

# MARTIN SHUBIK

## CURRICULUM VITA

### A. Formal Education

Woodstock School, London, England

University College School, London, England

Canford School, Dorset, England

Pickering College, Newmarket, Ontario, Canada, Senior Matric, 1943

University of Toronto, Ontario, Canada, B.A. Mathematics, 1947

University of Toronto, Ontario, Canada, M.A. Political Economy, 1949

Princeton University, Princeton, N.J., A.M. Economics, 1951

Princeton University, Princeton, N.J., Ph.D. Economics, 1953

### B. Employment or Affiliation

Sept. 1948 to May 1949	Demonstrator in Physics (part-time) University of Toronto
Sept. 1950 to Sept. 1951	Research Assistant (part-time), Economics Research Project Princeton University
Sept. 1951 to May 1953	Research Assistant, Economics Research Project Princeton University
June 1953 to June 1955	Research Associate, Economics Research Project Princeton University
Aug. 1955 to Aug. 1956	Fellow Center for Advanced Study in Behavioral Sciences Palo Alto, California
Sept. 1956 to Sept. 1960	Consultant Management Consultation Services General Electric Company
Sept. 1957 to Sept. 1959	Adjunct Research Professor Pennsylvania State University
Sept. 1960 to June 1961	Visiting Professor of Economics Yale University
Oct. 1961 to Aug. 1963	Staff Member, T. J. Watson Research Laboratories IBM
Sept. 1963 to Nov. 1975	Professor of the Economics of Organization Department of Administrative Sciences Yale University

Feb. 1965 to Sept. 1965	Visiting Professor, Escuela de Estudios Economicos Univ. de Chile, Santiago, Chile
May 1968 to July 1968	Visiting Professor
May 1970 to July 1970	Institute for Advanced Studies, Vienna, Austria
Sept. 1970 to Sept. 1971	Consultant, The RAND Corp., Santa Monica, CA (Leave of Absence from Yale University)
June 1973 to Aug. 1973	Visiting Professor, Department of Economics Univ. of Melbourne, Australia
July 1973 to June 1976	Director, Cowles Foundation for Research in Economics Yale University
Nov. 1975-2007	Seymour H. Knox Professor of Mathematical Institutional Economics, Cowles Foundation and School of Management Yale University
1994-present	Santa Fe Institute External Scholar
July 2007- present	Seymour H. Knox Professor Emeritus of Mathematical Institutional Economics, Cowles Foundation and School of Management Yale University

Also: Sometime Consultant to:

Naval Air Development Center, Johnsville, PA (Analytic Computer Group, Op. Res. on Weapons Systems); Ford Foundation, Economic Development Administration; The RAND Corporation; System Development Corporation; Sikorsky Aircraft Div. (United Aircraft Corp.); University and Banco Central of Uruguay; ARPA (Thailand Project); General Electric Corporation (TEMPO); National Bureau for Research in Economics; IESC; Mathematica; IBM; Ministry of Finance, Kenya; Fundacao Getulio Vargas, Brazil; NASA; Nuclear Regulatory Commission, and expert witness on various financial matters.

Sometime Member of:

Advisory Committee on the Study of the Management of Automatic Data Processing in the Federal Government, Executive Office of the President, Bureau of the Budget; Commission for the Year 2000; Committee on the Undergraduate Program in Mathematics (CUPM); The City of New York Operations Research Council; Computer Advisory Committee for the Brookings Institution; Advisory Committee, Institute for the Future; and others.

