

A Tale of Two Sciences: Bedside and Bench in Twentieth-Century Britain

CHRISTOPHER LAWRENCE*

Two Biographies

Recent years have seen a great deal of interest in the ways in which laboratory science was brought into clinical medicine in the twentieth century.¹ This is a study of two distinguished English physicians, Thomas Horder and Walter Langdon Brown, who had almost simultaneous and identical careers and were major figures in the introduction of some of the findings and practices of new laboratory sciences into clinical work. There are important similarities and differences in their responses to these sciences, especially over time. To explain these responses I refer to two rather different social orders or classes and the rather different ideologies associated with them which these men simultaneously inhabited.² One of these I deem patrician: the world of aristocracy, privilege, deference, tradition, genteel leisure pursuits, face-to-face social relations and charitable service.³ The other was professional or meritocratic: the world of citizenship, rationally driven progress, impersonal social relations and expert opinion.⁴ Of course, these orders are ideal types but distinguishing them serves a useful purpose. I suggest that while the imperatives for these men to introduce laboratory science into medicine came largely from the professional order, the *form* in which it was introduced was determined, to some extent, by the patrician world. The bulk of the study examines how, in the light of political, social and cultural change in the 1920s and 1930s, Horder and Brown, in rather different ways, modified their accounts of the sciences they had adopted before the Great War.

Horder and Brown were born a year apart, came from similar backgrounds, studied medicine together, practised at the same hospital and for most of their lives lived near each other in the West End of London. How they related on a personal level I have been unable

* Prof. Christopher Lawrence, The Wellcome Institute for the History of Medicine, 183 Euston Road, NW1 2BE.

I have talked about this material with so many people for so long I cannot name them all. I would specifically like to thank the anonymous referees in more than ritual fashion. Many of their comments revealed close reading and were extremely sharp and helpful.

¹ The literature on this subject is now very large. For a case study and a survey of predominantly American material see, Joel D Howell, *Technology in the hospital: transforming patient care in the early twentieth century*,

Baltimore, Johns Hopkins University Press, 1995. For British material and an important interpretation, see Steve Sturdy and Roger Cooter, 'Science, scientific management and the transformation of medicine in Britain c.1870–1950', *Hist. Sci.*, 1998, 36: 421–66.

² I follow Jose Harris very closely here in her evocation of the many classes that individuals could simultaneously identify with in this period. See her *Private lives, public spirit: a social history of Britain 1870–1914*, Oxford University Press, 1993.

³ See David Cannadine, *The decline and fall of the British aristocracy*, New York, Doubleday, 1992.

⁴ See Harold Perkin, *The rise of professional society: England since 1880*, London, Routledge, 1989.

to discover, although there was almost certainly no hostility.⁵ They seem to have held similar views about many things and responded similarly to the crisis of the interwar years. This response, governed by the mores of the dual social orders they inhabited, deeply affected their perceptions of their cherished laboratory sciences. Brown drew increasingly on the findings of his chosen science, experimental physiology (in particular endocrinology and neurophysiology), and shaped it to explain the interwar world; while Horder distanced himself somewhat from his favoured science, clinical pathology, and increasingly employed the language of bedside medicine for the understanding of contemporary events. If any generalizations can be made from this and similar studies, they are, perhaps, first, that the laboratory sciences were introduced into clinical medicine in myriad ways depending on local circumstances. Second, in the light of the work of other historians, notably on the United States and France, issues pertaining to the bench and the bedside are frequently about elite cultures of clinicians, individualism and responses to bureaucratization.⁶ Third, laboratory knowledge and practices were not entities that were introduced into clinical life unmolested but were things that were invested at the bedside with all sorts of meanings and assumptions that were foreign to their site of production.

Walter Langdon Brown was born in Bedford, England, in 1870 into a Nonconformist family, his father being a minister, Liberal politician and author of the standard biography of Bunyan.⁷ His mother was a niece of John Langdon Down, the eponymous describer of Down's syndrome, once Mongolism. Walter had an older sister, Florence, who, in 1882, married John Neville Keynes, father of John Maynard and Geoffrey Langdon Keynes. Brown went up to St John's College, Cambridge, where he gained first-class honours in both parts of the Natural Sciences Tripos in 1892 and 1893. It was here, presumably, that he developed what was to become a lifelong commitment to Darwinian evolutionary theory. He became similarly committed to the cause of experimental physiology, almost

⁵ Horder's son mentions neither animosity nor friendship. Mervyn Horder, *The little genius: a memoir of the first Lord Horder*, London, Duckworth, 1966. Neither does Geoffrey Bourne, who was not shy of displaying the hostilities at Bart's. Geoffrey Bourne, *We met at Bart's: the autobiography of a physician*, London, F Muller, 1963. In a letter to the *British Medical Journal* in 1927 a number of distinguished physicians encouraged their colleagues to join the recently established British Institute of Philosophical Studies. The signatories included Lord Dawson, Henry Head and Thomas Horder. Brown was not a signatory and, given his philosophical interests, this is at least mildly interesting. *Br. med. J.*, 1927, i: 699. I know of no reference to Horder in Brown's writings. Horder refers to Brown in an address in 1936. The tone is approving but no intimacy is signified. Thomas Horder, *Health and a day*, London, J M Dent and Sons, 1937, p. 21.

⁶ On the United States, see Russell C Maulitz, "'Physician versus bacteriologist': the ideology of science in clinical medicine", in Morris J Vogel and Charles E Rosenberg (eds), *The therapeutic*

revolution: essays in the social history of American medicine, Philadelphia, University of Pennsylvania Press, 1979, pp. 91–108; John Harley Warner, 'Ideals of science and their discontents in late nineteenth century American science', *Isis*, 1991, 82: 454–79; *idem*, 'The history of science and the sciences of medicine', in Arnold Thackray (ed.), *Constructing knowledge in the history of science, Osiris*, University of Chicago Press, 1995, vol. 10, pp. 164–93. On France, see Patrice Pinell, *Naissance d'un fléau: histoire de la lutte contre le cancer en France (1890–1940)*, Paris, Métaillé, 1992; George Weisz, *The emergence of modern universities in France, 1863–1914*, Princeton University Press, 1983; *idem*, *The medical mandarins: the French Academy of Medicine in the nineteenth and early twentieth centuries*, New York, Oxford University Press, 1995.

⁷ There is no biography of Brown, see the obituaries, *Lancet*, 1946, ii: 546–8; *Br. med. J.*, 1946, ii: 556–7; William Munk, *Lives of the Fellows of the Royal College of Physicians of London 1826–1925*, London, The College, 1955, vol. 4, p. 491.

A Tale of Two Sciences

certainly at this time. Thomas Jeeves Horder was born a year after Brown, in 1871, in Shaftesbury, Dorset, the son of a draper. His family were Congregationalists. He passed the London University matriculation examination in 1889 and studied for the London BSc by correspondence. In 1891 he won an entrance scholarship in science offered by St Bartholomew's Hospital. In 1892 and 1893 he won scholarships in anatomy and physiology. Also in 1893 he passed the London BSc with first-class honours in physiology. A year later, in 1894, Brown's name appeared as winner of the Senior Open Scholarship in biology and physiology at Bart's. In 1896 he was elected a member of the Physiological Society. Horder's son reported that his father, "qualified as a doctor in 1896: took his M.B. in 1898".⁸ In 1896 Horder had a junior appointment with the man acknowledged as one of the great clinicians of the age, Samuel Gee, with whom he enjoyed a "long, personal, working association".⁹ In October 1897 he was appointed senior house physician to Gee. This was the year in which Brown graduated MB BChir (Cambridge) and, following Horder's promotion in October, Brown became junior house physician to Gee. The next April he was appointed Gee's senior house physician as Horder became demonstrator in physiology (1898–1900). Horder proceeded MD (London) in 1899 and in the same year was elected a member of the Physiological Society and became Member of the Royal College of Physicians of London (MRCP). Also in that year he was appointed casualty physician at Bart's, while Brown was appointed assistant-demonstrator in physiology (1899–1912). Thus both men were fully exposed to, and excelled in, the basic sciences, especially physiology regarded as the flagship of modern medicine: Bart's had instituted classes in practical physiology in the 1870s as required by the regulations of the Royal College of Surgeons but had no full-time physiologist until 1915.

From 1900 to 1903, Horder was junior demonstrator of practical medicine. In 1901 Brown took the Cambridge MD with a prize for his thesis. In 1903 Horder was appointed demonstrator of practical pathology, from 1904 to 1911 he was medical registrar, and from 1904–1910 demonstrator of morbid anatomy. In 1906 Horder became Fellow of the Royal College of Physicians (FRCP), Brown joining him in the Fellowship two years later. In 1906 Brown was appointed alongside Horder as a demonstrator in morbid anatomy, a post which Brown held until 1913. In 1912 Horder was appointed assistant physician to the hospital. Brown remained associated with Bart's in junior positions until his appointment as assistant physician in 1913. In 1921 Horder became a full physician to the hospital and in 1936 (after retirement from the staff on 31 December 1935), a governor and consulting physician. Brown was appointed full physician in 1924 and consulting physician in 1930. From 1932 to 1935, the only period in which his career differed considerably from that of Horder, he was Regius professor of physic at Cambridge. In 1935 he was knighted and, by deed poll, hyphenated his name to Langdon-Brown. He died in 1946. Horder, who had had a string of royal appointments to his name, was made a Baron in 1933 and died in 1955. Both published widely on medical matters during their working lives and both, as

⁸ Mervyn Horder, *op. cit.*, note 5 above, p. 9. Thomas Horder took the conjoint examination of the Royal College of Surgeons of England and the Royal Society of Apothecaries (MRCS, LRCP) followed by the University of London degree. A very common practice.

⁹ *Ibid.*, p. 13. Details of junior appointments are given in *St. Bartholomew's Hosp. J.*, 1896–97, 4: 110; 1897–8, 5: 15, 111. On physiology, see John L. Thornton, 'The history of physiology at St. Bartholomew's hospital, London', *Ann. Sci.*, 1951, 7: 238–47.

is and was customary among senior medical figures, published essays in their sixties in which they reflected more generally on the human condition.

In spite of their thoroughly respectable careers, contemporaries found a hint of the unconventional in both men. In 1901 Horder was described by a patient as wearing a “Black Bow with scarf pin a golden sword set with Dimons [*sic*]”.¹⁰ He was appointed assistant physician at Bart’s in spite of opposition from senior colleagues. This followed a successful consultation with the Prince of Wales after which Horder observed “Bart’s will have to have me now”.¹¹ A student at Bart’s in the years of the Great War remembered Brown thus:

His was [an] . . . energetic personality. Already, thanks to his writings, he was a well-known, busy and prosperous consulting physician. He had deep-set, lustrous brown eyes, shaggy eyebrows and hair which gave rise to one of his nick-names ‘Curly’. His figure was already generous, so much so that when he bent to examine a child in a cot, his face would suffuse and his neck veins become congested. He looked like, and in fact was, a gourmet.¹²

These men were regarded as among the finest clinical teachers of their time, Horder perhaps the finest.

