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and shows that there are no insuperable philosophical problems in postulating a naturalistic, causal mode of social analysis which transcends the limited explanatory power of mere common sense, and the anti-causal view that all that can be offered are rule-obeying descriptions of actors' meanings of their performances.

One significant distinction between the social and natural sciences, Thomas admits, is that the concepts of the social sciences are evaluative (e.g. notions of human nature), to a degree far more striking than with the natural sciences; yet a naturalistic approach can cope with this fact by welcoming the continued existence of a plurality of competing theories in the area. This, however, does not mean that the social sciences are "pre-paradigm" in the Kuhnian sense (hence, pre-scientific). But neither should one expect to find a succession of "paradigms" in the development of the social sciences, in hope of proving that they are scientific through possessing their own "revolutions" and "normal science".

Incorporated in the text are some interesting side analyses (e.g. of modern Soviet sociology, or the individualism of Mannheim, or the degree to which Marxism can be taken as properly social-scientific). Overall, however, the general reader is left wondering about the ultimate thrust of the book. It reads like a succession of workmanlike digests of main areas of debate, and certainly doesn't seem to be aiming to affect practice in the social sciences. It is an able contribution to a philosophical genre which is both parasitic and parthenogenetic.

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MAURICE DAUMAS (editor) *A history of technology and invention. Progress through the ages*, English translation of original French ed. (1962–68) by Eileen B. Hennessy, London, John Murray, 1980, 3 vols., 4to. Vol. I: *The origins of technological civilization to 1450*, pp. [x], 596, illus.; Vol. II: *The first stages of mechanization, 1450–1725*, pp. [x], 694, illus.; Vol. III: *The expansion of mechanization: 1725–1860*, pp. ix, 752, illus.; £12.50 per volume.

There is no comprehensive history of medical technology, despite its enormous proliferation since the high middle ages when optics brought in a vast new segment to add to the ancient techniques of obstetrics, surgery, prosthesis, orthopaedics, and so forth. The microscope is the sole instrument of relevance to practical medicine whose history is widely known, though excellent monographic treatment has been given to a few others, such as Ludwig's kymograph (1846; by the Hoffs). Indeed, whereas the literature and expertise on the history of scientific instruments has been pretty considerable for a century, and steadily growing, the instruments of medicine and surgery (apart from the microscope) have provoked little scholarship and collecting enthusiasm.

Historians of technology have almost wholly ignored medical techniques. That great scholar of classical techniques, A. G. Drachmann, has written of the first gearbox, the "chest of Nymphodorus" described by Oribasius in connexion with the bed of Hippocrates for the extension of fractures, but none of this appears in the present work. In fact, though techniques of metrology and expression are dealt with, there is in it no direct discussion of instrument technology at all, in contrast to the

