



NEWSLETTER

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THE "HYPER-RATIONALITY" TRAP

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As a practitioner of Operational Research and Management Science, it is part of my job to read terms of reference for proposed studies on such matters as airport expansion, port developments, new coal mines, city traffic problems, etc. For the most part these are produced by offices of various governments and it is noticeable that over the last four or five years many of these terms of reference have become progressively more detailed, calling for the examination of every conceivable factor that could affect the situation, with projections for the next 20 years together with predictions of certain first- and second-order interactions.

As OR/MS is concerned with looking beyond superficial symptoms to "whole problems," such comprehensiveness seems praiseworthy. However, a closer examination frequently shows that a significant part of the information requested is unknowable, either absolutely or within the present state of the art; and that the volume of detailed information that would result (assuming the work could be conducted as specified) seems unrelated to either the administrative or political realities of the decision-making processes. In such cases, attempts at an OR/MS or systems approach to a complex problem have, by raising logic to the n th power, passed through the area where results might be both reasonably achievable and useful to the decision process, into the region of "Hyper-Rationality" and the Hyper-Rationality Trap.

The Hyper-Rationality Trap is set whenever the analyst permits himself to be led by a chain of logical reasoning, his own or someone else's, into undertaking work beyond that which is realistically achievable and/or useful to the decision process in a particular problem situation. Avoidance of the trap requires that the analyst have the ability to strike a balance between logic and judgment. Logic can be used to specify a task based largely on theoretical ideas about how the work should be conducted or about what it ought to be possible to do. Judgment requires some assessment, usually based on experience, of such factors as: what data might be available and how useful it might be; what established methods of analysis (if any) might be applicable; how useful any results might be in the decision process; and most important, just how much work can be done within the time deadline and the available budget. Failure to balance logic and judgment is clearly apparent in many of the highly detailed terms of reference already mentioned, when these are compared with the totally inadequate time and budget allowances they often contain.

OR/MS studies which attempt the unachievable, are conducted in greater detail than the problem warrants, or are of doubtful relevance to the real decision-making process; all serve to damage the general reputation of OR/MS and the systems approach. This is so whether the studies stem from overly detailed terms of reference supplied by potential clients or through the poor judgment of the analyst when he has the opportunity to design a work program.

What should an analyst do when confronted by a potential Hyper-Rationality Trap or other circumstances which could lead to conducting an inappropriate program of work? Responses to this question involve matters of philosophy, ethics, economics, and politics, as well as the general reputation of OR/MS and systems analysis.

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WOOLSEY

GENE WOOLSEY

Although plans have not yet been finalized it is almost certain that Gene Woolsey will be a guest at this year's O.R. Conference in August.

Gene Woolsey is Principal Scientist of the Institute for O.R. and Professor of Mineral Economics at the Colorado School of Mines.

He has extensive industry and consulting experience and is the author of numerous papers on "Quick and Dirty Methods" in O.R. He is currently Editor-in-Chief of "Interfaces" and best known for some of his contributions to this journal.

Gene Woolsey must be one of the most exciting O.R. people to visit this country and our congratulations and thanks go to those on council for the work in organising this highlight of conference.

An opportunity will be given to management and interested people to hear Gene without attending the whole conference. It is hoped that members will take this opportunity to introduce management to O.R. as no more exciting or memorable way could be found.

If it's green or wiggles its biology ; if it stinks it's chemistry; if it doesn't work it's engineering; if it's green and wiggles and stinks and still doesn't work – it's accountancy. (Chemtech Oct 77)

Seen Recently In Interfaces
(February 1979, Part 1)

"Ten Ways to Get Rich in Consulting by not taking on Clients"
by Robert G. Brown

This is a very perceptive paper, embodying the author's experience of 30 years consulting. One way to get rich is to take on more clients. Another way is to avoid the cost of taking on the wrong clients. The author entertainingly argues you should avoid the client who implies "I authorise you to work on his problem" or who wants "The assignment to confirm that..."