**C. Other Information**

Lieutenant (L), Royal Canadian Navy (Reserve), (Electronics and Radar)  
Status since 1950: Retired  
Citizenship: U.S.A. Born: March 24, 1926, Manhattan, New York

**D. Marital Status**

Married to Julie K. Shubik; one child, Claire Louise, born 1973

**E. Fellowships, etc.**

Harris Scholarship, University of Toronto, 1943  
Scholar in Economics, Princeton University, 1949  
Theodore Cuyler, Jr. Fellow, Princeton, 1950  
Fellow, Center for Advanced Study in the Behavioral Sciences, 1955  
Fellow, Econometric Society, 1971  
Fellow, World Academy of Arts and Sciences, 1975  
Honorary Professor, University of Vienna, 1978  
Medal, College de France, 1978  
The Lanchester Prize, 1984  
Fellow, American Academy of Arts and Sciences, 1985  
Fellow, Connecticut Academy of Arts and Sciences, 1993  
External Faculty, Santa Fe Institute, 1994  
Koopman Prize, Military Application Section, INFORMS, 1995  
Member, Science Board, Santa Fe Institute, 1997-Present  
The International Insurance Society Shin Research Excellence Award, 1999  
Distinguished Fellow American Economic Association, 2010

**F. Other Activities**

Sometime Associate Editor: Basic Books, Management Science; Member of Editorial Board: Review of Income and Wealth, Simulation and Games, Journal of Conflict Resolution, Eastern Economic Journal; Complexity,; Risk Management and Insurance Review Member of Advisory Board: International Journal of Game Theory, International Studies Series; Reviewer on proposals submitted for funding to: National Science Foundation, Canada Council, and others; Chairman, Board of Directors, Social Systems, Inc., 1978-1980; Director, Equity Strategies, 1984-94; Director Anglo Energy, 1988-1989; Director Perini Corporation, 2003-2005; Director Third Avenue Fund, 1991-present; Risk Management & Insurance Review

**LIST OF PUBLICATIONS**

**A. Books**

1. Readings in Game Theory and Political Behavior, New York: Doubleday, 1954.
2. Strategy and Market Structure , New York: Wiley, 1959. [Spanish Edition - Estrategia y Estructura de Mercado, Barcelona: Omega, 1962. French Edition - Strategie et Structure de Marches, Paris: Dunod, 1964.]
3. Game Theory and Related Approaches to Social Behavior, New York: Wiley, 1964. [German Edition - Spieltheorie und Sozialwissenschaften, New York: Wiley, 1964. Japanese Edition - New York: Wiley, 1969.]
4. Essays in Mathematical Economics in Honor of Oskar Morgenstern (M. Shubik, ed.), Princeton: Princeton University Press, 1967.
5. Games for Society, Business and War, Amsterdam: Elsevier, 1975.
6. The Uses and Methods of Gaming, New York: Elsevier, 1975.

7. The Aggressive Conservative Investor (with M. J. Whitman), New York: Random House, 1979.
8. The War Game (with G. Brewer), Cambridge: Harvard University Press, 1979.
9. Market Structure and Behavior (with R. E. Levitan), Cambridge: Harvard University Press, 1980
10. Game Theory in the Social Sciences, Volume I, Cambridge: MIT Press, 1982.
11. Auctions, Bidding and Contracting: Uses and Theory (M. Shubik, R. Engelbrecht-Wiggins and R. Stark, eds.), New York: New York University Press, 1983.
12. The Mathematics of Conflict, Amsterdam: North Holland, 1983.
13. Game Theory in the Social Sciences, Volume II, Cambridge: MIT Press, 1984.
14. Risk, Organizations, and Society: Studies in Risk and Uncertainty, (M. Shubik, ed.), Norwell, MA: Kluwer Academic Publishers, 1991.
15. Proceedings of the Conference: Accounting and Economics in honour of the 500th Anniversary of the Publication of Luca Pacioli's Summa de Arithmetica, Geometria, Proportioni et Proportionalita, Siena, 18th-19th, 1992, Garland Publishing, Inc., 1995 (Editor)
16. Political Economy, Oligopoly and Experimental Games: The Selected Essays of Martin Shubik Volume One, Cheltenham, UK; Northampton, MA: Edward Elgar Publishing Limited, 1999.
17. Money and Financial Institutions – A Game Theoretic Approach: The Selected Essays of Martin Shubik Volume Two, Cheltenham, UK; Northampton, MA: Edward Elgar Publishing Limited, 1999.
18. The Theory of Money and Financial Institutions Volume 1, Cambridge, MA; UK: MIT Press, 1999.
19. The Theory of Money and Financial Institutions Volume 2, Cambridge, MA; UK: MIT Press, 1999.
20. The Theory of Money and Financial Institutions Volume 3, Cambridge, MA; UK: MIT Press, 2010.
21. “Barley, gold or fiat,” Yale University press, January 14, 2014.