Brown and Horder had still more in common. Neither seems to have had a very wealthy background. Both had lucrative private practices in the West End where they cultivated the style of gentleman practitioners, using but not parading modern laboratory science. After his marriage in 1902, Horder lived at 141 Harley Street. His consulting room was described as large,

with a circular central skylight and a big bow window. It was always a comfortable room, bearing strongly the impress of its owner’s personality in the tall mahogany glass-fronted bookcases, the Persian carpets, the enormous writing desk, the six Turners (bought in the early 1900s when this artist was still lightly regarded), the leather armchairs and in winter the fire, which roared away in one of those old-fashioned whirlwind grates built in beaten brass well out in the room in front of the chimney. The room seemed to be arranged so as to inspire the maximum confidence in a visitor.¹³

Servants and chauffeurs ensured the Horder household ran efficiently while, at his country home at Ashford Chase, Sussex (purchased in 1924), under-gardeners policed the plants in the 120 acres. Near to the Horders in London, Brown lived in Cavendish Square and was remembered sitting in his combined consulting-room and study surrounded by cats. He was, said his obituarist, “a charming host with a great knowledge of good food and good wine”.¹⁴ Both men enjoyed cigars.

These points are not made for anecdotal purposes. They evidence the commitment to a professional self-styling shaped in part by the values of a patrician clientele. There is a sense in which both had adopted the very old role of physician as counsellor.¹⁵ Their various shared values, commitments and interests can be understood in a number of ways. To a great extent these men and others like them continued to live and practise in a world which was not so very different from that of their teachers. Both generations practised

¹⁰ Mervyn Horder, *op. cit.*, note 5 above, pp. 11–12. Horder was not quite so eccentric as to wear a sword, presumably this was a description of the pin.

¹¹ *Ibid.*, p. 18.

¹² Bourne, *op. cit.*, note 5 above, pp. 41–2.

¹³ Mervyn Horder, *op. cit.*, note 5 above, pp. 24–5.

¹⁴ *Lancet*, *op. cit.*, note 7 above, p. 547.

¹⁵ Harold J Cook, ‘Good advice and little medicine: the professional authority of early modern English physicians’, *J. Br. Stud.*, 1994, 33: 1–31.

privately among the wealthy and the aristocracy and many had the valued duty of charitable practice at prominent voluntary hospitals. They were themselves wealthy and lived in a style not unlike that of the plutocrats they treated. They enjoyed aristocratic leisure activities, such as dining well, gardening and motoring. The order in which they moved and of which they approved was patronage-based. It depended on face-to-face encounters to maintain and promote social relations and attract clientele. It was a social order institutionalized at the great London voluntary hospitals, in Harley Street houses, at the Royal College of Physicians, the Royal College of Surgeons and the ancient universities. At the end of the nineteenth century the medical predecessors of Horder and Brown were the so-called “Great” of the London hospitals.¹⁶ The Great cultivated the role of gentlemen, moral advisers and custodians of culture (in many senses, including the aesthetic) and valued clinical experience as the highest medical good.¹⁷ To men such as these, many of whom had royal appointments, the figure of the queen or king represented all that they approved of and regal metaphors frequently appeared in their writings. Many of the values of the Great were adopted by their pupils. Once the patient has entered the consulting room, he, “like the person of the king, is sacred”, wrote Horder.¹⁸ This collusion with the high and mighty was not specific to the doctors. Richard Shannon observes that in the middle of the nineteenth century the middle classes “collaborated in preserving traditional social and political forms of the ruling class. They developed the morality of professional service into their equivalent of *noblesse oblige*”.¹⁹

Samuel Gee

As noted, one of the most esteemed of these late-Victorian clinicians was the Bart’s practitioner, Samuel Gee, physician to the Prince of Wales. Sentiments that appeared in Gee’s writings can be found in the works of Horder and Brown throughout their lives. For Gee, clinical experience was the essence of the practical art of medicine. Experience was gained on the ward but it needed to be coupled with hours spent in the post-mortem room, since it was morbid anatomy which gave meaning to much bedside examination. The vast majority of clinical signs were explicable in morbid anatomical terms. Morbid anatomy was regarded by clinicians such as Gee as a branch of natural history, as was the description of diseases at the bedside. Horder was to write in his maturity in the manner Gee might have written fifty years earlier: “The doctor is a naturalist, having the human animal as his subject . . . observation is vital, so vital that the earlier the habit is cultivated the better”.²⁰ Natural history, in turn, was regarded as one of the highest forms to which scientific investigation might aspire. John Pickstone has persuasively connected such self-perceptions and views of science to the courtly culture with which this sort of medical practice had long been associated.²¹

¹⁶ On the “Great”, see Bourne, *op. cit.*, note 5 above, p. 20.

¹⁷ Christopher Lawrence, ‘Incommunicable knowledge: science, technology and the clinical art in Britain 1850–1914’, *J. contemp. Hist.*, 1985, 20: 503–20.

¹⁸ Thomas Horder, *op. cit.*, note 5 above, p. 30.

¹⁹ Richard Shannon, *The crisis of imperialism 1865–1915*, Frogmore, Paladin, 1976, p. 216.

²⁰ Thomas Horder, ‘The approach to medicine’, *Lancet*, 1939, i: 913–17, on p. 916.

²¹ See John V Pickstone, ‘Past and present knowledges in the practice of the history of science’, *Hist. Sci.*, 1995, 33: 203–24; *idem*, ‘Ways of knowing: towards a historical sociology of science, technology and medicine’, *Brit. J. Hist. Sci.*, 1993, 26: 433–58.

Given this orientation, it not surprising that Gee published a work on auscultation and percussion of the chest, the region where knowledge of normal and morbid anatomy and clinical skill admitted of endless interaction—for no two patients or lesions were the same. Underlying Gee's text was an assumption of design, for instance the chest had an "ideal shape", which was, however, "seldom realized". Similarly the heart had a "natural . . . force of impulse".²² In the real world the clinician had to recognize the particular deviations in thoracic form and function from the ideal, produced by such factors as age, biological sex, constitution, labour, and outright disease. In this sense the ideal and the normal were quite different, for the normal was relative to the actual patient at different times. "Health", wrote Horder in 1903, "is no fixed state, but is inclusive of certain oscillations, which must be regarded as variations rather than disturbances of the normal".²³ These clinical perceptions were legitimated by appeal to tradition and in particular to Hippocrates. Gee cast his clinical observations as aphorisms in imitation of the Greek sage. Somehow too (notably because of the history of empirical philosophy and natural historical enquiry in England), English (not British) physicians were deemed the most legitimate heirs of Hippocrates.

A sense of Gee's intellectual world can be gathered from his address 'Sects in medicine'. Although at the turn of the nineteenth century many claimed the new sciences were transforming medicine, Gee held the unchanging "constitution of the human understanding" ensured "that the sects are essentially the same in our time as they were in the early days of medicine." Gee dealt first with the dogmatist who practised medicine "reasoned from his theory of disease", although no dogmatists had been in evidence since the days of Albrecht von Haller. Methodists, however, "who strive to make the data of pathology and therapeutics as few as possible in number, and as universal as possible in extent" still abounded, homeopaths being the most obvious modern example. "The English mind", he observed, "is averse from methodism", adding "Van Helmont and Stahl, Brown [a Scotsman] and Broussais, were not English". Practitioners of the pneumatic sect were prone to overrate a particular doctrine just as the ancient pneumatists had stressed the importance of the animal spirits. Next were the physiological pharmacutists, a sect "at least as old as the days of Thomas Willis", who proceeded as follows: "Ascertain the manner in which the healthy body is affected by a drug . . . and you have a principle to guide you to the use of the drug in disease." Too rapid an application to clinical medicine of physiological knowledge gained by vivisection was one of the dangers of this approach. For, in fact, said Gee "physiological experiment has hitherto contributed very little to practical therapeutics."²⁴ In 1950, Sir Henry Dale recalled Gee teaching him that "When you enter my wards your first duty is to forget all your physiology. Physiology is an experimental science and a very good thing no doubt in its proper place. Medicine is not a science, but an empirical art."²⁵ Gee, wrote J Wickham Legg, who knew him well, "went so far as to doubt the value of experiment in the natural sciences".²⁶

²² Samuel Gee, *Auscultation and percussion*, London, Smith, Elder, 1893, pp. 6, 48.

²³ Thomas Horder, "'Neurasthenia:' a critical enquiry', *St. Bartholomew's Hosp. J.*, 1902–3, **10**: 67–73, p. 72

²⁴ Samuel Gee, *Medical lectures and aphorisms*,

Smith, Elder, 1902, pp. 209, 213, 215, 222, 223, 225.

²⁵ Henry Dale, 'Scientific method in medical research', *Br. med. J.*, 1950, **ii**: 1185–90, p. 1187.

²⁶ Gee, *op. cit.*, note 24 above, 4th ed., London, Henry Frowde, Hodder & Stoughton, 1915, p. 363.

The penultimate sect, and the one to which Gee proclaimed allegiance, was the Empiric. The empirical physician practised on the basis of personal experience. Empiricism, he explained, begins by compiling “a history of diseases” so that the individual’s complaint can be compared with a “universal . . . standard of reference”. This was diagnosis, the cornerstone of medicine. The untheorized nature of empiricism underlay its aphoristic style of transmitting knowledge, as in some of the Hippocratic texts. Finally came the expectants who largely let nature take its course. Gee had much sympathy for this view yet declared it took scepticism too far: “their principle is true, but not the whole truth”.²⁷ The healing power of nature does not figure large in Gee’s published works but these were mainly concerned with diagnosis in conditions characterized by gross morbid anatomy and usually terminating fatally. Gee’s resolute clinical empiricism should not obscure the fact that he drew on laboratory science when confronted with a diagnostic impasse. Thus, he noted, that “[e]ven auscultation” did not always permit distinguishing certain forms of bronchitis from tuberculosis. In such cases the clinician had a “potent auxiliary” in microscopic examination of the sputum for “Koch’s bacillus”.²⁸ Elsewhere, explaining emphysema, he deferred to the agreement among physiologists on respiratory air pressures.²⁹ For the most part, however, his text was littered with references to writers on clinical matters from Hippocrates onward.

As noted, Horder and Brown held Gee in high esteem. Horder, indeed, collected his teacher’s aphorisms for publication.³⁰ Both men, particularly Horder, brandished their empiricism when needed. Thus Horder in 1924 referred to, “all of us who are empiricists in the proper sense of that word.”³¹ Both Horder and Brown regarded diagnosis as the key to medicine, applauded nature’s healing powers and held sacrosanct the individuality of every case. Like Gee too they regarded pathological anatomy as central to clinical medicine. In 1924, echoing Gee’s essay on sects, Horder called morbid anatomy a “fundamental institution” in medicine, one which exercised “salutary control . . . over the natural tendency of the human mind to dogmatize”.³² As medical registrars before the First World War, Brown and Horder were performing an average of 326 post-mortems a year between them.³³ Unlike Gee, however, Horder and Brown had been exposed in their training to new, basic laboratory sciences, notably experimental physiology and bacteriology. It is with their attempts to incorporate the findings and practices of the new sciences into the world of traditional clinical medicine with which this paper will be concerned.

²⁷ *Ibid.*, 1st ed., 1902, p. 232, 235.

²⁸ *Ibid.*, p. 90.

²⁹ *Ibid.*, p. 99.

³⁰ ‘Clinical aphorisms from Dr. Gee’s wards’, collected and edited by Thomas J Horder, in Samuel West and W J Walsham (eds.), *Saint Bartholomew’s hospital reports*, London, Smith, Elder, 1897, pp. 29–59.

