The historical evolution and future of neurology and psychiatry

Summary of a UK symposium held at the Institute of Psychiatry, King's College London, on 9 July 2014

In the UK, as in most western countries, neurology and psychiatry evolved into separate disciplines in the late 19th and early 20th centuries. In the late 20th and early 21st centuries there are signs of some convergence of the two disciplines, stimulated in part by a common interest in neuroscientific studies of the brain, but also a greater awareness of the psychological and social dimensions of neurological disorders and the re-emergence of the concept and discipline of neuropsychiatry. Neither the Royal College of Psychiatrists, nor the Association of British Neurologists has a specialist interest group on history, but might there be support from both disciplines for a joint history group? So-called neurological and psychiatric diseases have been recorded for up to 4 millennia and the histories of these disorders are profoundly intertwined.

Against this background a symposium was held at the Institute of Psychiatry in London on 9 July on ‘The Historical Evolution and Future of Neurology and Psychiatry’. The event was partly sponsored by King’s College London with the encouragement of the Principal, Sir Richard Trainor, himself an historian, who welcomed 157 delegates and 13 speakers, including neurologists, psychiatrists, clinical and basic neuroscientists and historians. Sir Richard emphasised the commitment of King’s to neurology and psychiatry with its new joint Institute of Clinical Neurosciences, as well as to the historical sciences. He viewed this symposium as a high point of his last year as Principal.

Babylonian neurology and psychiatry
Dr Edward Reynolds, a King’s neurologist, reviewed his collaborative studies over the last 25 years with James Kinnier Wilson, a Cambridge-based Babylonian scholar and son of the distinguished neurologist, Samuel Alexander Kinnier Wilson (1878–1937). He summarised detailed Babylonian cuneiform descriptions of epilepsy, stroke, facial palsy, psychoses, obsessive compulsive disorder, phobias, psychopathic behaviour, depression and anxiety. These accounts, which date from the first half of the second millennium BC, are entirely objective and do not include subjective thoughts and feelings, a relatively modern interest in the last two to three hundred years. Some disorders, eg stroke, were considered physical; others eg epilepsy, psychoses and depression were supernatural; some, eg obsessive compulsive disorder or psychopathic behaviour were a mystery. The Babylonians had no understanding of brain or psychological function but were remarkably acute observers of medical diseases and human behaviour. The Babylonians were the first to describe the clinical foundations of neurology and psychiatry.

Neurology in Andalus
Dr Raad Shakir, an Imperial College neurologist, described how from 711 to 1492 AD Andalusia became the centre of a School of Islamic Sciences and Philosophy and a vehicle for the transfer of Greco-Roman literature back to Europe, with its zenith during the 10th to the 12th centuries AD. He highlighted four physicians and scholars ie Averroes (1126-1198); Maimonides (1135-1209); Avenzoar (1094-1161) and Abulcasis (936-1013). Each contributed in a unique way to medicine with some emphasis on diseases of the nervous system. Averroes was a defender of Aristotelian philosophy and is viewed as the father of secular thought in Europe. Maimonides, private physician to Saladin, was also a respected Torah scholar and theologian. Avenzoar was probably the first to practice experimental surgery on animals before trying such techniques on humans.
Abulcasis was a distinguished surgeon with an ingenious approach to the neurosurgical treatment of hydrocephalus.

**Demomania in the 18th century**
Dr Fiona Subotsky, a King’s psychiatrist, and Honorary Archivist of the Royal College of Psychiatry noted that the archives of the Royal College include eighty 18th century MD theses in Latin on psychiatric topics from various academic centres across Europe. She then focused on one of them on demomania submitted to the University of Vienna in 1782 by Martinus Martini from Saxon Transylvania. There was great interest in vampirism at the time. Many people in Eastern Europe were fearful of attack by vampires ie beings that rose from the graves to subject them to terrifying assaults, sucking their blood until they died. When exhumed the bodies appeared uncorrupted with blood on their mouths, and they had to be dealt with by being transfixed with a stake. Martini’s thesis was generally sceptical. Dr Subotsky discussed this thesis in relation to the then current and later views on demonomania by medical nosologists.

