

as to the desirability of such things as the application of objective criteria to the purchase of periodicals. At least one university library, Surrey, is now basing its periodicals purchasing policy on studies of use², and the possible use of such aids as the Institute of Scientific Information's *Journal Citation Reports* is being actively examined in other libraries. Secondary journal citation is another approach being studied³.

It is also suggested that for a scientist to admit that he could not keep abreast of his own speciality would imply an incompetence. There is a confusion here between two separate and distinct areas of competence; competence as a scientist in a particular field of science, and competence as an information searcher. These two abilities are different, and the first does not necessarily imply the second. Many writers have commented on the difficulties encountered by scientists in using the literature⁴⁻⁸, and some scientists are prepared to admit their limitations in this field⁹. If past work is to be fully utilised, and duplication avoided, it is essential for all scientists to be aware of their own personal limitations, and to seek whatever assistance they require from professional information workers.

As long as there remain scientists who regard it as somehow *infra dig* to ask for advice or help on information problems, then some at least of these problems will be of their own making.

Yours faithfully,

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¹ Bryan, H., *Aust. Lib. J.*, **17**, 389 (1968).

² *Annual Report, 1972-1973* (University of Surrey Library, 1973).

³ Windsor, D. A., *Spec. Libr.*, **64**, 446 (1973).

⁴ Urquhart, D. J., in *University Grants Committee, Report of the Committee on Libraries*, 280 (HMSO, London, 1967).

⁵ Urquhart, D. J., *Aslib Proc.*, **18**, 351 (1966).

⁶ Wood, D. N., and Barr, K. P., *J. Doc.*, **22**, 22 (1966).

⁷ Bottle, R. T., in *Progress in Library Science 1967* (edit. by Collison, R. L.), 109 (Butterworths, London, 1967).

⁸ Line, M. B., *J. Libr.*, **1**, 211 (1969).

⁹ Schur, H., and Saunders, W. L., *Education and Training for Scientific and Technological Library and Information Work*, 37 (HMSO, London, 1968).

The individual and the information problem

SIR,—Blaxter and Blaxter raise a number of interesting points in their recent paper (*Nature*, **246**, 335; 1973). They are careful to emphasise that their results and conclusions obtain from the views and habits of full-time research

scientists working in three biological research institutes, and that these may well differ from those of university lecturing staff, with educational commitments in addition to those of research. I should like to comment here on just one conclusion from the Aberdeen survey, however, and suggest that it may indeed be more generally applicable.

The Blaxters were able to estimate a figure for the total number of journals to be taken by a research institute's library to give 90% satisfaction to 90% of its users, a figure which was 25 times the number of 'fields' covered by the institute. The concept of a 'field' was defined by the publishing patterns of the individual scientist and the whole institute. For instance, for the institute cited, the number of non-overlapping fields was calculated to be five, so that the theoretically optimal number of journals to be taken by the library was only 125.

In 1971 a survey was conducted in Edinburgh by interviewing a representative proportion of the staff of the medical school with the main purpose of obtaining an estimate of the journals that our central medical library ought to take to give reasonable satisfaction to its readership. Our survey was designed rather differently from the Aberdeen one and full details of its methodology and general results have been published¹. From the results, we were able to obtain a total figure of approximately 580 unique primary and review journals covering all the major subject areas of biomedicine, except for social medicine, public health and dentistry, which were outside the scope of our survey. I must admit that we were pleasantly surprised and relieved that the figure was not higher.

For the library of a research institute, a holding of 580 carefully chosen journals is theoretically optimal for 23 non-overlapping fields with 25 journals per field, by the Blaxters' method of analysis. In the Edinburgh medical school survey, the 580 unique journals were in fact derived almost entirely from 47 subject areas as defined by the Index Medicus List of Journals. This corresponds to an average of 12 to 13 unique journals per subject area. Many individuals in our survey had an interest in the journals of more than one subject area, and between the various medical school departments there was evidence for considerable overlap of interest. It would therefore seem not unreasonable if a 'field' in the Blaxters' sense approximates roughly in size to two average subject areas in the Index Medicus sense.

Approximate techniques inevitably have to be used to estimate the optimal journal holding for a library serving a readership of any complexity. The important point is that, though based on

different methodologies, both the Aberdeen and Edinburgh surveys produced the same conclusion: in spite of the information explosion, the optimal journal holding of a research institute or medical school library appears not to be so enormous after all, given, of course, adequate back-up facilities by a national loan service. In fairness to Edinburgh's medical school and library staff, I should add that financial restrictions have prevented our central medical library from as yet achieving the estimated optimal number of journals.

Yours faithfully,

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¹ Whittle, E. D., *Br. J. med. Educ.*, **6**, 306, (1972).

Cognitive Subjective

GREGORY¹ should have acknowledged sources in references to his experiments and discussion of what he calls "cognitive contours" or, as others would have it, "subjective contours". ("Subjective contours" represents a neutral description, whereas "cognitive contours" suggests the role of an intellectual process.) He acknowledges Kanizsa as the source for his Fig. 1, but does not do so for his Fig. 2c, a figure also to be found in Kanizsa (Fig. 13)². Gregory reports, in regard to one of his experiments, that the subjective contours of the Kanizsa figure can be obtained stereoscopically by proper presentation of parts to each eye. I had already reported the positive results of this experiment with a slightly modified Kanizsa figure, also showing diagrammatically the selection of parts for presentation in a stereoscope (page 296, page 405 n. 14; ref. 3). In another experiment, he points out that the sides of the subjective triangle appear curved when the edges of the sectors are not collinear, an effect which he describes as "new". I had, however, also pointed this out: "The Kanizsa diagram itself can be modified so that the subjective contours are curved. The alignment of the edges of two sectors constitute a condition for straightness of subjective contours . . . When the sectors are redrawn so that the edges are not aligned, a triangular shape with curved contours is seen" (page 404; ref. 3). Furthermore, I had noted the presence of subjective contours in the after-image of an incomplete figure (page 406 n. 22; ref. 3), as had also Gregory.

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