Bibliography of Publications in Chronological Order

Gaines, B. R. (1964). Photoconductors: The Cadmium Sulphide photo-conductive cell in practice Part 1. **Practical Wireless** 40, 753-755, 774, 844, 847-848, 890.

Gaines, B. R. (1964). Some experiments on machine learning in various environments. In **British Computer Society Conference on Artificial Intelligence and the Simulation of Behaviour** British Computer Society, London.

Gaines, B. R. (1965). **[REPORT] A Stochastic Computer: Some notes on the application of digital circuits to the operations of arithmetic and differential calculus by means of a probabilistlc representation of quantities**. Standard Telecommunication Laboratories, Harlow UK.

Gaines, B. R. (1965). Photoconductors: The Cadmium Suplhide photo-conductive cell in practice Part 2. **Practical Wireless** 40, 844-890.

Gaines, B. R. (1965). **[REPORT] Automated feedback trainers for perceptual-motor skills. Technical Report No.1, Ministry of Defence Contract 70/JAN/9577 (February)**. Psychological Laboratory, University of Cambridge, Cambridge.

Gaines, B. R. (1965). **Discontinuities in tracking strategies**. Department of Experimental Psychology Tea Club, Cambridge.

Gaines, B. R. and Andreae, J. H. (1965). Nonlinear simplifications of the general control problem. In **United Kingdom Automation Council Symposium on Advances in Automatic Control**.

Grimwood, M. R. (1965). **[MANUAL] Workshop Manual for the Game-Playing Machine SToooP**. Standard Telecommunication Laboratories, Harlow, Essex, UK.

Andreae, J. H. and Gaines, B. R. (1966). **[REPORT] An introductory description of the STeLLA learning machine**. Standard Telecommunication Laboratories Technical Memorandum No.556 (August), Harlow, UK.

Andreae, J. H., Joyce, P. L. and Gaines, B. R. (1966). **[PATENT] Adaptive element**. Standard Telephones and Cables, UK.

Gaines, B. R. (1966). Teaching machines for perceptual-motor skills. In **Aspects of Educational Technology** Unwin, D. and Leedham, J., eds., pp. 337-358. Methuen, London.

Gaines, B. R. (1966). **[PATENT] Stochastic Computing Arrangement**, UK.

Gaines, B. R. (1966). The evaluation and control of human skill. In **Colloquium on Human Operator Studies**, pp. 1-8. Institution of Electrical Engineers, London.

Gaines, B. R. (1966). Vyučovací stroje pro operátory (Teaching machines for the human operator). In **British Teaching Machines Exhibition and Symposium**, pp. 1-25. Czechoslovak Academy of Sciences, Prague.

Gaines, B. R. and Andreae, J. H. (1966). A learning machine in the context of the general control problem. In **Proceedings of the 3rd Congress of the International Federation for Automatic Control**, pp. 342-348 (discussion session 14, p.93). Butterworths, London.

Gaines, B. R. (1967). Stochastic computing. In **Spring Joint Computer Conference**, pp. 149-156. AFIPS, Washington, DC.

Gaines, B. R. (1967). Stochastic computer thrives on noise. **Electronics** 40, 72-79.

Gaines, B. R. (1967). Techniques of identification with the stochastic computer. In **Proceedings IFAC Symposium on The Problems of Identification in Automatic Control Systems**, pp. 1-10.

Gaines, B. R. (1967). **[REPORT] Automated Feedback Trainers for Perceptual-Motor Skills: Final Report to MoD**. Department Experimental Psychology, Cambridge.

Gaines, B. R. (1967). The place of incremental techniques in future computer systems. In **Colloquium on Integrated Circuits & Logical Design**, pp. 1-2. Institution of Electrical Engineers, London.

Gaines, B. R. (1967). The application of phase computers to automatic tracking. In **IEE Colloquium on Air Traffic Control**. IEE, London.

Gaines, B. R. (1967). Steps towards computer-assisted instruction systems. In **British Association for the Advancement of Science Annual Meeting**, pp. 102-103. British Assocation, London.

Gaines, B. R. and Joyce, P. L. (1967). Phase computers. In **Proceedings of 5th Congress of International Association for Analog Computation**, pp. 48-57.

Gedye, J. L. and Gaines, B. R. (1967). Medical applications of programmable audio-visual displays. In **Digest 7th International Conference Medical Biological Engineering**, pp. 226, Stockholm.

Gaines, B. R. (1968). R68-18 Random Pulse Machines. **IEEE Transactions on Computers** C-17, 410-410.

Gaines, B. R. (1968). Training the human adaptive controller. **Proceedings Institution Electrical Engineers** 115, 1183-1189.

Gaines, B. R. (1968). Varieties of computer - their applications and inter-relationships. In **Proceedings of IFAC Symposium on Pulse Rate and Pulse Number Signals in Automatic Control**, pp. 1-16. IFAC, Budapest.

Gaines, B. R. (1968). The control of human learning. In **Digest of IEEE International Convention**, pp. 68. IEEE, New York.

Gaines, B. R. (1968). Foundations of stochastic computing systems. In **Digest of IEEE International Convention**, pp. 33. IEEE, New York.

Gaines, B. R. (1968). Interest turns again to the DDA. **Computer Weekly** 4, 4-5.

Gaines, B. R. (1968). A modular programmed DDA for real-time computation. In **Proceedings of IFIP Congress 68**, pp. 749-755.

Gaines, B. R. (1968). New possibilities in data-processing sub-systems. In **Proceedings 3rd Microelectronics in Equipment Conference**, pp. 18-1-18-2, London.

Gaines, B. R. (1968). [REPORT] Some remarks on computer-based educational systems. In **Report to a University/Industry Task Force on Computer-Based Educational Systems**. University of Essex, Colchester, UK.

Gaines, B. R. (1968). Interaction of difficulty and verbal instruction in the learning of a perceptual-motor skill. In **Experimental Psychology Society Meeting, Cambridge, 29-Mar-1968**.

Gaines, B. R. and Quarmby, D. J. (1968). The convergence of adaptive pattern classifiers in control systems. In **IEE Conference on Pattern Recognition**, pp. 1-11. Department of Electrical Engineering Science, University of Essex, National Physical Laboratory, .

Gaines, B. R. (1969). Linear and nonlinear models of the human controller. **International Journal of Man-Machine Studies** 1, 333-360.

Gaines, B. R. (1969). Stochastic computing systems. In **Advances in Information Systems Science, 2** Tou, J., ed, pp. 37-172. Plenum Press, New York.

Gaines, B. R. (1969). Stochastic computers. In **Encyclopaedia of Linguistics, Information & Control** Meetham, A. R. and Hudson, R. A., eds., pp. 66-76. Pergamon Press, London.

Gaines, B. R. (1969). Adaptively controlled instruction for a tracking skill. In **Programmed Learning Research. Sciences de Comportement**, pp. 321-336. Dunod, Paris.

Gaines, B. R. (1969). **System Organization: Lecture Notes for IEE Vacation School on Engineering Aspects of Microelectronics**. University of Essex, Colchester, UK.

Gaines, B. R. (1969). Adaptive control theory: the structural and behavioural properties of adaptive controllers. In **Encyclopaedia of Linguistics, Information & Control** Meetham, A. R. and Hudson, R. A., eds., pp. 1-9. Pergamon Press, London.

Gaines, B. R. (1969). **[MANUAL] MINIC I Manual**. Department of Electrical Engineering Science, Colchester, UK.

Gaines, B. R. and Gedye, J. L. (1969). IJMMS Editorial and Board - first issue. **International Journal Man-Machine Studies** 1, i-ii.

Gaines, B. R. and Shemer, R. A. (1969). Fitting Control Mathematics to Control Hardware: An Aspect of the 1968 IFAC Pulse-Symposium. **Automatica** 5, 37-40.

Gaines, B. R. (1970). Through a teleprinter darkly. **Behavioural Technology** 1, 15-16.

Gaines, B. R. (1970). Interaction and significance. **Behavioural Technology** 1, 11-12.

Gaines, B. R. (1970). Stochastic automata and learning systems. In **Proceedings SRC Seminar on Mathematics for Control**, pp. 22-27. Department of Engineering, University of Cambridge, Cambridge.

Gaines, B. R. (1970). System organization (reprint of IEE 1969 lecture notes). **Microelectronics** 3,

Gaines, B. R. (1970). Some fundamental problem areas for systems science. In **Society for General Systems Research Conference**. Brunel University, Uxbridge, UK.

Gaines, B. R. (1971). Memory minimization in control with stochastic automata. **Electronics Letters** 7, 710-711.

Gaines, B. R. (1971). Hash under a bushel. **Behavioural Technology** 1, 15-16.

Gaines, B. R. (1971). **[MANUAL] QUASIC Manual**. Department Electrical Engineering Science, Colchester, UK.

Gaines, B. R. (1971). The Human Adaptive Controller, Department of Experimental Psychology, University of Cambridge, Cambridge.

Gaines, B. R. (1971). The organization and instruction sets of small computers. In **Colloquium on the Design and Application of Minimal Computers**. Institution of Electrical Engineers.

Gaines, B. R. (1971). Selecting and using small computers. In **Small Computers in Clinical Psychology**. Division of Clinical Psychology, British Psychological Society, Liverpool.

Gaines, B. R., Gedye, J. L. and Facey, P. V. (1971). A versatile multi-user interactive language system for a minicomputer. In **Datafair 71**. British Computer Society.

Gaines, B. R., Maine, J. A. and Kennedy, T. C. S. (1971). MINIC - an 8-bit microprogrammed minicomputer. In **Datafair 71**. British Computer Society.

Gaines, B. R. (1972). The learning of perceptual-motor skills by men and machines and its relationship to training. **Instructional Science** 1, 263-312.

Gaines, B. R. (1972). Axioms for adaptive behaviour. **International Journal Man-Machine Studies** 4, 169-199.

Shaw, M. L. G. (1972). A Critical Survey of Computer Education in Schools in the London Borough of Havering, Institute of Computer Science, University of London, London.

Facey, P. V. and Gaines, B. R. (1973). Real-time system design under an emulator embedded in a high-level language. In **Proceedings DATAFAIR 73**, pp. 285-291. British Computer Society, London.

Gaines, B. R. (1973). Computer technology and its utilization: today and tomorrow. In **Proceedings of National Engineering Laboratory Conference on Small Computer Applications in Industry**, East Kilbride, UK.

Gaines, B. R. (1974). Training, stability and control. **Instructional Science** 3, 151-176.

Gaines, B. R. (1974). **[MANUAL] MINSYS Manual**. Department Electrical Engineering Science, University of Essex, Colchester, Essex.

Gaines, B. R. (1974). The role of randomness in cybernetic systems. In **Proceedings of Conference on Recent Topics in Cybernetics**. Cybernetics Society, London.

Gaines, B. R. (1974). **[NOTE] Inference from sequential data**. Man-Machine Systems Laboratory, University of Essex, Colchester, Essex.

Gaines, B. R., Facey, P. V. and Sams, J. (1974). An interactive display-based system for gilt-edged security broking. In **European Computing Congress Conference Proceedings, EUROCOMP 74**, pp. 155-169. Online, London.

Gaines, B. R., Facey, P. V., Williamson, F. K. and Maine, J. A. (1974). Design objectives for a descriptor-organized minicomputer. In **European Computing Congress Conference Proceedings, EUROCOMP 74**, pp. 29-45. Online, London.

Gaines, B. R., Haynes, M. and Hill, D. (1974). Integration of protection and procedures in a high-level minicomputer. In **Proceedings IEE 1974 Computer Systems and Technology Conference**. IEE, London.

Kennedy, T. C. S. and Edmunds, R. (1974). An examination of training problems with naive computer users. In **European Computing Congress Conference Proceedings, EUROCOMP 74**, pp. 411-425. Online, London.

Williamson, F. K., Gaines, B. R., Maine, J. A. and Facey, P. V. (1974). A high-level minicomputer. In **Information Processing 74**, pp. 44-48. Noth-Holland, Amsterdam.

Gaines, B. R. (1975). Analogy categories, virtual machines, and structured programming. In **GI-5. Jahrestagung, LNCS 34** Gods, G. and Hartmanis, J., eds., pp. 691-700. Springer, Berlin.

Gaines, B. R. (1975). Approximate identification of automata. **Electronics Letters** 11, 444-445.

Gaines, B. R. (1975). Stochastic and fuzzy logics. **Electronics Letters** 11, 188-189.

Gaines, B. R. (1975). **A calculus of possibility, eventuality and probability** (Report Number EES-MMS-FUZI-75). Department of Electrical Engineering Science, University of Essex, Colchester.

Gaines, B. R. (1975). Control engineering and artificial intelligence. In **Lecture Notes of AISB Summer School on Artificial Intelligence**, pp. 52-60. AISB, Cambridge, UK.

Gaines, B. R. (1975). Multivalued logics and fuzzy reasoning. In **Lecture Notes of AISB Summer School on Artificial Intelligence**, pp. 100-112. AISB, Cambridge, UK.

Gaines, B. R. (1975). **[NOTE] Precision and Reasonableness in Linguistic Communication: A Fuzzy Model**. Man-Machlne Systems Laboratory, University of Essex, Colchester, Essex.

Gaines, B. R. and Facey, P. V. (1975). Some experience in interactive system development and application. **Proceedings of the IEEE** 63, 894-911.

Gaines, B. R. and Kohout, L. J. (1975). The logic of automata. **International Journal of General Systems** 2, 191-208.

Gaines, B. R. and Kohout, L. J. (1975). Possible automata. In **Proceedings 1975 International Symposium Multiple-Valued Logic**, pp. 183-196. IEEE, Long Beach, CA.

Kohout, L. J. and Gaines, B. R. (1975). The logic of protection. In **GI-5. Jahrestagung, LNCS 34** Gods, G. and Hartmanis, J., eds., pp. 736-751. Springer, Berlin.

Gaines, B. R. (1976). Behaviour/structure transformations under uncertainty. **International Journal Man-Machine Studies** 8, 337-365.

Gaines, B. R. (1976). On the complexity of causal models. **IEEE Transactions on Systems, Man & Cybernetics** SMC-6, 56-59.

Gaines, B. R. (1976). Foundations of fuzzy reasoning. **International Journal of Man-Machine Studies** 8, 623-668.

Gaines, B. R. (1976). Fuzzy reasoning and the logics of uncertainty. In **Proceedings 6th International Symposium Multiple-Valued Logic, IEEE 76CH1111-4C**, pp. 179-188.

Gaines, B. R. (1976). Research notes on fuzzy reasoning. In **Discrete Systems and Fuzzy Reasoning** Mamdani, E. H. and Gaines, B. R., eds., pp. 45-49. University of Essex, Colchester, UK.

Gaines, B. R. (1976). General fuzzy logics. In **Proceedings of the Third European Meeting on Cybernetics and Systems Research**, pp. 270-275.

Gaines, B. R. (1976). Trends in stochastic computing. In **Colloquium on Parallel Digital Computing Methods—DDA's and Stochastic Computing**, pp. 1-2. IEE, London.

Gaines, B. R. (1976). Interpretive kernels for microcomputer software. In **Proceedings Symposium Microprocessors at Work**, pp. 56–69. Society of Electronic & Radio Technicians, London.

Gaines, B. R. (1976). **[REPORT] Some notes on the provision of data acquisition, processing and retrieval in the small EDP environment**. Department of Electrical Engineering Science, University of Essex, Colchester, UK.

Gaines, B. R. (1976). Human factors in virtual machine hierarchies. In **Proceedings Colloquium on the Influence of High Level Languages on Computer System Design**. IEE, London.

Gaines, B. R. (1976). A spectrum from pounds to fortunes. **Times Higher Education Supplement** 264, 26.

Gaines, B. R. (1976). Why fuzzy reasoning? In **Discrete Systems and Fuzzy Reasoning** Mamdani, E. H. and Gaines, B. R., eds., pp. 39-44. University of Essex, Colchester, UK.

Gaines, B. R. (1976). Multivalued logics and fuzzy reasoning (reprint from 1975 AISB Summer School). In **Discrete Systems and Fuzzy Reasoning** Mamdani, E. H. and Gaines, B. R., eds., pp. 26-38. University of Essex, Colchester, UK.

Gaines, B. R. and Facey, P. V. (1976). Programming interactive dialogue. In **Proceedings Computing and People** Parkin, A., ed, pp. 63-64. Edward Arnold, London.

Gaines, B. R., Facey, P. V. and Sams, J. (1976). Minicomputers in security dealing. **Computer** 9, 6-15.

Kohout, L. J. and Gaines, B. R. (1976). Protection as a general systems problem. **International Journal of General Systems** 3, 3-23.

Mamdani, E. H. and Gaines, B. R., eds. (1976). **[PROC] Discrete Systems and Fuzzy Reasoning**. University of Essex, Colchester, UK.

Witten, I. H. and Gaines, B. R. (1976). The role of randomness in system theory. In **Progress in Cybernetics and Systems Research III** Trappl, R., Klir, G. J. and Ricciardi, L., eds., pp. 11-18. Hemisphere, Washington.

Facey, P. V. and Gaines, B. R. (1977). **[MANUAL] AIMS-11 Manual**, London.

Gaines, B. R. (1977). Sequential fuzzy system identification. In **IEEE Conference on Decision and Control including the 16th Symposium on Adaptive Processes and A Special Symposium on Fuzzy Set Theory and Applications**, pp. 1309-1314.

Gaines, B. R. (1977). System identification, approximation and complexity. **International Journal of General Systems** 2, 241-258.

Gaines, B. R. (1977). Hardware engineering and software engineering. **Euromicro Newsletter** 3, 16-21.

Gaines, B. R. (1977). Some experience with a confirmation machine. **Journal of Symbolic Logic** 42, 449-450.

Gaines, B. R. (1977). Foundations of fuzzy reasoning (reprint of 1976). In **Fuzzy Automata and Decision Processes** Gupta, M. M., Saridis, G. N. and Gaines, B. R., eds., pp. 19-75. North-Holland, New York.