**The origins of clinical neuroscience in the 17th and 18th centuries**
Professor Alastair Compston, a Cambridge neurologist, outlined evolving concepts of the structure and function of the nervous system, beginning with the original ‘Decade of the Brain’ in which Thomas Willis described the anatomy of the brain and spinal cord in animals and man, developed his concepts of cerebral pathology, disordered function and neurophilosophy, and enunciated his ‘Doctrine of the Nerves’, all between 1660 and 1672. At the same time Rene Descartes consolidated ideas on reflex function in 1662. Over the next 200 years there followed increasing evidence in support of electrical concepts of nervous system function, including the work of Robert Whytt on ‘Vital and Involuntary Motions of Animals’ in 1751. All of this culminated in 1906 in the Nobel Prize for Medicine and Physiology for Cajal and Golgi and the simultaneous publication of Sherrington’s ‘Integrative Action of the Nervous System’, a defining year in the history of neuroscience.

**The evolution of psychiatry in Britain**
Dr Allan Beveridge, a Dunfermline psychiatrist, reviewed The evolution of psychiatry from the European Enlightenment of the 18th century to the first ‘Biological Revolution’ at the beginning of the 20th century. He included: the work of William Cullen and Philippe Pinel, and the interplay between Scottish and French psychiatry at that time; Alexander Morison, the first doctor to lecture on mental diseases in Britain; physiognomy and phrenology; the growth of the asylum and its medical profession; Daniel Hack Tuke’s 1892 ‘Dictionary of Psychological Medicine’; Kraeplin, Freud and Jaspers, and the need to reconcile somatic and psychological approaches.

**Frederick Mott, shell-shock and the Maudsley Hospital**
Professor Edgar Jones, a King’s historian and psychologist, described how shell-shock emerged as a major medical and military challenge during the first two years of World War I. Conceived either as a form of concussion or a psychological wound, the disorder inspired debate on the causation, diagnosis and treatment. Frederick Mott, a physician, neuropathologist and Director of London’s Central Pathological Laboratory, as well as an understated Founder of the Maudsley Hospital, researched the pathology and treatment of Shell-Shock as senior physician at the Maudsley Neurological Section of the 4th London General Hospital. His insights influenced his understanding of mental illness, the therapeutic regime he designed for the hospital and the professional development of psychiatry.

**Hysteria: past, present, future**
Dr Timothy Nicholson, a King’s psychiatrist, traced the history of this still puzzling illness, now known as ‘conversion disorder’ or ‘functional neurological symptoms’, from Ancient Egyptian and Greek medicine, through medieval times, to the 19th and 20th centuries. Along the way wandering uteri, vapours and other physical theories have been replaced by psychological theories. Clinical presentations and diagnostic concepts have also changed with, currently, less emphasis on positive psychological formulations, more on positive neurological signs and less stress on the difficult exclusion of feigning. This common, disabling and often chronic disorder has not attracted the research effort it deserves but recent robust findings may be seen as developments rather than replacements for the key historical theories of Charcot, Janet and Freud.

**Consciousness: past, present, future**
Professor Adam Zeman, an Exeter neurologist, reported that the ancient view that humans are comprised of visible matter and invisible mind, soul or ‘consciousness’ remains alive in much contemporary thought. 20th-century neuroscience distinguished ‘wakefulness’ and ‘awareness’, ie conscious state and conscious content.
Much has been learnt about the neural basis of the former and there is recent progress on the neural signature of the latter with two competing theories: the Baars/Dehaene ‘global workspace’ model and Tonini’s ‘integrated information’ theory. In the future will we no longer feel the need to draw a distinction between object and subject, mind and matter, a prospect that alarms the neurosceptics? It is too soon to say, but Professor Zeman thought that it is plausible.

The creative brain: origins and future

Professor Michael Trimble, a University College behavioural neurologist, reviewed historical neurological views that the brain is a passive receptor of sensations, a concept linked to Greek philosophy, British Empiricism (notably the philosophy of Locke) and Associationism. For about two millennia the ventricles were the main interest of brain anatomy, and the importance of the basal ganglia and cortex for human activities did not emerge until the Romantic era. At that time some neuroscientists, eg Gall, or poets, eg Coleridge, or both, eg Erasmus, Darwin, were interested in the active creative brain, and challenged those earlier views. Their contributions were largely ignored and it is only very recently that neuroscience has had a broader spectrum of interest, including consciousness and creativity.

