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Psychology, Neuroscience, Religion and Theology – Pruning the ‘isms’ and Defining the Conceptual Framework

Anyone who has edited a science journal is all too aware of what conscientious referees can say about what author(s) believed was a good paper. Commentators must be different from referees since those commenting on my Boyle lecture were constructively critical and helpfully perceptive. They note what could have been said and what next needs to be done. Thus the contributions of Warren Brown, Peter Clarke and Fraser Watts are both distinctive and show significant overlaps.

Warren Brown, a neuropsychologist, aims to ‘enhance the resonance’ which he sees created by my lecture. In doing this he examines some of the major ‘isms’ available in the marketplace of the mind-body or mind-brain discussions and argues that emergence should be a ‘critical concept’ in deciding between alternatives. He also looks at moral agency in light of developments in contemporary neuroscience.

Peter Clarke, a neuroscientist, also critiques the ‘isms’ that offer views of ‘how thoughts and emotions relate to the physical brain’. He classifies them into two categories, substance dualisms and substance monisms. He suggests that fuller attention to the whole spectrum of neuroscience would have underlined the need to deal more fully than I did with the mechanistic implications of neuroscience.

Fraser Watts, a psychologist/theologian, offers a ‘fuller conceptual framework’. He reminds of the important distinction to be made between religion and theology. He argues that when focusing on the psychology-theology interface, a key issue is the implications of the relevant science for theological anthropology. In his view, ‘dual aspect monism can be reconciled with systematic theology in a more satisfactory and comprehensive way than either non-reductive physicalism or emergentism’.

‘Isms’ in the mind-brain marketplace

John Polkinghorne¹ has recently reminded us that whilst ‘Much has been done to identify the neural pathways by which the brain processes inputs, [but] there still seems to be a vast gap yawning between this and the simplest mental experiences, such as seeing red or feeling pain’.

1 Polkinghorne, J. ‘The Future of the Science and Religion Debate’, Guest Editorial, *Science and Christian Belief* (2008) 20 (2), 130-132.

Many 'isms' are offered to label the mysterious mind-brain links. Is it then just a matter of 'you pays your money and you takes your choice'? All respondents agree that it is not. They argue that one long-endorsed variety, 'substance dualism' is having an increasingly hard time in the face of accumulating evidence of the intimate observed links between brain processes and perceiving, remembering, thinking or feeling.

Peter Clarke's grouping of the 'isms' into substance dualisms and substance monisms is most economical. He does caution, however, that this, for some, is an oversimplification. For example, he cites Philip Clayton, who does not believe that emergent dualism is identical with dual aspect monism and therefore cannot be properly subsumed within that group.

Clarke believes that most who endorse substance dualism views draw mainly on work in neuropsychology. That, he says, seldom does justice to the mechanistic implications of 'biophysics, biochemistry and cell biology of neurones, neuroanatomy, electrophysiology of microcircuits, computational science and so on'. Clarke writes that substance dualists 'largely ignore the strong mechanistic implications of these other branches of neuroscience'. This is a timely reminder. He concludes, 'In my opinion the only kind of substance dualism that is still even remotely defensible in the light of modern neuroscience is a limited one, invoking a separate soul acting on the brain only for very particular aspects of our humanity such as free will.'

At this point Clarke independently offers comments that complement those of Warren Brown, though Brown's focus is on 'the range of terms used to label various emergentist positions on the mind-body or soul-body issue'. Clarke, interestingly, apart from the reference to Clayton's views, never mentions emergence, a concept which Brown says, 'is critical to finding resonance between an embodied view of humankind, scientific descriptions of the physical and biological world, psychological accounts of human mental life, and religious ideas about human nature'.

Like Clarke, Brown sees the ultimate choice as between Cartesian dualism and eliminative materialism and he believes that the range of views between these two 'posit[s] some form of emergence'. Brown's summary of the essentials of the various alternative positions is most helpful.

Warren Brown links his discussion of 'emergence' with that of 'complex systems'. In this he finds support from John Polkinghorne² who in his editorial to the last issue of this journal listed the investigation of 'systems of moderate complexity' as one of the likely foci of the future of the science and religion debate. He pointed out, giving the example of Benard convection, that 'complex systems are found to possess astonishing powers of self-organisation that would never have been guessed simply from considering constituent interac-

2 Polkinghorne *op.cit.*, (1)

tions'. Is this, I wonder, a first glimpse of the 'major conceptual revolution' that the philosopher of mind Thomas Nagel was looking for?

Labels, levels and causes

In discussing emergent systems and moral agency, Brown wrote of 'a reciprocal *interaction* between... top-down and bottom-up influences'. Taken out of context this could suggest unintended hints of substance dualism which all respondents eschew. Clarke, for example, points out that a key feature of substance dualism is that 'two fundamentally different types of substance' are involved and that most substance dualists assume that soul and brain *interact*. Hence the use of the term '*interactive* dualism'.

