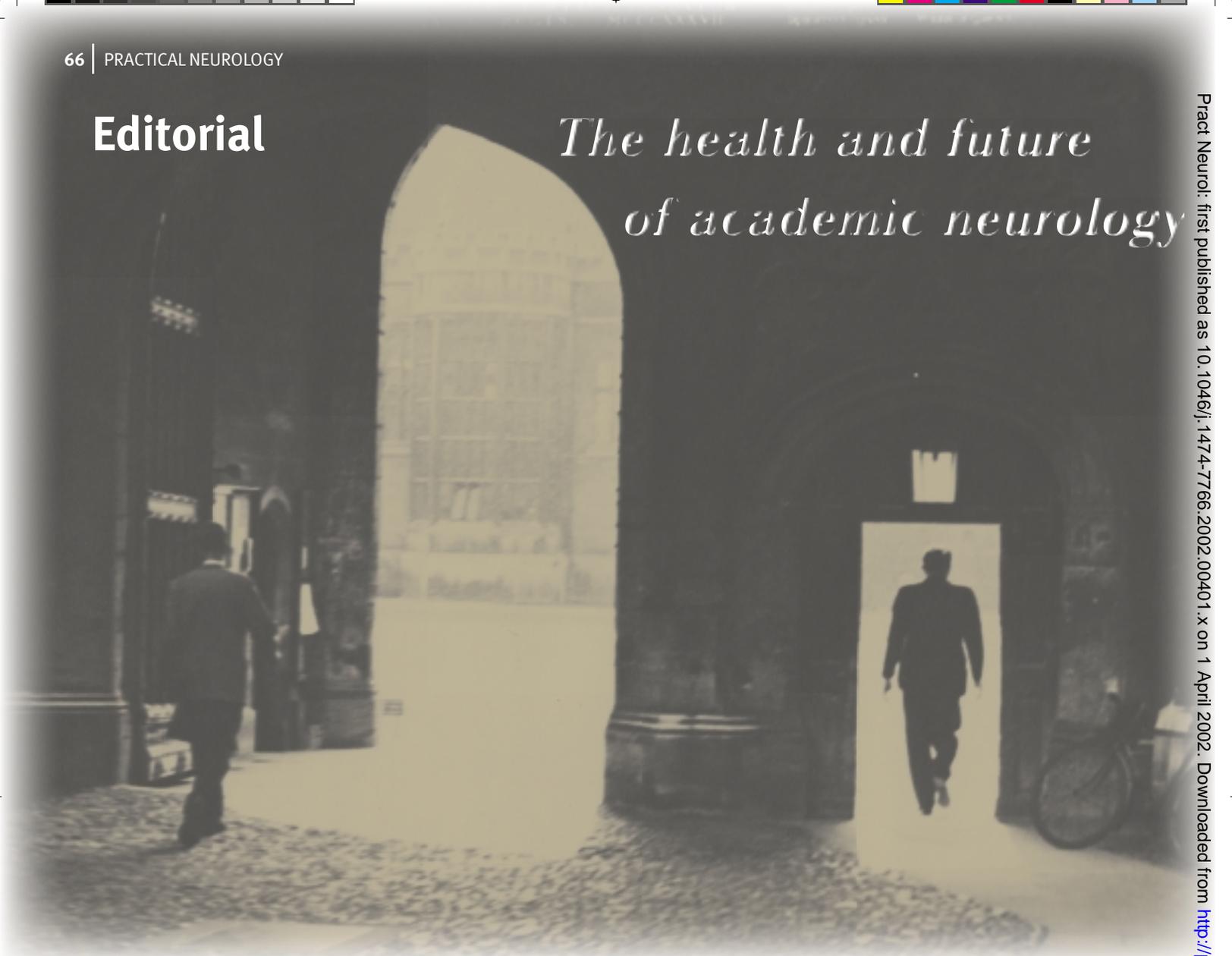


Editorial

The health and future of academic neurology



Alastair Compston

University of Cambridge Neurology unit,
Addenbrooke's Hospital, Hills Road, Cambridge, UK;
Email: dascompston@aol.com
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Nobody much cared when the Dodo (*didus ineptus*) disappeared in 1681; after all, it wasn't much of a bird, being unable to fly despite having wings. Perhaps the Dodo is a poor metaphor for academic neurology: at a pinch, most professors can elicit the ankle jerks; and neurology boasts some awesomely talented investigators working internationally and producing research of lasting significance across a range of neuroscience disciplines. But that said, all is not well – in the United Kingdom and elsewhere. Academic – adjective not noun – encapsulates the ethic of exploring problems identified by clinical analysis, intellectually and experimentally, and re-cycling the evidence so as better to inform clinical practice. Thus defined, every neurologist is academic and,

far from representing the transiently regrettable amputation of one redundant branch, any threat to *academic* neurology endangers the entire species *homo neurologiensis*.

Despite real dividends from the exponential increase in neuroscience activity over the last decade, and unprecedented cultural interest in the brain, clinical application of that knowledge has made slow progress. Of course, applying the technical wizardry and opportunities for experimental manipulation in science to the problems of clinical neurology is not a trivial task. So, if basic neuroscience is strong, neurology is doing fine and yet clinical neuroscience is under the cosh; what has gone wrong? The finger can be pointed at universities, funding agencies and reformers, but remedies can be proposed for the present lesions and, with prevention rather than reconstruction, the prognosis should be good.

