



## References Relating to Semantic Modeling

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### 1. *Structured Modeling*

Structured modeling, developed by A.M. Geoffrion at UCLA, offers some solid directors for The Data Project. Information about structured modeling can be obtained from:

<http://www.anderson.ucla.edu/faculty/art.geoffrion/home/biblio/text.htm>

<http://www.comp.nus.edu.sg/~yeogk/MM/SM/>

The following web site that provides an overview of Structured Modeling:

<http://www.anderson.ucla.edu/faculty/art.geoffrion/home/csts/index.htm>

"The theoretical foundation of structured modeling is formalized in Geoffrion [1989a], which presents a rigorous semantic framework that deliberately avoids committing to a representational formalism. The framework is "semantic" because it casts every model as a system of definitions styled to capture semantic content. Ordinary mathematics, in contrast, typically leaves more of the meaning implicit. 28 definitions and 8 propositions establish the notion of model structure at three levels of detail (so-called *elemental*, *generic*, and *modular* structure), the essential distinction between model *class* and model *instance*, certain related concepts and constructs, and basic theoretical properties. This framework has points in common with certain ideas found in the computer science literature on knowledge representation, programming language design, and semantic data modeling, but is designed specifically for modeling as practiced in MS/OR and related fields (Sec. 4 of Geoffrion [1987]).

An executable model definition language called SML (Structured Modeling Language) fully supports structured modeling's semantic framework (Geoffrion [1992a]). Other languages for structured modeling also exist, as noted later. SML can be viewed in terms of four upwardly compatible levels of increasing expressive power. The first level encompasses simple definitional systems and directed graph models. The second level covers more complex extensions of these, spreadsheet models, numeric formulas, and propositional calculus models. The third level encompasses mathematical programming and predicate calculus models with simple indexing over sets and Cartesian products.

Finally, the fourth level covers sparse versions of the above plus relational and semantic database models."

## *2. Data and Model Visualization*

Modeling large sets of data requires some sort of visualization. I posted two papers we completed on the subject. The reference list is important in the development of The MIT Data Project.

[http://www.ed-w.info/\\_private/International%20APICS%201999.pdf](http://www.ed-w.info/_private/International%20APICS%201999.pdf)

[http://www.ed-w.info/\\_private/International%20APICE%201998.pdf](http://www.ed-w.info/_private/International%20APICE%201998.pdf)

## *3. MetaModeling*

Historically, this work has involved databases and organization of data. However, there are some implications for Semantic Modeling. Some Sites on MetaModeling

<http://www.metamodel.com/>

[http://www.iturls.com/English/SoftwareEngineering/SE\\_mod8.asp](http://www.iturls.com/English/SoftwareEngineering/SE_mod8.asp)

<http://www.kbs.uni-hannover.de/Arbeiten/Publikationen/1998/krim98/node2.html>

[http://www.dis.anl.gov/msv/msv\\_meta\\_modeling.html](http://www.dis.anl.gov/msv/msv_meta_modeling.html)

<http://www.ii.uib.no/~rolfwr/thesisdoc/main1.html>

[http://www.madronesystems.com/products\\_metamodels\\_repository.html](http://www.madronesystems.com/products_metamodels_repository.html)

<http://www.dmreview.com/master.cfm?NavID=55&EdID=881>

<http://www.wkap.nl/prod/b/0-7923-9687-1>

<http://www.cogsci.princeton.edu/~wn/>

#### 4. *The Entertainment Industry*

Another interesting possibility for prototyping Semantic Modeling involves the video game and motion picture industry. There appears to be a good opportunity to increase productivity through a library of models for this industry. In addition, there is a large potential to integrate video games into business decision making. As a new generation enters management, many will think terms of video games. The following players give an overall sense of the video and motion picture industries:

##### **Video Game Makers**

\*Electronic Arts,

<http://www.ea.com/home/home.jsp>

\*UBISoft,

<http://www.ubi.com/NR/exeres/00014ed4sdazkieepsaizjig/Home+Page+Navigation.asp?NRMODE=Published&NRORIGINALURL=%2fUS&NRNODEGUID=%7b43C55A7A-E55D-4B89-BD20-EECC8108F3BB%7d&NRQUERYTERMINATOR=1&cookie%5Ftest=1>

\*Sony

<http://www.sony.com/>

##### **Hardware Makers**

\*xBox

<http://www.xbox.com/en-US/default.htm?culture=0>

\*PS2

<http://www.playstation.com/>

\*Game Cube

<http://www.nintendo.com/home>

\*Sega

<http://www.sega.com/index.jhtml>

\*Sony, IBM, Toshiba – The Cell (PS3)

