

between the SA/OR group and the administrator is rightly emphasized. The reader may find it meaningful that in the chapter on organisation a section is devoted on some caveats with a sub-section entitled failure modes. The training of SA/OR personnel and the implications for technical assistance programmes are briefly treated in the final two chapters.

It is clear that special care has been taken to make this booklet easy reading, especially for the complete outsider who wants to obtain an impression of what SA/OR is about. Those technical terms which have been used have been explained in a glossary. Summaries in three languages will further make it easily accessible to a wide public.

A tacit purpose of the report has quite probably also been to convince the policy maker in business and government circles of less developed countries that SA/OR provides a useful tool for policy preparation. But when the question is asked whether the report can be expected to be successful in this matter, the answer must be a mixed one. To the objective reader the argument developed in the report is probably convincing; the point, however, is that policy makers – in less developed countries more than elsewhere – are not necessarily neutral a priori. Often they fear that they will lose control of the SA/OR activity in progress so that they are unable to judge the outcome, or that they will lose control even of the entire decision making process when the technique has proved to be successful.

In fact, the authors seem to be well aware of this and make an effort to reassure potential users about the ancillary character of SA/OR services. But then will this argument have a chance to reach those who hold biased views against such services? This is, of course, the perennial problem of an argument tending to reach the ones who agreed with it already before. Still, this should not be a reason to hold back an opinion especially when there is a fair chance as in the present case, that misunderstandings and preconceived ideas will be pushed back a bit further.

In any case the chances are that policy makers dealing with microeconomic problems will be convinced more easily of the use of SA/OR techniques than those confronted with macro-economic problems. In the former case the policy makers can stay more closely in touch with the SA/OR group, if only because the problem can be defined more precisely, the administrator will be better informed about the

economic problems, such as in the preparation of a national development plan, imponderables, qualitative data and side effects will be much more numerous and often the SA/OR team will have to be larger. This conclusion has not been drawn by the panel, but it follows quite naturally from the survey of possible applications presented in the report.

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C.W. CHURCHMAN and R.W. WESNER, eds.,
Systems and Management Annual 1975, Petrocelli
Charter, New York, 1975, 620 pages, \$24.95.

The *Systems and Management Annual 1975* consists of 34 readings which are representative of the current literature in the area of management science and systems science; it has been preceded by the 1974 Annual.

The subject matter is organised into two main parts:

1. Extensions of the state of the art, and
2. Beyond the state of the art.

The first part is subdivided into five sections: general systems theory, models, utility theory, applications and general.

To this book many well-known writers have contributed such as Laszlo, Emery, Stafford Beer, Ackoff, Cowan and Churchman. Nevertheless, after reading this volume, which includes many interesting and thought-provoking articles, one is left with a feeling of bewilderment. Apparently there seems to be no clear-cut and widely-shared opinion on general systems theory, as it says in the preface on this topic: "This is elusive because the writers didn't even approximately agree on the meaning and the subject matter, nor did they agree on either a general theory of systems or a theory of general systems".

Now it is not unnatural that the area of a new discipline or science cannot be clearly delineated but it certainly goes too far to classify the paper by Laviolette called: "The predator-prey relationship and its appearance in stock market trend fluctuations" under the heading of general systems theory. Perhaps the best paper in that area is "A general systems framework for social systems" by Laszlo, Levine and Mil-

mented. Coyle made an investigation of the applications of industrial dynamics and Grinyer and Batt did the same on corporate financial simulation models. The results are rather meagre, which may be attributed to various factors such as a lack of managerial support, a lack of reliable data, the complexity of many social systems and so on.

It seems that we are on the horns of a dilemma, one has to choose between the Scylla of broad generalities and the Charybdis of a narrow-minded quantitative approach. Very enlightening in this respect is "The story of R: episodes in the death and life of a modern American planner" by Rosenthal. The writer gives a vivid image of an operations researcher who pursues his modelling activities until he becomes aware that the top-echelon is not really interested in his findings. Many writers have observed this dilemma and offer various suggestions such as the inclusion of intuitive concepts in the decision-making process (Cowan), the recursive approach recommended by Stafford Beer and an improved methodology for the use of experts as advised by Morris.

One remark seems to be in order. The conceptual framework given by mathematical systems theory presents a good rallying point for the construction of a theoretical framework to analyse social systems.

Of course, this does not do away with the difficulties mentioned before, but it will prevent various authors starting again from the beginning. It is certainly true that the general system models provided by the mathematicians need a lot of methodological labor before they can be put to practical use, but it seems that herein lies a challenge to be taken up by the practitioners of the general systems approach. Perhaps the 1976 Annual will provide us with a spectacle of articles which shows a greater degree of convergence than the present volume.

All taken together one may conclude that the 1975 Annual gives a very good survey of the state of the art. The majority of the articles are well-written and readable for the expert and non-expert alike because, with a few exceptions, papers of a technical nature have not been included in this volume.

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and II, Wiley NY, 1975, Vol. I, 358 pages, \$29.20, Vol. II, 442 pages, \$27.90

If intelligent outsiders, totally ignorant of systems theory or cybernetics, were to wade through these volumes they would be very confused. Their confusion is reflected in the material presented in these two interesting volumes, though perhaps it would be more polite to substitute the word "diversity" for confusion. The two volumes consist of papers presented at the European Meeting on Cybernetics and Systems Research in 1974 and are divided into two volumes, each beginning with a keynote address from Stafford Beer "On Heaping our Science Together".

Volume I covers General Systems, Engineering Systems, Biocybernetics and Neural Systems. Meanwhile, Volume II includes Socio-economic Systems, Cybernetics of Cognition and Learning, Systems Education, Cybernetics in Organisation and Management (both Macro and Micro Aspects) and Special Aspects. From this broad division of the papers their diversity is obvious; and from reading them, the lack of communication amongst the various fields of enquiry is apparent. For a field of enquiry which claims to be concerned with communication and control, this is disappointing. For example, many of the papers in Volume I are simply exercises in mathematics which pay lip-service to any realistic idea of systems, whereas Volume II finds Bamber making a plea that such theory is of no value in practice. Combining this with Stafford Beer's view that such work must be aimed at change and improvement, we are left disappointed by the diversity.

O.R. workers are likely to find Volume II of more direct relevance than Volume I, though some of the papers in the latter I found illuminating. Volume II has some very interesting papers, catering for those who are Systems Theorists as well as those of more eclectic tastes. I found Vesper's critique of conventional General System Theory and his plea for Special System Theories very helpful. At the other extreme, the papers of Checkland and Bamber made out a good case for a simple, practical systems approach. The paper by Reisinger includes a fascinating account of some work in Jurimetrics, which he defines as the Modelling of Judicial Decisions, and Dorow attempts to reconcile organisational system theory with the critiques based on its failure to account for power.

It is impossible to properly recommend or attack