Gaines, B. R. and Facey, P. V. (1977). BASYS - a language for processing interaction. In **Proceedings Conference Computer Systems and Technology, (IERE No. 36)**, pp. 251-262. IERE, London.

Gaines, B. R. and Kohout, L. J. (1977). The fuzzy decade: A bibliography of fuzzy systems and closely related topics. **International Journal Man-Machine Studies** 9, 1-68.

Gaines, B. R. and Kohout, L. J. (1977). The fuzzy decade: A bibliography of fuzzy systems and closely related topics (reprint of IJMMS 1977). In **Fuzzy Automata and Decision Processes** Gupta, M. M., Saridis, G. N. and Gaines, B. R., eds., pp. 403-490. North-Holland, New York.

Gaines, B. R. and Witten, I. H. (1977). Stability and admissibility of adaptive threshold logic convergence. **IEEE Transactions on Computers** C-26, 88-91.

Gupta, M. M., Saridis, G. N. and Gaines, B. R. (1977). **[BOOK] Fuzzy Automata and Decision Processes**. North-Holland, New York.

Shaw, M. L. G. (1977). Interactive computer programs for eliciting personal models of the world. In **Personal Construct Psychology 1977** Fransella, F., ed, pp. 59-67. Academic Press, London.

Shaw, M. L. G. (1977). PEGASUS, an interactive computer program for eliciting a repertory grid. In **Construct Theory and Repertory Grid Workshop**. Occupational Psychology Section of the BPS, Brunel University.

Gaines, B. R. (1978). Fuzzy and probability uncertainty logics. **Information and Control** 38, 154-169.

Gaines, B. R. (1978). Man-computer communication - what next? **International Journal Man-Machine Studies** 10, 225-232.

Gaines, B. R. (1978). Computers in world three. In **Proceedings of the International Conference on Cybernetics and Society**, pp. 1515-1521. IEEE (78CH-1306-0-SMC III), NY.

Gaines, B. R. (1978). Progress in general systems research. In **Applied General Systems Research** Klir, G. J., ed, pp. 3-28. Plenum, New York.

Gaines, B. R. (1978). A mixed-code approach to commercial microcomputer applications. In **Conference on Microprocessors in Automation and Communications, IERE Conference Proceedings No.41**, pp. 291-301. IERE, London.

Gaines, B. R. (1978). Decision: foundation and practice. In **Proceedings 3rd Conference on Decision Making in Complex Systems** Pask, G., ed. Systems Research, Richmond, Surrey, UK.

Gaines, B. R. (1978). Minicomputers in business applications in the next decade. In **Infotech State of Art Report on "Minis Versus Mainframes"**, pp. 51–81. Infotech International, Berkshire, UK.

Gaines, B. R. (1978). Programming interactive dialogue. In **Pragmatic Programming and Sensible Software**, pp. 305-320. Online Conferences, Uxbridge, Middlesex, UK.

Gaines, B. R. (1978). General system identification - fundamentals and results. In **Applied General Systems Research** Klir, G. J., ed, pp. 91-104. Plenum, New York.

Gaines, B. R. (1978). Nonstandard logics for database systems, pp. 443-463. Online, Uxbridge, UK.

Gaines, B. R., Trustram Eve, A. J. and Brazier, J. (1978). Minicomputer-based information systems. In **Minicomputer Forum**, pp. 313-321. Online, Uxbridge, UK.

Gaines, B. R., Trustram Eve, A. J. and White, P. (1978). Minicomputer-based information systems. In **Proceedings of the International Conference on Cybernetics and Society, 78CH-1306-0-SMC II**, pp. 830-834. IEEE, New York.

Shaw, M. L. G. (1978). Interactive computer programs for eliciting personal models of the world. In **Personal Construct Psychology 1977** Fransella, F., ed, pp. 59-67. Academic Press, London.

Shaw, M. L. G. (1978). On Becoming a Personal Scientist: Interactive Computer Elicitation of Personal Models of the World, Brunel University, Uxbridge, UK.

Shaw, M. L. G. (1978). Decision making in complex systems. In **Proceedings 3rd Conference on Decision Making in Complex Systems** Pask, G., ed. Systems Research, Richmond, Surrey, UK.

Shaw, M. L. G. and Thomas, L. F. (1978). FOCUS on education--an interactive computer system for the development and analysis of repertory grids. **International Journal of Man-Machine Studies** 10, 139-173.

Gaines, B. R. (1979). Logical foundations for database systems. **International Journal of Man-Machine Studies** 11, 481-500.

Gaines, B. R. (1979). Sequential fuzzy system identification. **Fuzzy Sets and Systems** 2, 15-24.

Gaines, B. R. (1979). Computers and society: the basis for a systemic model. In **Improving the Human Condition: Quality and Stability in Social Systems** Ericson, R. F., ed, pp. 523-530. Society for General Systems Research, Kentucky.

Gaines, B. R. (1979). Maryanski's Grammatical Inferencer. **IEEE Transactions Computers** C-28, 62-64.

Gaines, B. R. (1979). The role of the behavioural sciences in programming. **Infotech State of the Art Report on Structured Software Development: Vol. 2** 57-68.

Gaines, B. R. (1979). Man/computer communication: an overview. In **Infotech State of the Art Report on Man/Computer Communication, Vol. 2**, pp. 141-153. Infotech International, Maidenhead, UK.

Gaines, B. R. (1979). Personal computers and portfolio management. **ISIS Bulletin, April** 34-38.

Gaines, B. R. (1979). Computer systems architecture today: an overview and trends, October, Beijing.

Gaines, B. R. and Shaw, M. L. G. (1979). Decision: foundation and practice II. In **Proceedings 4th Conference on Decision Making in Complex Systems** Pask, G., ed. Systems Research, Richmond, Surrey, UK.

Goodacre, C. and Gaines, B. R. (1979). Monotype cracks the Chinese puzzle. **Printing Today** 16, 54-60.

Pope, M. and Shaw, M. L. G. (1979). Negotiation in learning. In **Third International Congress on Personal Construct Psychology**, pp. 1-18, Breukelen, Netherlands.

Shaw, M. L. G. (1979). Conversational heuristics for enhancing personal understanding of the world. In **General Systems Research: A Science, A Methodology, A Technology** Gaines, B. R., ed, pp. 270-277. Society for General Systems Research, Louisville, Kentucky.

Shaw, M. L. G. (1979). Conversational heuristics for eliciting shared understanding. **International Journal of Man-Machine Studies** 11, 621-634.

Shaw, M. L. G. (1979). Personal learning through the computer. **Computers & Education** 3, 267-272.

Shaw, M. L. G. (1979). [MANUAL] Manual for the PETRA Computer Program (Commodore PET).

Shaw, M. L. G. and Gaines, B. R. (1979). Externalizing the personal world: computer aids to epistemology. In **Improving the Human Condition: Quality and Stability in Social Systems** Ericson, R. F., ed, pp. 136-145. Society for General Systems Research, Louisville, Kentucky.

Shaw, M. L. G. and McKnight, C. (1979). An exploration of intra-personal personalities. In **Third International Congress on Personal Construct Psychology**, pp. 1-18, Breukelen, Netherlands.

Shaw, M. L. G. and Thomas, L. F. (1979). Extracting an education from a course of instruction. **British Journal of Educational Technology** 10, 5-17.

Gaines, B. R. (1980). General systems research: quo vadis? In **General Systems 1979** Gaines, B. R., ed, pp. 1-9. Society for General Systems Research, Louisville, KY.

Gaines, B. R. (1980). Autopoiesis - some questions. In **Autopoiesis** Zeleny, M., ed, pp. 145-15. Elsevier, New York.

Gaines, B. R., ed. (1980). **[BOOK] General Systems 1979**. Society for General Systems Research, Louisville, KY.

Gaines, B. R. and Shaw, M. L. G. (1980). New directions in the analysis and interactive elicitation of personal construct systems. **International Journal of Man-Machine Studies** 13, 81-116.

Gaines, B. R. and Witten, I. H. (1980). Identification of stochastic systems - reply to A.M.Andrew. **International Journal of General Systems** 6, 101-104.

Kevill, F. and Shaw, M. L. G. (1980). A repertory grid study of staff/student interactions. **Psychology Teaching** 8, 29-36.

Shaw, M. L. G. (1980). **[BOOK] On Becoming a Personal Scientist: Interactive Computer Elicitation of Personal Models of the World**. Academic Press, London.

Shaw, M. L. G. (1980). Advances in personal construct technology. **International Journal of Man-Machine Studies** 13, 1-2.

Shaw, M. L. G. (1980). Acquisition of personal knowledge. **International Journal of Policy Analysis and Information Systems (Special Issue on Knowledge Acquisition and Induction),** 4, 401-429.

Shaw, M. L. G. (1980). The analysis of a repertory grid. **British Journal of Medical Psychology** 53, 117-126.

Shaw, M. L. G. (1980). Two roles for the computer in cognisant systems. In **Progress in Cybernetics and Systems Research. Vol. V** Trappl, R., ed, pp. 377-381. Hemisphere, Washington.

Shaw, M. L. G. and Gaines, B. R. (1980). Fuzzy semantics for personal construing. In **Systems Science and Science: Proceedings of SGSR 26th Annual Meeting** Troncale, L., ed, pp. 146-154. Society for General Systems Research, Kentucky.

Shaw, M. L. G. and Gaines, B. R. (1980). Fuzzy entailment analysis. In **Applied Systems and Cybernetics Volume VI** Lasker, G. E., ed, pp. 3010-3014. Pergamon Press, Oxford.

Shaw, M. L. G. and McKnight, C. (1980). ARGUS: a program to explore intra-personal personalities. **International Journal of Man-Machine Studies** 13, 59-68.

Gaines, B. R. (1981). The technology of interaction--dialogue programming rules. **International Journal of Man-Machine Studies** 14, 133-150.

Gaines, B. R. (1981). Unravelling the Chinese typesetting puzzle. In **Penrose 1981: International Review of the Graphic Arts** Goodacre, C., ed, pp. 25-40. Northwood Publications, London.

Gaines, B. R. (1981). The digital revolution II: the bounds of possibility. **Printing World** 206, 16-17.

Gaines, B. R. (1981). Information technologies in a digital age. In **Pira Golden Jubilee Conference**, pp. 8.1-8.10. PIRA, Leatherhead.

Gaines, B. R. (1981). Logical foundations for database systems (reprint from IJMMS 1979). In **Fuzzy Reasoning and its Applications** Mamdani, E. H. and Gaines, B. R., eds., pp. 289-308. Academic Press, London.

Gaines, B. R. (1981). Some experience in text processing in the Chinese language. In **Sixth ACM European Regional Conference**, pp. 301-310. ACM, New York.

Gaines, B. R. (1981). Computers. communications and the languages of the world. In **Humphrey Davies Lecture**. Queen Mary College, London.

Gaines, B. R. (1981). Postęp w badaniach ogólnosystemowych (Progress in systems research, 1978). In **Nauka, Technika, Systemy** Gasparski, Wojciech and Miller, D., eds. Zakład Narodowy im. Ossolińskich, Wrocław.

Gaines, B. R., Facey, P. V. and Sams, J. (1981). Minicomputers in security dealing (reprint of Computer 1976). In **Computers and Business** Podell, H. J. and Weiss, M., eds., pp. 423-432. IEEE Computer Society Press, New York.

Gaines, B. R. and Shaw, M. L. G. (1981). A programme for the development of a systems methodology of knowledge and action. In **General Systems Research and Design: Precursors and Futures** Reckmeyer, W. J., ed, pp. 255-264. Society for General Systems Research, Louisville, KY.

Gaines, B. R. and Shaw, M. L. G. (1981). Logical analysis of personal construct systems. In **Fourth International Congress on Personal Construct Psychology**. Brock University, Canada.

Mamdani, E. H. and Gaines, B. R. (1981). **[BOOK] Fuzzy reasoning and its applications**. Academic Press, London.

Pope, M. L. and Shaw, M. L. G. (1981). Personal construct psychology in education and learning. **International Journal of Man-Machine Studies** 14, 223-232.

Pope, M. L. and Shaw, M. L. G. (1981). Negotiation in learning. In **Personal Construct Psychology: Recent Advances in Theory and Practice** Bonarius, H., Holland, R. and Rosenberg, S., eds., pp. 157-165. Macmillan Press, London.

Shaw, M. L. G., ed. (1981). **[BOOK] Recent Advances in Personal Construct Technology**. Academic Press, London.

Shaw, M. L. G. and Gaines, B. R. (1981). The personal scientist in the community of science. In **General Systems Research and Design: Precursors and Futures** Reckmeyer, W. J., ed, pp. 59-68. Society for General Systems Research, Louisville, KY.

Shaw, M. L. G. and Gaines, B. R. (1981). The personal computer and the personal scientist. In **BCS'81: Information Technology for the Eighties**, pp. 235-252. Heyden Press for British Computer Society, London.

Shaw, M. L. G. and Gaines, B. R. (1981). Exploring personal semantic space. In **Empirical Semantics II** Rieger, B. B., ed, pp. 712-791. Studienverlag Brockmeyer, Bochum, Germany.

Shaw, M. L. G. and Gaines, B. R. (1981). Comparison of techniques for analysing personal construct systems. In **Fourth International Congress on Personal Construct Psychology**. Brock University, Canada.

Shaw, M. L. G. and Gaines, B. R. (1981). Recent advances in the analysis of a repertory grid. **British Journal of Medical Psychology** 54, 307-318.

Shaw, M. L. G. and McKnight, C. (1981). **[BOOK] Think Again: Personal Problem-solving and Decision-making**. Prentice-Hall, Englewood Cliffs, N.J.

Witten, I. H. (1981). Some recent results on non-deterministic modelling of behaviour sequences. In **General Systems Research and Design: Precursors and Futures** Reckmeyer, W. J., ed, pp. 265-274. Society for General Systems Research, Louisville, KY.

Gaines, B. R. (1982). Videotex: the electronic challenge. In **Penrose 1982: International Review of the Graphic Arts** Goodacre, C., ed, pp. 47-56. Northwood Publications, London.

Gaines, B. R. (1982). Digital know-how. **Printing World Supplement** 13-14.

Gaines, B. R. (1982). Opportunity or disaster? In **Penrose 1982: International Review of the Graphic Arts** Goodacre, C., ed, pp. 253-255. Northwood Publications, London.

Gaines, B. R. (1982). Knowledge as an autopoietic system. In **Program of 148th Annual Meeting of the American Association for the Advancement of Science**, pp. 57. AAAS, Washington, DC.

Gaines, B. R. and Shaw, M. L. G. (1982). Analysing analogy. In **Progress in Cybernetics and Systems Research. Vol. IX** Trappl, R., Ricciardi, L. and Pask, G., eds., pp. 379-386. Hemisphere, Washington.

Gaines, B. R. and Shaw, M. L. G. (1982). The human protocol. In **Proceedings IEEE Compcon 82**.

Kevill, F., Shaw, M. L. G. and Goodacre, E. (1982). In-service diploma course evaluation using repertory grids. **British Educational Research Journal** 8, 1-12.

Shaw, M. L. G. (1982). PLANET: some experience in creating an integrated system for repertory grid applications on a microcomputer. **International Journal of Man-Machine Studies** 17, 345-360.

Shaw, M. L. G. (1982). Microelectronics in education. **International Journal of Man-Machine Studies** 17, 1-2.

Shaw, M. L. G. (1982). The extraction of personal meaning from a repertory grid. In **Personal Meanings** Shepherd, E. and Watson, J. P., eds., pp. 59-70. Wiley, Chichester, UK.

Shaw, M. L. G. (1982). Building subjectivity into the computer as a form of knowledge. In **Program of 148th Annual Meeting of the American Association for the Advancement of Science**, pp. 57. AAAS, Washington, DC.

Shaw, M. L. G. and Gaines, B. R. (1982). Tracking the creativity cycle with a microcomputer. **International Journal of Man-Machine Studies** 17, 75-85.

Shaw, M. L. G. and Gaines, B. R. (1982). Eliciting entailment. In **Progress in Cybernetics and Systems Research. Vol. IX** Trappl, R., Ricciardi, L. and Pask, G., eds., pp. 425-435. Hemisphere, Washington.

Shaw, M. L. G. and Gaines, B. R. (1982). The individual in the community. In **Second Symposium on Personal Meanings**, Guys Hospital, London.

Shaw, M. L. G. and McKnight, C. (1982). Repertory grid elicitation and analysis on a microcomputer. In **20th Congress of Applied Psychology**, Edinburgh.

Shaw, M. L. G. and McKnight, C. (1982). **חשיבה מתוכנתת ("Think Again" in Hebrew)[BOOK]** Tel Aviv, Or Am.

Shepherd, E. and Shaw, M. L. G. (1982). Spanning text. In **First International Conference on Representing Understanding**, Guys Hospital, London.

Gaines, B. R. (1983). Precise past---fuzzy future. **International Journal of Man-Machine Studies** 19, 117-134.

Gaines, B. R. (1983). Office automation in the languages of the world. In **Proceedings Graphics Interface '83**, pp. 337-344. Canadian Man-Computer Communications Society, Toronto.

Gaines, B. R. (1983). Commentary on 'T-Prolog' by Futo & Gergely. In **Adequate Modeling of Systems** Wedde, H., ed, pp. 49-51. Springer, Berlin.

Gaines, B. R. (1983). A framework for intelligent knowledge-based systems. In **Workshop on Intelligent Knowledge-Based Systems, Joint Research Council Strategy Meeting**. Brunel University, UK.

Gaines, B. R. (1983). From word processing to image processing in office systems. In **Proceedings of International Electrical, Electronics Conference and Exposition, IEEE 83CH1955-4**, pp. 622-625. IEEE, New York.