<http://www.eetimes.com/story/OEG20010313S0113>

## **Motion Pictures**

Physics Based Modeling, Behavior, Animators, Rendering

\*Pixar

<http://www.pixar.com/index.html>

\*Maya

<http://www.alias.com/eng/index.shtml>

\*3DS

<http://www.discreet.com/3dsmax/>

\*SoftImage

<http://www.softimage.com/home/>

\*Mental Ray

<http://www.mentalimages.com/>

\*Splutter Fish

<http://www.splutterfish.com/sf/>

\*Industrial Light & Magic

<http://www.ilm.com/>

\*Stanford Research Group

## **Film Production Companies**

\*Lucas Films

<http://www.lucasfilm.com/>

\*DreamWorks

<http://www.dreamworks.com/>

## *5. Mapping and Data Visualization*

\*ESRI

<http://www.esri.com/>

\*USGS

[http://www.governmentguide.com/officials\\_and\\_agencies/agencies/u.s./govsite.adp?bread=\\*Main\\*officials\\_and\\_agencies.adp?id=16101798\\*Officials%20and%20](http://www.governmentguide.com/officials_and_agencies/agencies/u.s./govsite.adp?bread=*Main*officials_and_agencies.adp?id=16101798*Officials%20and%20)

[Agencies\\*agencies.adp?id=16101799\\*Agencies\\*u.s..adp?id=16101800\\*U.S.\\*&url=http%3A//www.usgs.gov/&CID=16101830](http://www.usgs.gov/&CID=16101830)

\*NIMA

<http://164.214.2.59/>

\*IDL

<http://www.rsinc.com/>

\*SPSS

<http://www.spss.com/>

\*Imagine That, Inc.

<http://www.imagethatinc.com/>

## 6. *Other Related Topics*

\*The Semantic Web

<http://www.w3.org/2001/sw/>

\*Tapestry

<http://jakarta.apache.org/tapestry/>

\*UML

<http://www.rational.com/uml/index.jsp>

<http://www.omg.org/uml/>

<http://www.uml.org/>

\*HLA

<http://webster.cs.ucr.edu/>

\*SimULink

<http://www.mathworks.com/products/simulink/>

\*Blue Gene

[http://www.infoworld.com/article/03/11/14/HNbluegene\\_1.html](http://www.infoworld.com/article/03/11/14/HNbluegene_1.html)

\*General Systems and Cybernetics

<http://bioeng.binghamton.edu/faculty/klir.html#resfoc>

<http://www.iss.org/admin/bulletin2003.pdf>

<http://pespmc1.vub.ac.be/CSTHINK.html#Klir>

<http://www.ai.mit.edu/people/jimmylin/external-Linbrary.html>

<http://cscs.umich.edu/~crshalizi/notebooks/systems-theory.html>

\*RDF

<http://haystack.lcs.mit.edu/papers/sww02.pdf>

## *7. Software Agents for Distributed Modeling and Simulation*

“Distributed modeling and simulation imply a geographically distributed set of models and their components, as well as concurrent execution of model-derived code. In distributing model components, we must design model and component repositories, which should be accessible from a convenient source such as the World Wide Web. It should be possible to search these repositories for reusable objects. Although mechanisms do not yet exist for distributed model repositories, certain technologies such as object oriented databases and XML (Extensible Markup Language) will help in creating appropriate vehicles for model and component representations.

The execution of a model can be realized by a community of distributed, concurrently interacting, and moving entities. Their interaction, composition, and location structure adapts itself to improve the efficiency of the simulation run. Different parts of the model can be executed by different agents specialized in different formalism, e.g. continuous and discrete models. To balance the workload processes must migrate from one site to another during simulation. The flexibility of these approaches promise scalability properties that are necessary to deal with heterogeneous, large-scale applications.

Inspired by the agent metaphor, modeling and simulation environments can be thought of as a community of heterogeneous knowledge-based agents. These approaches can be traced back to research of the late 1980's where there were attempts to employ expert systems and other knowledge based techniques to facilitate many aspects of modeling and simulation. While some success was achieved in the past, the new multi-agent designs may prove more adequate to the challenge with their emphasis on modularity, flexibility, concurrency, and collaboration. Particularly, access to data and models available from a multitude of sources on the World Wide Web would significantly increase the available knowledge base for any one application. In many such applications, we may also be able to exploit the mobility of agents to reduce the time it takes to get the needed knowledge and information back to the requesting application.

To facilitate such exchange of models and data between different applications, agent-oriented techniques would seem to be needed. For example, we may need to apply knowledge interchange languages and protocols for interaction and negotiating that have been developed by agent-system researchers.”