³¹ Thomas Horder, ‘Medicine and old ethicks’, *Br. med. J.*, 1924, i: 485–9, 488. I develop the point that the sentiment that empiricism was particularly English (as exemplified by Sydenham) and compared favourably with dangerous continental theorizing in

Christopher Lawrence, ‘Edward Jenner’s jockey boots and the great tradition in English medicine 1918–1939’, in Christopher Lawrence and Anna-K Mayer (eds), *Regenerating England: science, medicine and culture in inter-war Britain*, Amsterdam, Rodopi (forthcoming).

³² Thomas Horder, ‘The influence of radiology upon our conceptions of disease’, *Pro. Roy. Soc. Med.*, 1924, 17, parts I & II: 64–76.

³³ Walter Langdon Brown, ‘Seven years in the post-mortem room: a retrospect’, *St. Bartholomew’s Hosp. J.*, 1913, 20: 70–2.

Brown's orientation to clinical medicine diverged rather more from Gee's than did Horder's, a fact possibly attributable to his exposure to physiology at Cambridge. Brown seems to have been more committed to the possibility that treatment might be "rational" in the sense of being based on knowledge, gained by experiment, of the body's normal function. This was apparent from the title of his first book, published in 1908, *Physiological principles in treatment* in which he programmatically and politically balanced laboratory and clinic:

Though the days are past when the student entering the wards often received the superfluous advice to 'forget his physiology,' the physiologist is still regarded a little suspiciously at the bedside. Perhaps he is in part himself to blame for that, for he is sometimes inclined to forget that observations made in the laboratory are not infallible, and are not necessarily more correct than clinical evidence. When I reflect that I am now teaching the exact opposite to many of the views held ten years ago, I feel that physiology can only come to the aid of medicine with becoming modesty, and without over-weening dogmatism. There is no finality about either.³⁴

The final sentence embodies a sentiment that Brown and, in a different way, Horder were to express repeatedly throughout their careers.

The New Sciences and Medicine before 1914

Brown's *Physiological principles*, a book which went through many editions, was directed to providing physiological rationales for therapy and the approach was ostensibly quite different to Gee's but so were the sorts of disorders Brown wrote about. Brown dealt mainly with conditions characterized as metabolic disturbances, for instance diabetes and intestinal intoxication, which were chronic, often non-febrile and usually without gross morbid anatomical change. Not surprisingly, as a disciple of W H Gaskell, Brown also dealt with cardiac irregularities. His accounts of these various disorders referred to the most recent experimental and clinical work. But, although the title of his book suggests that he considered that clinical thinking should be informed by physiological knowledge, the arrow also ran in the other direction. Brown's physiological thought might usefully be termed organic or holistic; parts of the body had specific roles to play or jobs to do and when all did so properly there was a harmonious functioning whole which was greater than the sum of the parts. The body was described as producing chemical substances "whereby it regulates its own functions". He lamented that, "in the past it has been too much the fashion to look upon the different organs as largely independent of each other".³⁵ This view is hardly surprising in a clinician educated in the doctrine of the healing power of nature. More generally, Brown's language might have suggested purpose, design and needs to his readers even though he was a convinced Darwinist. He wrote, for example, of "a gradual transition from a nervous to a chemical method of stimulation, as the need for rapidity of response grows less" and how the testes are "responsible [for an internal secretion] for the production of secondary male characters".³⁶

³⁴ Walter Langdon Brown, *Physiological principles in treatment*, London, Baillière, Tindall and Cox, 1908, p. vi.

³⁵ *Ibid.*, pp. 2, 1.

³⁶ *Ibid.*, pp. 36, 2.

Brown used his account of function to describe how the “rational treatment” of diseases could be instituted. Many of his examples related to organotherapy, for instance the use of adrenalin to replace a presumed deficiency of that substance in Addison’s disease.³⁷ In another chapter he classified dietary items by their effects on gastric secretion. Here again can be seen the ways in which clinical views structured physiological perceptions. Clinical teleology informed the explanation of scientific therapeutics, for example: the patient “feels more comfortable when the gastric juice is given plenty to do”. He also pointed out how important was the “personal equation” in dietetic considerations.³⁸ Diagnostically, each patient’s disorder could be referred to a general classificatory scheme, but the disorder was also unique because of the person’s inheritance, age, constitution, etc. In other words the general physiological laws had to be translated on the wards to take into account the patient’s life history. Gee had taught that the advantage of seeing private patients was that you “come to know their constitution”.³⁹ In Brown’s formulation this teaching was recast to preserve the autonomy of the clinician, who could simultaneously draw extensively on modern science.

Tommy (as he was known) Horder showed his commitment to the new medicine when his name appeared as an additional author on the title page of a translation of *Abel’s laboratory handbook of bacteriology* in 1907.⁴⁰ Three years later, in 1910, his own *Clinical pathology in practice* appeared. Horder, like Brown, welcomed the laboratory sciences and, equally, he refused to accept them as a superior authority. He observed:

The advances made in Medicine during the past twenty years have been due almost entirely to the introduction of special tools in the examination of the patient. The use of tools in diagnosis detracts nothing from the fundamental importance of examination conducted by the unaided senses. The physician who is tempted to substitute the microscope for a trained eye and an experienced hand stands to lose a good deal by the exchange. But to supplement the observations of the bedside by the investigations of the laboratory constitutes, in the matter of diagnosis, the whole duty of the medical man.⁴¹

Horder delineated clinical pathology as a field of research and as an ancillary to diagnosis and saw both areas as the preserve of the individual physician. He noted “Nearly all the results considered in these pages have been verified by the author himself, or by his colleagues”. He warned of the dangers of the subject falling into specialist hands, out of the reach of the practitioner:

So important, indeed, has this kind of work become that there is no little danger of the student concluding that it falls properly to the duty of the pathologist, whom he regards in the light of a specialist in these matters. This very serious error receives support from the practice in vogue at some hospitals of putting the routine ward investigations in the hands of senior men in the pathological department.

There were real threats to medicine in such undue emphasis on the laboratory “To change the physician for the pathologist can but end in disaster”. The physician must respect the

³⁷ See Robert Tattersall, ‘Hypoadrenia, or “A bit of Addison’s disease”’, *Med. Hist.* (this issue).

³⁸ Brown, op. cit., note 34 above, pp. 56, 49.

³⁹ Gee, op. cit., note 24 above, p. 1.

⁴⁰ [Rudolph Abel], *Abel’s laboratory handbook of bacteriology*, translated . . . by M H Gordon with

additions by Dr A C Houston, Dr T J Horder and the translator, London, Henry Frowde, 1907.

⁴¹ Thomas Horder, *Clinical pathology in practice*, London, H Frowde, Hodder & Stoughton, 1910, p. 1.

pathologist for “The whole truth will never be found at the bedside” but “still less will it be found in the laboratory.” The clinician needed to resist the “growing tendency for apparatus to take the place of brains”.⁴²

Clinical pathology, Horder said, should be central to medical practice but he found it little valued in comparison to some other subjects. In Horder’s opinion, students should be taught clinical pathology before entering the wards and “to gain the necessary time for this very moderate outlay upon so vital a part of the doctor’s training, some section of the earlier medical studies which has but a remote bearing upon practical medicine should be omitted or shortened. And it would not be difficult to find such a section”.⁴³ Diplomatically, he named no study with only a “remote bearing” on clinical medicine but, interestingly, he observed that instruction in clinical pathology should begin earlier than in the clinical years, perhaps during the course on practical physiology. The inference could have been drawn that some “practical physiology” was too theoretical and could be usefully jettisoned to make way for a clinically more relevant topic.

Horder’s image of the clinician’s control of clinical pathology was materialized in his practice. The pharmaceutical company, Burroughs, Wellcome, made him a portable case which, he explained, “contains practically all that is needed for the collection of clinical pathological material, as well as for several immediate investigations which are of importance in considerations of diagnosis”. The case became known as “Horder’s box”. It contained culture apparatus, chemical reagents, pipettes, counting slides and a microscope. Thus “the apparatus . . . permits of not a few very important observations appertaining to clinical pathology being executed at the time of the visit, such as a blood-count, sputum or pus examination, &c., &c.”⁴⁴ It is notable how, in Horder’s account, the clinician carries the laboratory to the patient. In this manner bacteriological and haematological diagnosis did not threaten clinical individualism. “Armed with this, or with some similar equipment”, he wrote, “the clinician is ready for almost any emergency. He is able to collect his materials at the time he sees his patient and to collect them under the best conditions. He is *independent of his surroundings*”.⁴⁵ Taking this apparatus to the patient was, presumably, the basis of Horder’s recollection that “A very distinguished colleague of mine in pathology . . . once said of me by way of introduction, ‘here’s the man who forsook the bench for the bedside’. My reply was, I hope, not immodest: ‘No’, I said, ‘I took the bench *to* the bedside’”.⁴⁶

Not all procedures were possible at the bedside. In these circumstances Horder considered that the individual practitioner should, ideally, carry out the more complex tests in a laboratory of his own. Horder had a small laboratory in his Harley Street home. In 1953 he remembered that at the beginning of the century:

The young consultant, trained in pathology, was able to add to the examination of the patient’s body the examination of the patient’s blood, his cerebrospinal fluid, his secretions . . . on reaching home, the culture tubes were put into the incubator in the little basement laboratory before going to bed, and only fatigue could cancel out the excitement of anticipating tomorrow’s findings, which would otherwise have prevented sleep!⁴⁷

⁴² *Ibid.*, pp. v, 1–2, 3, 9.

⁴³ *Ibid.*, p. 2.

⁴⁴ *Ibid.*, pp. 10, 13.

⁴⁵ *Ibid.*, p. 13. My emphasis.

⁴⁶ Thomas Horder, *Fifty years of medicine*, London, Duckworth, 1953, pp. 12–13.

⁴⁷ *Ibid.*, p. 12.

A Tale of Two Sciences

Horner was aware, of course, that time precluded the doctor carrying out all the tests required but, in a lecture given in 1912, he observed, "I hold very strongly that he should know the exact meaning of such investigations, should see them done, and, as far as is possible, should know how to do them". Indeed the whole tone of the lecture was to caution the clinician on the dangers of not keeping pathology subservient to the bedside and to warn against allowing "[clinical] pathological obsessions' to control the field of diagnosis and therapeutics". Horner was not alone in these views and was acquainted with clinicians who carried out even the most laborious tests themselves. "Only the other day", he recounted, "a patient told me that an eminent specialist in tropical diseases kept him waiting more than two hours whilst his blood, sputum and stools were searched for parasites".⁴⁸ In some instances technical problems triumphed and even the most skilled clinician had to concede defeat. In the case of the Wassermann reaction, Horner noted, "As may be readily gathered, the test is at present altogether beyond the powers of the clinician, and necessitates exact laboratory methods".⁴⁹ However, it is the optimism of the expression "at present . . . beyond the powers of the clinician" that is striking here.

The second decade of the twentieth century saw both men become established figures. Brown, for example, delivered the Croonian Lectures at the Royal College of Physicians in 1918, the year in which Horner was knighted. The war seems not to have been a very significant feature of their medical experience. Horner served in the RAMC in London at the 1st London General Hospital and spent six months at a base hospital in Abbeville, France, in 1915. But apart from military rounds in army hospitals in the London area he was able to fulfil his Bart's commitments and continue his private practice. Brown had served as a physician in South Africa during the Boer War and in the Great War he served in the 1st London General Hospital as a captain.