Gaines, B. R. and Shaw, M. L. G. (1983). Dialog engineering. In **Designing for Human-Computer Communication** Sime, M. and Coombs, M. J., eds., pp. 23-53. Academic Press, London.

Gaines, B. R. and Shaw, M. L. G. (1983). Is there a knowledge environment? In **The Relation Between Major World Problems and Systems Learning** Lasker, G. E., ed, pp. 27-34. Society for General Systems Research, Kentucky.

Gaines, B. R. and Shaw, M. L. G. (1983). Generating emotions in computer systems. In **Abstracts of 149th Annual Meeting of the American Association for the Advancement of Science**, pp. 103-104.

Gaines, B. R. and Shaw, M. L. G. (1983). A generative framework for conversation theory. In **Handout for Cybernetics Society Conference at Architectural Association**, pp. 1-8. Cybernetics Society, London.

Shaw, M. L. G. (1983). Individuals form communities - communities form individuals. In **Proceedings of Fifth International Congress on Personal Construct Psychology**, Boston.

Shaw, M. L. G. and Gaines, B. R. (1983). A computer aid to knowledge engineering. In **Proceedings of British Computer Society Conference on Expert Systems**, pp. 263-271. British Computer Society, Cambridge.

Shaw, M. L. G. and Gaines, B. R. (1983). Eliciting the real problem. In **Adequate Modeling of Systems** Wedde, H., ed, pp. 100-111. Springer, Berlin.

Shaw, M. L. G. and Gaines, B. R. (1983). Computer systems in the knowledge environment: a new medium. In **The Relation Between Major World Problems and Systems Learning** Lasker, G. E., ed, pp. 35-41. Society for General Systems Research, Kentucky.

Shaw, M. L. G. and Gaines, B. R. (1983). Does the human component in a network have a protocol? In **Proceedings of International Electrical, Electronics Conference and Exposition, IEEE 83CH1955-4**, pp. 546-549. IEEE, New York.

Shaw, M. L. G. and Gaines, B. R. (1983). Individuals and worlds. In **Handout for Cybernetics Society Conference at Architectural Association**, pp. 1-9. Cybernetics Society, London.

Gaines, B. R. (1984). Perspectives on fifth generation computing. **Oxford Surveys in Information Technology** 1, 1-53.

Gaines, B. R. (1984). Methodology in the large: modeling all there is. **Systems Research** 1, 91-103.

Gaines, B. R. (1984). A framework for the fifth generation. In **Proceedings of National Computer Conference, 53**, pp. 453-459. AFIPS Press, Arlington, Virginia.

Gaines, B. R. (1984). From ergonomics to the Fifth Generation: 30 years of human-computer interaction studies. In **Human-Computer Interaction—INTERACT'84: Proceedings of the IFIP Conference** Shackel, B., ed, pp. 629-634. North-Holland, Amsterdam.

Gaines, B. R. (1984). Fundamentals of decision: probabilistic, possibilistic and other forms of uncertainty in decision analysis. In **Fuzzy Sets and Decision Analysis, TIMS Series Studies in the Management Sciences, 20** Zimmermann, H. J., Zadeh, L. A. and Brian R, G., eds., pp. 47-65. North-Holland, Amsterdam.

Gaines, B. R. (1984). Foundations of fifth generation computing. In **Proceedings of CIPS SESSION 84**, pp. 500-508. Canadian Information Processing Society, Calgary.

Gaines, B. R. (1984). Complexity and approximation: the foundations of pattern recognition. In **Proceedings of Seventh International Conference on Pattern Recognition, IEEE 84CH2046-1**, pp. 1269-1271. IEEE, New York.

Gaines, B. R. (1984). Uncertain system theory: structures of logic and inference. In **Abstracts of International Conference on Fuzzy Information Processing, Kauai** Bezdek, J., ed, pp. B7.

Gaines, B. R. (1984). What is an expert system? In **Proceedings Calgary Conference on Fifth Generation and Expert Systems**, Calgary, AB.

Gaines, B. R. (1984). An analysis of Japan's fifth generation project. **ComputerWorld Canada** 1, 35-37.

Gaines, B. R. (1984). Perspectives on fifth generation computing (preprint of Oxford Surveys in Information Technology 1984). In **IMPACT 1984: New Horizons from Fifth Generation Computing** Muller, R. C., ed, pp. 32-81. SPL, Abingdon, UK.

Gaines, B. R. (1984). The technology of interaction---dialogue programming rules. In **Instructional Software: Principles and Perspectives for Design and Use** Walker, D. F. and Hess, R. D., eds., pp. 115-130. Wadsworth, Belmont, CA.

Gaines, B. R., McKellar, I. D., Dinger, W. P., Fast, S. R., Fowles, B. J., Fraccaro, M. A., Jolivet, G. C. and Maludzinski, A. B. (1984). Some experience in the real-time processing of handwriting. In **Proceedings of Seventh International Conference on Pattern Recognition, IEEE 84CH2046-1**, pp. 630-632. IEEE, New York.

Gaines, B. R. and Shaw, M. L. G. (1984). Hierarchies of distinctions as generators of system theories. In **Proceedings of the Society for General Systems Research International Conference** Smith, A. W., ed, pp. 559-566. Society for General Systems Research, Louisville, Kentucky.

Gaines, B. R. and Shaw, M. L. G. (1984). **[BOOK] The Art of Computer Conversation**. Prentice-Hall, Englewood Cliffs, New Jersey.

Gaines, B. R. and Shaw, M. L. G. (1984). Logical foundations of expert systems. In **Proceedings of IEEE International Conference on Systems, Man and Cybernetics, 84CH2063-6**, pp. 238-247. IEEE, New York.

Gaines, B. R. and Shaw, M. L. G. (1984). Expert systems: the substitution of knowledge for materials in world food production. In **Abstracts of 150th Annual Meeting of the American Association for the Advancement of Science**, pp. 80. American Association for the Advancement of Science, Washington.

Gaines, B. R. and Shaw, M. L. G. (1984). Emotion: a systemic development of the personal construct model. In **Proceedings of NAPCN First Biennial Conference**, pp. 192-205. NACN, Cincinnati, Ohio.

Gaines, B. R. and Shaw, M. L. G. (1984). Dialog shell design. In **Human-Computer Interaction—INTERACT'84: Proceedings of the IFIP Conference** Shackel, B., ed, pp. 629-634. North-Holland, Amsterdam.

Gaines, B. R. and Shaw, M. L. G. (1984). Principles of dialog engineering. In **NATO Conference on Research Needs in User-Computer Interaction**, London.

Gaines, B. R., Zadeh, L. A. and Zimmermann, H. J. (1984). Fuzzy sets and decision analysis---a perspective. In **Fuzzy Sets and Decision Analysis, TIMS Series Studies in the Management Sciences, 20** Zimmermann, H. J., Zadeh, L. A. and Brian R, G., eds., pp. 3-8. North-Holland, Amsterdam.

Shaw, M. L. G. (1984). Knowledge engineering for expert systems. In **Human-Computer Interaction - INTERACT'84: Proceedings of the IFIP Conference** Shackel, B., ed, pp. 489-493. North-Holland, Amsterdam.

Shaw, M. L. G. (1984). Interactive knowledge elicitation. In **Proceedings of CIPS SESSION 84**, pp. 202-208. Canadian Information Processing Society, Calgary, AB.

Shaw, M. L. G. and Gaines, B. R. (1984). Deriving the constructs underlying decision. In **Fuzzy Sets and Decision Analysis. TIMS Series Studies in the Management Sciences, 20** Zimmermann, H. J., Zadeh, L. A. and Gaines, B. R., eds., pp. 335-355. North-Holland, Amsterdam.

Shaw, M. L. G. and Gaines, B. R. (1984). Some experience in eliciting knowledge structures for expert systems. In **Proceedings of the Society for General Systems Research International Conference** Smith, A. W., ed, pp. 605-614. Intersystems, California.

Shaw, M. L. G. and Gaines, B. R. (1984). Fifth generation computers as the next stage of a new medium. In **Proceedings of National Computer Conference, 53**, pp. 445-451. AFIPS Press, Arlington, Virginia.

Shaw, M. L. G. and Gaines, B. R. (1984). Applications of personal construct theory to expert systems. In **Proceedings of NAPCN First Biennial Conference**, pp. 175-191. NACN, Cincinnati, Ohio.

Zimmermann, H. J., Zadeh, L. A. and Gaines, B. R. (1984). **[BOOK] Fuzzy sets and decision analysis**. North-Holland, New York.

Gaines, B. R. (1985). From ergonomics to the fifth generation: 30 years of human-computer interaction studies (reprint 1984). **Computer Compacts** 2, 158-161.

Gaines, B. R. (1985). Human-computer interaction in fifth generation computing: problems and opportunities. In **Proceedings of 18th Annual Conference of Human Factors Association of Canada**, pp. 1-8, Hull, Quebec.

Gaines, B. R. (1985). From electronics to fifth generation computing: the infrastructure of the computing industry. In **Electronicom'85, IEEE 85CH2238-4**, pp. 394-397. IEEE, New York.

Gaines, B. R. (1985). **The Formation of a Knowledge Science Institute in Canada - The 1985 Proposal**. University of Calgary, Calgary. AB.

Gaines, B. R. (1985). **The Entrepreneur in the Digital Age: Killam Chair Inaugural Address**. University of Calgary, Calagry, AB.

Gaines, B. R. and Shaw, M. L. G. (1985). From fuzzy logic to expert systems. **Information Sciences** 36, 5-16.

Gaines, B. R. and Shaw, M. L. G. (1985). Foundations of expert systems. In **Management Decision Support Systems Using Fuzzy Sets and Possibility Theory** Kacprzyk, J. and Yager, R. R., eds., pp. 3-24. Interdisciplinary Systems Research, Rheinland.

Gaines, B. R. and Shaw, M. L. G. (1985). Systemic foundations for reasoning in expert systems. In **Approximate Reasoning in Expert Systems** Gupta, M. M., Kandel, A., Bandler, W. and Kiszka, J. B., eds., pp. 271-281. North-Holland, Amsterdam.

Gaines, B. R. and Shaw, M. L. G. (1985). Expert systems and simulation. In **AI, Graphics and Simulation** Birtwistle, G., ed, pp. 95-101. Society for Computer Simulation, La Jolla, California.

Gaines, B. R. and Shaw, M. L. G. (1985). Creativity, values and the infrastructure of computing. In **Research Workshop on Technology and Culture: Computers, Values and Creativity** Ghanotakis, G., ed, pp. 115-136, Ottawa.

Gaines, B. R. and Shaw, M. L. G. (1985). Three world views and system philosophies. In **Systems Inquiring: Theory, Philosophy, Methodology** Banathy, B. H., ed, pp. 244-252. Intersystems Publications, Seaside, CA.

Gaines, B. R. and Shaw, M. L. G. (1985). Epistemological foundations of information technology. In **Systems Inquiring: Theory, Philosophy, Methodology** Banathy, B. H., ed, pp. 387-396. Intersystems Publications, Seaside, CA.

Gaines, B. R. and Shaw, M. L. G. (1985). Foundations of human-computer interaction. In **Proceedings of CIPS/ACI CONGRESS 85**, pp. 384-388. Canadian Information Processing Society, Montreal.

Gaines, B. R. and Shaw, M. L. G. (1985). Information-theoretic analysis of construct systems. In **Sixth International Congress on Personal Construct Psychology**, Cambridge, UK.

Gaines, B. R. and Shaw, M. L. G. (1985). The infrastructure of fifth generation computing. In **Proceedings COMPINT'85, IEEE 85CH2136-O, 747-751**, pp. 747-751. IEEE, New York.

Shaw, M. L. G. (1985). Communities of knowledge. In **Anticipating Personal Construct Psychology** Epting, F. and Landfield, A. W., eds., pp. 25-35. University of Nebraska Press, Lincoln, Nebraska.

Shaw, M. L. G. (1985). Engineering knowledge-based systems: the transfer of expertise. . In **Electronicom'85, IEEE 85CH2238-4**, pp. 402-405. IEEE, New York.

Shaw, M. L. G. and Gaines, B. R. (1985). Systemic principles for human-computer interaction. In **Systems Inquiring: Theory, Philosophy, Methodology** Banathy, B. H., ed, pp. 377-386. Intersystems Publications, Seaside, CA.

Shaw, M. L. G. and Gaines, B. R. (1985). Developments in dialog engineering. In **Proceedings of National Computer Conference, 54**, pp. 493-499. AFIPS Press, Arlington, Virginia.

Shaw, M. L. G. and Gaines, B. R. (1985). The construction of expertise. In **Sixth International Congress on Personal Construct Psychology**, Cambridge, UK.

Shaw, M. L. G. and Gaines, B. R. (1985). Some perspectives on knowledge engineering for expert systems and simulation. In **Proceedings of Workshop on Coupling Symbolic and Numerical Computing in Expert Systems**, pp. 151-158. Boeing Computer Services, Bellevue, Washington.

Shaw, M. L. G. and Gaines, B. R. (1985). Knowledge engineering for expert systems. In **Proceedings COMPINT'85, IEEE 85CH2136-O, 747-751**, pp. 45-49. IEEE, New York.

Boose, J. H. and Gaines, B. R., eds. (1986). **[PROC] Proceedings of the Knowledge Acquisition For Knowledge-Based Systems Workshop**. Knowledge Science Institute, University of Calgary, Calgary, AB.

Gaines, B. R. (1986). Sixth generation computing: a conspectus of the Japanese proposals. **ACM SIGART Newsletter** 95, 39-44.

Gaines, B. R. (1986). Expert systems and simulation in industrial applications. **Intelligent Simulation Environments**

Gaines, B. R. (1986). Expert systems and simulation in the design of an FMS advisory system. In **Simulation in Manufacturing** Hurrion, R. D., ed, pp. 311-324. IFS Conferences, Bedford, UK.

Gaines, B. R. (1986). The design of expert systems for planning flexible manufacturing. In **Proceedings of Japan-USA Symposium on Flexible Automation**, pp. 761-768, Osaka.

Gaines, B. R. (1986). Foundations of knowledge engineering. In **Research and Development in Expert Systems III** Bramer, M. A., ed, pp. 13-24. Cambridge University Press, Cambridge, UK.

Gaines, B. R. (1986). Logical foundations for knowledge representation in intelligent systems. In **Proceedings of the ACM SIGART International Symposium on Methodologies for Intelligent Systems. Vol. ACM-552861**, pp. 366-380. ACM, New York.

Gaines, B. R. (1986). From differential analyzers to knowledge-based systems: the changing technologies of simulation. In **Proceedings of JSST Conference on Recent Advances in the Simulation of Complex Systems**, pp. 271-276. Japan Society for Simulation Technology, Tokyo.

Gaines, B. R. (1986). Total integration: design considerations for the next generation of networks. In **Proceedings of 10th Annual Simulation Conference**, Washington.

Gaines, B. R. (1986). Cognitive models of human-computer interaction in distributed systems. In **Proceedings of 1986 International Conference on Systems, Man and Cybernetics IEEE 86CH2364-8**, pp. 1358-1362. IEEE, New York.

Gaines, B. R. (1986). Socio-economic foundations of knowledge science. In **Proceedings of 1986 International Conference on Systems, Man and Cybernetics IEEE 86CH2364-8**, pp. 1035-1039. IEEE, New York.

Gaines, B. R. (1986). An overview of knowledge acquisition and transfer. In **Proceedings of AAAI Workshop on Knowledge Acquisition for Knowledge-Based Systems** Boose, J. H. and Gaines, B. R., eds., pp. 14-0-14-18. Knowledge Science Institute, University of Calgary, Calgary, AB.

Gaines, B. R. (1986). Expert systems in manufacturing. In **Proceedings of AUTOFACT'86**, pp. 8-45-8-62. Society of Manufacturing Engineers, Dearborn, Michigan.

Gaines, B. R. and Shaw, M. L. G. (1986). Induction of inference rules for expert systems. **Fuzzy Sets and Systems** 18, 315-328.

Gaines, B. R. and Shaw, M. L. G. (1986). Foundations of dialog engineering: the development of human-computer interaction. Part II. **International Journal of Man-Machine Studies** 24, 101-123.

Gaines, B. R. and Shaw, M. L. G. (1986). From timesharing to the sixth generation: the development of human-computer interaction. Part I. **International Journal of Man-Machine Studies** 24, 1-27.

Gaines, B. R. and Shaw, M. L. G. (1986). A learning model for forecasting the future of information technology. **Future Computing Systems** 1, 31-69.

Gaines, B. R. and Shaw, M. L. G. (1986). Knowledge engineering for an FMS advisory system. In **Proceedings of the Second International Conference on Simulation in Manufacturing: AMS'86** Lenz, J. E., ed, pp. 51-61. IFS Conferences, Bedford, UK.

Gaines, B. R. and Shaw, M. L. G. (1986). Steps toward knowledge science. In **Proceedings of NAPCN Second Biennial Conference**, pp. 73-82. Knowledge Science Institute, University of Calgary, Calgary, AB.

Gaines, B. R. and Shaw, M. L. G. (1986). Foundations of logic and reasoning in knowledge-based systems. In **Analysis of Fuzzy Information II: Artificial Intelligence and Decision Systems** Bezdek, J., ed, pp. 3-28. CRC Press, Boca Raton, FL.

Gaines, B. R. and Shaw, M. L. G. (1986). The changing technologies underlying computer-aided design. **Environment and Planning B: Planning & Design,** 13, 377-384.

Gaines, B. R. and Shaw, M. L. G. (1986). Knowledge engineering techniques. In **Proceedings of AUTOFACT'86**, pp. 8-79-8-96. Society of Manufacturing Engineers, Dearborn, Michigan.

Gaines, M. L. G. S. B. R., ed. (1986). **[PROC] Proceedings of the North American Personal Construct Network Second Biennial Conference**. Department of Computer Scence, University of Calgary, Calgary, AB.

