

SIMULATION METHODOLOGY:

Lessons of the Past, Challenges for the Future

Organized by:  
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This panel discussion is patterned after a similar session held at the recent Annual Meeting of the Society for General Systems Research, held in Detroit (May, 1983). The objective of that panel session was to raise the level of awareness of systems researchers regarding the role of modelling and simulation as a key tool in systems methodologies. Audience reaction to the session was intense and generated much debate. Consequently, the idea arose of presenting a matching version to the simulation community. It will be interesting to compare reactions emerging from the different perspectives of systems research and simulation modelling practice. For interested readers, the panel contributions are being expanded and deepened by the authors to take the form of articles for publication in the post proceedings of the Detroit SGSR meeting and the journal Behavioral Science.

The current panel discussion aims to examine the methodology of current practice, and from this base, go on to point out the challenges that lie in the near and long term future. The session will consist of an integrated sequence of presentations by simulation methodologists. Beginning with problems and approaches in contemporary large-scale simulation modelling, it will move onto more ambitious computer-supported methodologies under development.

The sequence of topics and speakers is:

Simulation Methodology in the Socio-Economic Domain  
Rohamon Rogade will discuss the

objectives of the simulation study he is leading, the approach taken, progress made thus far and obstacles to overcome. This study exemplifies the state-of-the art in simulation modelling of socio-economic systems.

Global Systems Modelling: Critique and Directions

Brian Pollins, who has experience with the global modelling group at the Science Center in Berlin, will review and critique the major world modelling efforts to date. He will outline the new approaches that are being adopted to overcome deficiencies in earlier global modelling methodology.

Multifaceted Modelling Methodology

B. P. Zeigler will consider how multifaceted modelling methodology can be viewed as an approach to the problem of coping with the complexity of real systems. Complexity has to be arbitrarily restrained in order to make any progress, but the partial models so arrived at must be integrated into a coherent whole.

Model-Based Information Technology

Tuncer Oren will conclude with the most futuristic and methodologically related presentation. He will outline the possibilities for basing information technology on model bases in addition to data bases. While data base management systems have descriptive power, model base management systems add predictive power: they store information in a form required by knowledge-

based society of the future.

The presentations will be followed by a period for audience reaction and panel response. The discussion should serve to bring out the varying pragmatic and methodological viewpoints of the simulation community. The result should be a better appreciation for the boundaries between the desirable and the feasible in the near, as well as in the long, term.

The panel members and their affiliations are:

Professor Rohamon Ragade,  
Systems Science Institute,  
University of Louisville,  
Louisville, Kentucky

Professor Brian Pollins,  
Department of Political Science,  
The Ohio State University,  
Columbus, Ohio

Profrrsor Bernard P. Zeigler,  
Department of Computer Science,  
Wayne State University,  
Detroit, Michigan

Professor Tuncer I. Ören,  
Department of Computer Science,  
University of Ottawa,  
Ottawa, Canada

For interested readers, a bibliography of fundamental works and reference books in the methodology of modelling and simulation follows.

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