Source: <http://www.informatik.uni-rostock.de/~lin/AnnounceIEEE/node2.html>

8. *Keyword search: “Philosophy of Modeling” INFORMS Database. Interesting articles in bold.*

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**Auth: Bell, Peter C.**

**Yr : 1991**

**Titl: Visual interactive modelling: The past, the present, and the prospects**

**Jrnl: European Journal of Operational Research**

**PIPu: The Netherlands**

**Vol.: 54**

**Issu: 3**

**Pges: 274-286**

**Keyw: 531 Philosophy of modeling**

**Abst: 53132**

**IAOR: IAOR:4030-Philosophy**

---

Auth: Bharadwaj, Anandhi, Choobineh, Joobin, Lo, Amber and Shetty, Bala

Yr : 1992

Titl: Model management systems: A survey

Jrnl: Annals of Operations Research

PIPu: Switzerland

Vol.: 38

Issu: 1/4

Pges: 17-67

Keyw: 531 Philosophy of modeling

Abst: 52632

IAOR: IAOR:3320-Programming: Mathematical

---

Auth: Lee, Jae Sik, Guignard, Monique and Jones, Christopher V.

Yr : 1992

Titl: Variations in model formulations

Jrnl: Annals of Operations Research

PIPu: Switzerland

Vol.: 38

Issu: 1/4

Pges: 325-357

Keyw: 531 Philosophy of modeling

Abst: 52634

IAOR: IAOR:3320-Programming: Mathematical

---

**Auth: Volkema, Roger J.**  
**Yr : 1983**  
**Titl: Problem formulation in planning and design**  
**Jrnl: Management Science**  
**PIPu: U.S.**  
**Vol.: 29**  
**Issu: 6**  
**Pges: 639-652**  
**Keyw: 570 Philosophy of modeling**

---

Auth: Maturana, Sergio V.  
Yr : 1994  
Titl: Issues in the design of modelling languages for mathematical programming  
Jrnl: European Journal of Operational Research  
PIPu: The Netherlands  
Vol.: 72  
Issu: 2  
Pges: 243-261  
Keyw: 531 Philosophy of modeling  
Abst: 63364  
IAOR: IAOR:3320-Programming: Mathematical

---

Auth: Kang, Myong, Wright, Gordon P., Chandrasekharan, Radha, Mookerjee, Radha,  
and Worobetz, N. Dan  
Yr : 1997  
Titl: The design and implementation of OR/SM: A prototype integrated modeling  
environment.  
Jrnl: Annals of Operations Research  
PIPu: The Netherlands  
Vol.: 72  
Issu: 1  
Pges: 211-240  
Keyw: 531 Philosophy of modeling  
Abst: 64393  
IAOR: IAOR:1046-Computers: Data-structure



---

Auth: McKay, Kenneth N., Kletter, David B., and Graves, Stephen C.

Yr : 1997

Titl: OMAC: An environment for modeling and analysis.

Jrnl: Annals of Operations Research

PIPu: The Netherlands

Vol.: 72

Issu: 1

Pges: 241-264

Keyw: 531 Philosophy of modeling

Abst: 64394

IAOR: IAOR:1046-Computers: Data-structure

---

Auth: Norese, Maria Franca

Yr : 1995

Titl: Macrame: A problem formulation and model structuring assistant in multiactorial contexts.

Jrnl: European Journal of Operational Research

PIPu: The Netherlands

Vol.: 84

Issu: 1

Pges: 25-34

Keyw: 531 Philosophy of modeling

Abst: 65879

IAOR: IAOR:4030-Philosophy

---

Auth: Basadur, M., Ellspermann, S.J., and Evans, G.W.

Yr : 1994

Titl: A new methodology for formulating ill-structured problems

Jrnl: OMEGA

PIPu: U.K.

Vol.: 22

Issu: 6

Pges: 627-645

Keyw: 531 Philosophy of modeling

Abst: 57949

IAOR: IAOR:4040-Practice

---

Auth: Spera, Cosimo, and Gagliardi, Marco  
Yr : 1995  
Titl: Toward a formal theory of model integration  
Jrnl: Annals of Operations Research  
PIPu: Switzerland  
Vol.: 58  
Issu: 1  
Pges: 405-440  
Keyw: 531 Philosophy of modeling  
Abst: 59170  
IAOR: IAOR:4030-Philosophy

---

**Auth: Reisman, Arnold, and Kirschnick, Frank**  
**Yr : 1995**  
**Titl: Research strategies used by OR/MS workers as shown by an analysis of papers in flagship journals.**  
**Jrnl: Operations Research**  
**PIPu: US**  
**Vol.: 43**  
**Issu: 5**  
**Pges: 731-740**  
**Keyw: 610 Professional, ORMS philosophy 531 Philosophy of modeling**  
**Abst: 66405**  
**IAOR: IAOR:4040-Practice**

---

Auth: Bell, P.C.  
Yr : 1989  
Titl: Stochastic visual interactive simulation models  
Jrnl: Journal of the Operational Research Society  
PIPu: U.K.  
Vol.: 40  
Issu: 7  
Pges: 615-624  
Keyw: 570 Philosophy of modeling/890 Simulation  
Abst: 44114  
IAOR: IAOR:3410-Simulation