Shaw, M. L. G. (1986). A cognitive science analysis of expert systems and simulation. In **Proceedings of JSST Conference on Recent Advances in the Simulation of Complex Systems**, pp. 277-282. Japan Society for Simulation Technology, Tokyo.

Shaw, M. L. G. (1986). Knowledge science - towards the prosthetic brain. In **Proceedings of 1986 International Conference on Systems, Man and Cybernetics, IEEE 86CH2364-8**, New York.

Shaw, M. L. G. (1986). PCS: a knowledge-based interactive system for group problem solving. In **Proceedings of 1986 International Conference on Systems, Man and Cybernetics, IEEE 86CH2364-8**. IEEE, New York.

Shaw, M. L. G. (1986). Epistemological hierarchies in knowledge and expert systems. In **Decision Making About Decision Making: Metamodels and Metasystems.** van Gigch, J. P., ed, pp. 185-198. Abacus Press, Cambridge, MA.

Shaw, M. L. G. and Chang, E. (1986). A participant construct system. In **Proceedings of NAPCN Second Biennial Conference**, pp. 131-14. Department of Computer Scence, University of Calgary, Calgary, AB.

Shaw, M. L. G. and Gaines, B. R. (1986). A cognitive model for intelligent information systems. In **Intelligent Information Systems: Progress and Prospects** Davies, R., ed, pp. 238-258. Ellis Horwood, Chichester, UK.

Shaw, M. L. G. and Gaines, B. R. (1986). Knowledge engineering tools for expert systems. In **Computer Models for Decision Making** Mitra, G., ed, pp. 147-163. North-Holland, Amsterdam.

Shaw, M. L. G. and Gaines, B. R. (1986). A framework for knowledge-based systems unifying expert systems and simulation. In **Intelligent Simulation Environments** Luker, P. A. and Adelsberger, H. H., eds., pp. 38-43. Society for Computer Simulation, La Jolla, CA.

Shaw, M. L. G. and Gaines, B. R. (1986). Interactive elicitation of knowledge from experts. **Future Computing Systems** 1, 151-190.

Shaw, M. L. G. and Gaines, B. R. (1986). Fifth generation computers as the next stage of a new medium (reprint of 1984). In **Proceedings of National Computer Conference, 55**, pp. 479-485. AFIPS Press, Arlington, VA.

Shaw, M. L. G. and Gaines, B. R. (1986). Techniques for knowledge acquisition and transfer. In **Proceedings of AAAI Workshop on Knowledge Acquisition for Knowledge-Based Systems** Boose, J. H. and Gaines, B. R., eds., pp. 39-0-39-13.

Shaw, M. L. G. and Gaines, B. R. (1986). Advances in interactive knowledge engineering. In **Research and Development in Expert Systems III** Bramer, M. A., ed, pp. 111-122. Cambridge University Press, Cambridge, UK.

Shaw, M. L. G. and Gaines, B. R. (1986). Cognitive foundations of knowledge-based systems. In **Proceedings of the First International Conference on Future Advances in Computing**, pp. 1-24, Christchurch, New Zealand.

Shaw, M. L. G. and Gaines, B. R. (1986). **[REPORT] Development of a Participant Construct System: Final Report & Manual**. Centre for Person-Computer Studies, Calgary, AB.

Addis, T., Boose, J. H. and Gaines, B. R., eds. (1987). **[PROC] Proceeding of the First European Workshop on Knowledge Acquisition for Knowledge-Based Systems**. Reading University, Reading, UK.

Boose, J. H. and Gaines, B. R., eds. (1987). **[PROC] Proceedings of the 2nd Knowledge Acquisition For Knowledge-Based Systems Workshop**. Knowledge Science Institute, University of Calgary, Calgary, AB.

Gaines, B. R. (1987). An overview of knowledge-acquisition and transfer. **International Journal of Man-Machine Studies** 26, 453-472.

Gaines, B. R. (1987). Knowledge structures for intelligent interaction. In **Methodologies for Intelligent Systems: Proceedings of the Second International Symposium, held October 14-17, 1987 in Charlotte, North Carolina** Ras, Z. and Zemankova, M., eds., pp. 496-507. North-Holland, New York.

Gaines, B. R. (1987). Positive feedback processes underlying functional differentiation. In **Proceedings of IEEE First International Conference on Neural Networks. Vol.2** Caudhill, M. and Butler, C., eds., pp. 387-394.

Gaines, B. R. (1987). Engineering knowledge: artificial intelligence, robotics and future society. In **Thematic Address of Canadian Engineering Centennial Convention**, pp. 19.1-19.23. Canadian Society for Mechanical Engineering, Montreal.

Gaines, B. R. (1987). Adapting to a highly automated world. In **Canadian Engineering Centennial Convention: Proceedings of Electrical Engineering Sessions IEEE 87TH0186-7**, pp. 42-49. IEEE, New York.

Gaines, B. R. (1987). New paradigms in system engineering: From 'hard' to 'soft' approaches. In **Optimization Models Using Fuzzy Sets and Possibility Theory** Kacprzyk, J. and Orlovskiĭ, S. A., eds., pp. 3-12. Reidel, Dordrecht.

Gaines, B. R. (1987). Uncertainty as a foundation of computational power in neural networks. In **IEEE International Conference on Neural Networks Vol.III** Caudhill, M. and Butler, C., eds., pp. 51-57. IEEE, San Diego.

Gaines, B. R. (1987). From teaching machines to knowledge-based systems: changing paradigms for CAL. In **Learning in Future Education: Proceedings of International Conference on Computer Assisted Learning in Post-Secondary Education** Norrie, D., ed, pp. 17-26. University of Calgary, Calgary.

Gaines, B. R. (1987). A methodological framework for the design and evaluation of software in systems involving complex human-computer interaction. In **Software-Ergonomie '87** Schonflug, W. and Wittstock, M., eds., pp. 55-73. Teubner, Stuttgart.

Gaines, B. R. (1987). A new science of manufacturing. In **Third International IFIP Conference on Advances in Production Management Systems**, Winnipeg.

Gaines, B. R. (1987). Knowledge acquisition for expert systems. In **Proceedings of the First European Workshop on Knowledge Acquisition for Knowledge-Based Systems, EKAW87** Addis, T., Boose, J. H. and Gaines, B. R., eds., pp. A3-1-4. Reading University, Reading, UK.

Gaines, B. R. (1987). How do experts acquire expertise? In **Proceedings of the First European Workshop on Knowledge Acquisition for Knowledge-Based Systems** Addis, T., Boose, J. H. and Gaines, B. R., eds., pp. B2-1-11. Reading University, Reading, UK.

Gaines, B. R. (1987). Advanced expert system support environments. In **Proceedings of Second AAAI Workshop on Knowledge Acquisition for Knowledge-Based Systems** Boose, J. H. and Gaines, B. R., eds., pp. 8-0-8-14. Knowledge Science Institute, University of Calgary, Calgary, AB.

Gaines, B. R. (1987). Integrated knowledge support environments for rapid prototyping of expert systems. In **Proceedings Intelligence Integration**, pp. 24-38. Canadian Information Processing Society, Edmonton, AB.

Gaines, B. R. (1987). Rapid prototyping for expert systems. In **Proceeding of the International Conference on Expert Systems and the Leading Edge in Planning and Control** Oliff, M., ed, pp. 213-241. University of South Carolina, Columbia, SC.

Gaines, B. R. (1987). Knowledge acquisition for expert systems (reprint of part of EKAW87). In **IEE Colloquium on "Knowledge Acquisition for Knowledge-Based Systems"**. Institution of Electrical Engineers, London.

Gaines, B. R. and Sharp, M. (1987). A knowledge acquisition extension to Notecards. In **Proceedings of the First European Workshop on Knowledge Acquisition for Knowledge-Based Systems** Addis, T., Boose, J. H. and Gaines, B. R., eds., pp. C1-1-7. Reading University, Reading, UK.

Gaines, B. R. and Shaw, M. L. G. (1987). Knowledge support systems. In **ACM MCC-University Research Symposium**, pp. 47-66. MCC, Austin, Texas.

Gaines, B. R. and Shaw, M. L. G. (1987). **[MANUAL] Knowledge Support System Zero: Knowledge Acquisition Program Reference Guide**. Knowledge Science Institute, University of Calgary, Calgary, AB.

Gaines, B. R. and Shaw, M. L. G. (1987). **[BOOK] A interação computador-usuário: um novo meio de comunicação ("The Art of Computer Conversation" in Portugese)**. Livros Téchnicos e Científicos, Rio de Janeiro, Brazil.

Gaines, B. R. and Vickers, J. N. (1987). [REPORT] Instantiation of knowledge structures in books and hypermedia. In **Technical Report of Knowledge Science Institute and Neuro-Motor Laboratory**. University of Calgary, Calgary, AB.

Holman, B. and Shaw, M. L. G. (1987). Expert computers emerge from shells. **Calgary Herald: New Waves 24-Apr-1987** D13.

Shaw, M. L. G. (1987). Knowledge support systems. In **Simulation and AI,** Luker, P. A. and Birtwistle, G., eds., pp. 58-63. Society for Computer Simulation, San Diego.

Shaw, M. L. G. (1987). A knowledge system for group learning and decision making. In **Proceedings of the International Conference on Computer assisted Learning in Post-Secondary Education**, pp. 197-203. University of Calgary, Calgary, AB.

Shaw, M. L. G. (1987). Conversational computer technology in personal construct psychology. In **Proceedings of Western Psychological Association Annual Conference**. Western Psychological Association, Long Beach, CA.

Shaw, M. L. G. (1987). Issues in knowledge acquisition for knowledge-based systems. In **Ninth Annual Cognitive Science Meeting**, Seattle, WA.

Shaw, M. L. G. and Gaines, B. R. (1987). KITTEN: Knowledge initiation and transfer tools for experts and novices. **International Journal of Man-Machine Studies** 27, 251-280.

Shaw, M. L. G. and Gaines, B. R. (1987). An interactive knowledge-elicitation technique using personal construct technology. In **Knowledge Elicitation for Expert Systems: A Practical Handbook** Kidd, A. L., ed, pp. 109-136. Plenum Press.

Shaw, M. L. G. and Woodward, J. B. (1987). Validation of a knowledge support system. In **Proceedings of Second AAAI Workshop on Knowledge Acquisition for Knowledge-Based Systems** Boose, J. H. and Gaines, B. R., eds., pp. 18-0-18-15. Knowledge Science Institute, University of Calgary, Calgary, AB.

Boose, J., Gaines, B. R. and Linster, M., eds. (1988). **[PROC] Proceedings of the Second European Workshop on Knowledge Acquisition for Knowledge-Based Systems (EKAW'88)**. Gellsellschaft für Mathematik und Datenverarbeitung, Bonn, Germany.

Boose, J. H. and Gaines, B. R., eds. (1988). **[BOOK] Knowledge Acquisition Tools for Expert Systems**. Academic Press, London.

Boose, J. H. and Gaines, B. R., eds. (1988). **[PROC] Proceedings of the 3rd Knowledge Acquisition For Knowledge-Based Systems Workshop**. Knowledge Science Institute, University of Calgary, Calgary, AB.

Gaines, B. R. (1988). Positive feedback processes underlying the formation of expertise. **IEEE Transactions on Systems, Man and Cybernetics** 18, 1016-1020.

Gaines, B. R. (1988). Knowledge acquisition systems for rapid prototyping of expert systems. **INFOR** 26, 256-285.

Gaines, B. R. (1988). Knowledge acquisition: developments and advances. In **Expert Systems and Intelligent Manufacturing: Proceedings of the Second International Conference and the Leading Edge in Production Planning and Control.** Oliff, M. D., ed, pp. 410-434. North-Holland, New York.

Gaines, B. R. (1988). Structure, development and applications of expert systems in integrated manufacturing. In **Artificial Intelligence Implications for CIM** Kusiak, A., ed, pp. 117-161. IFS Conferences, Bedford, UK.

Gaines, B. R. (1988). Software engineering for knowledge-based systems. In **Proceedings of CASE'88, Second International Workshop on Computer-Aided Software Engineering**, pp. 14-1-14-7.

Gaines, B. R. (1988). A conceptual framework for person-computer interaction in distributed systems. **IEEE Transactions Systems, Man & Cybernetics** SMC-18, 532-541.

Gaines, B. R. (1988). Second generation knowledge acquisition systems. In **Proceedings of the Second European Workshop on Knowledge Acquisition for Knowledge-Based Systems (EKAW'88)** Boose, J., Gaines, B. R. and Linster, M., eds., pp. 17-1-17-14. Gellsellschaft für Mathematik und Datenverarbeitung, Bonn, Germany.

Gaines, B. R. (1988). Knowledge Support Systems, pp. 77-80. Apple Canada, Toronto.

Gaines, B. R. (1988). Expert systems in agriculture. In **Proceedings of Agricultural Management Systems Directions and Vision Conference**. Alberta Agriculture, Edmonton, AB.

Gaines, B. R. (1988). New generations of human-computer interaction. In **Proceedings of IFAC/IFIP/IEA/IFORS Conference on Man-Machine Systems**, pp. 181-190, Oulu, Finland.

Gaines, B. R. (1988). Applying expert systems. In **Expert Systems: Strategies and Solutions in Manufacturing Design and Planning** Kusiak, A., ed, pp. 41-76. Society of Manufacturing Engineers, Dearborn, Michigan.

Gaines, B. R. (1988). Intelligent user interfaces. In **Expert Systems and Advanced Data Processing. Proceedings of Conference on Expert Systems Technology in the ADP Environment** Emrich, M. L., Sadlowe, A. R. and Arrowood, L. F., eds., pp. 271-302. North-Holland, New York.

Gaines, B. R. (1988). Eye movements and knowledge structures. In **Proceedings of Canadian Society for Psychomotor Learning and Sport Psychology Symposium on Eye Movements in Sport and Psychomotor Activity** Vickers, J. N. and Canic, M. J., eds., pp. 16-29. Neuro-Motor Laboratory, University of CalgaryNeuro-Motor Laboratory, Calgary, AB.

Gaines, B. R. (1988). Intelligent network support systems. In **Proceedings of the Second Network Computing Forum**, St Louis.

Gaines, B. R. (1988). Knowledge acquisition and technology. In **Proceedings of the Third AAAI Knowledge Acquisition for Knowledge-Based Systems Workshop** Boose, J. H. and Gaines, B. R., eds., pp. 8-1-8-21. Knowledge Science Institute, University of Calgary, Calgary, AB.

Gaines, B. R. (1988). Rapid prototyping for expert systems (reprint of 1987). In **Intelligent Manufacturing: Proceeding from the First International Conference on Expert Systems and the Leading Edge in Planning and Control** Oliff, M., ed, pp. 45-73. Penjmin Cummings, Menlo Park, CA.

Gaines, B. R. and Boose, J. H., eds. (1988). **[BOOK] Knowledge Acquisition for Knowledge-based Systems**. Academic Press, London.

Gaines, B. R. and Vickers, J. N. (1988). Design considerations for hypermedia systems. **Microcomputers for Information Management** 5, 1-27.

Gaines, B. R. and Vickers, J. N. (1988). Hypermedia design. In **Proceedings of RIAO'88 Conference on User-Oriented Content-Based Text and Image Handling**, pp. 14-23. MIT, Cambridge, Massachusetts.

Mancuso, J. C. and Shaw, M. L. G., eds. (1988). **[BOOK] Cognition and Personal Structure: Computer Access and Analysis**. Praeger, New York.

Mancuso, J. C. and Shaw, M. L. G. (1988). A constructivist perspective on assessing personal cognitive structures. In **Cognition and Personal Structure: Computer Access and Analysis** Mancuso, J. C. and Shaw, M. L. G., eds., pp. 1-12. Praeger, New York.

Rappaport, A. T. and Gaines, B. R. (1988). integration of acquisition and performance systems. In **Proceedings of the First AAAI Integration of Knowledge Acquisition and Performance Systems Workshop** Rappaport, A. T., Gaines, B. R. and Boose, J. H., eds. AAAI, Menlo Park.

Rappaport, A. T. and Gaines, B. R. (1988). Integration of acquisition and performance. In **Proceedings of the Third AAAI Knowledge Acquisition for Knowledge-Based Systems Workshop** Boose, J. H. and Gaines, B. R., eds., pp. 25-1-25-20. Knowledge Science Institute, University of Calgary, Calgary, AB.

Shaw, M. L. G. (1988). An interactive knowledge-based system for group problem solving. **IEEE transactions on systems, man, and cybernetics** 18, 610-617.

Shaw, M. L. G. (1988). A framework for knowledge acquisition from more than one expert. In **Proceedings of the Third IASTED International Conference**, pp. 19-22, Los Angeles.

Shaw, M. L. G. (1988). Problems of validation in a knowledge acquisition system using multiple experts. In **Proceedings of the Second European Workshop on Knowledge Acquisition for Knowledge-Based Systems (EKAW'88)** Boose, J., Gaines, B. R. and Linster, M., eds., pp. 5-1-5-15. GMD-Studien Nr 143, Bonn, Germany.

Shaw, M. L. G. (1988). Knowledge acquisition techniques for knowledge-based systems. In **Proceedings of the Seventh Biennial Conference of the Canadian Society for Computational Studies of Intelligence**, pp. 169-176, Toronto.

Shaw, M. L. G. (1988). Knowledge acquisition techniques for knowledge-based systems. In **Artificial Intelligence and Simulation: The Diversity of Applications** Henson, T., ed, pp. 19-24. The Society for Computer Simulation, San Diego, CA.

Shaw, M. L. G., Bradshaw, J. M., Gaines, B. R. and Boose, J. H. (1988). Rapid prototyping techniques for expert systems. In **Proceedings of the Fourth Conference on Artificial Intelligence Applications**, pp. 34-39. IEEE, New York.

Shaw, M. L. G. and Gaines, B. R. (1988). PLANET: A computer-based system for Personal Learning, Analysis, Negotiation and Elicitation Techniques. In **Cognition and Personal Structure: Computer Access and Analysis** Mancuso, J. C. and Shaw, M. L. G., eds., pp. 27-65. Praeger, New York.