**B. Articles**

**1952–1953**

1. “A Business Cycle Model with Organized Labor Considered,” Econometrica, 20, 2, April 1952, 284-294.
2. “Information Theories of Competition and the Theory of Games,” Journal of Political Economy, 60, April 1952, 145-150. [Also translated into German as “Information, Wettbewerbs theorien und die Spieltheorie” in Hans-Heinrich Barnikel, Wettbewerb und Monopol, Wissenschaftliche Buchgesellschaft, Darmstadt, 1968.]

3. "A Comparison of Treatments of a Duopoly Situation" (with J. P. Mayberry and J. F. Nash), Econometrica, January 21, 1953, 141-154.
4. "Non-Cooperative Games and Economic Theory," in Report of Conference on the Theory of N-Person Games, March 1953, 20-23.
5. "Solutions of N-Person Games with Ordinal Utilities" (with L. S. Shapley), Econometrica, 21, 2, April 1953, 348-349.
6. "Game Theory and Operations Research," Journal of the Research Society of America, 1, May 1953, 152.
7. "The Role of Game Theory in Economics," Kyklos, 7, 2, 1953, 21- 34.

#### **1954-1955**

8. "A Method for Evaluating the Distribution of Power in a Committee System" (with L. S. Shapley), The American Political Science Review, 48, 3, September 1954, 787-792.
9. "Introduction to the Nature of Game Theory," in Readings in Game Theory and Political Behavior, (M. Shubik, ed.), New York: Doubleday, 1954, 1-11.
10. "Does the Fittest Necessarily Survive?" in Readings in Game Theory and Political Behavior (M. Shubik, ed.), New York: Doubleday, 1954, Chapter 5, 43-46.
11. "Information, Risk, Ignorance and Indeterminacy," The Quarterly Journal of Economics, 68, November 1954, 629-640.
12. "A Comparison of Treatments of a Duopoly Problem (Part II)," Econometrica, 23, 4, 1955, 417-431.
13. "The Uses of Game Theory in Management Science," Management Science, 2, 1, October 1955, 40-54. [Reprinted in Readings in Management Science (C. Turban and N. P. Loomba, eds.), Dallas: Business Publications, Inc., 1976.]

#### **1956-1957**

14. "A Game Theorist Looks at the Antitrust Laws and the Automobile Industry," Stanford Law Review, 8, 4, July 1956, 594-630.
15. "Market Form, Intent of the Firm and Market Behavior," Zeitschrift fur Nationalokonomie, 17, 2, 1957, 186-196.

#### **1958-1959**

16. "Economics and Operations Research: A Symposium", The Review of Economics and Statistics, 40, 3, August 1958, 214-220.
17. "Simulation of the Firm," The Journal of Industrial Engineering, Vol. IX, No. 5, September-October 1958, 391-392.
18. "Studies and Theories of Decision Making," Administrative Science Quarterly, December 1958, 289-306. [Reprinted in Administration and Education (R. Elboim-Dror, ed.), Jerusalem: Achva Press Ltd., 1977.]

19. "Games of Economic Survival" (with Gerald Thompson), Naval Research Logistics Quarterly, 6, 2, June 1959, 111-123.
20. "Operations Research, Models and Data Organization," Proceedings of 1958 Meetings of American Statistical Association, 1959.
21. "Simulation and the Theory of the Firm," Contributions to Scientific Research in Management (Proceedings on Dedication of Western Data Processing Center, Jan. 29-30), Los Angeles: University of California, Graduate School of Business Administration, 1959, 69-78.
22. "Edgeworth Market Games," in Contributions to the Theory of Games (A. W. Tucker and R. D. Luce, eds.), 1959, Princeton, Vol. IV, 267-278. [Reprinted in: Mathematische Wirtschaftstheorie, Cologne: Verlag Kiepenheuer.]