In the United Kingdom, medicine flourished and academic disciplines developed for nearly 40 years from inception of the National Health Service in 1948. Professionalism was the oil that made the medical engine work to deliver high quality care and

advance knowledge despite under-resourcing. But, by the late 1980s, with too much on offer and high expectations from society, serial administrative re-organizations, disguised as long overdue reforms, were introduced to contain expenditure. Resistance to change was managed by distancing doctors from patients and creating smoke screens that confused quality with performance indicators, but (predictably) the real costs of service provision, teaching and research were exposed. Manpower in academic neurology nevertheless increased into the late 1990s so as to supplement the provision of clinical services and teaching, reward career aspirations, and stabilise faculties as deans sought to represent the major discipline of neurology – offering rich research pickings in each medical school. These academic appointees now find themselves exposed in a contracting research economy, and specifically disadvantaged as clinical neuroscientists. Systems for funding are seen to favour the elite and to inhibit the beginner. The alternative to starvation is to take big *Pharma's* shilling and piggy-back research onto clinical trials. With no apparent long-term strategy for supporting clinical neuroscience, the trend is to concentrate academic activities in fewer locations – the topics determined by short-term needs and opportunities rather than strategic investment in a portfolio subtending the entire needs of clinical neuroscience. The cynical Martian could be forgiven for concluding that academic neurologists now either take photographs of the brain whilst their friends perform party tricks, or fish for genes without much clue on how to sort the catch. Performance and productivity are over-scrutinised. Faced with periodic inspection of the roots in order to assess growth, and no apparent consistency in research policy as new executive brooms sweep clean, morale is low. Recruitment is reduced and yet it takes no very great wisdom to see that the future depends on the sustained transfer of enthusiasm and method to a new generation, giving them the technical expertise and motivation to keep neurology academic. Lose the culture, and the practice disappears. Nurture recruits, secure their sustained commitment for subsequent transfer and continuity of the discipline, and all should be well.

Once upon a time, exposure to the range of medical disciplines as students or junior residents allowed young doctors to chose their speciality and integrate clinical and research training rotations. They moved between people, places and projects subject to opportunity and ability. The house-keeping of those who governed neurology was tight. The system was generally supportive and with few casualties. But junior residents are now largely denied this period of apprenticeship as an integral member of a medical firm. Those who do decide on a career in neurology must enter via research and with no guarantee of a clinical training position thereafter. The situation is especially difficult for the MB PhD student who has to mark time whilst waiting for a clinical training post. There are tensions between NHS and university staff – a few professorial *barons* being seen as dominating recruitment and persistently down-loading their selections on NHS departments.

At present, the two major medical funding agencies in the United Kingdom (Medical Research Council and the Wellcome Trust) process clinical applications through their neuroscience and men-

tal health panels. Clinical grants do badly because too often they are methodologically over-ambitious and perceived by scientific assessors to be flawed. Clinicians conclude that the licence to practice science is being withheld. Granting agencies seem more tolerant of the often unsubstantiated catch-all signature of practically all basic scientific proposals, '... *from which new treatments will follow*'. In failing to finesse the limitations of working with patients, criticism is also often levelled by clinical peer reviewers – dog routinely eating dog. It is rarely possible to justify clinical salaries for staff supported on neuroscience projects unless the work requires direct contact with patients and yet the pressure on personal basic medical science fellowships is intense. When last surveyed (2000), 30 of 324 (9%) MRC and Wellcome clinical fellowships (basic, advanced or clinician scientist) were awarded to clinical neurologists, 19 of which were located in just two institutions. Disappointed applicants often sense that they have been assessed for 'an already trained in science' fellowship rather than a 'clinical training' fellowship.

In short, academic neurology is now in a post-expansionist era with patchy inter-unit performance, activity restricted to a narrow range of topics, an insufficient science base for clinically-orientated research, growing dependence on conditional pharmaceutical support, restricted entry at junior resident grade, poor post-research neurology trainee entry career paths, lack of flexible training schemes, and difficulty in maintaining research activity during the formative years as an independent investigator. Three adjustments would help.

First, existing activities within universities need to be re-grouped to create interdisciplinary teams with both scientific and clinical expertise, combining the experimental rigour of basic science with the critical analyses of clinical neurology to the mutual benefit of each. Second, the major research funding organizations need to prioritize support for clinical neuroscience. It may be necessary to separate funding from the basic science portfolio with assessment by a panel experienced in *clinical* science, but without creating a soft and hence second class culture – real or perceived. Third, a training infrastructure is needed that enhances recruitment, establishes individuals as independent investigators, and graduates trainees as trainers to pass on the research mantle. At present, the move between research and clinical training is abrupt and transitional success not secure. Faced with uncertainty at entry, exit and re-entry into research, potential career clinician neuroscientists may opt away from an academic appointment or even chose a better-managed speciality. To make the academic track more attractive, research fellowships should be linked to clinical training with a flexible curriculum and postdoctoral opportunities; increasing the number of postdoctoral advanced training, clinician scientist and senior fellowships, linked to clinical and senior lectureships in the University sector, would allow a cohort of committed neurologists to maintain research activity and credibility through to tenured appointment.

If academic neurology is not to go the way of the Dodo, tweaking the system now makes better sense than ignoring the distress signals and leaving an ostrich-like head in the sand (somewhat to mix the metaphor).