Also discussed are:

Conflict of interest with other clients – sometimes difficult to see in advance, and arising in different ways.

Moral issues – may greatly reduce the satisfaction of an assignment.

Personal goals – the consultant has some very definite needs from each assignment as well.

The need for mutual trust between the client and consultant.

What fees to charge.

A paper well worth reading, even if you're not a budding consultant.

BOOK REVIEW

Any country of 800 million people that claim ping pong as its favourite indoor sport lie about other things too.

IDEALISM IN OPERATIONAL RESEARCH

The two recent articles by the noted operational researcher Russ Ackoff in the Journal of the O.R. Society ("The future of OR is past"—Vol 30 no2 and "Restructuring the Future of OR"—Vol 30 no3) are well worth reading. Ackoff argues that OR is in an introverted stage, and that we must re-think its role if it is to grow as a discipline, and realise its potential in the decision-making process.

He suggests that systems thinking and OR must be concerned with three inter-related organisational problems. These are how systems can serve their own purposes, the purposes of their parts, and the purposes of the larger systems to which they belong. He calls these the self control, the humanisation and the environmentalisation problems respectively. OR, to date Ackoff states, has been almost exclusively concerned with organisational self control. However, such questions as style and choice, the quality of life, and a sense of progress towards ideals, are all very important to society, and need to be considered much more explicitly in the OR process.

A further difficulty is that planning and design are predominantly an analytic activity. Ackoff contends that too much concern for optimality is a red herring, because there is no such thing as an optimal plan or design in a dynamic environment. He believes OR should be much more concerned with creativity, that is, with the synthesis of completely new solutions, rather than the best choice from already known solutions.

Ackoff sees objectivity as another current stumbling block to progress in OR. In his view objectivity is an unobtainable ideal, and it is impossible and damaging to assume an individual's moral and ethical values can be separated from his/her work. Science recognises this, in that scientific theory is objective only in the sense that it is the consensus of a broad range of different individual value judgements made on the evidence and experiments available. He sees the view of objectivity as feelingless and uncompassionate thought as damaging to the ability of OR to produce truly useful solutions. Conflicts are not "games to be won" and it is irresponsible, unprofessional and unethical for the OR practitioner, or management to consider them solely as such.

Ackoff suggests that the OR principle "predict and prepare" should be changed to "design a desirable future, and develop ways of bringing it about". There is no one best solution to a messy problem. He suggests three operating principles to achieve this. Firstly the "participative" principle — that the main benefit of planning comes from engaging in it. No-one can plan effectively for someone else. Consequently it is better to plan for oneself, no matter how badly, than to be planned for by others, no matter how well. Secondly, the principle of "continuity", that because the future is uncertain, plans must be continually revised. Thirdly, the "holistic" principle, that the whole is more than the sum of its parts.

On the practice of OR, Ackoff feels that there is a need to broaden it, because the current definition is too restrictive. He also sees a need to make OR truly inter-disciplinary, and a need for OR to become more participative, involving managers more and also employees and consumers. He has some useful starting suggestions on how these changes can be approached. OR societies can help both through encouraging discussion with relevant workers and disciplines outside OR e.g. managers, related disciplines, and representatives of important minority blocks of public opinion e.g. women's groups, environmentalists. He also considers OR education must try new approaches. Education should give a greater appreciation of the scientific method, the nature of management, and the organisation of business and government. He believes many current courses produce students who lack a "world view", and an understanding of political reality, and who are uncomfortable in the world of ideas.

Ackoff himself has done some trail-blazing work in these suggested new directions, such as his work to give minorities a voice in the US ghetto. If answers are to be found, they will take time and effort and experimentation to develop. His two articles include some challenging ideas and are well worth the trouble of reading and understanding. They seem just as relevant to quiet little New Zealand as to big bustling North America and Europe.

H.B.

God of nations hear our plea
Help our productivity

Hear us when we call to thee
God defend our free land.

Should our country overspend
Give us strength, Lord, to pretend
Things will come right in the end
God defend New Zealand.

(Press 21.7.78)