Shaw, M. L. G. and Gaines, B. R. (1988). A methodology for recognizing consensus, correspondence, conflict and contrast in a knowledge acquisition system. In **Proceedings of the Third AAAI Knowledge Acquisition for Knowledge-Based Systems Workshop** Boose, J. H. and Gaines, B. R., eds., pp. 30-1-30-19. Knowledge Science Institute, University of Calgary, Calgary, AB.

Shaw, M. L. G. and Gaines, B. R. (1988). Un modello cognitivo per sistemi informativi intelligenti. In **Sistemi informatiivi intelligenti. Risultati e prospective** Davis, R., ed, pp. 287-315. F. Muzzio, Padua.

Shaw, M. L. G. and Mancuso, J. C. (1988). Modeling cognitive processes. In **Cognition and Personal Structure: Computer Access and Analysis** Mancuso, J. C. and Shaw, M. L. G., eds., pp. 13-26. Praeger, New York.

Shaw, M. L. G. and Woodward, J. B. (1988). Validation in a knowledge support system: construing and consistency with multiple experts. **International Journal of Man-Machine Studies** 29, 329-350.

Vickers, J. N. and Gaines, B. R. (1988). A comparison of books and hypermedia for knowledge-based sports coaching. **Microcomputers for Information Management** 5, 29-44.

Witten, I. H. and Gaines, B. R. (1988). Research in the knowledge sciences at the University of Calgary. **Canadian Artificial Intelligence** 17, 25-30.

Woodward, J. B. (1988). Knowledge Acquisition at the Front End: Defining the Domain In **Proceedings of the Third AAAI Knowledge Acquisition for Knowledge-Based Systems Workshop** Boose, J. H. and Gaines, B. R., eds., pp. 37-1-37-25. Knowledge Science Institute, University of Calgary, Calgary, AB.

Boose, J., Gaines, B. R. and Ganascia, J. H., eds. (1989). **[PROC] Proceedings of the Third European Workshop on Knowledge Acquisition for Knowledge-Based Systems (EKAW'89)**, Paris, France.

Boose, J. H. and Gaines, B. R. (1989). Knowledge acquisition for knowledge-based systems: Notes on the state-of-the-art. **Machine Learning** 4, 377-394.

Boose, J. H. and Gaines, B. R., eds. (1989). **[PROC] Proceedings of the 4th Knowledge Acquisition For Knowledge-Based Systems Workshop**. Knowledge Science Institute, University of Calgary, Calgary, AB.

Gaines, B. R. (1989). An ounce of knowledge is worth a ton of data: quantitative studies of the trade-off between expertise and data based on statistically well-founded empirical induction. In **Proceedings of the Sixth International Workshop on Machine Learning**, pp. 156-159. Morgan Kaufmann, San Mateo, California.

Gaines, B. R. (1989). Integration issues in knowledge support systems. **International Journal of Man-Machine Studies** 31, 495-515.

Gaines, B. R. (1989). Social and cognitive processes in knowledge acquisition. **Knowledge Acquisition** 1, 39-58.

Gaines, B. R. (1989). New generations of human-computer interaction. In **Analysis, Design and Evaluation of Man–Machine Systems 1988** Ranta, J., ed, pp. 9-18. Pergamon, Amsterdam.

Gaines, B. R. (1989). Knowledge acquisition: the continuum linking machine learning and expertise transfer. In **Proceedings of the Third European Workshop on Knowledge Acquisition for Knowledge-Based Systems (EKAW'89)** Boose, J., Gaines, B. R. and Ganascia, J. H., eds., pp. 90-101, Paris, France.

Gaines, B. R. (1989). Extracting knowledge from data. In **Proceedings of the AAAI Workshop on Knowledge Discovery in Databases**, pp. 109-116. AAAI, San Mateo.

Gaines, B. R. (1989). Design requirements for knowledge support systems. In **Proceedings of the Fourth AAAI Knowledge Acquisition for Knowledge-Based Systems Workshop** Boose, J. H. and Gaines, B. R., eds., pp. 12-1-12-20. Knowledge Science Institute, University of Calgary, Calgary, AB.

Gaines, B. R. (1989). The quantification of knowledge - formal foundations for acquisition methodologies. In **Methodologies for Intelligent Systems 4** Ras, Z. W., ed, pp. 137-149. New York.

Gaines, B. R. (1989). Knowledge acquisition and its integration with data processing technologies. In **Proceedings of the Second International Symposium on Expert Systems in Business, Finance and Accounting**, Los Angeles.

Gaines, B. R. and Rappaport, A. T. (1989). The automatic generation of classes, objects and rules at the interface between knowledge acquisition tools and expert system shells. In **Proceedings of ICAI-89 Workshop on Knowledge Acquisition: Practical Tools and Techniques**, pp. 51-53. AAAI, San Mateo.

Gaines, B. R., Rappaport, A. T. and Shaw, M. L. G. (1989). A heterogeneous knowledge support system. In **Proceedings of the Fourth AAAI Knowledge Acquisition for Knowledge-Based Systems Workshop** Boose, J. H. and Gaines, B. R., eds., pp. 13-1-13-20. Knowledge Science Institute, University of Calgary, Calgary, AB.

Gaines, B. R. and Shaw, M. L. G. (1989). Comparing the conceptual systems of experts. In **Proceedings of the Eleventh International Joint Conference on Artificial Intelligence**, pp. 633-638. Morgan Kaufmann, San Mateo, California.

Gaines, B. R. and Shaw, M. L. G. (1989). Automating software design for knowledge-based systems. In **Proceedings of the AAAI Workshop on Automating Software Design**, pp. 92-99.

Leishman, D. (1989). Analogy In knowledge acquisition: Description of an an analogical tool. In **Proceedings of the Fourth AAAI Knowledge Acquisition for Knowledge-Based Systems Workshop** Boose, J. H. and Gaines, B. R., eds., pp. 19-1-19-13. Knowledge Science Institute, University of Calgary, Calgary, AB.

Leishman, D. (Year). "Analogy as a constrained partial correspondence over conceptual graphs." Paper presented at the First International Conference on Principles of Knowledge Representation and Reasoning, San Mateo, CA, 1989.

Leishman, D. and Gaines, B. R. (1989). **A minimal framework for knowledge representation sufficient to support**

analogical reasoning and other forms of inductive inference, KSI-TR-Feb-89. Knowledge Science Institute, University of Calgary, Calgary, AB.

Norrie, D. H., Fauvel, O. R. and Gaines, B. R. (1989). Object-oriented management planning systems for advanced manufacturing. In **Proceedings of AAAI Symposium on AI and Manufacturing**. AAAI, Menlo Park, CA.

Norrie, D. H., Fauvel, O. R., Gaines, B. R. and Mowchenko, M. (1989). A knowledge-based decision support system for flexible manufacturing. In **Proceedings of Second International Conference on Industrial and Engineering Applications of Artificial Intelligence and Expert Systems: IEA/AIE-89**, pp. 393-400. ACM, NY.

Norrie, D. H., Fauvel, O. R., Guo, D. T. and Gaines, B. R. (1989). Object-oriented expert systems in management planning. In **IJACAI'89 First SIGMAN Workshop on Manufacturing Planning** Nau, D., ed, pp. 51-53.

Norrie, D. H., Fauvel, O. R., Guo, D. T. and Gaines, B. R. (1989). An integrated object-oriented architecture for manufacturing knowledge systems. In **IJCAI'89 Workshop on Integrated Architectures for Manufacturing** Sycara, K. P., ed.

Sharp, M. and Gaines, B. R. (1989). Knowledge acquisition for user support in heterogeneous networks. In **Proceedings of CASE'89, Third International Workshop on Computer-Aided Software Engineering**, pp. 504-514.

Shaw, M. L. G. (1989). Interactive elicitation and exchange of knowledge in group problem solving. **International Journal of Personal Construct Psychology** 2, 215-238.

Shaw, M. L. G. (1989). A grid-based tool for knowledge acquisition: validation with multiple experts. **ACM SIGART Bulletin Special Issue on Knowledge Acquisition** 108, 168-169.

Shaw, M. L. G. (1989). Knowledge acqisition: The state of the art. In **Informatique Cognitive des Organisations: Colloque ICO'89** Moulin, B. and Simian, G., eds., pp. 27-46. l'Intererdisciplinaire, Limost, Québec.

Shaw, M. L. G. and Gaines, B. R. (1989). Comparing conceptual structures: consensus, conflict, correspondence and contrast. **Knowledge Acquisition** 1, 341-363.

Shaw, M. L. G. and Gaines, B. R. (1989). Knowledge acquisition: some foundations, manual methods and future trends. In **Proceedings of the Third European Workshop on Knowledge Acquisition for Knowledge-Based Systems (EKAW'89)** Boose, J., Gaines, B. R. and Ganascia, J. H., eds., pp. 3-18, Paris, France.

Shaw, M. L. G. and Gaines, B. R. (1989). Eliciting and comparing the conceptual structures of experts and end-users. In **CASE'89: Proceedings of the Third International Workshop on Computer-Aided Software Engineering**, pp. 220-228, London.

Shaw, M. L. G. and Gaines, B. R. (1989). A grid-based tool for knowledge acquisition. In **Proceedings of the AAAI Workshop on Knowledge Acquisition**, pp. 19-22. AAAI, San Mateo.

Shaw, M. L. G. and Gaines, B. R. (1989). Extensions to knowledge acquisition methodologies and tools. In **Proceedings of the Sixth IASTED International Conference** Hamza, M. H., ed, pp. 76-79, Los Angeles.

Shaw, M. L. G. and Woodward, J. B. (1989). Mental models in the knowledge acquisition process. In **Proceedings of the Fourth AAAI Knowledge Acquisition for Knowledge-Based Systems Workshop** Boose, J. H. and Gaines, B. R., eds., pp. 29-1-29-24. Knowledge Science Institute, University of Calgary, Calgary, AB.

Boose, J. H. and Gaines, B. R., eds. (1990). **[BOOK] The Foundations of Knowledge Acquisition**. Academic Press, London.

Boose, J. H. and Gaines, B. R., eds. (1990). **[PROC] Proceedings of the 5th Knowledge Acquisition For Knowledge-Based Systems Workshop**. Knowledge Science Institute, University of Calgary, Calgary, AB.

Boose, J. H. and Gaines, B. R. (1990). Knowledge Acquisition for Knowledge-Based Systems: Notes on the State-of-the-Art (reprint of 1989). In **Knowledge Acquisition: Selected Research and Commentary: A Special Issue of Machine Learning on Knowledge Acquisition** Marcus, S., ed, pp. 131-148. Springer US, Boston, MA.

Gaines, B. R. (1990). Organizational integration: modeling technology and management. In **Empirical Foundations of Information and Software Sciences V** Zunde, P. and Hocking, D., eds., pp. 51-64. Plenum Press, New York.

Gaines, B. R. (1990). Intelligent systems as a stage in the evolution of information technology. In **Intelligent Systems: State of the Art and Future Directions** Ras, Z. W. and Zemankova, M., eds., pp. 431-455. Ellis Horwood, Chichester, UK.

Gaines, B. R. (1990). Knowledge acquisition systems. In **Knowledge Engineering: Volume 1: Fundamentals** Adeli, H., ed, pp. 52-102. McGraw-Hill, New York.

Gaines, B. R. (1990). From information to knowledge technology. **Future Computing Systems** 2, 377-407.

Gaines, B. R. (1990). Knowledge representation servers: a generic technology for knowledge acquisition and knowledge-based systems. **Proceedings of the First Japanese Knowledge Acquisition for Knowledge-Based Systems Workshop: JKAW'90** 413-430.

Gaines, B. R. (1990). An architecture for integrated knowledge acquisition systems. In **Proceedings of the Fifth AAAI Knowledge Acquisition for Knowledge-Based Systems Workshop** Boose, J. H. and Gaines, B. R., eds., pp. 8-1-8-22. Knowledge Science Institute, University of Calgary, Calgary, AB.

Gaines, B. R. (1990). A standardization architecture for hypertext and hypermedia. In **Proceedings of Hypertext Standardization Workshop, NIST Special Publication 500-178** Moline, J., Benigni, D. and Baronas, J., eds., pp. HT7-1-11. NIST, Washington.

Gaines, B. R. (1990). Open system integration issues in large-scale knowledge support systems. In **Proceedings of the Workshop on Full-Size Knowledge-Based Systems at Fifth Annual AI Systems in Government Conference**, pp. 4-10-4-25. IEEE Computer Society.

Gaines, B. R. (1990). Modes of being: a logical, psychological and ontological analysis of cyberspace. In **Collected Abstracts of the First Conference on Cyberspace**, pp. 33-34, Austin, TX.

Gaines, B. R. (1990). Knowledge acquisition based on an open-architecture knowledge representation server. In **Proceedings of the AAAI Workshop on Knowledge Acquisition: Practical Tools and Techniques** Rappaport, A. T., Gaines, B. R. and Boose, J. H., eds., pp. 1-7. AAAI, Menlo Park, CA.

Gaines, B. R. (1990). Knowledge support systems. **Knowledge-Based Systems** 3, 192-203.

Gaines, B. R. (1990). Hypermedia and laserdiscs: controlling and structuring multimedia. In **Innovations in Laser and Optical Disc Technology** Katz, L. and Keet, C., eds., pp. 161-174. Alberta Laserdisc Committee, Calgary, AB.

Gaines, B. R. and Boose, J. H. (1990). **[BOOK] Machine learning and uncertain reasoning**. Academic Press, London.

Gaines, B. R. and Freedman, D. (1990). Object-oriented implementation of a knowledge representation server. In **Proceedings of the AAAI Workshop on Object-Oriented Programming in AI**, pp. 1-4. AAAI, Meno Park, CA.

Gaines, B. R. and Linster, M. (1990). Integrating a knowledge acquisition tool, an expert system shell and a hypermedia system. **International Journal of Expert Systems Research and Applications** 3, 105-129.

Gaines, B. R. and Linster, M. (1990). Development of second generation knowledge acquisition systems Wielinga, B., Boose, J.H. & Gaines, B.R., Schreiber, G., van Someren, M., ed, pp. 143-160. IOS, Amsterdam.

Gaines, B. R., Rappaport, A. T. and Shaw, M. L. G. (1990). Integrating hypermedia, database and expert system technologies in knowledge acquisition. In **Proceedings of the Third International Symposium on Expert Systems in Business, Finance and Accounting**, pp. 21-36.

Gaines, B. R. and Shaw, M. L. G. (1990). Cognitive and logical foundations of knowledge acquisition. In **Proceedings of the Fifth AAAI Knowledge Acquisition for Knowledge-Based Systems Workshop** Boose, J. H. G., B.R., ed, pp. 9-1-9-24. Knowledge Science Institute, University of Calgary, Calgary, AB.

Gaines, B. R. and Shaw, M. L. G. (1990). Foundations of knowledge acquisition. In **Proceedings of the First Japanese Knowledge Acquisition for Knowledge-Based Systems Workshop: JKAW'90** Motoda, H., Mizoguchi, R., Boose, J. and Gaines, B., eds., pp. 3-24. Ohmsha, Tokyo.

Linster, M. and Gaines, B. R. (1990). Hyper-KSE: The integration of acquisition, interpretation and documentation. In **Proceedings of the Fifth AAAI Knowledge Acquisition for Knowledge-Based Systems Workshop** Boose, J. H. and Gaines, B. R., eds., pp. 16-1-16-13. Knowledge Science Institute, University of Calgary, Calgary, AB.

Linster, M. and Gaines, B. R. (1990). Supporting acquisition and interpretation in a hypermedia environment. In **Proceedings of TKE'90** Czap, H. and Nedobity, W., eds., pp. 176-186. Infoterm, Indeks Verlag, Frankfurt.

Motoda, H., Mizoguchi, R., Boose, J. H. and Gaines, B. R. (1990). **[PROC] Knowledge Acquisition for Knowledge-Based Systems, JKAW90**. Ohmsha, Tokyo.

Norrie, D. H., Fauvel, O. R. and Gaines, B. R. (1990). Object-oriented manufacturing planning systems for advanced manufacturing. **International Journal of Computer Integrated Manufacturing** 3, 373-378.

Rappaport, A. T. and Gaines, B. R. (1990). Integrated knowledge base building environments. **Knowledge Acquisition** 2, 51-71.

Rappaport, A. T. and Gaines, B. R. (1990). Integrating knowledge acquisition and performance systems. In **AI'88: 2nd Australian Joint Artificial Intelligence Conference, Adelaide, Australia, November, 1988** Barter, C. J. and Brooks, M. J., eds., pp. 307-326. Springer, Berlin.

Shaw, M. L. G. and Gaines, B. R. (1990). Computer support of a conversation-theoretic methodology. In **Proceedings of the AAAI Workshop on Complex Systems, Ethnomethodology and Interaction Analysis** Gilbert, N., ed, pp. 57-67. AAAI, Menlo Park, CA.

Shaw, M. L. G. and Gaines, B. R. (1990). Sharing accounting expertise. In **Proceedings of the Third International Symposium on Expert Systems in Business, Finance and Accounting**, pp. 1-19.

Shaw, M. L. G. and Gaines, B. R. (1990). Integration issues in knowledge support environments. In **Proceedings of the Seventh IASTED International Conference** Hamza, M. H., ed, pp. 23-26, Los Angeles.

Shaw, M. L. G. and Woodward, J. B. (1990). Modeling expert knowledge. **Knowledge Acquisition** 2, 179-206.

Wielinga, B., Boose, J. H., Gaines, B. R., Schreiber, G. and van Someren, M. (1990). **[PROC] Current Trends in Knowledge Acquisition, EKAW90**. IOS, Amsterdam.

Boose, J. and Gaines, B. R., eds. (1991). **[PROC] EKAW91: Fifth European Knowledge Acquisition for Knowledge-Based Systems Workshop**. University of Strathclyde, Crieff Hydro, Scotland.