---

**Auth: Smith, Gerald F.**

**Yr : 1988**

**Titl: Towards a heuristic theory of problem structuring**

**Jrnl: Management Science**

**PIPu: U.S.**

**Vol.: 34**

**Issu: 12**

**Pges: 1489-1506**

**Keyw: 681 Professional : OR-MS philosophy/570 Philosophy of modeling**

**Abst: 42622**

**IAOR: IAOR:3130-Heuristics/IAOR:4030-Philosophy**

---

**Auth: Aggarwal, Ajay K., Clayton, Edward R., Rakes, Terry R. and Baker, Joanna R.**

**Yr : 1992**

**Titl: A problem identification taxonomy for classification and automated formulation of multiple objective linear programming models**

**Jrnl: Annals of Operations Research**

**PIPu: Switzerland**

**Vol.: 38**

**Issu: 1/4**

**Pges: 1-16**

**Keyw: 651 Programming, Multiple criteria/531 Philosophy of modeling**

**Abst: 52492**

**IAOR: IAOR:3024-Artificial Intelligence: Decision Support/IAOR:1076-Decision:**

**Rules/IAOR:4030-Philosophy/IAOR:3074-Decision Theory: Multiple**

**Criteria/IAOR:3325-Programming: Multiple Criteria**

---

**Auth: Muhanna, Waleed A.**

**Yr : 1994**

**Titl: SYMMS: A model management system that supports model reuse, sharing, and integration**

**Jrnl: European Journal of Operational Research**

**PIPu: The Netherlands**

**Vol.: 72**

**Issu: 2**

**Pges: 214-242**

**Keyw: 021 Artificial intelligence 531 Philosophy of modeling**

**Abst: 63228**

**IAOR: IAOR:3024-Artificial Intelligence: Decision Support**

---

Auth: Bhargava, Hemant K., Krishnan, Ramayya and Mukherjee, Sumitra  
Yr : 1992  
Titl: On the integration of data and mathematical modeling languages  
Jrnl: Annals of Operations Research  
PIPu: Switzerland  
Vol.: 38  
Issu: 1/4  
Pges: 69-95  
Keyw: 063 Computers, Data bases/531 Philosophy of modeling  
Abst: 52308  
IAOR: IAOR:1046-Computers: Data-structure/IAOR:3024-Artificial Intelligence:  
Decision Support

---

Auth: Bisschop, J.J. and Kuip, C.A.C.  
Yr : 1993  
Titl: Compound sets in mathematical programming modeling languages  
Jrnl: Management Science  
PIPu: U.S.  
Vol.: 39  
Issu: 6  
Pges: 746-756  
Keyw: 438 Mathematics, Sets/531 Philosophy of modeling/621 Programming  
Abst: 54930  
IAOR: IAOR:3400-Sets/IAOR:3320-Programming: Mathematical

---

Auth: Dolk, Daniel R. and Kottemann, Jeffrey E.  
Yr : 1993  
Titl: Model integration and a theory of models  
Jrnl: Decision Support Systems  
PIPu: The Netherlands  
Vol.: 9  
Issu: 1  
Pges: 51-63  
Keyw: 323 Information systems, Management/531 Philosophy of modeling  
Abst: 53888  
IAOR: IAOR:3024-Artificial Intelligence: Decision Support

---

Auth: Jones, C. and Carmona, J.  
Yr : 1987  
Titl: A new species of modelling system  
Jrnl: IMAMIM  
PIPu: U.K.  
Vol.: 1  
Issu: 3  
Pges: 225-236  
Keyw: 456 Mathematics : Systems solution/576 Philosophy of modeling  
Abst: 40304  
IAOR: 4040-Practice/3320-Programming: Mathematical

Auth: Muhanna, Waleed A.  
Yr : 1992  
Titl: On the organization of large shared model bases  
Jrnl: Annals of Operations Research  
PIPu: Switzerland  
Vol.: 38  
Issu: 1/4  
Pges: 359-396  
Keyw: 531 Philosophy of modeling/099 Decision analysis, Systems  
Abst: 52715  
IAOR: IAOR:4030-Philosophy/IAOR:3024-Artificial Intelligence: Decision Support

---

Auth: Gassmann, H.I., and Ireland, A.M.  
Yr : 1995  
Titl: Scenario formulation in an algebraic modelling language  
Jrnl: Annals of Operations Research  
PIPu: Switzerland  
Vol.: 59  
Issu: 1  
Pges: 45-75  
Keyw: 531 Philosophy of modeling 647 Programming, Linear, Applications  
Abst: 59117  
IAOR: IAOR:3300-Programming: Linear

**Auth: Willemain, Thomas R.**  
**Yr : 1995**  
**Titl: Model formulation: What experts think about and when.**  
**Jrnl: Operations Research**  
**PIPu: US**  
**Vol.: 43**  
**Issu: 6**  
**Pges: 916-932**  
**Keyw: 531 Philosophy of modeling 608 Professional, ORMS education**  
**Abst: 66400**  
**IAOR: IAOR:4030-Philosophy**

