

through functional magnetic resonance imaging and positron emission tomography. Obsessive-compulsive disorder is characterised by recurrent, unwanted, intrusive ideas, images, or impulses that seem silly, weird, nasty, or horrible (obsessions) and by urges to carry out an act (compulsions) that will lessen the discomfort due to the obsessions. Increasing the levels of brain serotonin with selective reuptake inhibitors may control the symptoms and signs of this disorder. Evidence of a genetic basis in some patients, structural abnormalities of the brain on magnetic resonance imaging in others, and abnormal brain function on functional magnetic resonance imaging and positron emission tomography collectively suggest that schizophrenia is a disorder of the brain.³

Nor does all of the neuroscientific evidence linking neurology and psychiatry arise from study of patients. Learning to read by braille can enlarge the brain region responding to fingertip stimulation. Brain imaging research shows that several brain areas are larger in adult musicians than in non-musicians. The primary motor cortex and the cerebellum, which are involved in movement and coordination, are bigger in musicians than in people who don't play musical instruments, as is the corpus callosum. Discontinuing the use of braille or the violin can reverse the functional neuroanatomic connections.⁴

Because of the vast increase in neurobiological knowledge in recent years, and the ever increasing number of disorders (including those referred to above) once thought to be psychopathological yet now known to be neuropathological, some neurologists might cling to the view that their specialty has now emerged alone as the reigning queen of the medical sciences. If they do, we do not agree with them. The concept of mental health as much more than the mere absence of brain disease is, we suggest, indispensable for neurological and psychiatric practice and care.

From our angle of vision, the fundamental alliance between mental health and brain illness (devoid of the confounding terms brain health and mental illness⁵) as the basis of care derives in the first instance from Aristotle's distinction between efficient causes and final causes. (An efficient cause, or mechanism, is that by means of which something happens; a final cause, or teleological cause, is that for the sake of which something happens.) Neurologists and psychiatrists must have a suitably broad perspective, for theirs is the domain of purposeful behaviour and intentionality (final causes) that is no less a brain/mind function than sense perception and movement. Clearly, the education of future generations of neurologists and psychiatrists must be grounded in neuroscience, but must equally be focused on those dimensions of professional activity that quintessentially define the work of medical doctors from the neck up.⁶

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Demystifying neurology

Phenomenology can help

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Muhammad Ali, Dudley Moore, Ronald Reagan, and Christopher Reeve have in common that they suffered from degenerative and traumatic disorders of the nervous system, the prevalence of which will increase greatly during the next 20 years.¹ Although neurological and psychiatric disorders account for only 1.4% of all deaths, they account for a remarkable 28% of all years of life lived with a disability. Thus all doctors must be prepared to meet the needs of patients with such disorders and refer appropriately for specialised care and investigations, bearing in mind that neurologists often function as consultants for other physicians. Yet do medical students and house officers believe they are being adequately prepared for independent practice, and do general doctors have confidence in their ability to diagnose and treat patients with disorders of the nervous system?

Apparently not. Schon et al recently surveyed medical students, senior house officers, and general practitioners about such matters, and the results merit

serious attention.² Compared with their knowledge of other organ systems, their knowledge of disorders of the nervous system was said to be poorest. Moreover, basic neuroscience and clinical neurology ranked at the top of the list for difficulty in learning and complexity. Practising doctors likewise averred that they had less confidence in practical clinical situations in neurology than in other system disorders. When respondents to the survey were asked to identify the causes of their difficulties in neurological education, they cited insufficient, poor, irrelevant, or poorly coordinated teaching, and intimidation by neurology's reputation as a tough grind, among other considerations. Although the survey was carried out in the United Kingdom, few neurologists and educators elsewhere would doubt the universality of these disturbing findings, which were in fact identified in the United States and Canada a generation ago.^{3,4}

Many groups, including the World Federation for Medical Education, the Royal College of Physicians of