Boose, J. H. and Gaines, B. R., eds. (1991). **[PROC] Proceedings of the 6th Knowledge Acquisition For Knowledge-Based Systems Workshop**. Knowledge Science Institute, University of Calgary, Calgary, AB.

Gaines, B. R. (1991). Integrating rules in term subsumption knowledge representation servers. In **AAAI'91: Proceedings of the Ninth National Conference on Artificial Intelligence**, pp. 458-463. AAAI Press/MIT Press, Menlo Park, California.

Gaines, B. R. (1991). An interactive visual language for term subsumption visual languages. In **IJCAI'91: Proceedings of the Twelfth International Joint Conference on Artificial Intelligence**, pp. 817-823. Morgan Kaufmann, San Mateo, CA.

Gaines, B. R. (1991). Modeling and forecasting the information sciences. **Information Sciences** 57-58, 3-22.

Gaines, B. R. (1991). Organizational modeling and problem solving using an object-oriented knowledge representation server and visual language. In **COCS'91: Proceedings of Conference on Organizational Computing Systems**, pp. 80-94. ACM Press.

Gaines, B. R. (1991). Empirical investigations of knowledge representation servers: Design issues and applications experience with KRS. **ACM SIGART Bulletin** 2, 45-56.

Gaines, B. R. (1991). The trade-off between knowledge and data in data acquisition. In **Knowledge Discovery in Databases** Piatetsky-Shapiro, G. and Frawley, W., eds., pp. 491-505. AAAI/MIT Press, Cambridge, Massachusetts.

Gaines, B. R. (1991). Between neuron, culture and logic: explicating the cognitive nexus. **ICO: Intelligence Artificielle et Sciences Cognitives au Québec** 3, 47-61.

Gaines, B. R. (1991). Refining induction into knowledge. In **Proceedings of the AAAI Workshop on Knowledge Discovery in Databases.**, pp. 1-10. AAAI, Menlo Park, California.

Gaines, B. R. (1991). Induction and visualization of rules with exceptions. In **Proceedings of the Sixth AAAI Knowledge Acquisition for Knowledge-Based Systems Workshop** Boose, J. H. and Gaines, B. R., eds., pp. 7-1-7-17. Knowledge Science Institute, University of Calgary, Calgary.

Gaines, B. R. (1991). Designing expert systems for usability. In **Human Factors for Informatics Usability** Shackel, B. and Richardson, S., eds., pp. 207-246. Cambridge University Press, Cambridge, UK.

Gaines, B. R. (1991). The Sisyphus problem solving example through a visual language with KL-ONE-like knowledge representation. Sisyphus Working Papers Part 2. In **Proceedings of the Fifth European Workshop on Knowledge Acquisition for Knowledge-Based Systems (EKAW'91)**, pp. 3-1-3-13, Crieff, Scotland.

Gaines, B. R. (1991). Object-oriented implementation of object-oriented knowledge representation. In **Proceedings of the AAAI Workshop on Object-Oriented Programming in AI**, pp. 62-76. AAAI, Menlo Park, CA.

Gaines, B. R. (1991). A knowledge-based multimedia system. In **Proceedings of the AAAI Workshop on Intelligent Multimedia Interfaces**, pp. 116-120. AAAI, Menlo Park.

Gaines, B. R. (1991). Methodology in the large: modeling all there is (reprint of 1984 in System Research). In **Facets of System Science** Klir, G. J., ed, pp. 355-376. Pergamon Press, New York.

Gaines, B. R. and Boose, J. H. (1991). Standards requirements, sources and feasibility in knowledge acquisition. In **Proceedings of the AAAI Workshop on Standards in Expert Systems**, pp. 5-10. AAAI, Menlo Park.

Kremer, R. A. (1991). Experience in applying KRS to an actual business problem. In **Proceedings of the 6th Knowledge Acquisition For Knowledge-Based Systems Workshop** Boose, J. H. and Gaines, B. R., eds., pp. 11-1-11-12. Knowledge Science Institute, University of Calgary, Calgary, AB.

Malcolm, N. and Gaines, B. R. (1991). A minimalist approach to the development of a word processor supporting group writing activities. In **COCS'91: Proceedings of Conference on Organizational Computing Systems**, pp. 147-152. ACM Press.

Motoda, H., Mizoguchi, R., Boose, J. and Gaines, B. R. (1991). Knowledge acquisition for knowledge-based systems. **IEEE Expert** 6, 53-64.

Shaw, M. L. G. (1991). Personal construct psychology as a foundation for cognitive and computational knowledge representation. In **Proceedings of Ninth International Congress on Personal Construct Psychology**, Albany, New York.

Shaw, M. L. G. and Gaines, B. R. (1991). Extending electronic mail with conceptual modeling to provide group decision support. In **COCS'91: Proceedings of Conference on Organizational Computing Systems**, pp. 153-158. ACM Press, New York.

Shaw, M. L. G. and Gaines, B. R. (1991). Supporting personal networking through computer networking. In **Proceedings of CHI'91: Human Factors in Computing Systems**, pp. 437-438. ACM Publications, New York.

Shaw, M. L. G. and Gaines, B. R. (1991). Knowledge support systems: Integrated knowledge acquisition and expert systems. In **Proceedings of the IASTED International Symposium on Computers, Electronics, Communication and Control** Hamza, M. H., ed, pp. 170-173. Acta Press, Anaheim,CA.

Shaw, M. L. G. and Gaines, B. R. (1991). Integration of knowledge acquisition techniques within a group decision support systems framework. In **Proceedings of the Fifth European Workshop on Knowledge Acquisition for Knowledge-Based Systems (EKAW'91)**, pp. 5-1-5-15, Crieff, Scotland.

Shaw, M. L. G. and Gaines, B. R. (1991). Mapping creativity with knowledge support tools. In **Proceedings of the AAAI Workshop on Creativity: Models, Methods and Tools**, pp. 32-45. AAAI, Menlo Park.

Shaw, M. L. G. and Gaines, B. R. (1991). Integrating knowledge acquisition techniques with electronic mail to provide knowledge support systems for group collaboration. In **Proceedings of the AAAI Workshop on Knowledge Acquisition: From Science to Technology to Tools**, pp. 16-28. AAAI, Menlo Park.

Shaw, M. L. G. and Gaines, B. R. (1991). Group decision support for the verification and validation process. In **Proceedings of the AAAI Workshop on Knowledge-Based Systems Verification, Validation and Testing**, pp. 48-55. AAAI, Menlo Park.

Shaw, M. L. G. and Gaines, B. R. (1991). Group decision support systems for knowledge based systems development. In **Proceedings of the Fourth International Symposium on Expert Systems in Business, Finance and Accounting**, pp. 1-13, Los Angeles.

Shaw, M. L. G. and Gaines, B. R. (1991). Using knowledge acquisition tools to support creative processes. In **Proceedings of the Sixth AAAI Knowledge Acquisition for Knowledge-Based Systems Workshop** Boose, J. H. and Gaines, B. R., eds., pp. 27-1-27-19. Knowledge Science Institute, University of Calgary, Calgary, AB.

Gaines, B. R. (1992). Managing tractability in an open-architecture knowledge representation server. In **Proceedings of the AAAI Workshop on Tractable Reasoning**, pp. 51-56. AAAI, Palo Alto, California.

Gaines, B. R. (1992). Social dynamics of scholarly publication. In **AAAI-92 Workshop on Communicating Scientific and Technical Knowledge** Swaminathan, K., ed, pp. 1-8. AAAI, Menlo Park, California.

Gaines, B. R. (1992). Modeling the generational structure of information technology. In **Proceedings of FGCS'92: International Conference on Fifth Generation Computer Systems**, pp. 1165-1172. ICOT, Tokyo.

Gaines, B. R. (1992). Manufacturing in the knowledge economy. In **Proceedings of ICOOMS'92: International Conference on Object-Oriented Manufacturing**, pp. 19-36. University of Calgary, Calgary.

Gaines, B. R. (1992). The species as a cognitive agent. In **AAAI Spring Symposium: Cognitive Aspects of Knowledge Acquisition**, pp. 101-114. AAAI, Menlo Park.

Gaines, B. R. (1992). Experience with a class library for knowledge representation and communication. In **Proceedings of ICOOMS'92: International Conference on Object-Oriented Manufacturing**, pp. 371-376, Calgary.

Gaines, B. R. and Compton, P. (1992). Induction of ripple-down rules. In **AI '92. Proceedings of the 5th Australian Joint Conference on Artificial Intelligence** Adams, A. and Sterling, L., eds., pp. 349-354. World Scientific, Singapore.

Gaines, B. R., Linster, M. and Shaw, M. L. G. (1992). An integrated knowledge support system. In **Proceedings of FGCS'92: International Conference on Fifth Generation Computer Systems**, pp. 1157-1164. ICOT, Tokyo.

Gaines, B. R., Musen, M. A. and Boose, J. H., eds. (1992). **[PROC] Proceedings of the 7th Knowledge Acquisition For Knowledge-Based Systems Workshop**. Knowledge Science Institute, University of Calgary, Calgary, AB.

Gaines, B. R., Rappaport, A. T. and Shaw, M. L. G. (1992). Combining paradigms in knowledge engineering. **Data & Knowledge Engineering** 9, 1-18.

Gaines, B. R. and Shaw, M. L. G. (1992). Integrated knowledge acquisition architectures. **Journal of Intelligent Information Systems** 1, 9-34.

Gaines, B. R. and Shaw, M. L. G. (1992). Documents as expert systems. In **Research and Development in Expert Systems IX** Bramer, M. A. and Milne, R. W., eds., pp. 331-349. Cambridge University Press, Cambridge.

Gaines, B. R. and Shaw, M. L. G. (1992). Managing quality assurance in integrated knowledge acquisition and performance systems. In **Proceedings of the AAAI Workshop on Knowledge-Based Systems Verification, Validation and Testing**, pp. 12.1-12.7. AAAI, Menlo Park.

Gaines, B. R. and Shaw, M. L. G. (1992). A knowledge acquisition architecture unifying the different stages of knowledge representation. In **Proceedings of the AAAI Workshop on Knowledge Representation Aspects of Knowledge Acquisition**, pp. 35-43. AAAI, Menlo Park.

Gaines, B. R. and Shaw, M. L. G. (1992). KWrite: Incorporating active knowledge bases in multi-media documents. In **Proceedings of the Seventh Knowledge Acquisition for Knowledge-Based Systems Workshop** Gaines, B. R., Musen, M. and Boose, J. H., eds., pp. 10-1-10-19. Knowledge Science Institute, University of Calgary, Calgary, AB.

Shaw, M. L. G. (1992). Supporting the creative process in a personal construct framework using repertory grid techniques and tools. In **NAPCN Fifth Biennial Conference**, Seattle, WA.

Shaw, M. L. G. and Gaines, B. R. (1992). Kelly's 'Geometry of psychological space' and its significance for psychological modeling. **New Psychologist** 23-31.

Shaw, M. L. G. and Gaines, B. R. (1992). On the relation between the repertory grid and term subsumption knowledge structures: theory, practice and tools. **Research and Development in Expert Systems IX. Proceedings of British Computer Society Expert Systems Conference** 125-143.

Shaw, M. L. G. and Gaines, B. R. (1992). The synthesis of knowledge engineering and software engineering. In **Advanced Information Systems Engineering: 4th International Conference CAiSE92** Loucopoulos, P., ed, pp. 208-220. Springer, Berlin.

Shaw, M. L. G. and Gaines, B. R. (1992). Kelly's psychological geometry as an intensional logic of knowledge representation. In **AAAI Spring Symposium: Cognitive Aspects of Knowledge Acquisition**, pp. 203-211. AAAI, Menlo Park.

Shaw, M. L. G. and Gaines, B. R. (1992). Knowledge modeling for software design. In **Proceedings of the AAAI Workshop on Automating Software Design**, pp. 134-138.

Shaw, M. L. G. and Gaines, B. R. (1992). RepGrid-Net: Combining conceptual modeling with electronic mail to provide group decision support. In **Proceedings of the Seventh Knowledge Acquisition for Knowledge-Based Systems Workshop** Gaines, B. R., Musen, M. and Boose, J. H., eds., pp. 24-1-24-18. Knowledge Science Institute, University of Calgary, Calgary, AB.

Woodward, J. B., Shaw, M. L. G. and Gaines, B. R. (1992). The cognitive basis of knowledge engineering. In **Contemporary Knowledge Engineering and Cognition** Schmalhofer, F., Strube, G. and Wetter, T., eds., pp. 194-221. Springer, Berlin.

Gaines, B. R. (1993). A class library implementation of a principled open architecture knowledge representation server with plug-in data types. In **IJCAI'93: Proceedings of the Thirteenth International Joint Conference on Artificial Intelligence**, pp. 504-509. Morgan Kaufmann, San Mateo, CA.

Gaines, B. R. (1993). Modeling practical reasoning. **International Journal of Intelligent Systems** 8, 51-70.

Gaines, B. R. (1993). An agenda for digital journals: the socio-technical infrastructure of knowledge dissemination. **Journal of Organizational Computing** 3, 135-193.

Gaines, B. R. (1993). Experience with a class library for organizational modeling and problem solving. **Integrated Computer-Aided Engineering** 1, 93-107.

Gaines, B. R. (1993). Modeling and extending expertise. **EKAW'93: Knowledge Acquisition for Knowledge-Based Systems** 1-22.

Gaines, B. R. (1993). Representation, discourse, logic and truth: situating knowledge technology. **Conceptual Graphs for Knowledge Representation** 36-63.

Gaines, B. R. (1993). Social and technical dimensions of electronic journals. **Bibliotheca Medica Canadiana** 15, 100-113.

Gaines, B. R. and Compton, P. (1993). Induction of meta-knowledge about knowledge discovery. **Knowledge and Data Engineering, IEEE Transactions on** 5, 990-992.

Gaines, B. R. and Malcolm, N. (1993). Supporting collaboration in digital journal production. **Journal of Organizational Computing** 3, 195-213.

Gaines, B. R. and Shaw, M. L. G. (1993). Eliciting knowledge and transferring it effectively to a knowledge-based systems. **IEEE Transactions on Knowledge and Data Engineering** 5, 4-14.

Gaines, B. R. and Shaw, M. L. G. (1993). Supporting the creativity cycle through visual languages. In **AAAI Spring Symposium: AI and Creativity**, pp. 155-162. AAAI, Menlo Park, California.

Gaines, B. R. and Shaw, M. L. G. (1993). Open architecture multimedia documents. **Proceedings of ACM Multimedia 93** 137-146.

Gaines, B. R. and Shaw, M. L. G. (1993). Knowledge acquisition tools based on personal construct psychology. **Knowledge Engineering Review** 8, 49-85.

Gaines, B. R., Shaw, M. L. G. and Woodward, J. B. (1993). Modeling as a framework for knowledge acquisition methodologies and tools. **International Journal of Intelligent Systems** 8, 155-168.

Shaw, M. L. G. and Gaines, B. R. (1993). Personal construct psychology foundations for knowledge acquisition and representation. In **Proceedings of EKAW-93: Seventh European Workshop on Knowledge Acquisition for Knowledge-Based Systems** Aussenac, N., Boy, G., Gaines, B., Linster, M., Ganascia, J. G. and Kodratoff, Y., eds., pp. 256-276.

Shaw, M. L. G. and Gaines, B. R. (1993). Group knowledge elicitation over networks. In **Research and Development in Expert Systems X. Proceedings of British Computer Society Expert Systems Conference** Bramer, M. A. and Macintosh, A. L., eds., pp. 43-62. Cambridge University Press, Cambridge, UK.

Shaw, M. L. G. and Gaines, B. R. (1993). A methodology for analyzing terminological and conceptual differences in language use across communities. In **Contributions to Quantitative Linguistics. Proceedings of the First Quantitative Linguistics Conference, QUALICO** Köhler, R. and Rieger, B. B., eds., pp. 91-138. Kluwer, Dordrecht.

Wetter, T., Althoff, K. D., Boose, J. H., Gaines, B. R., Linster, M. and Schmalhofer, F. (1993). **[PROC] EKAW'92: Current Developments in Knowledge Acquisition**. Springer, Berlin.

Gaines, B. R. (1994). Class library implementation of an open architecture knowledge support system. **International Journal Human-Computer Studies** 41, 59-107.

Gaines, B. R. (1994). A situated classification solution of a resource allocation task represented in a visual language. **International Journal of Human-Computer Studies** 40, 243-271.

Gaines, B. R. (1994). **Version control in collaborative writing**. 10.1109/IPCC.1994.347554.

Gaines, B. R. (1994). Exception DAGs as knowledge structures. In **AAAI-94 Workshop: KDD'94 Knowledge Discovery in Databases**. AAAI, Menlo Park, California.

Gaines, B. R. (1994). Supporting collaboration through multimedia digital archives. In **Canadian Multimedia Conference Proceedings** Katz, L., Mayo, M. and Richardson, B., eds., pp. 8-63. University of Calgary, Calgary, AB.

Gaines, B. R. (1994). The collective stance in modeling expertise in individuals and organizations. **International Journal of Expert Systems** 7, 21-51.

Gaines, B. R. (1994). The collective stance in modeling expertise in individuals and organizations (full version). **International Journal of Expert Systems** 7, 21-51 (pub version) 1-47 (full version).

Gaines, B. R. (1994). Modeling expertise in individuals and organizations. In **Proceedings of the Eighth AAAI Knowledge Acquisition for Knowledge-Based Systems Workshop** Gaines, B. R. and Musen, M., eds., pp. 8-1-8-20. Knowledge Science Institute, University of Calgary, Calgary, AB.

Gaines, B. R. and Musen, M. A., eds. (1994). **[PROC] Proceedings of the 8th Knowledge Acquisition For Knowledge-Based Systems Workshop**. Knowledge Science Institute, University of Calgary, Calgary, AB.