The Interwar Years

I now trace the ways in which Horner's and Brown's views of their cherished laboratory sciences were modified in the interwar years, notably in response to broad cultural and political change, particularly in so far as these were manifest in medicine. Brown, unlike Horner, specifically addressed the effects of the war on western culture and like so many of his contemporaries expressed a realization that those brought up in the 1870s "regarded the then existing state of affairs as normal, certain, and permanent and that the war brought 'disillusionment'".⁵⁰ It would be difficult to discover an age in which physicians were not writing on civilization as a source of disease, none the less Horner and Brown found life in the interwar years to be a significant source of ill health.⁵¹ In the case of Brown, a clearly articulated theory of the diseases of civilization had been worked out by the end of the war although it obviously had its roots in his pre-war conjectures. His *The sympathetic*

⁴⁸ Thomas Horner, 'Clinical medicine as an aid to pathology: a criticism', *St. Bartholomew's Hosp. J.*, 1911–12, **19**: 192–5. The title was intentionally ironic.

⁴⁹ Horner, *op. cit.*, note 41 above, p.151.

⁵⁰ Walter Langdon-Brown, *Thus we are men*, London, Kegan Paul, Trench, Tubner, 1938, pp. 164–5.

⁵¹ On the ubiquitous condemnation of the diseases of civilization, see Roy Porter, 'Diseases of civilization', in W F Bynum and Roy Porter (eds), *Companion encyclopaedia of the history of medicine*, 2 vols, London, Routledge, 1993, vol. 1., pp. 585–600; Charles Rosenberg, 'Pathologies of progress: the idea of civilization as risk', *Bull. Hist. Med.*, 1998, **72**: 714–30.

nervous system in disease appeared in 1920, based on his Croonian Lectures. Central to Brown's view was a claimed disjunction between biologically evolved, adaptive mechanisms and the artificial demands of modern life. He noted

when, under conditions of modern life, emotion is dissociated from the movement it should evoke under more natural conditions, the preparations made for that movement are wasted. . . . this principle explains some of the phenomena of disease, and renders intelligible the fact that worry is more injurious than work. Crile quotes the saying, 'When stocks go down in New York, diabetes goes up'.⁵²

Horner too saw a relation between the demands of current civilization and disease. In an address in the United States in 1925 he reportedly blamed the "pace of modern life" and the "nervous and emotional strain of living" for the "new" diseases that had been exchanged for "old" ones.⁵³ This may have been a revised position for Horner who, in 1903, had rejected George Miller Beard's widely employed concept of neurasthenia and discussed the nervous symptoms attributed by Beard to "over-civilisation" in terms of physical factors such as trauma, tobacco addiction, the climacteric, etc.⁵⁴

Horner and Brown confronted the 1920s as men in their fifties who had been exposed to the gradual reform of the early twentieth century. Both seem to have adopted as a political creed the gradualism, individualism and organicism of this era.⁵⁵ Horner was quite explicit about his political beliefs by the thirties: "If doctors had political colour, like lawyers, it must needs be Liberal, and—I speak entirely without prejudice—I think a re-birth of that spirit in British politico-social life would be one of the best medicines that our strained lives could have administered to them."⁵⁶ Both men were liberals and professionals. They were devoted to rationalist causes, such as eugenics, to effect gradual, controlled social progress. Both would have enjoyed hearing themselves described by that interwar portmanteau word, humanist. Horner wrote an essay on 'The doctor as a humanist' and Brown's obituarist referred to him as "a humanist in every sense of the word".⁵⁷ In deploying this term these men and others like them were drawing on the Renaissance sense of humanism as indicating broad and deep learning, notably in classical sources. Brown, wrote another obituarist, was a "humanist, a modern example of the scholar-physicians in the succession of Thomas Linacre".⁵⁸ But such men also valued modern scientific learning, and in this sense they situated themselves as scientific or secular humanists, that is gradualists, evolutionists, meliorists who saw human progress in terms of betterment through scientific knowledge rather than through faith.

⁵² Walter Langdon Brown, *The sympathetic nervous system in disease*, London, Henry Frowde, 1920, p. 27. George Crile, an American surgeon famous for his researches on shock who later turned his attention to psychosomatic disorders.

⁵³ Report of a meeting of 'Interstate Post-graduate Assembly of America', *Br. med. J.*, 1925, i: 1051–3.

⁵⁴ Horner, op. cit., note 23 above. On Beard, see Charles E Rosenberg, 'The place of George M Beard in nineteenth-century psychiatry', *Bull. Hist. Med.*, 1962, 36: 245–59.

⁵⁵ On the marked move to organic political thought, in all sorts of ways, in these years, see Harris, op. cit., note 2 above. On a particular formulation and quite probably the one Horner and Brown adopted, see Michael Freedon, *The New Liberalism: an ideology of social reform*, Oxford, Clarendon Press, 1978.

⁵⁶ Thomas Horner, op. cit., note 5 above, pp. 16–17.

⁵⁷ *Ibid.*, pp. 19–41; *Lancet*, op. cit., note 7 above, p. 547.

⁵⁸ *Br. med. J.*, op. cit., note 7 above, p. 556.

They were, however, by no means hostile to Christianity. Both Horder and Brown had church memorial services. Horder co-authored a book sympathetic to what the title called *The philosophy of Jesus*.⁵⁹ It was in relation to religion that a third meaning of humanism was being drawn on when the term was used in these circles. Humanism evoked the ideal of humanity or compassion. In one of his essays, Brown found in St Francis the “complete expression” of the “humanitarian attitude” and he linked this to the founding of St Bartholomew’s Hospital.⁶⁰ In this context the physician was presented by such men primarily as a practitioner: the skilled and creative artist, the student of humanity, the trained observer and listener. In the combination of dedicated professional and civilized human being the doctor was the successor to the priest. In the thirties Horder declared that the doctor “must needs be a priest as well as a physician. . . . [and] if the doctor was of necessity a humanist in former generations, it behoves him . . . to be all the more a humanist to-day”.⁶¹ “The doctor”, he noted in another address, “is in the privileged position of the Almighty”.⁶² Similarly, Brown explained, the doctor was a very powerful figure, “we cannot even observe a patient”, he said, “without altering him for good or evil”.⁶³ The physician besides having an obligation to the patient was also a custodian of cherished, historically-accumulated values. This sense of the doctor’s role in society generally was expressed by Horder in 1924: “Medical men are citizens as well as doctors, and the medical profession has greater privileges and deeper obligations than are represented by the daily round of visits to sick persons”.⁶⁴

It was their attempts to square the relative stability of the pre-war world with the upheavals of the interwar ones in the light of such liberal and professional values that informs many of their mature reflections. Not only did they have to confront the obvious political and economic crises of these years, their writings show deep concern with the perceived evils of modernity: mass production, mass culture, standardization and urban growth. There was more to this than detached philosophical reflection, for they also inhabited a social order that was itself under threat. The luxurious patrician world in which these men from modest non-conformist backgrounds circled was changing and was riddled with conflicting moral values. The aristocratic order with which they had made contact in their youth “had been undermined by two generations of social decay and corruption”.⁶⁵ Values, such as charitable service, were being eroded by the very professionalism these physicians endorsed. There is no evidence that they experienced this decay in any material sense, there was plenty of new money from newspaper tycoons and industrialists to support private practice.

Changes in society at large were equally perceptible in science and in medicine. The modern laboratory sciences were not simply a set of techniques and a body of knowledge that were introduced into medicine by adding them onto pre-existing practices. Laboratory science changed the social relations of medical practice. Many who were introducing new sciences into medicine were using them to redefine the place of medicine in society. With the laboratory, whether diagnostic or experimental, came new hierarchies, the division of

⁵⁹ Thomas Horder and Harry Roberts, *The philosophy of Jesus*, London, Dent, 1944.

⁶⁰ Brown, op. cit., note 50 above, p. 262.

⁶¹ Thomas Horder, op. cit., note 5 above, p. 35.

⁶² *Ibid.*, p. 179.

⁶³ Walter Langdon-Brown, ‘The return to

Aesculapius,’ *Lancet*, 1933, ii: 821–2. A sentiment Horder explicitly mentioned and of which he approved. Thomas Horder, op. cit., note 5 above, p. 21.

⁶⁴ Horder, op. cit., note 31 above, p. 485.

⁶⁵ Cannadine, op. cit., note 3 above, p. 354.

labour, specialism and scientific management. The university professorial unit was seen by many as the model for organizing medical work and the site of production of medical knowledge. Medical education was being reorganized. Basic scientists, in the interwar years increasingly claimed that the future of medicine and sound medical education lay in the laboratory, not on the ward. There was friction between the Royal College of Physicians and the Medical Research Council.⁶⁶ There were changes at Bart's. A full-time chair in physiology had been established in 1915 and clinical professorial units in medicine and surgery commenced work in 1919 and 1921 respectively. Research and teaching laboratories were built there in the early 1920s.⁶⁷ The interwar years saw increasing concern with medical efficiency. As the laboratory entered medicine, medicine was also increasingly brought into administrative and economic connection with the state or corporate philanthropy, the Rockefeller Foundation for instance.⁶⁸ Ideas of state medical service frequently surfaced in the interwar years, certainly to Horder's disgust.⁶⁹

The patrician social order in which Horder and Brown circulated sustained the sort of clinical medicine discussed at the outset. It is their continuing attempts to endorse the new sciences, to accommodate themselves to a changing world and not disrupt their clinical universe which will concern me here. I now trace, chronologically, the manner in which these various intellectual and material issues were dealt with, both directly and indirectly by Horder and Brown. One of the features which characterizes their writings at this time, as indeed it did those of many other authors of the period, was an increasing employment of holistic or organicist ideas in relation to both the body and society. This emphasis was not new and, as in many other intellectual areas, was an elaboration of themes deployed before the war. I have discussed the origins, content, and meanings of this move in British clinical medicine and its wider significance elsewhere.⁷⁰

Horder's interwar publications on clinical medicine and pathology were various, although rheumatic heart disease, a pre-war concern, figured large. The role of research and the place of the diagnostic laboratory in medicine appeared frequently in his writings. In the immediate post-war period he was alarmed at a possible decline in government spending on medical laboratory research because of a change in its perceived relevance to

⁶⁶ See, for example, Joan Austoker, *A history of the Imperial Cancer Research Fund, 1902–1986*, Oxford University Press, 1988, p. 86; Joan Austoker, 'Walter Morley Fletcher and the origins of a basic biomedical research policy', in Joan Austoker and Linda Bryder (eds), *Historical perspectives on the role of the MRC*, Oxford University Press, 1989, pp. 23–34.

⁶⁷ Victor Cornelius Medvei and John L Thornton, *The Royal Hospital of St. Bartholomew*, London, St Bartholomew's Hospital, 1974.

⁶⁸ For an excellent study of just such a change see Steve Sturdy, 'The political economy of scientific medicine: science, education and the transformation of medical practice in Sheffield, 1890–1922', *Med. Hist.*, 1992, 36: 125–59.

⁶⁹ These, for Horder, certainly, with their promise of bureaucratization and threat to freedom, constituted one of his worst nightmares. See his 'The place of the voluntary hospitals in relation to health

services', *Br. med. J.*, 1928, ii: 27–9. Horder was a vociferous opponent of a National Health Service (NHS) in the form it was introduced after the second world war. This opposition is easily caricatured as reactionary. Horder's response, however, was that of an ageing Edwardian liberal who feared bureaucratization, the dominance of large hospitals and the marginalization of the general practitioner. Criticisms all currently levelled at the NHS.