Rather than speak of *interaction* I prefer to see the relation of the 'top-down and bottom-up influences' as an '*intrinsic irreducible interdependence*'. As far as I know we simply have no idea how 'interaction' between the mental and the physical occurs and until we do it is probably wiser to underline the observed 'interdependence' and leave it at that. In doing this I take encouragement from Fraser Watts's comment that, 'The mutual interdependence between the mental and physical that Jeeves proposes reminds me in some ways of the two-way reductionism posed by Michael Arbib and Mary Hesse in their Gifford lectures.' Further support comes from Watts's later concerns about some forms of emergentism when he concludes, 'I have a growing suspicion that Malcolm Jeeves' dual-aspect monism can be reconciled with systematic theology in a more satisfactory and comprehensive way than either non-reductive physicalism or emergentism.'

Warren Brown makes clear how different shorthand labels serve to emphasise different issues under consideration. He prefers nonreductive physicalism which, he notes, has many of the features of dual aspect monism. He comments that nonreductive physicalism 'emphasises that what emerges is a very high level neurobiological (physical) system property *whose causal role in the world cannot be reduced to lower-level processes*'. He is very careful about how he uses the word 'causal'. However, since others are not always so careful, it becomes all too easy to link 'causal' with 'interaction' in a misleading way.

Brown also writes that 'There is a reciprocal interaction between the top-down influences of the emergent mental activity and behaviour of the whole person, and the bottom-up influences of the substratum of neurobiology.'

Reference to '*causal roles*' and '*interaction*' brings to mind wise words by Donald Mackay³ twenty years ago. He expressed a cautionary note when writing of the links between mental activity and brain activity. He said,

I prefer not to call the link 'causal' because normally we use the term cause

3 Mackay, D.M. *Behind the Eye*, Oxford: Blackwell (1991), p.63.

or causality to point to relations of dependence within one conceptual level – one physical force causing another physical force, or one information flow causing another information flow. But the relation now is between the two levels and I think if we call the relationship one of *interdependence* it will be less misleading.

Identifying underlying conceptual frameworks

Fraser Watts, working as a psychologist/theologian, reminds of the burgeoning fields of psychology and religion, and of psychology and theology, and sees the need for ‘a fuller conceptual framework’ into which all the new data may be fitted. To do this he distinguishes between religion and theology. He notes how religion since the nineteenth century has been increasingly studied as a phenomenon that could be approached in a detached, neutral and scientific way. Theology, however, concerns itself with specific doctrines in the different faith traditions. Watts encourages us to maintain a clear distinction between dialogues at the interface of theology and psychology, and those at the interface of religion and psychology. As he points out, my lecture was concerned primarily with the dialogue between psychology and theology and more particularly where advances in psychology pointed to views of human nature which may be consonant with or dissonant with, traditional theological views of human nature. In my full Boyle lecture⁴ (reduced by one third for this published version) I suggested that there were lessons to be learned from phrenology, the brain science of two centuries ago, and the different reactions to it then by Christians coming from their various faith traditions.

Warren Brown notes the wider context of any attempts at psychologising and neurologising about religion: how they sit at the intersection of scientific observations and theories, of philosophical arguments, of subjective experiences, of differing cultural traditions in which they are embedded, and of revelation, including authoritative religious texts. There will be ongoing debates about the relative weights to be given to these differing sources. Brown urges us to seek resonance and to avoid dissonance as the varying sources are brought together. This is not always an easy task but is nevertheless worth attempting.

Peter Clarke, as a neuroscientist, notes that my focus was primarily on what he regards as one sub-discipline of neuroscience, namely, neuropsychology. That is fair comment because the core of neuroscience is indeed based upon the biochemistry and cell biology of neurones, on biophysics, neuroanatomy and so on. However, from my primary perspective as a psychologist, neuropsychology is one of the many contemporary sub-disciplines of psychology alongside other currently high-profile ones such as evolutionary psychology, cognitive psychol-

4 www.stmarylebow.co.uk/?Boyle_Lecture 2008.

ogy, developmental psychology, clinical psychology, health psychology and so on.

A very good reason for Peter Clarke's emphasis on neuroscience is that it is here where much of the philosophical discussion originates though, he believes, all too often it focuses too narrowly on neuropsychology. Clarke agrees that the ghost in the machine is not quite dead but, as he puts it, 'is getting smaller every day'. For Peter Clarke the best conceptual framework we have at the moment is dual aspect monism as strongly canvassed in my Boyle lecture.

The way ahead: tiptoeing through the minefield of a rapidly changing scientific landscape

In the space of the few months since my January 2008 Boyle lecture even a cursory glance at reports in the serious scientific press and the media beautifully illustrates the accelerating progress of research at the mind-brain interface and the growing awareness of its wider implications for the individual and for society.

Consider a few illustrative examples selected since they may have potential implications for our discussions of the psychology, neuroscience, theology (religion) interfaces.