Gaines, B. R. and Norrie, D. H. (1994). Mediator: information and knowledge management for the virtual factory. In **SIGMAN AAAI-94 Workshop: Reasoning about the Shop Floor**, pp. 30-39. AAAI, Menlo Park, California.

Gaines, B. R. and Shaw, M. L. G. (1994). Using knowledge acquisition and representation tools to support scientific communities. In **AAAI'94: Proceedings of the Twelfth National Conference on Artificial Intelligence**, pp. 707-714. AAAI Press/MIT Press, Menlo Park, California.

Gaines, B. R. and Shaw, M. L. G. (1994). **The production of multimedia publications**. 10.1109/IPCC.1994.347506.

Gaines, B. R. and Shaw, M. L. G. (1994). Concept maps indexing multimedia knowledge bases. In **AAAI-94 Workshop: Indexing and Reuse in Multimedia Systems**, pp. 36-45. AAAI, Menlo Park, California.

Gaines, B. R. and Shaw, M. L. G. (1994). Knowledge acquisition and representation techniques in scholarly communication. In **Proceedings SIGDOC'94: ACM 12th Annual International Conference on Systems Documentation**, pp. 251-260. ACM, New York.

Kremer, R. A. and Gaines, B. R. (1994). Groupware concept mapping techniques. In **Proceedings SIGDOC'94: ACM 12th Annual International Conference on Systems Documentation**, pp. 156-165. ACM, New York.

Norrie, D. H. and Gaines, B. R. (1994). Intelligent knowledge management systems in the virtual factory. In **Proceedings of Second International Working Conference on Cooperating Knowledge Based Systems**. University of Keele, Keele, UK.

Shaw, M. L. G. (1994). Women, scholarship and information technology: A post-modern perspective. **Transactions of the Royal Society of Canada** 5, 113-131.

Shaw, M. L. G. (1994). A methodology for sharing personal construct systems. **International Journal of Constructivist Psychology** 7, 35-51.

Shaw, M. L. G. (1994). Computer-mediated collaboration: a PCP approach. In **Proceedings of NAPCN-94**, Indianapolis.

Shaw, M. L. G. and Gaines, B. R. (1994). Requirements acquisition. In **Proceedings of Workshop on Requirements Elicitation for Software-Based Systems**. University of Keele, Keele.

Shaw, M. L. G. and Gaines, B. R. (1994). Active documents combining multimedia and expert systems. In **SIGDOC '94: Proceedings of the 12th annual international conference on Systems documentation: technical communications at the great divide**, pp. 166-175. ACM, New York.

Shaw, M. L. G. and Gaines, B. R. (1994). Knowledge support systems for constructively channeling conflict in group dynamics. In **AAAI-94 Workshop on Models of Conflict Management**, pp. 107-116. AAAI, Menlo Park, CA.

Shaw, M. L. G., Gaines, B. R. and Linster, M. (1994). Supporting the knowledge engineering life cycle. In **Research and Development in Expert Systems XI** Bramer, M. A. and Macintosh, A. L., eds., pp. 73-86. SGES Publications, Oxford.

Woodward, J. B. and Shaw, M. L. G. (1994). Cognition support tools for knowledge acquisition. In **Proceedings of the Eighth AAAI Knowledge Acquisition for Knowledge-Based Systems Workshop** Gaines, B. R. and Musen, M., eds., pp. 13-1-13-2. Knowledge Science Institute, University of Calgary, Calgary, AB.

Gaines, B. R. (1995). Structured and unstructured induction with EDAGs. In **Proceedings of the First International Conference on Knowledge Discovery and Data Mining (KDD-95)** Fayyad, U. M. and Uthurusamy, R., eds., pp. 124-129. MIT Press, Cambridge, MA.

Gaines, B. R. (1995). Porting interactive applications to the web. In **4th International World Wide Web Conference Tutorial Notes**, pp. 199-217. O'Reilly, Sebastopol, CA.

Gaines, B. R. (1995). Inducing knowledge. In **Proceedings of the Ninth Knowledge Acquisition for Knowledge-Based Systems Workshop** Gaines, B. R. and Musen, M., eds., pp. 15-1-15-20. Knowledge Science Institute, University of Calgary, Calgary. AB.

Gaines, B. R. (1995). Dimensions of electronic journals. In **Computer Networking and Scholarly Communication in the Twenty-First Century University** Harrison, T. and Stephen, T. D., eds., pp. 315-334. State University of New York Press, New York.

Gaines, B. R. and Compton, P. (1995). Induction of ripple-down rules applied to modeling large databases. **Journal of Intelligent Information Systems** 5, 211-228.

Gaines, B. R. and Musen, M. A., eds. (1995). **[PROC] Proceedings of the 9th Knowledge Acquisition For Knowledge-Based Systems Workshop KAW95**. Knowledge Science Institute, University of Calgary, Calgary, AB.

Gaines, B. R. and Norrie, D. H. (1995). Knowledge systematization in the international IMS research program. In **IEEE International Conference on Systems, Man and Cybernetics**, pp. 958-963. IEEEE, New York.

Gaines, B. R., Norrie, D. H. and Lapsley, A. Z. (1995). Mediator: an intelligent information system supporting the virtual manufacturing enterprise. In **IEEE International Conference on Systems, Man and Cybernetics**, pp. 964-969.

Gaines, B. R. and Shaw, M. L. G. (1995). Concept maps as hypermedia components. **International Journal Human-Computer Studies** 43, 323-361.

Gaines, B. R. and Shaw, M. L. G. (1995). Collaboration through concept maps. In **Proceedings of CSCL95: Computer Support for Collaborative Learning** Schnase, J. L. and Cunnius, E. L., eds., pp. 135-138. Lawrence Erlbaum, Mahwah, New Jersey.

Gaines, B. R. and Shaw, M. L. G. (1995). WebMap: concept mapping on the web. **World Wide Web Journal** 1, 171-183.

Gaines, B. R. and Shaw, M. L. G. (1995). **Interacting with the Web, KSI-TR-Jun-95**. Knowledge Science Institute, University of Calgary, Calgary, AB.

Kremer, R. A. (1995). The design of a concept mapping environment for knowledge acquisition and knowledge representation. In **Proceedings of the Ninth Knowledge Acquisition for Knowledge-Based Systems Workshop** Gaines, B. R. and Musen, M., eds., pp. 23-1-23-19. Knowledge Science Institute, University of Calgary, Calgary. AB.

Norrie, D. H. and Gaines, B. R. (1995). The learning web: An agent-oriented network supporting knowledge access,collaboration and simulation. In **Proceedings of ED-MEDIA'95 : World Conference on Educational Multimedia and Hypermedia** Maurer, H., ed, pp. 500-505. Association for the Advancement of Computing in Education, Charlottesville, VA.

Norrie, D. H. and Gaines, B. R. (1995). The learning web: A system view and an agent-oriented model (reprint of ED-MEDIA'95). **International Journal of Educational Telecommunications** 1, 23-41.

Shaw, M. L. G. and Gaines, B. R. (1995). Comparing constructions through the web. In **Proceedings of CSCL95: Computer Support for Collaborative Learning** Schnase, J. L. and Cunnius, E. L., eds., pp. 300-307. Lawrence Erlbaum, Mahwah, New Jersey.

Shaw, M. L. G. and Gaines, B. R. (1995). Knowledge and requirements engineering. In **Proceedings of the Ninth Knowledge Acquisition for Knowledge-Based Systems Workshop, V2** Gaines, B. R. and Musen, M., eds., pp. 44-1-44-22. Knowledge Science Institute, University of Calgary, Calgary, AB.

Shaw, M. L. G. and Gaines, B. R. (1995). Constructing the Web. In **XI International Congress on Personal Construct Psychology**, Barcelona, Spain.

Chen, L. L.-J. and Gaines, B. R. (1996). Methodological issues in studying and supporting awareness on the World Wide Web. In **Proceedings of WebNet96** Maurer, H., ed, pp. 95-102. Association for the Advancement of Computing in Education, Charlottesville, VA.

Chen, L. L.-J. and Gaines, B. R. (1996). Knowledge Acquisition processes in Internet communities. In **Proceedings of the 10th Knowledge Acquisition for Knowledge-Based Systems Workshop** Gaines, B. R. and Musen, M., eds., pp. 43-1-43-19. Knowledge Science Institute, University of Calgary, Calgary, AB.

Flores-Mendez, R. A. (1996). Distributed concept mapping collaboration using Java. In **Proceedings of the 10th Knowledge Acquisition for Knowledge-Based Systems Workshop** Gaines, B. R. and Musen, M., eds., pp. 64-1-64-7. Knowledge Science Institute, University of Calgary, Calgary, AB.

Gaines, B. R. (1996). Transforming rules and trees into comprehensible knowledge structures. In **Knowledge Discovery in Databases II** Fayyad, U. M., Piatetsky-Shapiro, G., Smyth, P. and Uthurusamy, R., eds., pp. 205-226. AAAI/MIT Press, Cambridge, Massachusetts.

Gaines, B. R. (1996). Convergence to the information highway. In **Proceedings of WebNet96** Maurer, H., ed, pp. 159-166. Association for the Advancement of Computing in Education, Charlottesville, VA.

Gaines, B. R. (1996). Adaptive interactions in societies of agents. In **Workshop on Intelligent Adaptive Agents**, pp. 4-10. AAAI, Menlo Park, CA.

Gaines, B. R. (1996). Fundamentals of validation. In **AAAI-96 Workshop on Validation and Verification of Knowledge-Based Systems and Subsystems**, pp. 1-6. AAAI, Menlo Park, CA.

Gaines, B. R. (1996). The emergence of knowledge through modeling and management processes in societies of adaptive agents. In **Proceedings of the 10th Knowledge Acquisition for Knowledge-Based Systems Workshop** Gaines, B. R. and Musen, M., eds., pp. 14-1-24-13. Knowledge Science Institute, University of Calgary, Calgary, AB.

Gaines, B. R. and Chen, L. L.-J. (1996). A model of knowledge processes in Internet communities. In **AAAI-96 Workshop on Internet-Based Information Systems**, pp. 41-47. AAAI, Menlo Park, CA.

Gaines, B. R. and Musen, M. A. (1996). **[PROC] Proceedings of the 10th Knowledge Acquisition For Knowledge-Based Systems Workshop**. Knowledge Science Institute, University of Calgary, Calgary, AB.

Gaines, B. R., Norrie, D. H., Lapsley, A. Z. and Shaw, M. L. G. (1996). Knowledge management for distributed enterprises. In **Proceedings of the 10th Knowledge Acquisition For Knowledge-Based Systems Workshop** Gaines, B. R. and Musen, M. A., eds., pp. 37-1-37-18. Knowledge Science Institute, University of Calgary, Calgary, AB.

Gaines, B. R., Norrie, D. H. and Shaw, M. L. G. (1996). Foundations for the learning web. In **Proceedings of ED-TELECOM 96: World Conference on Educational Telecommunications** Carlson, P. and Makedon, F., eds., pp. 109-114. Association for the Advancement of Computing in Education, Charlottesville, VA.

Gaines, B. R. and Shaw, M. L. G. (1996). WebGrid: knowledge modeling and inference through the World Wide Web. In **Proceedings of the 10th Knowledge Acquisition For Knowledge-Based Systems Workshop** Gaines, B. R. and Musen, M. A., eds., pp. 65-1-65-14. Knowledge Science Institute, University of Calgary, Calgary, AB.

Gaines, B. R. and Shaw, M. L. G. (1996). A networked, open architecture knowledge management system. In **Proceedings of the 10th Knowledge Acquisition For Knowledge-Based Systems Workshop** Gaines, B. R. and Musen, M. A., eds., pp. 45-1-45-22. Knowledge Science Institute, University of Calgary, Calgary, AB.

Gaines, B. R. and Shaw, M. L. G. (1996). Implementing the learning web. In **Proceedings of ED-TELECOM 96: World Conference on Educational Telecommunications** Carlson, P. and Makedon, F., eds., pp. 359. Association for the Advancement of Computing in Education, Charlottesville, VA.

Gaines, B. R., Shaw, M. L. G. and Chen, L. L.-J. (1996). Utility, usability and likeability: dimensions of the net and web. In **Proceedings of WebNet96** Maurer, H., ed, pp. 167-173. Association for the Advancement of Computing in Education, Charlottesville, VA.

Herlea, D. E. (1996). Requirements elicitation over the electronic workspace. In **Proceedings of the 10th Knowledge Acquisition for Knowledge-Based Systems Workshop** Gaines, B. R. and Musen, M., eds., pp. 66-1-66-8. Knowledge Science Institute, University of Calgary, Calgary, AB.

Herlea, D. E. (1996). Users involvement in requirements engineering process. In **Proceedings of the 10th Knowledge Acquisition for Knowledge-Based Systems Workshop** Gaines, B. R. and Musen, M., eds., pp. 47-1-47-17. Knowledge Science Institute, University of Calgary, Calgary, AB.

Kremer, R. A. (1996). A demonstration of KSIMapper and constraint graphs. In **Proceedings of the 10th Knowledge Acquisition for Knowledge-Based Systems Workshop** Gaines, B. R. and Musen, M., eds., pp. 67-1-67-8. Knowledge Science Institute, University of Calgary, Calgary, AB.

Kremer, R. A. and Gaines, B. R. (1996). Embedded interactive concept maps in web documents. In **Proceedings of WebNet96** Maurer, H., ed, pp. 273-280. Association for the Advancement of Computing in Education, Charlottesville, VA.

Lapsley, A. Z., Gaines, B. R. and Norrie, D. H. (1996). Concurrent manufacturing on the web. In **Proceedings of WebNet96** Maurer, H., ed, pp. 286-291. Association for the Advancement of Computing in Education, Charlottesville, VA.

Norrie, D. H. and Gaines, B. R. (1996). Distributed agent systems for intelligent manufacturing. **Canadian Artificial Intelligence** 40, 31-33.

Shaw, M. L. G. and Gaines, B. R. (1996). WebGrid: knowledge elicitation and modeling on the web. In **Proceedings of WebNet96** Maurer, H., ed, pp. 425-432. Association for the Advancement of Computing in Education, Charlottesville, VA.

Shaw, M. L. G. and Gaines, B. R. (1996). Requirements acquisition. **Software Engineering Journal** 11, 149-165.

Shaw, M. L. G. and Gaines, B. R. (1996). Distributed knowledge modeling through the World Wide Web. In **AAAI-96 Workshop on Internet-Based Information Systems**, pp. 103-112. AAAI, Menlo Park, CA.

Shaw, M. L. G. and Gaines, B. R. (1996). Participatory design and validation of knowledge-based systems through the web. In **AAAI-96 Workshop on Validation and Verification of Knowledge-Based Systems and Subsystems**, pp. 135-144. AAAI, Menlo Park, CA.

Shaw, M. L. G. and Gaines, B. R. (1996). Experience with the learning web. In **Proceedings of ED-TELECOM 96: World Conference on Educational Telecommunications** Carlson, P. and Makedon, F., eds., pp. 320-324. Association for the Advancement of Computing in Education, Charlottesville, VA.

Shaw, M. L. G. and Gaines, B. R. (1996). **Learning Environments for Requirements Engineering, SERN-TR-Dec-1996**. Software Engineering Research Network, University of Calgary, Calgary, AB.

Chen, L. L.-J. and Gaines, B. R. (1997). A CyberOrganism model for awareness in collaborative communities on the Internet. **International Journal of Intelligent Systems** 12, 31-56.

Chen, L. L.-J. and Gaines, B. R. (1997). Awareness and virtual cooperative interaction in the learning web. In **Proceedings of ED-TELECOM 97: World Conference on Educational Telecommunications** Müldner, T. and Reeves, T. C., eds., pp. 168-175. Association for the Advancement of Computing in Education, Charlottesville, VA.

Gaines, B. R. (1997). Knowledge management in societies of intelligent adaptive agents. **Journal of Intelligent Information Systems** 9, 277-298.

Gaines, B. R. (1997). Knowledge level modeling of agents, organizations and technologies. In **AAAI Spring Symposium: Artificial Intelligence in Knowledge Management** Gaines, B. R. and Musen, M. A., eds., pp. 47-55. AAAI, Menlo Park.

Gaines, B. R., Chen, L. L.-J. and Shaw, M. L. G. (1997). Modeling the human factors of scholarly communities supported through the Internet and World Wide Web. **Journal American Society Information Science** 48, 987-1003.

Gaines, B. R. and Norrie, D. H. (1997). Coordinating societies of research agents - IMS experience. **Integrated Computer Aided Engineering** 4, 179-190.

Gaines, B. R. and Shaw, M. L. G. (1997). Knowledge acquisition, modeling and inference through the World Wide Web. **International Journal of Human-Computer Studies** 46, 729-759.

Gaines, B. R. and Shaw, M. L. G. (1997). Institutional transformation to a learning web. In **Proceedings of ED-TELECOM 97 : World Conference on Educational Telecommunications** Müldner, T. and Reeves, T. C., eds., pp. 384-389. Association for the Advancement of Computing in Education, Charlottesville, VA.

Gaines, B. R. and Shaw, M. L. G. (1997). Knowledge management for research communities. In **AAAI Spring Symposium: Artificial Intelligence in Knowledge Management** Gaines, B. R. and Musen, M. A., eds., pp. 55-62. AAAI, Menlo Park.

Herlea, D. E., Shaw, M. L. G. and Gaines, B. R. (1997). The learning web in the workplace. In **Proceedings of ED-TELECOM 97 : World Conference on Educational Telecommunications** Müldner, T. and Reeves, T. C.,

eds., pp. these proceedings. Association for the Advancement of Computing in Education, Charlottesville, VA.

Herlea, D. E., Shaw, M. L. G. and Gaines, B. R. (1997). Knowledge management for requirements engineering. In **AAAI Spring Symposium: Artificial Intelligence in Knowledge Management** Gaines, B. R. and Musen, M. A., eds., pp. 69-74. AAAI, Menlo Park.