---

**Auth: Pidd, Michael**  
**Yr : 1999**  
**Titl: Just modeling through: A rough guide to modeling.**  
**Jrnl: Interfaces**  
**PIPu: US**  
**Vol.: 29**  
**Issu: 2**  
**Pges: 118-132**  
**Keyw: 608 Professional, ORMS education 531 Philosophy of modeling**  
**Abst: 71517**  
**IAOR: IAOR:4010-Education in OR IAOR:4030-Philosophy**

---

**Auth: Sen, A., Bharadwaj, A.S. and Vinze, A.S.**  
**Yr : 1993**  
**Titl: Use of reason maintenance in model formulation**  
**Jrnl: OMEGA**  
**PIPu: U.K.**  
**Vol.: 21**  
**Issu: 1**  
**Pges: 123-133**  
**Keyw: 021 Artificial intelligence/610 Professional, ORMS philosophy/531 Philosophy of modeling**  
**Abst: 53884**  
**IAOR: IAOR:3020-Artificial Intelligence/IAOR:4030-Philosophy**

---

**Auth: Yu, P.L.**

**Yr : 1991**

**Titl: Habitual domains**

**Jrnl: Operations Research**

**PIPu: U.S.**

**Vol.: 39**

**Issu: 6**

**Pges: 869-876**

**Keyw: 091 Decision analysis/531 Philosophy of modeling/610 Professional, ORMS philosophy**

**Abst: 52716**

**IAOR: IAOR:4040-Practice/IAOR:1074-Decision: Applications/IAOR:4030-Philosophy**

---

**Auth: Powell, Stephen G.**

**Yr : 1998**

**Titl: The studio approach to teaching the craft of modeling.**

**Jrnl: Annals of Operations Research**

**PIPu: The Netherlands**

**Vol.: 82**

**Issu: 1**

**Pges: 29-47**

**Keyw: 608 Professional, ORMS education 610 Professional, ORMS philosophy 531 Philosophy of modeling**

**Abst: 68539**

**IAOR: IAOR:4010-Education in OR IAOR:4030-Philosophy**

---

**Auth: Banerjee, Snehamay and Basu, Amit**

**Yr : 1993**

**Titl: Model type selection in an integrated DSS environment**

**Jrnl: Decision Support Systems**

**PIPu: The Netherlands**

**Vol.: 9**

**Issu: 1**

**Pges: 75-89**

**Keyw: 503 Organizational studies, Decision making/531 Philosophy of modeling**

**Abst: 53675**

**IAOR: IAOR:1078-Decision: Studies**

---

Auth: Bhargava, Hemant K. and Krishnan, Ramayya

Yr : 1993

Titl: Computer-aided model construction

Jrnl: Decision Support Systems

PIPu: The Netherlands

Vol.: 9

Issu: 1

Pges: 91-111

Keyw: 503 Organizational studies, Decision making/531 Philosophy of modeling

Abst: 53676

IAOR: IAOR:1078-Decision: Studies

---

Auth: Hutchins, A.R.

Yr : 1990

Titl: Introduction to entity-relationship modelling for OR analysts

Jrnl: Journal of the Operational Research Society

PIPu: U.K.

Vol.: 41

Issu: 3

Pges: 191-200

Keyw: 570 Philosophy of modeling/624 Probability : Stochastic model applications

Abst: 45358

IAOR: IAOR:1040-Computers

---

Auth: Lenard, Melanie L.