⁷⁰ Christopher Lawrence, 'Still incommunicable: clinical holists and medical knowledge in interwar Britain', in Christopher Lawrence and George Weisz (eds), *Greater than the parts: holism in biomedicine 1920–1950*, New York, Oxford University Press, 1998, pp. 94–111. For an overview of holism in the period, see Christopher Lawrence and George Weisz, 'Medical holism: the context', *ibid.*, pp. 3–22. For studies of other varieties of medical and scientific holism in the period, see the other essays in the volume.

national security.⁷¹ At this time he expressed no worries about the misuse of laboratory tests by clinicians but did repeat his long-standing concern that bench and bedside were becoming separate spheres. This concern was voiced with increasing intensity in the late twenties to be joined in the thirties by the worry that a multiplicity of tests were being substituted for good clinical practice. In 1920 Horder reviewed Sir James Mackenzie's *The future of medicine*. Horder situated Mackenzie's work in the post-war "spirit of revival" which found medical science and medical teaching "[l]ike most other things, . . . lacking, and in sore need of 'reconstruction'". There are two points here. First, by the end of the review the reader could hardly fail to understand that Horder favoured medicine being left untouched by anything except piecemeal reform (the "newly established Ministry of Health" was clearly seen as a "reconstruction"). Second, Mackenzie's proposals for medical reform were almost certainly those of a minority (perhaps of one). Mackenzie's work attacked the increasing specialization of medicine, the trend towards the use of instruments, the excessive presence of laboratory science in the medical curriculum and the failure to appreciate the general practitioner's unique potential as a clinical researcher. Horder, although applauding many of these sentiments, found Mackenzie's unflattering comparison of clinical and laboratory methods "reactionary" and suggested Mackenzie's solution to the problems that he diagnosed would require the clinician cutting himself off from the laboratory. What was required, however, was greater collaboration between clinician and pathologist or bacteriologist. That the ward and laboratory might become increasingly separate spheres he acknowledged in his observation that it was "almost a vogue to speak of pathology and clinical medicine as being in opposition".⁷²

In the same way that Horder was to become increasingly critical of aspects of laboratory science in the 1920s, so he was to take an increasingly suspicious view of trends in the organization of medical work. Shortly after the war Horder was advocating "group clinics", albeit of the sort in which a single general clinician was in overall control. Indeed the *British Medical Journal* reported his belief, expressed at a meeting in 1922, in the "urgent desirability of great and even drastic changes in medical practice" as far as group work was concerned. There was possibly a little licence in the reporting here. As good as his word, Horder did briefly enter group practice in Brook Street in 1923 with other physicians and surgeons and various "experts". It was not a success in terms of social relations and he was soon back in Harley Street.⁷³ The "group system", he eventually decided, "has its advantages" but unless "a general clinician of experience" is on its panel it "cannot effect the best service for the patient".⁷⁴

After the war, Brown published regularly on metabolic, endocrine and nervous disorders. His work showed increasing investment in the physiological sciences he had adopted before the war. Pre-war themes were restated and developed. In 1920 he was emphasizing the importance of understanding health in terms of "balance", and describing

⁷¹ Thomas Horder, 'Preventive treatment in influenza', *Br. med. J.*, 1919, ii: 695–8, on p. 696.

⁷² Thomas Horder, 'The future of medicine', *St. Bartholomew's Hosp. J.*, 1920, 27: 143–5.

⁷³ Mervyn Horder, op. cit., note 5 above, p. 31, and personal communication. Thomas Horder would

make a fascinating study in the relation between temperament and ideology. His son described him to me as a "loner".

⁷⁴ Thomas Horder, op. cit., note 5 above, pp. 175–6.

disease as the outcome of an external force and the body's efforts to restore "equilibrium" by reaction.⁷⁵ He continued to update his *Physiological principles* and by 1924 the fifth edition was 150 pages longer than the first. The tone of the work, however, remained the same. Thus the chapter on glycosuria was primarily devoted to explaining the rationale of dietetic management. Insulin was described as an agent which could "reinforce" this approach.⁷⁶ Brown devoted increasing attention to conditions in which there was marked psychological distress, adopting aspects of Freud's psychoanalytic theories.⁷⁷ None of the sciences that Brown championed threatened clinical autonomy quite so immediately as clinical pathology was beginning to do, even though they might challenge for space in the medical curriculum. Their findings were shaped and moulded by Brown at arm's length, as it were, into clinical accounts which stressed the interrelated nature of the body's reactions in disease.

As noted, Brown's *The sympathetic nervous system in disease* appeared in 1920. The choice of the sympathetic system is interesting. Clearly it was a topic partly chosen because of Brown's youthful experiences, notably learning physiology with W H Gaskell. Equally it was a subject related to his endocrinological interests. But it had wider uses. It was employed by Brown to develop an evolutionary model of the body and society as normally or ideally integrated wholes. The healthy body was integrated not merely corporeally but psycho-physically. Brown deployed modern physiological and psychological science to underwrite the clinical imperative that the whole patient should be the subject of the physician's attention (Horder too was an advocate of more psychology in the curriculum for the same reason).⁷⁸ For Brown, both body and society could display evolutionary regression to abnormal or pathological states and, when cognitive factors were involved, these states reproduced traits found in the infant, the primitive or the insane.

As in his *Physiological principles*, teleological language informed Brown's discussion. He gave no detailed account of the sympathetic system's anatomy only "the main plan". The sympathetic system he noted was "brought rapidly into play" "in pain, fear, rage and any intense excitement". Its "katabolic activities" were "defensive in origin and aided the primitive animal in its struggle with its antagonist".⁷⁹ Brown discussed the relation of the sympathetic system to the endocrine glands stressing their integration. The explanation for this was evolutionary. The most primitive forms of life, now and in the past, responded to chemical stimulants. The nervous system, which enabled a more rapid response when self-preservation was at stake, was a comparative late-comer on the evolutionary stage. This "newer express route" had then "evolved in connection with the more primitive" and, as the endocrine glands and the sympathetic nervous system became specialized, they remained associated. "This association", he observed, "is reciprocal . . . Their relationship is shown in disease as well as in health, and is reflected in many of the neuroses and psychoses".⁸⁰ The endocrine and sympathetic systems were, literally, constitutive of

⁷⁵ Walter Langdon Brown, 'Diabetes in relation to the ductless glands', *Br. med. J.*, 1920, ii: 191.

⁷⁶ Brown, op. cit., note 34 above, 5th ed., 1924, p. 272.

⁷⁷ See obituaries, op. cit., note 7 above. Horder considered the introduction of psychology as a compulsory subject in the medical curriculum "long

overdue'. Thomas Horder, op. cit., note 5 above, p. 49.

⁷⁸ Horder, op. cit., note 20 above, p. 916. I have no evidence that Horder was involved in the Medical Society of Individual Psychology to which Brown seems to have devoted a great deal of attention.

⁷⁹ Brown, op. cit., note 52 above, pp. vii, 14.

⁸⁰ *Ibid.*, pp. 23–4.

individual and social integration and implicated in their breakdown. For Brown there was a seamless continuity, guaranteed by evolution, from the lowest biological forms to the highest social formations. In 1931 he was to write, his tongue scarcely in his cheek: "There is thus no break in the chain between simple reflexes and the evolution of the medical profession".⁸¹ Similarly, in his discussion of the thyroid, he noted: "[w]hen . . . all the bodily activities have to be quickened . . . the thyroid gland must be brought into play". He added, "this emergency ration is drawn on at puberty, marriage, and pregnancy, while the gland shows retrogressive changes at the climacteric".⁸² In Brown's conceptualization, marriage was part of normal (in a normative sense) biological evolution.

In the highest organisms and in society the central nervous system and brain were essential to integration. Using Hughlings Jackson's conception of the evolution of the nervous system, Brown argued that spontaneous or primitive actions had built-in inhibitory mechanisms, but higher actions were under the control of the intellect. He again saw a relation here between primitive and civilized societies that was more than analogical, for it was grounded in evolutionary progress. In modern society, more basic or primitive systems could emerge as inappropriate responses. Thus "with increasing civilization the threshold to pain and painful emotion becomes lowered", the result being that instinctive protective responses appeared as "psychoneuroses". He noted:

It may be urged that such psychoneuroses are quite distinct from the present topic. But my object is to show that, just as a psychical impression may produce a disturbance at the highest level exciting an obsession, or at the second level exciting paralysis, contracture, or anaesthesia, so it also may do so at the lowest level. The shell-shocked soldier may develop a contracture of his arm, the girl exposed to an air-raid may develop Graves' disease.⁸³

Brown used this integrative model to explain disorders generally regarded as purely organic: "If Graves' disease is 'a state of continuous fear', diabetes is a state of continuous mobilization of blood-sugar", he wrote, noting its association with excitement, shock and bereavement and the "special liability of the Jewish race, one of the most emotional of all."⁸⁴

Thus in the immediate post-war years Brown embraced experimental physiological knowledge as warmly as he had done in the interwar years. He found sufficient flexibility in his chosen subject to use it as an all-embracing explanation of society and historical change that fitted his secular, professional sensibilities. He also employed it as the basis of a model of clinical medicine that retained the whole patient as the object of the

⁸¹ Report of an address, 'Individual psychology and the sympathetic mechanism', *Br. med. J.*, 1931, ii: 753-4, on p. 753. Brown's conflation of the social and the biological was explicit in his Maudsley lecture in 1936, 'The biology of social life', in which political and biological languages were freely exchanged. Cell, individual and society, were in hierarchical continuity: "Just as cells struggle to achieve the best they can within their environment, so the individual they form struggles either to do so, or to change its surroundings". "The cause of successful evolution", he stated, "has been to

increase . . . the size of the . . . unit" and "just as the development of the higher centres checks instinctive activities, so the development of communal life must restrict the freedom of the individual". The conclusion was obvious, "A strong central government is needed to keep order, and no high degree of differentiation is possible in the animal body without the control of a centralised nervous system". Brown, *op. cit.*, note 50 above, pp. 11-31.

⁸² Brown, *op. cit.*, note 52 above, pp. 36-7.

⁸³ *Ibid.*, pp. 143-5.

⁸⁴ *Ibid.*, pp. 82, 83.

physician's attention and permitted rational therapy. The clinician's autonomy had been preserved, for in no way did Brown's endocrinological and neurological formulations leave space for anyone other than the general physician to be in control. There is no evidence that he saw experimental physiology as any sort of intellectual or institutional threat. Horder was to find keeping control of clinical pathology much more difficult.

