REFERENCES

BATH UNIVERSITY (1980). *Towards the improvement of social science information systems: an overview of research carried out 1971–1975.* Bath: Bath University. (Design of information systems in the social sciences. Report Series A, no. 7) (BLRDD Report No. 5527)

BRITTAIN, J. M. (1979). Information services and the structure of knowledge in the social sciences. *International Social Science Journal, 31*, 711–728.

KUHN, T. S. (1962). *The structure of scientific revolutions.* Chicago: Chicago University Press.

LINE, M. B. (1981). The structure of social science literature as shown by a large-scale citation analysis. *Social Science Information Studies, 1*, 67–87.

WILSON, P. (1980). Limits to the growth of knowledge: the case of the social and behavioral sciences. *Library Quarterly, 50*, 4–21.

M. de May.
The cognitive paradigm. Dordrecht: Reidel, 1982. 314 pp. ISBN 90 277 1382 0. Dfl. 100 ($43.50).

This review has been a long time in the writing because Marc de May's book is thought-provoking and important.

De May is in the Department of Logic and Epistemology at the University of Ghent and his object in this work is to explore the application of the 'cognitive view' to the study of how scientific knowledge is generated, transferred and used.

The cognitive view (or paradigm—the use of this alternative in the title is significant) or 'movement' has attained, at least in some persons' opinions, the status of a 'science'. The author discusses this emergence of 'cognitive science' in the preface, noting such indicators as the journal *Cognitive Science* and the discussion in *Behavioral and Brain Sciences* of the 'Foundations of cognitive science'.

A coherent definition of the cognitive view only emerges out of the text, however. De May's first statement does not, at first sight, appear to be very helpful in this respect:

> Cognitive science deals with the study of knowledge: i.e., what knowledge is and how it can be represented, how it can be handled by transforming it from one form to another (p. 3).

Elsewhere in the book there are other pointers towards a definition, for example Winograd's statement:

> Cognitive science is based on two assumptions . . .
> 1. The human mind can be usefully studied as a *physical symbol system* . . .
> 2. It is both possible and revealing to study the properties of physical symbol systems . . . (p. 22).

or,

> The central claim of the cognitive view is that both perception and communication require the selection of a world model (p. 31).

or,

> The cognitive orientation can be considered a development within the information processing approach which stresses the importance of

> what is contributed by a subject when 'knowing' an object (Note 2, p. 261).

So—to 'know' things involves processing information about those things within the physical symbol system of the human mind, and within the context of a world view which the human subject brings to the perception of an object. Cognitive science deals with these elements and processes of 'knowing'.

If *I* have understood the author (and those he cites) correctly, then the conclusion must be that the cognitive view (movement, paradigm, orientation, science) is of very great relevance to the development of an 'information science'. If we can understand and, more to the point, *gain access to* the processes and constituents of personal knowledge and world views, we ought to be in a better position to present information effectively, to organize systems for ease of use, and to understand information-seeking behaviour.

De May goes some way towards helping us in this task. His treatment of artificial intelligence as a problem within the cognitive view is stimulating and, to a novice in the field, instructive. The way in which he presents alternative and often competing models of science (positivism, logical positivism, science of science, and the Kuhnian paradigm) is similarly accessible and informative—one mark of the author's ability is his skill in presenting other writers' ideas in better English than some of the originals!

In Part 2 the idea of the 'paradigm' is further developed in the context of bibliometric studies which are integrated in a way which gives further substance to its definition as a social phenomenon and insights into the development of scientific 'world views'.

Finally, in part three, the author brings together his ideas on artificial intelligence, the paradigmatic model, world views, and perception (in which field he makes a novel contribution) into a stimulating discussion of the role of puzzle-solving in science and the dynamics of conceptual systems.

'The cognitive paradigm' is not a *typical* work of information science but it ought to be on the shelf of every teacher and researcher in the field and on the reading list of any student or practitioner seriously interested in how those they serve are likely to set about 'knowing'.

TDW

Ching-chi Chen and Peter Hernon.
Information seeking: Assessing and anticipating user needs. New York: Neal-Schuman Publishers Inc., 1982. 205 pp. ISBN 0 918212 50 2. £16.00.

In spite of the general character of its title, this book is, in fact, the report of a single investigation: 'A regional investigation of the citizen's information needs in New England', supported by the Office of Libraries and Learning Technology of the US Department of Education.

The research draws upon the earlier studies carried out in Baltimore (Warner *et al.*, 1973), Syracuse (Gee, 1974), Seattle (Dervin *et al.*, 1976) and California (Palmour *et al.*, 1979) but had distinctive features:

1. Other studies had confined themselves to a single state or city: the New England study covered six New England States—Maine, Vermont, New Hampshire, Massachusetts, Connecticut and Rhode Island.