Yr : 1993

Titl: An object-oriented approach to Model Management

Jrnl: Decision Support Systems

PIPu: The Netherlands

Vol.: 9

Issu: 1

Pges: 67-73

Keyw: 503 Organizational studies, Decision making/531 Philosophy of modeling

Abst: 53674

IAOR: IAOR:1078-Decision: Studies



---

**Auth:** Liang, Ting-Peng and Konsynski, Benn R.

**Yr :** 1993

**Titl:** Modeling by analogy: Use of analogical reasoning in model management systems

**Jrnl:** Decision Support Systems

**PIPu:** The Netherlands

**Vol.:** 9

**Issu:** 1

**Pges:** 113-125

**Keyw:** 503 Organizational studies, Decision making/531 Philosophy of modeling

**Abst:** 53677

**IAOR:** IAOR:1078-Decision: Studies

---

**Auth:** Willemain, Thomas R.

**Yr :** 1994

**Titl:** Insights on modeling from a dozen experts

**Jrnl:** Operations Research

**PIPu:** U.S.

**Vol.:** 42

**Issu:** 2

**Pges:** 213-222

**Keyw:**531 Philosophy of modeling 608 Professional, ORMS education

**Abst:** 56713

**IAOR:** IAOR:4040-Practice IAOR:4010-Education in OR

---

**Auth:** Meyer, Brad C.

**Yr :** 1995

**Titl:** Lessons from an early management scientist

**Jrnl:** Interfaces

**PIPu:** U.S.

**Vol.:** 25

**Issu:** 2

**Pges:** 55-59

**Keyw:**531 Philosophy of modeling 608 Professional, ORMS education

**Abst:** 58365

**IAOR:** IAOR:4030-Philosophy IAOR:4010-Education in OR

---

Auth: Piramuthu, Selwyn, Raman, Narayan, Shaw, Michael J. and Park, Sang Chan  
Yr : 1993  
Titl: Integration of simulation modeling and inductive learning in an adaptive decision support system  
Jrnl: Decision Support Systems  
PIPu: The Netherlands  
Vol.: 9  
Issu: 1  
Pges: 127-142  
Keyw: 761 Simulation/531 Philosophy of modeling/503 Organizational studies, Decision making  
Abst: 53665  
IAOR: IAOR:1074-Decision: Applications/IAOR:3024-Artificial Intelligence: Decision Support

---

Auth: Lane, David C., and Smart, Chris  
Yr : 1996  
Titl: Reinterpreting 'generic structure': Evolution, application and limitations of a concept  
Jrnl: System Dynamics Review  
PIPu: U.K.  
Vol.: 12  
Issu: 2  
Pges: 87-120  
Keyw: 768 Simulation, Systems dynamics 531 Philosophy of modeling 514 Organizational studies, Training 610 Professional, ORMS philosophy  
Abst: 62015  
IAOR: IAOR:4020-History IAOR:4030-Philosophy IAOR:3410-Simulation

---

**Auth: Cheng, Joseph L.C.**  
**Yr : 1994**  
**Titl: On the concept of universal knowledge in organizational science: Implications for cross-national research**  
**Jrnl: Management Science**  
**PIPu: U.S.**  
**Vol.: 40**  
**Issu: 1**  
**Pges: 162-168**  
**Keyw:501 Organizational studies 531 Philosophy of modeling 609 Professional, ORMS implementation**  
**Abst: 55907**  
**IAOR: IAOR:1300-Organization IAOR:4040-Practice**

---

Auth: Andersen, David F., and Richardson, George P.

Yr : 1997

Titl: Scripts for group model building.

Jrnl: System Dynamics Review

PIPu: UK

Vol.: 13

Issu: 2

Pges: 107-129

Keyw: 768 Simulation, Systems dynamics 231 Games-Group Decisions 531

Philosophy of modeling

Abst: 65372

IAOR: IAOR:3412-Simulation: Analysis IAOR:1440-Systems

---

Auth: Andersen, David F., Richardson, George P., and Vennix, Jac A.M.

Yr : 1997

Titl: Group model building: Adding more science to the craft.

Jrnl: System Dynamics Review

PIPu: UK

Vol.: 13

Issu: 2

Pges: 187-201

Keyw: 768 Simulation, Systems dynamics 231 Games-Group Decisions 531

Philosophy of modeling

Abst: 65373

IAOR: IAOR:3412-Simulation: Analysis IAOR:1440-Systems

---

Auth: Lee, Jae Sik, and Park, Dong Jin

Yr : 1994

Titl: Development of a decision support system shell for problem structuring

Jrnl: Journal of the Korean OR-MS Society

PIPu: Korea

Vol.: 19

Issu: 3

Pges: 15-40

Keyw:095 Decision analysis, Inference 099 Decision analysis, Systems 531 Philosophy of modeling

Abst: 58204

IAOR: IAOR:3024-Artificial Intelligence: Decision Support IAOR:1046-Computers: Data-structure IAOR:4030-Philosophy