In 1921 Horder produced *Medical notes*. The importance of clinical autonomy was strongly asserted in this work, where tradition, experience and instinct also figured large, as did the whole patient and the generalism of the physician. In one sense this is not surprising, Horder had long made clear how important he thought traditional skills were. Nevertheless, it is striking that Horder chose to publish on such matters when he did. Interesting too is the fact that the work was cast in aphoristic form and that the first aphorism in the volume, "it has been said of medicine that 'the most important thing is diagnosis; the next most important thing is diagnosis; and the third most important thing is diagnosis'" was coined by Samuel Gee following an ancient model.⁸⁵ That the worth of traditional clinical medicine was being asserted here seems clear. The second aphorism taught that diagnosis was not "the mere name of a disease" because disease was, he observed, in an formulation similar to one used by Brown, "the sum of the phenomena resulting from the interaction between the organism and various pathogenic influences". The patient's sickness, in other words, could not be reduced to the name of a disease. Various other aphorisms dealt with the clinician's skill. For example, "It sometimes happens that, whilst a consideration of the data collected in reference to a case leads to a particular diagnosis, the conclusion lacks conviction, and is *instinctively* rejected as improbable by the *experienced* practitioner", and "[t]here are four methods of eliciting physical signs, . . . Inspection, palpation, percussion, auscultation. Let not the practitioner be tempted to depart from the *traditional* sequence of these methods". The knowledge that this approach produced the fullest and most accurate data "explains why the *experienced* observer, . . . rarely changes the sequence".⁸⁶

Horder dealt at length with the details of physical examination in a section which concluded with various admonitions on the use of tools in clinical medicine. He deplored the physician who used the thermometer to detect fever (instead of employing it to measure fever ascertained by using the senses) and the sphygmomanometer before noting the state of the pulse, or the doctor who would not pronounce anaemia to be present without a haemoglobinometer. He did not decry the use of instruments as such but declared, "*The great value of an instrument is to determine the degree of a condition rather than its existence.*" Horder's sense of the independent nature of clinical knowledge was evident in the aphorism "*Pace* physiology one is tempted to say that *there is no such thing as 'normal' urine.*"⁸⁷ Clinical pathology as a distinct subject made no appearance in the text although there were references to microscopic examination of the sputa and so forth. These were few, however, and the overwhelming emphasis of the text was on unaided clinical observation (except for use of the stethoscope).

⁸⁵ Thomas Horder, *Medical notes*, London, H Frowde, 1921, p. 1, citing Gee, op. cit., note 24 above, p. 232.

⁸⁶ Horder, *ibid.*, pp. 2, 5. Emphasis mine.

⁸⁷ *Ibid.*, pp. 19, 77. Emphasis in original in both.

The Meanings of Science

Holder's simultaneous commitment to clinical autonomy and the necessity of embracing and controlling science would seem to explain an episode in the mid-1920s. In January 1924 the *Lancet* announced the death of Albert Abrams. Born in San Francisco in 1863, Abrams graduated in medicine at Heidelberg and, after practising in various European capitals, settled in the city of his birth. He published many texts and in the second decade of the twentieth century developed the concept of the "electronic reactions of Abrams" ("E.R.A."). The *Lancet* in recording his death reported "[h]is electro-tonic work developed into an elaborate system of diagnosis and treatment which was considered by scientific medicine to be devoid of any basis".⁸⁸ In the same journal, the following week, a simultaneous exposition and denunciation of the system appeared by F Howard Humphris, past president of the American Electrotherapeutic Association. Humphris explained that Abrams believed that "[e]lectrons not cells are the units of the body", that "[p]hysiologic phenomena are manifestations of vital energy" and that "[p]athologic phenomena are manifestations of perturbed electronic energy". These energies had definite rates of "vibration" that could be determined by the "oscilloclast", a device invented by Abrams. This was reportedly described in the United States press as: "A contraption which might have been thrown together by a ten year old boy who knows a little about electricity to mystify an eight year old boy who knows nothing about it". To

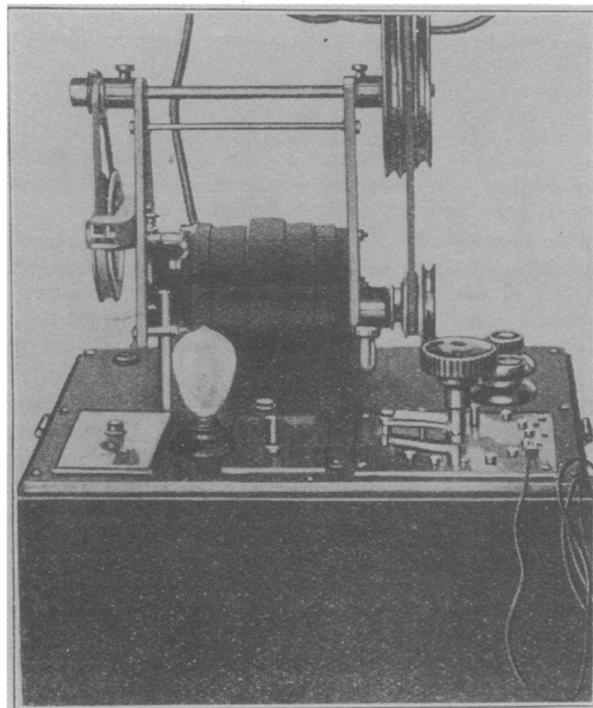


Figure 1: Abrams' 'oscilloclast'. *Lancet*, 1924, i: 177. (Wellcome Institute Library, London.)

⁸⁸ 'Dr. Albert Abrams', *Lancet*, 1924, i: 146.

make a diagnosis, either the patient or, instead, a healthy person together with a specimen of the patient's blood, saliva or handwriting had to be examined. These were connected to the apparatus and the abdomen of the patient or the patient's proxy percussed by the clinician. The diagnosis depended on any dullness detected or the percussion notes obtained. Dullness varied not only with pathology but with such factors as the subject's religion.

Humphris reported diagnoses made from specimens sent by post to practitioners who used Abrams' device. In one case a follower of Abrams reported that a specimen showed evidence of: "Congenital and cryptogenic syphilis; congenital gonorrhoea; carcinoma of stomach, small and large intestine, colon pancreas, kidneys and bladder; epithelioma (not localised); sarcoma of spine; chronic malaria; diabetes." The sufferer, however, was reassured "This may look like a formidable array of diseases to you, but it is not so bad from an electronic standpoint . . . if all other things are equal your chances for recovery are very good." Humphris then revealed that, unknowingly, the diagnostician had examined the blood of a healthy rooster and not a sick person.⁸⁹ In sum, the tone of the *Lancet's* account and its hilarious examples must, one would have thought, have made reputable practitioners think Abrams' system both ludicrous and a piece of rank charlatantry. Subsequent letters and an article in the *British Medical Journal*, also in January, could only encourage the historian in this opinion.⁹⁰

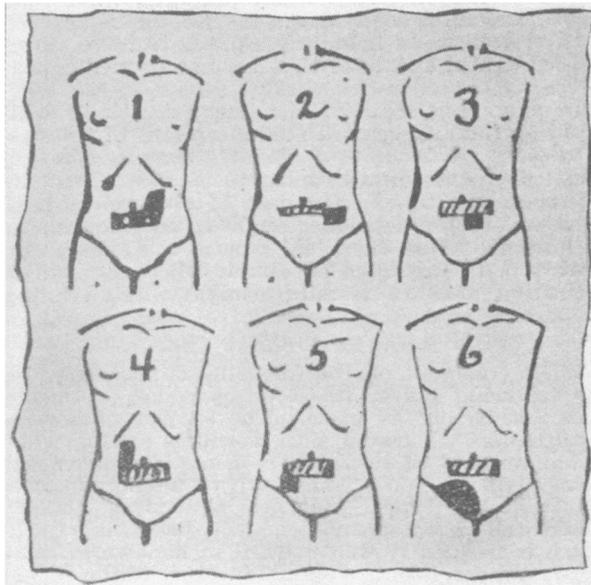


Figure 2: Abdominal dullness in various religions according to Abrams. *Lancet*, 1924, i: 176. (Wellcome Institute Library, London.)

⁸⁹ F Howard Humphris, 'The "electronic reactions" of Abrams (E.R.A.)', *ibid.*, pp. 176–8.

⁹⁰ *Ibid.*, pp. 309, 359–60, 415–16; *Br. med. J.*, 1924, i: 164–5.

Which only goes to show how easy it is to be misled, because around this time, Horder developed what he was later to call “a sympathetic interest in the work” of those investigating claims made for “E.R.A.”⁹¹ In March 1924 Horder appeared in the *British Medical Journal* with an article which, considering the obloquy to which the oscilloclast had been exposed, could only be construed as defensive. He began in familiar fashion, he would proceed “[n]ot in a spirit of dogmatism . . . but in a spirit of inquiry” since “most of us . . . belong to no particular method or school”. He recognized in Abrams’ system an idea “of such magnitude that it is absolutely subversive of most of our orthodox tenets”. Horder had learned of the system from a colleague in 1923 and, although at first sceptical, he began to “acquaint himself with the method” and came in touch with “a small group of men” who were using the instruments “for purposes of scientific investigation”. The group, which included “a trained physicist and a wireless expert”, was doing its work in “properly equipped laboratories”.

Among the clinicians investigating “E.R.A.”, Horder had been impressed by the research of “Dr. W. E. Boyd of Glasgow” who was “unfortunately . . . a homoeopathist”. Boyd had simplified Abrams’ machine and created the “emanometer”. Boyd, whose approach had been in a “scientific spirit”, had advanced the knowledge of “reactions”. Horder then gave an account of “E.R.A.” in terms of contemporary physics, explaining that Abrams had actually constructed a “form of wireless”. Boyd had “proved” that the emanometer when coupled to a human subject picked up “minute ether waves”. These, “tuned by variation of the inductance” produced local areas, dull to percussion, on the abdomen. These latter, Boyd thought, were due to muscular contraction and, Horder added, “from my own experience I am inclined to agree.” He reported “in the course of my own percussion . . . I was nearly always conscious of an increased tenseness of the rectus abdominis beneath the pleximeter finger”. Horder poured scorn on many of the claims made for the system and he insisted it was unethical to use it in treatment but ultimately he begged for “an attitude of forbearance” and exploration in a “spirit of impartiality . . . with strictly scientific methods”.⁹²

A report on Abrams’ system in the September 1924 *Scientific American* which many were to regard as damning did not stifle Horder’s interest for, at this time, along with the “wireless expert” and others, he was chairman of a self-appointed committee that was busy investigating the claims made for “E.R.A.” and in particular the studies of Boyd.⁹³ A preliminary communication of the committee’s findings was made by Horder to the Royal Society of Medicine in January 1925. Horder again gave no support to Abrams’ claims but once more reported favourably on tests carried out in Boyd’s laboratory in which two boys using the emanometer could, by percussing each other, distinguish between “active” and “neutral” substances apparently invisible to them. The committee saw no current clinical value in “E.R.A.” but none the less it made noises about possible “developments . . . on the clinical side” from Boyd’s “methods”.⁹⁴ There seems to have

⁹¹ Thomas Horder, *et al.*, *A preliminary communication concerning the “Electronic Reactions” of Abrams with special reference to the “Emanometer” technique of Boyd*, John Bale, Sons & Danielsson, London, 1925, p. 20. It is possible Horder funded the work of the committee. He certainly helped remove “certain financial obstacles” (*ibid.*).

⁹² Horder, *op. cit.*, note 31 above. William Boyd qualified MB ChB Glasgow 1915 and MD Glasgow 1919. He held appointments at homeopathic institutions and published in homeopathic journals.

⁹³ See *Lancet*, 1924, ii: 803–4.