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London, and the American Academy of Neurology, have weighed in with proposals and remedies.^{5 6} Everyone agrees that the teaching of basic neuroscience and clinical neurology must be more effectively integrated, that sufficient time for neurology must be allotted in an already overburdened curriculum, and that every practising doctor must be prepared to handle common neurological disorders and emergencies. Neurologists are also discovering that there are reciprocal benefits for teaching and patient care from collaboration with other groups. For example, advances in neuroscience research have now made it untenable to draw a sharp demarcation line between the twin educational domains of neurology and psychiatry, and the Department of Mental Health and Substance Dependence of the World Health Organization has inaugurated a collaboration to grapple with these and related issues. In the United States, neurological teachers have also joined forces with their counterparts in primary care to develop and implement a family practice curriculum in neurology, intended to enlarge the range of settings in which educational programmes are carried out (CD Rom available from the American Academy of Neurology, kjones@aan.com).

About 50 years ago, Morris B Bender rightly concluded that the bottom up pathway in neurological education—from basic science to clinical problems—was becoming dysfunctional and instituted a top down approach starting with clinical signs instead, by means of phenomenology seminars. In origin, as described by philosopher Edmund Husserl, phenomenology is the intuitive appreciation of phenomena as they are immediately perceived, without reference to scientific theory or prior learning.⁷ Teaching phenomenology in neurology rivets the attention of learners to an arm

that shakes, an incomprehensible word, or a person lost in the world. Explanations and interpretations “to save the phenomena” follow, but do not precede or coincide with, awareness. Clearly, phenomenology is an approach that starts with the patient’s perspective (illness) and only later shifts to the doctor’s perspective (disease). Such teaching shifts emphasis from the passive methods so widespread in medical education to more active, self directed, and independent study.⁵

The a priori method of phenomenology represents a radical departure from the prevailing educational paradigm of the 20th century. This general approach, with neurology as an example, is possibly applicable in other clinical fields. As there are fewer born teachers than born poets, however, success hinges upon the availability of adequate resources to promote and sustain a cadre of seminar leaders who are both content experts and teachers trained as educators.⁵

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Iatrogenic stigma of mental illness

Begins with behaviour and attitudes of medical professionals, especially psychiatrists

The stigma attached to mental illness, and to the people who have it, is a major obstacle to better care and to the improvement of the quality of their lives.¹ The World Psychiatric Association has recently initiated a global programme against stigma and discrimination because of schizophrenia.² Twenty countries are participating in the programme, and others have expressed their interest in joining.³ The programme of the World Psychiatric Association is different from others in three ways. Firstly, it begins by an examination of experiences that patients and their families have had since the illness started. The analysis of accounts of their experiences in relation to society serves to select targets for interventions that will aim to reduce stigma and its consequences. Secondly, it involves different social sectors—for example, health ministries, social welfare services, labour ministries, non-governmental organisations, and the media. Thirdly, the programme is not a campaign but a long term engagement. Because of the strategy adopted for the programme, its focus differs from one place to another. For example, in Canada, one of the first targets of the programme was a change in procedures

used in emergency departments that discriminate against people with mental illness. In Italy, the attitudes of shopkeepers were the target and in Germany, the reporting about mental illness in the media. Certain themes and sources of stigmatisation, often neglected, emerge as worthwhile targets in most places. Among them are the behaviour of medical professionals (psychiatrists in particular⁴) and the contribution of the people with the disease who, for a variety of reasons, lose their self confidence and self respect, which changes their relationships with others and their way of life.

A most obvious source of stigmatisation is the careless use of diagnostic labels. Diagnoses are useful tools in medicine because they summarise the information about a patient’s illness and facilitate communication among members of the profession. They become less helpful in communication with other professions and can be harmful when used by non-professionals who are not familiar with the original definition of the term. Even doctors must communicate by diagnoses in a careful and restrained manner. The public and health professionals often have negative attitudes to people with mental illness and will behave accordingly once