Oxford History of technology, 1953–8.¹

This French survey of the evolution of technology (down to 1860 in these three volumes of English translation) was originally published between 1962 and 1968, while the present version was issued at New York between 1969 and 1979. Thus although the genesis of the French book goes back to about the time of the completion of the *Oxford History*, its publication in English has been completed only some twenty years later. There has been time for M. Daumas's work to become established among historians of technology, especially in the United States (and nothing more need here be specifically addressed to historians of medicine, except to note a brief treatment of the nineteenth-century technology of water-supply and sewerage by M. Daumas himself in Vol. III, Part 5, Ch. 2). The editor is a long-respected historian of science and technology (with major work on Lavoisier and, strange to relate, scientific instruments) and his colleagues, notably M. Bertrand Gille, are equally esteemed in their profession. In comparison with the Oxford volumes – which one may assume to be equally available in libraries – the French is shorter, but less thoroughly indexed. The *Oxford History of technology* has also been extended recently to seven volumes, so that it now covers roughly a further century beyond M. Daumas's limit. Since few works of this sort are as justly international as one might wish, the English work draws heavily on English and American materials and experience, while M. Daumas's history offers a useful corrective in its continental coverage, for example in the chapter on railroads (Vol. III, Part 3, Ch. 4). Here, too, a few topics are more systematically treated than in the Oxford series, such as the technology of warfare. The way in which detail is handled in the two volumes is very different, hence no simple analytical comparison in this respect is possible. The amount of illustration is about the same (but the excellent quality of the half-tones in the French original is not reproduced in this English version). The French work has no list of illustrations nor are they properly attributed to their sources. In the *Oxford History of technology* we took endless trouble to document each picture in a scholarly manner to its origin; why is this useful practice so uncommon? Certain American commentators have preferred M. Daumas's volumes as offering a more "social" approach to the history of technology than was found in the Oxford volumes. In the French, some of the technical descriptions as translated seem to me hard to follow or inappropriate (e.g. Vol. II, p. 219: in fulling cloth "the threads of the fabric are 'soldered' to each other"; and again a couple of pages later the use of the word "curry" for felting cloth by boiling is unknown to the *O.E.D.* However, the same chapter has a splendid account of the development of knitting). There are a number of other oddities from trivialities like references to "H. Boyle" (Honourable Boyle?) and "Marc Block" to the omission from M. Daumas's chapter on the heavy chemical industry of the English development of the synthetic soda process, independently of Leblanc, which has been thoroughly studied by A. and N. Clow. But in general this is a rich and stimulating account of the progress of the chief branches of engineering and manufacture. The narrative tends towards strings of facts and dates: this was built, then that. *I think* (but

¹C. Singer, E. J. Holmyard, A. R. Hall, and T. I. Williams (editors), *A history of technology*, 5 vols., Oxford, Clarendon Press, 1953–58.

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I may be prejudiced) that in the Oxford *History* our contributors often – not invariably – tended towards the “problems and solutions” form of analysis. The French treatment certainly has the merit, for which it has been praised, of presenting at least in some contexts a greater wealth of technical detail. All who are interested in technology (but not medical technology!) will wish to refer to these excellent volumes and have indeed done so for a good many years past.

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JÜRGEN PÜSCHEL, *Die Geschichte des German Hospital in London (1845 bis 1948)* (Studien zur Geschichte der Krankenhauswesens, vol. 14, edited by Axel Hinrich Murken), Münster, Murken-Altrogge, 1980, 8vo, pp. 207, illus., DM. 18.00 (paperback).

In 1843 Dr. J. H. C. Freund, physician (later director of the German Hospital), and the pastor of one of the German congregations in London, Sydow, were convinced of the urgent need for a hospital where the German language would be spoken. The existence of about 50,000 Germans in London, most of whom were workers who spoke English badly or not at all, justified large-scale planning for a hospital where patients could make themselves understood and need not live in isolation. Negotiations with the mother country were taken up by the ambassador, Freiherr Christian von Bunsen, and resulted in a response from German royalty and other donors that exceeded all expectations.

In 1845 the German Hospital in Dalston was opened with thirty-six beds. Administration was on the lines of the English voluntary hospital: admission, however, was granted on the condition that the sick applicant was German-speaking; governors' letters were not required. With a dispensary for out-patients and growing numbers of beds, entrance to needy English patients of the district was eventually also granted. This helped to increase sympathy for the “ex-territorial” hospital among citizens in the neighbourhood and farther afield; numbers of English subscribers and individual donors grew, up to the time of World Wars I and II, when prosperity declined.

The medical staff and visiting consultants were either born Germans or German-speaking Englishmen. Nurses were recruited from Pastor Fliedner's Deaconess schools in Kaiserswerth and Darmstadt, later from Bodelschwing's institution in Bethel. This fact explains why, at a time before the introduction of Florence Nightingale's nursing reforms, standards of cleanliness and nursing care were higher than those at other hospitals, whose mortality figures were many times greater. Dr. Püschel bases this revealing comparison on hospital records and Ruth Hodgkinson's quotations from Nightingale reports.

Before the second world war the German Hospital had 224 beds, a convalescent home, a wing for paying patients, a nurses' home, specialists, and allocated beds in specialist hospitals. According to Dr. W. Pagel, it was “the most modern and best equipped hospital in London”.

The post-war incorporation into the National Health Service caused an almost total