⁹⁴ ‘The Electronic Reactions of Abrams’, *Br. med. J.*, 1925, i: 179–85.

been little published response to Horder's communication, except, predictably perhaps, hostility from some medical men and a welcome from the Secretary of the Society of Electronic Medicine.⁹⁵ The full report appeared in late March or, more likely, April.⁹⁶ There was little in it, except for detail, not covered in the *Preliminary communication* save an attack on the reliability of the previous year's reports in the *British Medical Journal*, *Lancet* and *Scientific American*.⁹⁷ There seems to have been little or no published response. Horder, however, had made himself unpopular in some medical circles, an obituarist recording the "highly critical" notices he received.⁹⁸ Royalty were oblivious. In July 1925 the *Lancet* reported his receiving the Knight Commander of the Royal Victorian Order (KCVO).⁹⁹

How, then, did a physician so steeped in clinical conservatism see anything valuable in a system that deviated so radically from tradition and that was viewed by many to be outright quackery. I am not arguing asymmetrically here: that Horder should have seen the whole thing *really was* scientific claptrap. Rather I am asking, after closure had been effected, why did Horder persist in supporting the 1920s equivalent of cold fusion after most of the medical and scientific world had denounced the system.¹⁰⁰ There are several possible reasons why this was so. Horder, although a traditionalist, was happy to introduce technological aids into bedside medicine when they seemed to be based on sound science and could be brought under the clinician's control. Clinical pathology had seemed one such aid and, to some of Horder's contemporaries before the war, the tools of this subject looked newfangled or quackish. In 1910, he wrote that some physicians still regarded lumbar puncture as novel and gave only "half-hearted" consent to its performance.¹⁰¹ Horder was being discreet since, apparently, as a registrar he had been forbidden by one of his seniors to carry out the procedure.¹⁰² Horder indeed was willing to give almost anything a try. He was one of the first physicians at Bart's to understand and use electrocardiography and was an early advocate of vaccine therapy. In 1922 he was encouraging wider use of blood transfusion in civilian practice and chiding Geoffrey Keynes for being too conservative about its possibilities.¹⁰³ On the other hand, he was ever ready to inject a note of caution when a novelty seemed to be embraced too warmly. In 1923 he expressed concern over public enthusiasm surrounding insulin.¹⁰⁴ His response to "E.R.A." fits this pattern quite well. Yet "E.R.A." itself deviates so far from the usual run of clinical innovations that additional explanation seems necessary. By 1924 Horder's cherished clinical pathology was well on the way to being institutionalized in separate laboratories in the major hospitals. Radiology had similarly become separated. The clinician's autonomy was under threat. In Horder's formulation Boyd's emanometer required the application of a clinical skill in conjunction with an innovation, based,

⁹⁵ *Ibid.*, pp. 192–3, 236–7, 281–2.

⁹⁶ *Ibid.*, p. 702.

⁹⁷ *Preliminary communication*, op. cit., note 91 above, p. 12–18.

⁹⁸ *Br. med. J.*, 1955, ii: 624. The obituarist passed over Horder's endorsement of Boyd in such a way as to suggest to this historian that the whole episode was an embarrassment to Horder's friends.

⁹⁹ *Lancet*, 1925, ii: 210. Indeed perhaps Horder benefited from supporting a homeopath!

¹⁰⁰ See Harry Collins and Trevor Pinch, *The Golem: what everyone should know about science*, Cambridge University Press, 1993. On cold fusion see ch. 3.

¹⁰¹ Horder, op. cit., note 41 above, p. 90.

¹⁰² Mervyn Horder, op. cit., note 5 above, p. 17.

¹⁰³ *Br. med. J.*, 1922 ii: 1078–80.

¹⁰⁴ *Br. med. J.*, 1923 ii: 445.

apparently, on modern laboratory science, to examine body products. It was the post-war equivalent of "Horder's box". It put the clinician who used modern science back in total control.

While Horder was busying himself with such things, Brown was publishing widely on clinical aspects of endocrinology and establishing himself as an authority on the subject. One of the many appeals of endocrinology for Brown was that it provided a "rational basis for treatment".¹⁰⁵ Brown used endocrinology to defend clinical medicine as rational to physiologists, some of whom were inclined to be supercilious about it. He also employed endocrinology to defend the virtues of experimental physiology to practitioners, some of whom were still disposed to dismiss its clinical relevance.¹⁰⁶ By the mid-1920s endocrine therapy had become something of a scandal. In 1925 Swale Vincent, professor of physiology at the Middlesex, talked of the "distressing spectacle . . . of hundreds or thousands of medical men . . . prescribing preparations which were nearly always of doubtful value and were quite often inactive in health or disease." In defence, Brown attributed "some of the recent disagreement between the physiologist and the clinician on endocrine therapy to non-realization by some laboratory workers of the urgency of the problem which a sick man presented." He was prepared to acknowledge, however, "the undue suggestibility of some observers at the bedside". Nevertheless, conflicting evidence had led some physiologists to doubt "whether the observed pharmacological actions of adrenaline and pituitrin had any relation to the functions of the structures from which the extracts were prepared" but Brown "could hardly believe that the body was so ill designed as that".¹⁰⁷

In 1922 Brown had described endocrinology as "the missing link between biology and psychology"¹⁰⁸ and in 1927 his revealingly titled *The endocrines in general medicine* appeared. Brown used the endocrine system to bring together mind and body, individual and society, man and animal, and past and present and to integrate all these into a single biological domain. Such enterprises were not uncommon on both sides of the Atlantic in these years. For Brown, the evolution of the nervous and endocrine systems explained primitive societies, human childhood, the psychoneuroses and the unique character of the individual's sickness which inevitably had physical and psychical characteristics. Endocrines were deeply implicated in emotional expression. Myxoedematous patients, for example, were usually melancholic but could become maniacal. Conversely mild hyperthyroidism was essential to artistic creation (as well as child-bearing, making pregnancy and creativity mutually exclusive). Similarly, slightly excessive pituitary secretion could be associated with "a good intellect, with an imaginative force", but very excessive activity could be associated with "failure of the moral sense". Modern science therefore was consistent with, indeed explained, ancient observations of the totality and uniqueness of health or disease in the individual. Modern science also transcended dualism, since "the two newest methods in medicine, psychotherapy and endocrinology, become not opposed, but different aspects of the same problem."¹⁰⁹ By employing

¹⁰⁵ *Br. med. J.*, 1925, i: 695.

¹⁰⁶ See the views cited in Lawrence, op. cit., note 70 above.

¹⁰⁷ *Br. med. J.*, 1925, i: 695.

¹⁰⁸ Walter Langdon Brown, 'The position of the

thyroid in the endocrine system', *Br. med. J.*, 1922, i: 85-8.

¹⁰⁹ Walter Langdon Brown, *The endocrines in general medicine*, London, Constable, 1927, pp. 109, 131.

endocrinology as part of a global account of the body in health and disease, Brown preserved it as part of general medicine. His obituary observed he was interested in endocrinology “not as a speciality (for his was too Hippocratic a view for the admission of a speciality) but as a tool to the better understanding of medicine as an indivisible whole”.¹¹⁰ Indeed, as far as I can gauge at present, Brown was familiar with all modern endocrinological work once it entered the clinical domain but he does not seem to have participated in work on, or discussions of, technical endocrine physiology or biochemistry. He moved in the clinical world not among physiologists and his reputation among the latter merits further study.

Brown used endocrinology to bind together bench and bedside and to defend them as distinct but mutually dependent spheres. To begin with, he wrote, “[t]he pioneer observations . . . [in endocrinology] were made at the bedside”. The correlation of clinical abnormalities with dysfunction of particular organs “was pointed out by clinicians before any laboratory observations had been made on the subject”. To gain further knowledge “clinical observation must continue to play a large part by the careful study of abnormal types.” No doubt evoking Gee in spirit, if not in name, Brown declared “[t]here is no need, therefore, to apologise for using empirical methods” even though “[t]he empirical method has always been suspect by the laboratory.” Refusing to privilege either bench or bedside Brown observed that empiricism was “a procedure by trial and error just as the experimental method is.”¹¹¹

In 1928 Horder and A E Gow’s *The essentials of medical diagnosis* was published. Gow was a former Bart’s student and at the time of publication ‘Physician in Charge of Out-Patients’. In 1930 he was promoted to full physician. Like Horder, he was considered primarily as a clinician and teacher. Their book was aimed mainly at medical students.¹¹² As in Gee’s work of forty years earlier, the authors stressed variation and the relativity of the normal, as in their observation that “the pallor natural to a city clerk is pathological in an agricultural labourer”. The work was comprehensive, describing not only straightforward history taking and physical examination but the use of instrumental examinations such as electrocardiography. The blood levels of various chemicals were also described, it being assumed the student would have recourse to special laboratory facilities to measure these. But it was “taken for granted that urine and blood [haematological] examinations form a part of the routine procedure in all cases”.¹¹³ In other words the practitioner was expected to carry out a great many of the tests described and certainly to be familiar with the methods of performing others. In the second edition produced many years later they recorded that they “were fully aware, in 1928, that the whole character of their effort contrasted markedly with the tendency that had begun to be apparent in the sphere of diagnosis—the parcelling out of the patient to a number of ancillary investigations, biochemical, radiological and the like.”¹¹⁴ But even in the 1928 edition many of the bacteriological tests that had been contained in “Horder’s box” had disappeared. The description of the examination of, say, the sputum followed the model of *Clinical pathology in practice* of 1910, the same diseases were described but without

¹¹⁰ *Lancet*, op. cit., note 7 above, p. 547.

¹¹¹ Brown, op. cit. note, 109 above, p. 131.

¹¹² Thomas Horder and A E Gow, *The essentials*

of medical diagnosis, London, Cassell, 1928.

¹¹³ *Ibid.*, pp. 7, 10.

¹¹⁴ *Ibid.*, 2nd ed., London, Cassell, 1952, p. xiii.

their bacteriological tests. Presumably these were now regarded as being consigned to specialized laboratories.

That this was happening and what Horder thought about it was revealed in a paper published in July of the same year (1928). One of the paper's main themes was Horder's familiar lament that clinician and clinical pathologist did not consult often enough. This situation was worsening, notably owing to "commercializing" of laboratory work, resulting in the growth "of laboratories in which the personal element as between doctor and pathologist is quite eliminated. Materials are dumped in these places much as coals are dumped at our houses. I supposed such places are necessary; anyway they seem to have come to stay. I do not patronise them myself". Another theme in the paper, and again one of Horder's favourites, was individualism. After complaining that some pathologists introduced too much of their research interests into their reports and while pleading for more uniformity, he added, "I do not mean that everybody should make his report . . . follow the same stereotyped plan; that would be to stultify individual effort and individual genius". There was, he added, "a personal equation" in these things.¹¹⁵ This, of course, was the phrase used by Brown, long before, to describe how, at the bedside, general rules had to be tailored to the individual's constitution and sickness.¹¹⁶

Disillusion

During the 1930s both authors (now in their sixties) wrote increasingly on the evils of modernity (including nudism), philosophically embellishing themes that had preoccupied them in earlier decades.¹¹⁷ Like many other members of elites in Britain (F R Leavis and his circle are the obvious example) they agonized over a possible "decline of the west".¹¹⁸ Large-scale organization, standardization and mechanization seemed to challenge the small-scale, organic, face-to-face world they valued. "To-day we are witnessing the

¹¹⁵ Thomas Horder, 'On the need for standardization in clinical pathology', *Lancet*, 1928, ii: 137–9.

¹¹⁶ Brown, op. cit., note 33 above, p. 49. The phrase had been used of the doctor, rather than the patient, three years earlier by Horder when discussing septicaemia: "In no disease did the personal equation of the doctor enter so largely" *Br. med. J.*, 1925, i: 657–8.

¹¹⁷ On nudism, see Thomas Horder, 'Medicine and morals', *Lancet*, 1934, i: 795–8.