### **1960–1961**

23. "Games Decisions and Industrial Organization," Management Science , 6, 4, July 1960, 455-474. [Reprinted in: Operations Research: A Reader (W. C. House, ed.), Ferendon Systems Press; also in Readings in Mathematical Social Science (Lazarsfeld and Henry, eds.), Chicago: Science Research Associates, Inc., 1966, 242-261.
24. "Bibliography on Simulation, Gaming, Artificial Intelligence and Allied Topics," Journal of the American Statistical Association, 55, December 1960, 736-751.
25. "Game Theory as an Approach to the Firm," American Economic Review, 50, 2, 1960, 556-559.
26. "Simulation of the Industry and the Firm," American Economic Review, 50, 5, 1960, 908-919.
27. "Comment to 'Forecasting from the Business Standpoint,'" in The Quality and Economic Significance of Anticipations Data, Princeton: Princeton University Press, 1960, 25-27.
28. "Comments Upon Games as a Teaching Device," in Proceedings of the Conference on Business Games (W. T. Dill, J. R. Jackson and J. W. Sweeney, eds.), New Orleans: Tulane University, 1961, 134-135.
29. "Approaches to the Study of Decision-Making Relevant to the Firm," The Journal of Business of the University of Chicago, 34, 2, April 1961, 101-118. CFP 164 & CFDP 100.
30. "Objective Functions and Models of Corporate Optimization," Quarterly Journal of Economics, 75, 3, August 1961, 345-375. CFDP 104.

### **1962–1963**

31. "Some Experimental Non Zero Sum Games with Lack of Information about the Rules," Management Science, 8, 2, January 1962, 215-234. CFP 170 & CFDP 105.
32. "Incentives, Decentralized Control, the Assignment of Joint Costs and Internal Pricing," Management Science, 8, 2, April 1962, 325-343. [Reprinted in: Management Controls: New Directions in Basic Research (Bonini et. al., eds.), Hightstown, N.J.: McGraw Hill, 1964, 205-226; also in: Readings in Management Decision (L. R. Amey, ed.), London: Longmans.] CFP 178 & CFDP 112.
33. "L'Oligopole et la Theorie des Jeux," Economie Applique, 1962, 5-28.

34. "Some Reflections on the Design of Game Theoretic Models for the Study of Negotiation and Threats," The Journal of Conflict Resolution, 7, 1 (March 1963), pp. 1-12. [Reprinted in: Theory of Games (A. Mensch, ed.), Publisher: 1966.]
35. "Toward a Study of Bidding Processes: Some Constant-Sum Games," (with J. H. Griesmer), Naval Research Logistics Quarterly, 10, 1, March 1963, 11-21.
36. "Toward a Study of Bidding Processes, Part II: Games with Capacity Limitations" (with J. H. Griesmer), Naval Research Logistics Quarterly, 10, 2, June 1963, 151-173.
37. "Toward a Study of Bidding Processes, Part III: Some Special Models" (with J. H. Griesmer), Naval Research Logistics Quarterly, 10, 3, September 1963, 199-217.
38. "Simulation and Gaming: Their Value to the Study of Pricing and Other Market Variables," in Models of Markets (A. R. Oxenfeldt, ed.), New York: Columbia University Press, 1963, 307-338.
39. "Oligopoly Bargaining: The Quantity Adjuster Models" (with L. E. Fouraker and S. Siegel), partially reported in Siegel and Siegel, Bargaining Behavior, Hightstown, NJ: McGraw-Hill, 1963.