---

**Auth:** Bradley, G. H. and Clemence, R. D.

**Yr :** 1987

**Titl:** A type calculus for executable modelling languages

**Jrnl:** IMAMIM

**PIPu:** U.K.

**Vol.:** 1

**Issu:** 4

**Pges:** 277-291

**Keyw:** 456 Mathematics : Systems solution/740 Programming : Linear : Large scale systems/570 Philosophy of modeling

**Abst:** 41022

**IAOR:** 3320-Programming: Mathematical/3050-Computational Analysis/4030-Philosophy

---

**Auth:** Jones, Christopher V.

**Yr :** 1990

**Titl:** An Introduction to Graph-Based Modeling Systems, Part I: Overview

**Jrnl:** ORSA Journal of Computing

**PIPu:** U.S.

**Vol.:** 2

**Issu:** 2

**Pges:** 136-1151

**Keyw:** 502 Networks-graphs : Applications/570 Philosophy of modeling/032 Computers-computer science : Software

**Abst:** IAOR: IAOR:3120-Graphs

---

**Auth:** Rosenzweig, Philip M.

**Yr :** 1994

**Titl:** When can management science research be generalized internationally?

**Jrnl:** Management Science

**PIPu:** U.S.

**Vol.:** 40

**Issu:** 1

**Pges:** 28-39

**Keyw:**502 Organizational studies, Behavior 609 Professional, ORMS implementation 531 Philosophy of modeling

**Abst:** ng

**IAOR:** IAOR:4040-Practice IAOR:1020-Behaviour IAOR:1260-Management

---

**Auth: Srinivasan, Ananth, and Te'eni, Dov**

**Yr : 1995**

**Titl: Modeling as constrained problem solving: An empirical study of the data modeling process**

**Jrnl: Management Science**

**PIPu: U.S.**

**Vol.: 41**

**Issu: 3**

**Pges: 419-434**

**Keyw:502 Organizational studies, Behavior 531 Philosophy of modeling 634 Programming, Integer, Algorithms, Heuristic**

**Abst: 58788**

**IAOR: IAOR:1020-Behaviour IAOR:1120-Experiment IAOR:4030-Philosophy**

**IAOR:3130-Heuristics**

---

**Auth: Muhanna, Waleed A., and Pick, Roger Alan**

**Yr : 1994**

**Titl: Meta-modeling concepts and tools for model management: A systems approach**

**Jrnl: Management Science**

**PIPu: U.S.**

**Vol.: 40**

**Issu: 9**

**Pges: 1093-1123**

**Keyw:061 Computers 099 Decision analysis, Systems 321 Information systems 531 Philosophy of modeling**

**Abst: 57373**

**IAOR: IAOR:3024-Artificial Intelligence: Decision Support IAOR:1440-Systems**

---

**Auth: Hackman, Steven T. and Leachman, Robert C.**

**Yr : 1989**

**Titl: A general framework for modeling production**

**Jrnl: Management Science**

**PIPu: U.S.**

**Vol.: 35**

**Issu: 4**

**Pges: 478-495**

**Keyw: 635 Production-scheduling/646 Production-scheduling : Planning/772 Project management : CPM/570 Philosophy of modeling**

**Abst: 43901**

**IAOR: IAOR:1340-Production/IAOR:1380-Scheduling/IAOR:3190-Networks/IAOR:3300-Programming: Linear**

---

**Auth:** Rust, Roland T., Simester, Duncan, Brodie, Roderick, and Nilikant, V.  
**Yr :** 1995  
**Titl:** Model selection criteria: An investigation of relative accuracy, posterior probabilities, and combinations of criteria  
**Jrnl:** Management Science  
**PIPu:** U.S.  
**Vol.:** 41  
**Issu:** 2  
**Pges:** 322-333  
**Keyw:**531 Philosophy of modeling 221 Forecasting 561 Probability 762 Simulation, Applications 803 Statistics, Regression  
**Abst:** 59161  
**IAOR:** IAOR:3490-Statistics: Regression IAOR:1150-Forecasting: Applications IAOR:3220-Probability IAOR:3530-Time Series & Forecasting Methods

---

**Auth:** Basu, Amit, and Blanning, Robert W.  
**Yr :** 1997  
**Titl:** Metagraphs in hierarchical modeling.  
**Jrnl:** Management Science  
**PIPu:** US  
**Vol.:** 43  
**Issu:** 5  
**Pges:** 623-639  
**Keyw:** 099 Decision analysis, Systems 063 Computers, Data bases 482 Networks-Graphs, Applications 531 Philosophy of modeling  
**Abst:** 66430  
**IAOR:** IAOR:1070-Decision IAOR:3120-Graphs IAOR:3070-Decision Theory IAOR:3024-Artificial Intelligence: Decision Support

---

**Auth:** Basu, Amit, and Blanning, Robert W.  
**Yr :** 1994  
**Titl:** Metagraphs: A tool for modeling decision support systems  
**Jrnl:** Management Science  
**PIPu:** U.S.  
**Vol.:** 40  
**Issu:** 12  
**Pges:** 1579-1600  
**Keyw:**099 Decision analysis, Systems 063 Computers, Data bases 531 Philosophy of modeling 482 Networks-Graphs, Applications  
**Abst:** 58205  
**IAOR:** IAOR:3024-Artificial Intelligence: Decision Support IAOR:1180-Information IAOR:3120-Graphs IAOR:1070-Decision

---

Auth: Richardson, George P., and Andersen, David F.

Yr : 1995

Titl: Teamwork in group model building

Jrnl: System Dynamics Review

PIPu: U.K.

Vol.: 11

Issu: 2

Pges: 113-137

Keyw: 768 Simulation, Systems dynamics 231 Games-Group Decisions 240 Games-Group decisions, Teams 503 Organizational studies, Decision making 761 Simulation 531 Philosophy of modeling

Abst: 59921

IAOR: IAOR:4040-Practice IAOR:1070-Decision IAOR:3410-Simulation

*9. References from keyword search “structured modeling.” INFORMS database search.*

*New keyword to search” “Philosophy of Modeling”*

---

Auth: Geoffrion, Arthur M.