¹¹⁸ On literary elites, see D L LeMahieu, *A culture for democracy: mass communication and the cultivated mind in Britain between the wars*, Oxford, Clarendon Press, 1988; John Carey, *The intellectuals and the masses: pride and prejudice among the literary intelligentsia, 1880–1939*, London, Faber, 1992. The difference between Leavis and the doctors was that Leavis and the Scrutineers were to some extent engaged in overthrowing a gentleman-scholar tradition. See Francis Mulhern, *The moment of scrutiny*, London, NLB, 1979, p. 32. Perhaps more correctly they were engaged in overthrowing the critical apparatus employed in that tradition. Mulhern

argues that "neither birth nor occupational status fitted its members for the role of scholar-gentlemen. They were, for the most part, petit or lower bourgeois in origin" (p. 32). The same could be said for many of the doctors. See also Ian Mackillop, *F. R. Leavis, a life in criticism*, London, Allen Lane, 1995. For a comparison of Leavis and the doctors, see Lawrence, op. cit., note 70 above. On the medical profession and gentility, see Christopher Lawrence, 'Medical minds: surgical bodies: corporeality and the doctors', in Christopher Lawrence and Steven Shapin (eds), *Science incarnate: historical embodiments of natural knowledge*, Chicago University Press, 1998, pp. 156–201. The similarities of the medical responses to modernity to those of some modernists in the arts by no means entailed identity of sentiments on all matters. "Mr T. S. Eliot", wrote Brown, "who is bleakly austere in prose says that in poetry, meaning only plays the part of the lump of meat in the turned-up end of the dog-stealer's trousers. Meaning is only required to focus the reader's attention until the poem has him in thrall. Well that may be so, but I still hanker after that bit of meat." Brown, op. cit., note 50 above, p. 45.

apotheosis of the machine in human life!" complained Horder 1936.¹¹⁹ "This", said Brown in 1938, "is an age of machines and we are becoming machine minded."¹²⁰ "[S]tandardization", Horder lamented, "thrills . . . [the citizen] nearly as much as mechanization", finding one example of such regimentation in "the white or red line painted at the thirty-mile-per-hour mark on the speedometer of some motor-cars".¹²¹ Standardization was killing a (mythical) England. Brown considered that "[i]t is one of the drawbacks of these vast new suburbs, mere dormitories, which radiate out like huge tentacles from London, destroying the countryside as they grow, that they offer so few opportunities for communal life and a social background."¹²² He complained that "the division of labour in a large factory has reached such a pitch that in many occupations craftsmanship is dead and the workman has become a robot."¹²³ Contrasted with the modern world was the simple and organic community of antiquity. Elaborating on an address given in 1931, in which he celebrated 'The return to Æsculapius', he wrote, "as I think of the marriage of science to art in medicine, the vision rises before my eyes of the Ionian sea."¹²⁴ Brown, whose whole medical *oeuvre* was focused on the concept of integration, cited the political philosophy of Jan Smuts's *Holism and evolution* approvingly and in 1935 gave the Horsley Memorial lecture, which was published as *The integration of the endocrine system*.¹²⁵

There were more tangible threats to civilization in the thirties than nudism and standardization, notably political developments in Europe. Both Horder and Brown could be numbered among Eric Hobsbawm's roll of "survivors from the nineteenth century [who] were perhaps most shocked by the collapse of values and institutions of the liberal civilization their century had taken for granted".¹²⁶ Both expressed deep concern over political change, Brown often using evolutionary language and Horder generally employing clinical terms. In the introduction to his *Thus we are men* of 1938, Brown considered it quite likely that human physical evolution was at an end and "only a psychological evolution remains" and from what follows it is clear this was equivalent to social progress. Social progress, however, would be slow because of biologically-based conflicts between the individual and the herd. Similarly conflicts between "herds", that is societies, would need to be overcome. These conflicts occurred because, "on the one hand [there is] the evolutionary demand for enlargement of the unit, [and] on the other the species-making impulse which makes for segregation". "Thus international troubles largely arise from the fact that different communities do not reach the same evolutionary level at the same time". He concluded:

If this species-making impulse is, as I think, repressing the evolutionary trend towards the expansion of the unit, one might expect that trend to take an abnormal course. The building up of vertical walls between nations is being countered by horizontal lines of cleavage, which threaten to divide Europe

¹¹⁹ Thomas Horder, op. cit., note 5 above, p. 174.

¹²⁰ Brown, op. cit., note 50 above, p. 60.

¹²¹ Thomas Horder, op. cit., note 5 above, p. 33.

¹²² Brown, op. cit., note 50 above, p. 13.

¹²³ Ibid., p. 27.

¹²⁴ Ibid., p. 49. Parenthetically, one might note the use again of the idea of marriage as, variously, something normal, evolved and an ideal, organic union.

¹²⁵ Ibid., p. 27; Jan Smuts, *Holism and evolution*, New York, Macmillan, 1926; Walter Langdon Brown, *The integration of the endocrine system*, Cambridge, The University Press, 1935.

¹²⁶ Eric Hobsbawm, *The age of extremes. A history of the world, 1914–1991*, New York, Vintage Books, 1996, p. 109.

into Fascists and Communists. This, to my mind, represents the pathological form of internationalism resulting from repression of its normal expression.¹²⁷

Horder's denunciations of collectivism were based on explicit medical analogies, notably the body's natural healing processes, the need for minimal therapeutic intervention and the centrality of the individual. Horder, like many clinicians in this period proclaimed the need for a more holistic view of disease, and the importance of rejecting the reduction of disease to bacteriological or biochemical names. Such specialized classification, he said, had had unfortunate consequences: "Nosology disappeared and pathology contracted down to the name of the infecting agent; patients no longer suffered from diseases but from micro-organisms. To the question: 'What is the matter with the man in bed 4?' the answer came: 'T.B.' . . .". Horder cited the nineteenth-century physician P M Latham approvingly: "Diseases are not abstractions; they are modes of acting, different from the natural and healthy modes—modes of disorganizing, modes of suffering, and modes of dying".¹²⁸ Brown made similar observations. "For me", he said, "the significance of this modern return to Æsculapius is the recognition of the importance not only of the disease which the patient has, but of the patient which has the disease; his reactions as an individual, his environment, and his hereditary trends." He lamented the "neglect" of "[e]xpectant treatment" which meant, he explained, "following the natural course of the disease, ready to help nature at the appropriate moment, ready to relieve symptoms as they arise. It involves care that our remedies should not do harm. The homeopath at least uses remedies that can not do harm and he waits upon the *vis medicatrix*."¹²⁹ For Horder too, the healing power of nature was the key to clinical understanding "the disharmony which we call disease can only be adjusted through the operation of processes which are already inherent in the body".¹³⁰ Horder's political conclusion from such a view of the body was that one had to be critical of "mass movements as efforts toward restoring that sense of security which is essential to national and to international well-being. The analogy from Medicine is all against treating the crowd, and all in favour of treating the individual."¹³¹ Communism and Fascism, like standardized therapies, were tyrannical. Brown similarly found "the present and urgent problem of civilisation" was "to give scope for individual development, and yet for the individual to fit into his place as part of a much larger whole".¹³²

Modernity and political change in the thirties did not simply threaten the wider social order, they challenged the organization and practice of science and medicine. Science, which Horder valued highly, was noticeably subject to fragmentation. "Our scientific meetings", he complained,

serve very largely the purpose of cataloguing more and more conclusions of disconnected researches. Shall we not soon begin to piece things together a little? A table of figures, a graph, a mathematical formula—these give us a comfortable feeling that we are arriving at exactness and precision; and so we paste them on the walls and call them a 'scientific exhibit'. But to produce these things is the function of the instrument and the machine rather than of the mind. They are merely

¹²⁷ Brown, op. cit., note 50 above, pp. 2–3, 17.

¹²⁸ Thomas Horder, op. cit., note 5 above, p. 169;
Thomas Horder, 'The vocation of medicine', *Lancet*,
1948, ii: 715–7, p. 717.

¹²⁹ Brown, op. cit., note 50 above, pp. 62, 57.

¹³⁰ Thomas Horder, op. cit., note 5 above, p. 191.

¹³¹ *Ibid.*, p. 13.

¹³² Brown, op. cit., note 50 above, p. 23.

the pabulum for the mind; they are not the product of the mind's synthetic faculty. And synthesis is essential to progress.¹³³

In the medical school the institutionalization of specialized sciences was stifling the cultivation of the clinical generalism. In 1939, he wrote,

I think we saw an unfortunate set-back when the medical schools decided to put pure anatomists, pure physiologists, and pure chemists at the head of their departments. Each professor has quite naturally wished to stake out his own claim and make it as large as possible . . . it is in the teaching of physiology especially that we still see too much cleavage from the later clinical work¹³⁴

Slightly earlier he had regretted that "some people" held that the clinician's function had been superseded and that medicine was being mechanized by "the exploitation of instruments of precision, [and] the elaboration of bacteriological and bio-chemical methods". He noted, "in my daily work, when I am faced with a mass of data resulting from the exploitation of instruments of precision, I ask the patient, as soon as I can isolate him from the laboratory equipment, 'Where does it hurt you?'"¹³⁵

By now Horder had become quite hostile to the ways in which his chosen science had grown. "Some of us", he observed,

saw the birth of clinical pathology, and many of us have watched this lusty babe grow up to a vigorous manhood. As is wont with the virile adolescent, there have been times when he thought himself more important than he really was, when he sought to bestride the whole world of medical knowledge, when he firmly believed he *was* Medicine rather than merely making his contribution to Medicine.

The idea had taken hold that "A catalogue of the flora of the fauces and/or of the faeces, a complete blood count, [and] a chemical analysis of the urine to the third place of decimals" was sufficient for arriving at a diagnosis.¹³⁶ Similarly, group practice and its related division of labour which had momentarily looked attractive after the war were now the objects of Horder's suspicion. In 1936 he observed that too often the all-rounder "stands aside and allows his specialist colleagues to take charge".¹³⁷

Brown, like Horder, also expressed a great deal of concern over modernity, yet, unlike Horder, he did not indicate that he found the distasteful features of modernity to be present in science and medicine (though we should not forget his disdain of specialism). Horder found in the organization of clinical pathology and the teaching of the basic sciences the same forces that were eroding his world in general. In response, he turned to the language of the bedside to state the need for clinical autonomy and to explain the crisis of contemporary society and the necessity of social integration and slow, professionally-guided progress. Brown, on the other hand, found in neuroendocrinological theory a language for defending the clinical *status quo* and underwriting the authority of the clinician while extolling the basic sciences. It proved a rich resource for explicating the human condition and analysing contemporary politics. Nevertheless, in spite of the remarkable changes to medicine and society that Horder had seen, he remained an

¹³³ Thomas Horder, op. cit., note 5 above, pp. 209–10.

¹³⁴ Horder, op. cit., note 20 above, p. 915.

¹³⁵ Thomas Horder, op. cit., note 5 above, pp. 166, 32, 2.

¹³⁶ *Ibid.*, pp. 168–9.

¹³⁷ *Ibid.*, pp. 175–6, 181.

A Tale of Two Sciences

optimistic liberal to the last. The 1952 justification for a new edition of his *Medical diagnosis* of 1928 now makes pathetic reading in the light of the even more radical technological transformations of medicine that were then occurring. It noted “The ‘call’ for another edition may be a sign that a return to clinical medicine is taking place, and that the mechanical approach to the problem presented by the patient has been tried and is found wanting”.¹³⁸

¹³⁸ Horder and Gow, op. cit., note 114 above, p. xiii.