1. The May 2008 report⁵ by the UK's Academy of Medical Sciences on 'Brain Science, Addiction and Drugs' underlined both the rate of advance of research in neuroscience and its relevance to contemporary social problems. The report also, almost as an aside, by implication raised key questions about the nature of human nature with its discussion of cognitive enhancers. It comments '... our grasp of the molecular events underpinning learning and memory do suggest that cognitive enhancement should be taken seriously by bodies such as the Food Standards Agency and the Medicines and Healthcare Regulatory Authority'. A July 2008 major review paper in *Nature Reviews: Neuroscience*⁶ entitled, 'Brain foods: the effects of nutrients on brain function' indicates that the possibility of such enhancement is not speculative scientific hand waving. It is here and now science. Some will quite naturally ask, why then limit it to cognitive enhancement? *Given the accumulating evidence for the embodiment of spirituality should we also seek to restore normal spirituality at times lost in some forms of Alzheimers disease?*
2. In the USA, the National Research Council deemed the wider impact of developments in neuroscience sufficiently far reaching that they pub-

5 'Brain science, addiction and drugs', The Academy of Medical Sciences, May 2008 Report, London.

6 Gomez-Pinilla, F. 'Brain foods: the effects of nutrients on brain function', *Perspective: Nature Reviews Neuroscience* (July 2008) 9, 568-578.

lished 'a guide... on how developments in cognitive neuroscience are likely to affect national security'. The authors are some of America's most highly regarded neuroscientists and psychologists such as Michael Gazzaniga and Elizabeth Loftus. In an October 2008 interview⁷ with *The Psychologist*, Elizabeth Loftus commented, 'In addition to psychologists there were experts in pharmacology, medicine, molecular biology, human-machine interactions, brain imaging and more. We were trying to anticipate where the world might be in the next 20 years... how can we prepare ourselves to respond for the safety of our society? *Is neuroscience really putting our society, including the freedom of religious societies, at risk? Watch this space.*

3. The October 2008 report⁸ compiled by a team of more than 400 scientists assembled by Foresight, the UK government think tank, entitled 'Mental Capital and Well-being', serves to underline yet again that when thinking about the mind-brain relationships any overemphasis on the brain to the exclusion of the mind may be seriously misleading. *Already this report is generating controversy but it underlines the importance of top-down effects which pay proper attention to what it calls our 'mental capital' and to the social contexts in which we live.*
4. One final reinforcing cautionary tale is noteworthy at a time when our media so often show striking coloured pictures indicating which parts of our brains light up when we are engaged in everything from seeing faces, to listening to music, looking at art,⁹ or expressing romantic or maternal love.¹⁰ In an October 2008 paper entitled 'The Truth About Brain Science', Robert Epstein,¹¹ a contributory editor to *Scientific American Mind*, says that, '*Claims are being made about brain research that just aren't true, and they're being accepted uncritically by the press, the public policy makers and even the courts.*' Specifically, and *this is very relevant to the increasing numbers of studies of the brain correlates of spirituality*, he comments 'The vast majority of brain studies being conducted these days are correlational...' And the result he says: 'The problem with many headlines these days is that they automatically claim, based on the latest correlational brain study, that we have identified the cause of... this or that.' 'But', he concludes, 'finding correlations isn't the same as finding causes, and finding causes is often quite difficult.'

7 'Neuroscience for Spooks', *The Psychologist* (Oct. 2008) 21(10), 834.

8 'Mental Capital and Wellbeing', <http://news.bbc.co.uk/1/hi/health/76077.stm>

9 Zeki, S. *Inner Vision: An Exploration of Art and the Brain*, Oxford: O.U.P (2000), p. 219.

10 Bartels, A. & Zeki, S. 'The neural correlates of maternal and romantic love', *NeuroImage* (2004) 21, 1155-1166.

11 Epstein, R. 'The Truth About Brain Science', *The Skeptical Psychologist, Skeptical Inquirer*, (Sept/Oct. 2008) 32-33.

Mapping the future

Whether it is Warren Brown's search for resonance between the differing relevant inputs he lists, or Fraser Watts's construction of a more 'comprehensive framework', we shall need to ensure, if we are to avoid the alternative of eliminative materialism that Peter Clarke warns of, that we hold in balance and give due weight to all the varied aspects of our mysterious human nature.

One way of mapping the relationships between these different aspects to guide our future studies may be to use a Venn diagram. Two decades ago¹² when summing up at the end of a NATO conference on Aspects of Face Processing I suggested that the areas of overlapping interests, between, in that instance, Cognitive psychology, Neuropathology, Neurophysiology and Neuropsychology, could be clarified by using a Venn diagram. The vast amount of research since then suggests that that is one productive way to proceed. I think the same could profitably be done today for neuroscience, psychology, religion and theology.

12 Jeeves M.A. 'An Overview. Complementary Approaches to Common Problems in Face Recognition', pp.445-452, in Ellis, H., Jeeves, M.A., Newcombe F.&Young, A. (eds.) *Aspects of Face Processing*, Dordrecht; Martinus Nijhoff (1986), p. 509.

RESCUING DARWIN – GOD AND EVOLUTION IN BRITAIN TODAY

Nick Spencer and Denis Alexander

A 70-page report on the quantitative data obtained by the polling company ComRes on the state of belief and disbelief in evolution in Britain today. The report includes a discussion of the results, together with chapters on Darwin's own religious beliefs, the ways in which evolution has been used and abused to support competing ideological positions, and an analysis of why many people today still find it difficult to accept evolutionary theory.

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