#### 1964-1965

40. "Behavioristic or Normative Decision Criteria," in Actes de la 3me Conference Internationale de Recherche Operationnelle, Oslo (G. Kreweras and G. Morlat eds.), Paris: Dunod, 1964, 2-8.
41. "Experimental Gaming and Some Aspects of Competitive Behavior," New Perspectives in Organization Research (W. W. Cooper, H. J. Leavitt, and M. W. Shelly, eds.), New York: Wiley, 1964, 449-463.
42. "So Long Sucker - A Four-Person Game" (with M. Hauser, J. Nash, and L. Shapley) in Game Theory and Related Approaches to Social Behavior (M. Shubik, ed.), New York: Wiley, 1964, 359-361.
43. "Game Theory and the Study of Social Behavior: An Introductory Exposition," in Game Theory and Related Approaches to Social Behavior (M. Shubik, ed.), New York: Wiley, 1964, 3-77.

#### 1966-1967

44. "Some Comments on Gaming for Teaching and Research Purposes," in Simulation Models and Gaming, White Plains, NY: IBM Data Processing Division, 1966.
45. "Towards a Theory of Threats," in Theory of Games, Proceedings of NATO Conference at Toulon, 1964 (A. Mensch, ed.), London: English Universities Press, Ltd, 1966.
46. "Quasi-Cores in a Monetary Economy with Nonconvex Preferences" (with L. S. Shapley), Econometrica, 34, 4, October 1966, 805-827. CFP 273.
47. "The Uses of Game Theory," in Contemporary Political Analysis (J. Charlesworth, ed.), New York: The Free Press, 1967, Chapter 13.

48. "Concepts and Theories of Pure Competition" (with L. S. Shapley), in Essays in Mathematical Economics in Honor of Oskar Morgenstern (M. Shubik, ed.), Princeton: Princeton University Press, 1967, 63-79.
49. "Ownership and the Production Function" (with L. S. Shapley), The Quarterly Journal of Economics, 81, February 1967, 88-111. CFP 250 & CFDP 167.
50. "Information, Rationality, and Free Choice in a Future Democratic Society," Daedalus, 96, 3, Summer Issue, 1967, 771-778. [Reprinted in Toward the Year 2000: Work in Progress (D. Bell, ed.), Boston: Houghton Mifflin Co., 1968.]
51. "Transfer of Technology and Simulation Studies," in The Transfer of Technology to Developing Countries (D. L. Spencer and A. Woroniak, eds.), New York: F. A. Praeger, 1967, 119-140.
52. "Toward a Study of Bidding Processes, Part IV: Games with Unknown Costs" (with J. Griesmer and R. Levitan), Naval Research Logistics Quarterly, 14, 4, 1967, 415-443.
53. "Simulation of Socio-Economic Systems, Part I: General Considerations," General Systems, 12, 1967, 149-158. CFP 267 & CFDP 203.
54. "Simulation of Socio-Economic Systems, Part II: An Aggregative Socio-Economic Simulation of a Latin American Country," General Systems, 12, 1967, 149-175.
55. "Welfare, Economic Structure and Game Theoretic Solutions," in New Methods of Thought and Procedure (F. Zwicky and A. G. Wilson, eds.), New York: Springer-Verlag, 1967, 228-245.

### 1968-1969

56. "Game Theory: Economic Applications," in International Encyclopedia of the Social Sciences, New York: Macmillan and Free Press, 1968, 68-69. CFP 280.
57. "On the Study of Disarmament and Escalation," Journal of Conflict Resolution, 12, 1, March 1968, 83-101. [Reprinted in Readings in the Social Science of Conflict Resolution (C. J. Smith, ed.), South Bend: University of Notre Dame Press, 1971, 130-145.]
58. "Gaming: Costs and Facilities," Management Science, 14, 11, July 1968, 629-660.
59. "A Further Comparison of Some Models of Duopoly," Western Economic Journal, 6, 4, 1968, 260-276. CFP 285 & CFDP 217.
60. "Planning: Perspectives and Prospects," in Proceedings of the 11th Annual Symposium, TIMS College on Planning, Los Angeles, November 1968.
61. "Extended Edgeworth Bargaining Games and Competitive Equilibrium," Metroeconomica, 20, 3, 1968, 299-312. CFP 305 & CFDP 107.
62. "A Two Party System, General Equilibrium and the Voter's Paradox," Zeitschrift fur Nationalokonomie, 28, 1968, 341-354.
63. "Price Strategy Oligopoly with Product Variation" (with L. Shapley), Kyklos, 22, 1, 1969, 30-44. CFP 291 & CFDP 233.