Yr : 1989

Titl: The formal aspects of structured modeling

Jrnl: Operations Research

PIPu: U.S.

Vol.: 37

Issu: 1

Pges: 30-51

Keyw: 570 Philosophy of modeling

Abst: 43263

IAOR: IAOR:4030-Philosophy/IAOR:1090-Design

---

Auth: Jones, Chris  
Yr : 1992  
Titl: Attributed graphs, graph-grammars, and structured modeling  
Jrnl: Annals of Operations Research  
PIPu: Switzerland  
Vol.: 38  
Issu: 1/4  
Pges: 281-324  
Keyw: 531 Philosophy of modeling  
Abst: 52714  
IAOR: IAOR:4030-Philosophy

---

Auth: Geoffrion, Arthur M.  
Yr : 1996  
Titl: Structured modeling: Survey and future research directions  
Jrnl: Interactive Transactions of OR/MS  
PIPu: U.S.  
Vol.: 1  
Issu: 3  
Pges: 0-0  
Keyw: 531 Philosophy of modeling  
Abst: 63105  
IAOR: IAOR:1440-Systems

---

Auth: Geoffrion, Arthur M.  
Yr : 1987  
Titl: An introduction to structured modeling  
Jrnl: Management Science  
PIPu: U.S.  
Vol.: 33  
Issu: 5  
Pges: 547-588  
Keyw: 570 Philosophy of modeling/679 Professional : OR-MS implementation



---

Auth: Geoffrion, Arthur M.  
Yr : 1996  
Titl: An informal annotated bibliography on structured modeling  
Jrnl: Interactive Transactions of OR/MS  
PIPu: U.S.  
Vol.: 1  
Issu: 2  
Pges: 0-0  
Keyw: 531 Philosophy of modeling  
Abst: 63106  
IAOR: IAOR:1440-Systems

---

Auth: Chari, Kaushal, and Sen, Tarun K.  
Yr : 1998  
Titl: An implementation of a graph-based modeling system for structured modeling (GBMS/SM).  
Jrnl: Decision Support Systems  
PIPu: Netherlands  
Vol.: 22  
Issu: 2  
Pges: 103-120  
Keyw:  
Abst: 74573  
IAOR: IAOR:3120-Graphs

---

Auth: Neustadter, L., Geoffrion, A., Maturana, S., Tsai, Y. and Vicuña, F.  
Yr : 1992  
Titl: The design and implementation of a prototype structured modeling environment  
Jrnl: Annals of Operations Research  
PIPu: Switzerland  
Vol.: 38  
Issu: 1/4  
Pges: 453-484  
Keyw: 531 Philosophy of modeling/761 Simulation  
Abst: 52678  
IAOR: IAOR:3410-Simulation

---

Auth: Wright, Gordon P., Worobetz, N. Dan, Kang, Myong, Mookerjee, Radha V., and Chandrasekharan, Radha

Yr : 1997

Titl: OR/SM: A prototype integrated modeling environment based on structured modeling.

Jrnl: JOC

PIPu: US

Vol.: 9

Issu: 2

Pges: 134-153

Keyw: 581 Production-Scheduling

Abst: 67526

IAOR: IAOR:4040-Practice

---

Auth: Chari, Kaushal, and Sen, Tarun K.

Yr : 1997

Titl: An integrated modeling system for structured modeling using model graphs.

Jrnl: JOC

PIPu: US

Vol.: 9

Issu: 4

Pges: 397-416

Keyw: 482 Networks-Graphs, Applications 611 Professional, ORMS standards

Abst: 67527

IAOR: IAOR:4040-Practice IAOR:3100-Game Theory

---

Auth: Basadur, M., Ellspermann, S.J., and Evans, G.W.

Yr : 1994

Titl: A new methodology for formulating ill-structured problems

Jrnl: OMEGA

PIPu: U.K.

Vol.: 22

Issu: 6

Pges: 627-645

Keyw: 531 Philosophy of modeling

Abst: 57949

IAOR: IAOR:4040-Practice

---

Auth: Hurlimann, T. and Kohlas, J.

Yr : 1988

Titl: LPL: A structured language for linear programming modeling

Jrnl: Operations Research Spektrum

PIPu: Germany, F.R.

Vol.: 10

Issu: 1

Pges: 55-63

Keyw: 736 Programming : Linear : Algorithms

Abst: 40655

IAOR: 3300-Programming: Linear/1040-Computers

---

Auth: Mitroff, Ian I., Mason, Richard O. and Barabba, Vincent P.

Yr : 1982

Titl: Policy as argument - a logic for ill-structured decision problems

Jrnl: Management Science

PIPu: U.S.

Vol.: 28

Issu: 12

Pges: 1391-1404

Keyw: 045 Decision analysis/570 Philosophy of modeling