The self in psychiatry

Professor Anthony David, a King’s neuropsychiatrist, indicated that the ‘self’ is a relatively recent ‘Western’ concept which is central to many psychiatric theories since the 19th century. He discussed recent research relating to body image, depersonalisation and failures of self-awareness or ‘insight’. Psychiatric disorders of body image tend to effect the mid-line, unlike neurological disorders. Depersonalisation may be linked to a dampening of autonomic arousal, involving a balance between ventrolateral prefrontal cortex inhibition and ‘limbic’ activation. Lack of insight is a hallmark of mental disorder. Functional and structural imaging has converged on a ‘central mid-line system’ as a key to effective self-appraisal in health and disease.

Neuroscience: past, present, future

Professor Tilli Tansey, a Queen Mary College historian, described how the word ‘neuroscience’ is often misused, frequently unintentionally, and is not synonymous with either neurology or psychiatry. The concept arose in the 1950s and 1960s to embrace a collaborative multidisciplinary scientific approach to the study of brain function and its associated neurological and psychiatric disorders. She focused her historical account particularly on the impact of the Neuroscience Research Program at MIT in the USA, and the development of the Brain Research Association (now the British Neuroscience Association) in the UK.

The future of neurology and psychiatry

Professor Shitij Kapur, Dean of the Institute of Psychiatry, noted that the separation and divergence of psychiatry and neurology over a century ago has more recently been followed by suggestions for greater integration, especially in training, and even ‘merger’. Scientifically and even socially many psychiatric disorders are being seen as brain disorders, but there are differences with neurology. Neurologists deal with: a) discrete brain disorders, b) primarily sensory-motor or cognitive symptoms, c) biological explanations, d) technical tests, e) mostly biological interventions, f) a largely ‘medical’ orientation. The psychiatrist mainly deals with: a) systemic brain disorders, b) primarily emotional-behavioural symptoms, c) limited biological explanations, d) few technical tests, e) a wide range of interventions, the biological being the simplest among many, f) a more diffuse role in multidisciplinary teams. These variations attract different kinds of doctors into different practice settings. This is unlikely to change soon. Neurology and psychiatry are joined at the head, but not at the hip! This does not call for ‘merger’ but for wider cross-training to promote a greater appreciation of the breadth and complexity of understanding and treating brain disorders, while developing future paradigms of care which will encourage professional collaboration more than differentiation.

A forum for the history of neurology and psychiatry?

Edward Reynolds and Timothy Nicholson led a final general discussion on the question of a future forum for the History of Neurology and Psychiatry? The interest and attendance at this one day symposium, had exceeded expectations and there was much appreciation and enthusiasm for extending this joint neuropsychiatric historical initiative. For this unique event the widest possible historical theme had been chosen, but any one of the topics could have formed the basis of another more in-depth symposium. The potential future scope of this joint historical field, covering at least 4,000 years, is enormous. A wide range of linked or independent forums were floated, including for example the Royal College of Psychiatrists, the Association of British Neurologists, the British Neuropsychiatric Association, the British Society for the History of Medicine. A key issue is finding financial resources for historical events or societies. This event had been fortunate to have the support of the Principal of King’s and some of the resources of the university. The
Institute of Psychiatry, King’s College London, has recently changed its name to the Institute of Psychiatry, Psychology & Neuroscience; and the Institute of Neurology of University College London is also considering a broader name change. Members of the Institute of Neurology were very supportive of this event. A joint initiative of the two London-based institutes might be an option. The International Society for the History of the Neurosciences, which includes some neurologists and psychiatrists, holds annual International Conferences, so far either in Europe or North America, but this society does not have national chapters. It was noted that many colleagues from disciplines related to neurology and psychiatry were interested in this field and event, including psychologists, clinical and basic neuroscientists, historians, representatives of the humanities, philosophers and even theologians; anyone in fact with an interest in brain and mind. The various options and challenges will be considered and explored.

In closing Edward Reynolds thanked all the speakers and delegates, especially Sir Richard Trainor, for his support, and Liz Beckmann, Secretary of the British Society for the History of Medicine, for her expert organisation of the event.

E.H. Reynolds, November 2014