64. "Preface," to R. Farquharson, Theory of Voting, New Haven, Yale University Press, 1969.
65. "Welfare, Static and Dynamic Solution Concepts," in La Decision, Paris: Centre de la Reserche-Scientifique, 1969, 265-285. CFP 306 & CFDP 230.
66. "On Market Games" (with L. S. Shapley), Journal of Economic Theory, 1, 1, June 1969, 9-25. CFP 295.
67. "On the Core of an Economic System with Externalities" (with L. S. Shapley), American Economic Review, 59, 4, September 1969, 678-684.
68. "Pure Competition, Coalitional Power and Fair Division" (with L. S. Shapley), International Economic Review, 10, 3, October 1969, 337-362. CFP 318.
69. "A Bibliography with Some Comments," in Game Theory (Buchler and Nutini, eds.), Pittsburgh: University of Pittsburgh Press, 1969.
70. "Preface" to J. Cross, The Economics of Bargaining, New York: Basic Books, 1969.

### 1970-1971

71. "On Different Methods for Allocating Resources," Kyklos, 23, 2, 1970, 332-337.
72. "A Note on a Simulated Stock Market," Decision Sciences, 1, January-April 1970, 129-141. CFDP 249.
73. "Voting, or a Price System in a Competitive Market Structure," American Political Science Review, 64, 1, 1970, 179-181. CFP 321.
74. "Game Theory, Behavior and the Paradox of the Prisoner's Dilemma: Three Solutions," Conflict Resolution, 14, 2, 1970, 181-193. CFDP 274.
75. "A Curmudgeon's Guide to Microeconomics," The Journal of Economic Literature, 8, 2, June 1970, 405-434.
76. "On Homo Politicus and the Instant Referendum," Public Choice, Fall 1970, 79-84.
77. "Price Strategy Oligopoly: Limiting Behavior with Product Differentiation," Western Economic Journal, 8, 3, September 1970, 226-232. [Reprinted in Readings in Microeconomics (R. E. Neel, ed.), Cincinnati: Southwestern Publishing, 1972
78. "Gaming and Planning for Campus Crisis," in Cybernetics, Simulation and Conflict Resolution (D. E. Knight, H. W. Curtis, and L. E. Fogel, eds.), Spartan, 1971, 79-83.
79. "Noncooperative Equilibria and Strategy Spaces in an Oligopolistic Market" (with R. E. Levitan), in Differential Games and Related Topics (H. W. Kuhn and G. P. Szego, eds.), Amsterdam: North Holland Press, 1971, 429-447. CFP 346.
80. "How to be Data Rich and Information Poor, or Let's Bury Ourselves with the Facts," in Computers, Communications and Public Interest (M. Greenberger, ed.), Baltimore: Johns Hopkins Press, 1971, 56-59.
81. "A Simulation Model of the Economy of Brazil" (with T. H. Naylor, M. Fioravante, and J. V. Monteiro) (also in Portuguese), Revista Brasileira de Economia, 25, 1, January-March 1971, 39-63.