Shaw, M. L. G. (1997). Using grids to develop expert systems through the World Wide Web. In **XII International Congress on Personal Construct Psychology**, Seattle, WA.

Shaw, M. L. G. (1997). Anticipations: Constructivism and the 21st century. In **International Congress on Personal Construct Psychology**, Seattle, WA.

Shaw, M. L. G. (1997). **[BROCHURE] Software Engineering Research Network**. University of Calgary, Calgary, AB.

Shaw, M. L. G. and Gaines, B. R. (1997). Using the web to support cooperative learning in software engineering. In **Proceeedings of WCCCE'97: 2nd Western Canadian Conference on Computing Education** Tsiknis, G. K., ed, pp. 63-72. Malaspina College, Nanaimo, BC.

Shaw, M. L. G. and Gaines, B. R. (1997). Collaboration and negotiation through the learning web. In **Proceedings of ED-MEDIA/ED-TELECOM 97: World Conference on Educational Multimedia/Hypermedia and Telecommunications** Müldner, T. and Reeves, T. C., eds., pp. 1390-1391. Association for the Advancement of Computing in Education, Charlottesville, VA.

Chen, L. L.-J. and Gaines, B. R. (1998). Modeling and supporting virtual cooperative interaction through the World Wide Web. In **Network and Netplay: Virtual Groups on the Internet** Sudweeks, F., McLaughlin, M. and Rafaeli, S., eds., pp. 221-242. AAAI Press, Cambridge, MA.

Damian, D. E. H., Shaw, M. L. G. and Gaines, B. R. (1998). Locales for requirements engineering. In **IT & NOWS: Information Technologies and Knowledge Systems: Proceedings of the XV IFIP World Computer Congress.**, pp. 245-258, Vienna & Budapest.

Gaines, B. R. (1998). The learning curves underlying convergence. **Technological Forecasting and Social Change** 57, 7-34.

Gaines, B. R. and Musen, M. A., eds. (1998). **[PROC] Proceedings of the 11th Knowledge Acquisition For Knowledge-Based Systems Workshop**. Knowledge Science Institute, University of Calgary, Calgary, AB.

Gaines, B. R. and Shaw, M. L. G. (1998). Developing for web integration in Sisyphus-IV: WebGrid-II experience. In **[PROC] Proceedings of the 11th Knowledge Acquisition For Knowledge-Based Systems Workshop** Gaines, B. R. and Musen, M. A., eds., pp. SIS3: 1-12. Knowledge Science Institute, University of Calgary, Calgary, AB.

Gaines, B. R. and Shaw, M. L. G. (1998). Socio-cultural implications of personal construct psychology. In **Proceedings of NAPCN98: Constructivism in Psychology and the Human Sciences**, Denton, Texas.

Gaines, B. R. and Shaw, M. L. G. (1998). **A software architecture for porting interactive applications to the web, KSI-TR-May-98**. Knowledge Science Institute, University of Calgary, Calgary, AB.

Gaines, B. R. and Shaw, M. L. G. (1998). **Conversation theory in context, KSI-TR-Feb-98**. Knowledge Science Institute, University of Calgary, Calgary, AB.

Herlea, D. (1998). Computer supported collaborative requirements negotiation. In **[PROC] Proceedings of the 11th Knowledge Acquisition For Knowledge-Based Systems Workshop** Gaines, B. R. and Musen, M. A., eds., pp. VKM4: 1-16. Knowledge Science Institute, University of Calgary, Calgary, AB.

Kremer, R. A. (1998). Visual languages for knowledge representation. In **Proceedings of the 11th Knowledge Acquisition For Knowledge-Based Systems Workshop** Gaines, B. R. and Musen, M., eds., pp. VKM: 1-16. Knowledge Science Institute, University of Calgary, Calgary, AB.

Shaw, M. L. G. and Gaines, B. R. (1998). A research-based masters program in the workplace. In **Proceedings of WCCCE'98: Western Canadian Conference on Computing Education** Tsiknis, G., ed, pp. 13-28.

Shaw, M. L. G. and Gaines, B. R. (1998). WebGrid II: Developing hierarchical knowledge structures from flat grids. In **Proceedings of the 11th Knowledge Acquisition For Knowledge-Based Systems Workshop** Gaines, B.

R. and Musen, M. A., eds., pp. SIS-7: 1-15. Knowledge Science Institute, University of Calgary, Calgary, AB.

Shaw, M. L. G. and Gaines, B. R. (1998). Using WebGrid-II to support exchange and comparison of construct systems in communities on the World Wide Web. In **Proceedings of NAPCN98: Constructivism in Psychology and the Human Sciences**, Denton, Texas.

Damian, D. E., Eberlein, A., Shaw, M. L. G. and Gaines, B. R. (1999). Studies in distributed software requirements engineering. In **Proceedings of the Twelth Knowledge Acquisition for Knowledge-Based Systems Workshop** Gaines, B. R., Kremer, R. A. and Musen, M., eds., pp. 1-1-1 to 1-1-19.

Gaines, B. R. (1999). HCI in the next millennium: supporting the world mind. In **Human-Computer Interaction: INTERACT'99** Sasse, M. A. and Johnson, C., eds., pp. 18-30. Springer, New York.

Gaines, B. R., Kremer, R. A. and Musen, M. A., eds. (1999). **[PROC] Proceedings of the 12th Knowledge Acquisition For Knowledge-Based Systems Workshop**. Knowledge Science Institute, University of Calgary, Calgary, AB.

Gaines, B. R. and Shaw, M. L. G. (1999). Embedding formal knowledge models in active documents. **Communications of the ACM** 42, 57-63.

Gaines, B. R. and Shaw, M. L. G. (1999). Expert system development through the World Wide Web. In **PACES99: Pacific Asian Conference on Expert Systems** O'Leary, D. E., ed. USC Business School, Los Angeles, CA.

Gaines, B. R. and Shaw, M. L. G. (1999). Porting knowledge-based systems to the World Wide Web. In **PACES99: Pacific Asian Conference on Expert Systems** O'Leary, D. E., ed. USC Business School, Los Angeles, CA.

Jacobsen, D. M., Wijngaard, N. J. E., Kremer, R., Shaw, M. L. G. and Gaines, B. R. (1999). The comparative evaluation of classroom and distance sections of an Industrial Software Engineering graduate course. In **Proceedings M/SET 99: International Conference on Mathematics/Science Education & Technology**, San Antonio, Texas.

Jacobsen, M., Kremer, R. A. and Shaw, M. L. G. (1999). An examination of distance education learning environments in two software engineering graduate courses. In **Proceedings of the Western Canadian Conference on Computing Education 1999, WCCCE'99** Cavers, I. and Tsiknis, G., eds., pp. 1-21. Okanagan University College, Kelowna, BC.

Shaw, M. L. G. and Gaines, B. R. (1999). Modeling the social practices of users in Internet communities. In **UM99: User Modeling: Proceedings of the Seventh International Conference** Kay, J., ed, pp. 77-86. Springer, New York.

Shaw, M. L. G. and Gaines, B. R. (1999). Knowledge modeling by exchange and comparison of construct systems through the World Wide Web. In **PACES99: Pacific Asian Conference on Expert Systems** O'Leary, D. E., ed. USC Business School, Los Angeles, CA.

Wijngaard, N. J. E., Jacobsen, D. M., Kremer, R. A. and Shaw, M. L. G. (1999). The learning web: A technical evaluation of WebCT in concurrent classroom and distance education sections of a software engineering graduate course. In **World Conference on Educational Multimedia/Hypermedia & Educational Telecommunication**, Seattle, WA.

Damian, D. E. H., Eberlein, A., Shaw, M. L. G. and Gaines, B. R. (Year). "The effects of communication media on group performance in requirements engineering." Paper presented at the Proceedings. 4th International Conference on Requirements Engineering, 2000.

Damian, D. E. H., Eberlein, A., Shaw, M. L. G. and Gaines, B. R. (2000). Using different communication media in requirements negotiation. **IEEE Software** 17, 28-36.

Damian, D. E. H., Eberlein, A., Shaw, M. L. G. and Gaines, B. R. (2000). Group performance and distributed requirements negotiations (longer version of 2 published papers).

Damian, D. E. H., Shaw, M. L. G. and Gaines, B. R. (2000). A study of requirements negotiations in virtual project teams. In **Proceedings of ECIS2000: the Eighth European Conference on Information systems**, pp. 937-944.

Damian, D. E. H., Shaw, M. L. G., Gaines, B. R. and Zowghi. (2000). A multidisciplinary approach to the study of distributed requirements negotiations. In **Proceedings of the Fifth Australian Workshop on Requirements Engineering**.

Gaines, B. R. (2000). Knowledge science and technology: operationalizing the enlightenment. In **Proceedings of PKAW2000** Compton, P., Hoffman, A., Motoda, H. and Yamaguchi, T., eds., pp. 97-123. University of New South Wales, Sydney.

Gaines, B. R. and Shaw, M. L. G. (2000). HCI and Internet communities: something borrowed, something blue. In **Proceedings of OZCHI2000** Paris, C., Ozkan, N., Howard, S. and Lu, S., eds., pp. 364-374.

Gaines, B. R. and Shaw, M. L. G. (2000). Emergent knowledge maps. **KnowMap** 5, http://www.knowmap.com/0105/gainesshaw_emergent_knowledge.html.

Jacobsen, M., Kremer, R. A. and Shaw, M. L. G. (2000). Experiments with distance learning in software engineering graduate courses. **ACM SIGCSE Bulletin** 32, 56-59.

Shaw, M. L. G. and Gaines, B. R. (2000). Learning environments for meta-competencies in software engineering. In **Proceedings of International Conference on Mathematics / Science Education and Technology 2000**, pp. 356-362. Association for the Advancement of Computing in Education (AACE).

Shaw, M. L. G. and Gaines, B. R. (2000). Knowledge modeling on the Web. In **Proceedings of PKAW2000** Compton, P., Hoffman, A., Motoda, H. and Yamaguchi, T., eds., pp. 364-374.

Damian, D. E. H., Eberlein, A., Woodward, J. B., Shaw, M. L. G. and Gaines, B. R. (Year). "An empirical study of facilitation of computer-mediated distributed requirements negotiations." Paper presented at the Requirements Engineering, 2001. Proceedings. Fifth IEEE International Symposium on, 2001.

Gaines, B. R. and Shaw, M. L. G. (2001). Human-computer interaction in online communities. **Journal of Research and Practice in Information Technology** 33, 3-15.

Gaines, B. R. and Shaw, M. L. G. (2001). WebGrid-III: Access to distributed knowledge modeling tools through the web. In **Proceedings of IJCAI2001 Workshop on Effective Interactive Artificial Intelligence Resources** Greiner, R., ed, pp. 17-22. AAAI, Menlo Park, CA.

Shaw, M. L. G. and Gaines, B. R. (2001). WebGrid: Knowledge Elicitation and Modeling on the World Wide Web. In **Industrial Knowledge Management: A Micro-level Approach** Roy, R., ed, pp. 335-348. Springer, London.

Gaines, B. R. and Shaw, M. L. G. (2002). Using WebGrid in Your Research and Teaching (Workshop). In **North American Personal Construct Network Biennial Conference** Arvay, M., ed. University of British Columbia, Vancouver, BC.

Shaw, M. L. G. and Gaines, B. R. (2002). Personal Construct Psychology as a Basis for Cognitive Science. In **North American Personal Construct Network Biennial Conference** Arvay, M., ed. University of British Columbia, Vancouver, BC.

Damian, D. E., Eberlein, A., Shaw, M. L. G. and Gaines, B. R. (2003). An exploratory study of facilitation in distributed requirements engineering. **Requirements Engineering** 8, 23-41.

Gaines, B. R. (2003). Organizational knowledge acquisition. In **Handbook on Knowledge Management: 1** Holsapple, C. W., ed, pp. 317-347. Springer, Berlin.

Gaines, B. R. and Shaw, M. L. G. (2003). **Personal construct psychology and the cognitive revolution, KSI-TR-May-03**. Knowledge Science Institute, University of Calgary, Calgary, AB.

Shaw, M. L. G. and Gaines, B. R. (2003). Expert systems. In **Handbook of Personal Construct Psychology.** Fransella, F., ed, pp. 133-139. Wiley, Chichester, UK.

Gaines, B. R. (2004). Understanding ontologies in scholarly disciplines. In **Proceedings 2004 International Workshop on Description Logics, DL2004** Haarslev, V. and Möller, R., eds. CEUR-Workshop Proceedings, http://CEUR-WS.org/, Whistler, B.C.

Gaines, B. R. and Damian, D. E. (2004). Framing the requirements for research environments of the future. In **BCNet-Netera-WestGrid Advanced Networks Conference**, Vancouver.

Shaw, M. L. G. and Gaines, B. R. (2004). Kelly's 'Geometry of psychological space' and its significance for psychological modeling (reprint of 1992). In **Space and Time in Management and Social Analysis: Emerging Concepts and Working Models** Churnside, R., ed, pp. Ch.17. Universidad de Costa Rica, Costa Rica.

Shaw, M. L. G. and Gaines, B. R. (2005). Expertise and expert systems: emulating psychological processes. In **The Essential Practitioner's Handbook of Personal Construct Psychology** Fransella, F., ed, pp. 87-94. Wiley, Chichester, UK.

Gaines, B. R. (2006). A critical period in the history of the World Wide Web. In **Abstracts of History of Science Society Biennial Congress**, pp. 35, Vancouver.

Gaines, B. R. (2006). **Aether as a referring term, KSI-TR-Apr-2006**. Knowledge Science Institute, University of Calgary, Cagary, AB.

Gaines, B. R. and Shaw, M. L. G. (2007). **WebGrid evolution through four generations 1994-2007, KSI-TR-Feb-2007**. Knowledge Science Institute, University of Calgary, Calgary, AB.

Gaines, B. R. (2009). Designing visual languages for description logics. **Journal of Logic, Language and Information** 18, 217-250.

Gaines, B. R. and Shaw, M. L. G. (2009). **[MANUAL] Rep IV V2.0 Manual**. Centre for Person-Computer Studies.

Gaines, B. R. (2010). Human rationality challenges universal logic. **Logica Universalis** 4, 163-205.

Gaines, B. R. (2010). **Visualizing logical aspects of conceptual structures, KSI-TR-May-2010**. Knowledge Science Institute, University of Calgary, Calgary, AB.

Gaines, B. R. (2010). iConstructivism. **Constructive Interventionist, Newsletter of the Centre for Personal Construct Psychology** 42, 6-8.

Gaines, B. R. (2011). Knowledge capture through the millennia: from cuneiform to the semantic web. In **Proceedings K-CAP '11: Sixth International Conference on Knowledge Capture** Musen, M. A. and Corcho, O., eds., pp. 1-8. ACM, New York.

Gaines, B. R. (2011). **Presentation visuals for "Knowledge capture through the millennia", KCAP2011**, Banff, AB.

Gaines, B. R. and Shaw, M. L. G. (2012). Computer aided constructivism. In **Constructivist Methods** Caputi, P., Viney, L. L., Walker, B. M. and Crittenden, N., eds., pp. 183-222. Wiley, New York.

Gaines, B. R. and Shaw, M. L. G. (2012). Sociocognitive inquiry. In **Social Network Mining, Analysis and Research Trends: Techniques and Applications** Ting, I.-H., Hong, T.-P. and Liang, L. S., eds., pp. 35-55. IGI Global, PA, USA.

Gaines, B. R. (2013). Knowledge acquisition: Past, present and future. **International Journal Human-Computer Studies** 71, 135-156.

Gaines, B. R. (2013). Living in an uncertain universe. In **On Fuzziness: A Homage to Lotfi A. Zadeh: Vol. 2** Seising, R., Trillas, E., Moraga, C. and Termini, S., eds., pp. 797-811. Springer, Berlin.

Gaines, B. R. (2013). Humans as scientists: scientists as humans. **Joumal Constructivist Psychology** 26, 210-217.

Gaines, B. R. (2014). **Hyperconnected civilizations: Some historic perspectives, KSI-TR-May-2014**. Knowledge Science Institute, University of Calgary, Calgary, AB.

Gaines, B. R. (2015). Universal logic as a science of patterns. In **The Road to Universal Logic: Festschrift for 50th Birthday of Jean-Yves Béziau** Koslow, A. and Buchsbaum, A., eds., pp. 145-189. Birkhäuser, Basel.

Gaines, B. R. (2019). From facilitating interactivity to managing hyperconnectivity: 50 years of human–computer studies. **International Journal of Human-Computer Studies** 131, 4-22.

Gaines, B. R. (2019). Origins of stochastic computing. In **Stochastic Computing: Techniques and Applications** Gross, W. J. and Gaudet, V. C., eds., pp. 13-37. Springer, Cham.

Gaines, B. R. (2021). A conceptual framework for stochastic neuromorphic computing. **IEEE Design & Test** 38, 16-27.

Gaines, B. R. and Shaw, M. L. G. (2021). **[MANUAL] RepGrid Manual: Eliciting, Entering, Editing and Analyzing a Conceptual Grid**. University of Victoria, Victoria, BC.

Gaines, B. R. and Shaw, M. L. G. (2021). **[MANUAL] RepGrids Manual: Managing and Analyzing Collections of Grids**. University of Victoria, Victoria, BC.

Gaines, B. R. and Shaw, M. L. G. (2021). **[MANUAL] RepServe Manual: Managing the Rep Plus Web Server and its Scripts, including WebGrid**. University of Victoria, Victoria, BC.

Gaines, B. R. and Shaw, M. L. G. (2021). **[MANUAL] RepNet Manual: Managing, Editing and Scripting the Rep Plus Graphics System**. University of Victoria, Victoria, BC.

Gaines, B. R. and Shaw, M. L. G. (2021). **[MANUAL] RepDoc Manual: The Rep Plus Document Editor**. University of Victoria, Victoria, BC.