*

Like his fellow-American Frank Lloyd Wright, Pat Suppes experienced a breathtaking burst of creativity in the ninth decade of his life. While Pat’s earlier work on economics, psychology and the philosophy of science achieved justified world renown, it is the sustained attack on problems of mind and world that occupied his later energies that we will celebrate in this panel. This work, which is being continued at Stanford, features the highly technical and competent researchers on this panel

---

bringing a wide artillery of techniques to bear on issues of mind, brain, cognition, and epistemology. It is their work which will indicate whether what was being hinted at in Pat's autumn years until his passing in late 2014 is an entirely new language for describing humanity's relationship to reality itself.

#### ECOLOGICAL CONSCIOUSNESS, ENVIRONMENTAL TECHNOLOGY

*Fritjof Capra: The Systems View of Life: A Unified Conception of Mind, Matter, and Life*

Mindfulness : meditation, presence in daily life and high performance in sports and the arts.

While the beneficial effects of meditation to health can perhaps most economically be explained in terms of its measured decrease in brain metabolism, the issue of how to elicit high performance perhaps needs to be re-opened in the context of modern neuroscience. Artists, meditators and athletes will talk about their experience of presence and flow.

© 2015 Seán Ó Nualláin

President, UoI

[president@universityofireland.com](mailto:president@universityofireland.com)