82. “Econometric Models of Brazil: A Critical Appraisal” (with T. H. Naylor and R. Zerkowski) (also in Portuguese), Revista Brasileira de Economia, 25, 1, January-March 1971, 65-91.
83. “Models, Simulations and Gaming” (with I. Kerstenetzky and T. H. Naylor) (also in Portuguese), Revista Brasileira de Economia, 25, 1, January-March 1971, 9-37.
84. “The Dollar Auction Game: A Paradox in Noncooperative Behavior and Escalation,” The Journal of Conflict Resolution, 15, 1, 1971, 109-111. [Also described by J. R. Platt in Public Interest, 25, Fall 1971, 123-124; and in Fragile Dominion, “Economic Game,” Helix Books, 1999.]
85. “An Artificial Player for a Business Market Game” (with G. Wolf and S. Lockhart), Simulation and Games, March 1971, 27-43.
86. “Games of Status,” Behavioral Sciences, 16, 2, March 1971, 117-129. CFP 340.
87. “Price Variation Duopoly with Differentiated Products and Random Demand” (with R. Levitan), Journal of Economic Theory, 3, 1, March 1971, 23-39. CFP 342 & CFDP 270.
88. “Corporate Reality and Accounting for Investors” (with M. J. Whitman), Financial Executive, May 1971, 3-14. [Reprinted in Financial Accounting Theory (T. Keller and Zeff, eds.), Hightstown: McGraw Hill; and Abr. in C.F.A. Digest, 1972.]
89. “The 'Bridge Game' Economy: An example of Indivisibilities,” Journal of Political Economy, 79, 4, July-August 1971, 909-912. CFP 354 & CFDP 267.
90. “Systems Simulation and Gaming as an Approach to Understanding Organizations” (with G. Brewer), in Proceedings: Symposium on Computer Simulation as Related to Manpower and Personnel Planning (A. I. Siegel, ed.), Washington: Applied Psychological Services and Naval Personnel Research and Development Laboratory, 1971, 17-33.
91. “Pecuniary Externalities: A Game Theoretic Analysis,” The American Economic Review, 61, 4, September 1971, 713-718. CFP 355 & CFDP 288.
92. “The Assignment Game I: The Core” (with L. Shapley), International Journal of Game Theory, 1, 2, 1971, 111-130.

### 1972–1973

93. “On the Scope of Gaming,” Management Science, 18, 5, January 1972, 20-36. CFP 359 & CFDP 318.
94. “On Gaming and Game Theory,” Management Science, 18, 5, January 1972, 37-53. [Reprinted in Systems and Management Annual (R. L. Ackoff, ed.), New York: Petrocelli Books, 1974, 441-458.]
95. “Price Duopoly and Capacity Constraints” (with R. L. Levitan), International Economic Review, 13, 1, February 1972, 111-122. CFP 363 & CFDP 287.
96. “Methodological Advances in Gaming — The One-Person, Computer Interactive, Quasi-Rigid Rule Game” (with G. Brewer), Simulation and Games, September 1972, 329-348.

97. "Some Experiences with an Experimental Oligopoly Business Game" (with G. Wolf and H. B. Eisenberg), General Systems, 17, 1972, 61-75. [Reprinted in Systems and Management Annual (R. L. Ackoff, ed.), New York: Petrocelli Books, 1974, 425-440.]
98. "An Experiment with Ten Duopoly Games and Beat-the-Average Behavior" (with M. Riese) in Contributions to Experimental Economics (H. Sauermann, ed.), 3, Tübingen: Mohr, 1972, 656-689.
99. "A Theory of Money and Financial Institutions: Fiat Money and Noncooperative Equilibrium in a Closed Economy," International Journal of Game Theory, I, 4, 1972, 243-268. CFDP 330.
100. "Some Aspects of Socio-Economic Modelling," Lecture Notes in Economics and Mathematical Systems (M. Beckmann et. al., eds.), Berlin: Springer-Verlag, 1973, 155-163.
101. "A Note on Decision Making and Replacing Sure Prospects with Uncertain Prospects," Management Science, 19, 6, February 1973, 711-712.
102. "Commodity Money, Oligopoly, Credit and Bankruptcy in a General Equilibrium Model," Western Economic Journal, 11, 1, March 1973, 24-38. CFP 391.
103. "An Economic Song," Journal of Economic Literature, 11, 3, September 1973, 888.
104. "Fiat Money in an Economy with One Nondurable Good and No Credit (A Noncooperative Sequential Game)" (with W. Whitt) in Topics in Differential Games (A. Blaquiere, ed.), Amsterdam: North Holland, 1973, 401-448. CFP 389 & CFDP 355.
105. "Price Strategy Duopoly with Product Variation - Reply," Kyklos, 26, 3, 1973, 612.
106. "Information, Duopoly and Competitive Markets: A Sensitivity Analysis," Kyklos, 26, 4, 1973, 736-761. CFP 400 & CFDP 347.
107. "The Core of a Market Game with Exogenous Risk and Insurance," New Zealand Economic Papers, 7, 1973. CFP 407.

#### 1974-1975

108. "Concepts, Theory, and Techniques: Solution Concepts and Psychological Motivation in Prisoner's Dilemma Games" (with G. Wolf), Decision Sciences, 5, 2, April 1974, 153-163.
109. "Perception of Payoff Structure and Opponent's Behavior in Related Matrix Games," (with G. Wolf and B. Poon). Journal of Conflict Resolution, 18, 4, December 1974, 646-655.
110. "Planning the Future," abstract in Towards a Plan of Action for Mankind: Problems and Perspectives (M. Marois, ed.), Amsterdam: North Holland and New York: American Elsevier, 1974, 491.
111. "Money, Trust and Equilibrium Points in Games in Extensive Form," Zeitschrift für Nationalökonomie, 3, 4, 1974, 365-385. CFP 420.
112. "A Note on the Shape of the Pareto Optimal Surface" (with G. Bradley), Journal of Economic Theory, 8, 4, 1974, 530-538. CFP 417 & CFDP 350.
113. "Simulation and Gaming," in Proceedings, Symposium on Analytical Methodology, Washington, D.C.: U.S. Central Intelligence Agency, RD/CDAM-1, 1974, 23-28.

114. "Some Implications of the Information Revolution to Economic and Political Life," in Man and Computer (M. Marois, ed.), Amsterdam: North Holland, 1974, 517-525.
115. "The General Equilibrium Model: Barter and Trust, or Mass Markets with Money and Credit," Economic Record, 50, 130, 1974, 245-258. CFP 416.
116. "On the Eight Basic Units of a Dynamic Economy Controlled by Financial Institutions," Review of Income and Wealth, 21, 2, 1975, 183-201. CFP 430 & CFDP 367.
117. "Competitive Equilibrium. The Core, Preferences for Risk and Insurance Markets," Economic Record, 51, March 1975, 73-83.
118. "Teams Compared to Individuals in Duopoly Games with an Artificial Player" (with G. Wolf), Southern Economic Journal, 41, 4, 1975, 635-648.
119. "Oligopoly Theory, Communication, and Information," The American Economic Review, 65, 2, May 1975, 280-283. [Papers and Proceedings of the Eighty-seventh Annual Meeting of the American Economic Association, San Francisco, December 1974.] CFP 426 & CFDP 388.
120. "On the Role of Numbers and Information in Competition," Revue Economique, 26, 4, 1975, 605-621. CFDP 371.
121. "The General Equilibrium Model is Incomplete and Not Adequate for the Reconciliation of Micro and Macroeconomic Theory," Kyklos, 28, 3, 1975, 545-73. CFP 432.
122. "Mathematical Models for a Theory of Money and Financial Institutions," in Adaptive Economic Models (R. H. Day and T. Groves, eds.), New York: Academic Press, 1975, 513-574. CFDP 377.
123. "Alternative Futures: Expectations," in Environment and Society in Transition: World Priorities (B. Pregel, H. D. Lasswell, and J. McHale, eds.), Annals of the New York Academy of Sciences, 261, New York: The New York Academy of Sciences, 1975, 20-24.
124. "Competitive Outcomes in the Cores of Market Games" (with L. Shapley), International Journal of Game Theory, 4, 4, 1975, 229-237. CFP 435.

#### 1976-1977

125. "A Noncooperative Model of a Closed Trading Economy with Many Traders and Two Bankers," Zeitschrift für Nationalökonomie, 36, 1976, 49-60. CFP 438.
126. "A Theory of Money and Financial Institutions, Part 27: Beyond General Equilibrium," Economie Applique, 29, 2, 1976, 319-337. CFP 441 & CFDP 462.
127. "Competitive Equilibrium, Contingent Commodities and Information," The Journal of Finance, 32, 1, March 1977, 189-193. CFP 444 & CFDP 379.
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