

SELECTED PUBLICATIONS

Books:

Complexity and the Economy, Oxford University Press, October 2014.

The Nature of Technology: What it is and How it Evolves, The Free Press, Simon & Schuster, and Penguin Books (UK), 2009. Also in Chinese, Japanese, and Italian.

The Economy as an Evolving Complex System II. Edited (with S. Durlauf and D. Lane), Addison-Wesley, 1997.

Increasing Returns and Path-Dependence in the Economy, University of Michigan Press, Ann Arbor, Mich., 1994.

The Economic Consequences of Changing Age Distributions. Edited (with R.D. Lee and G. Rodgers), Oxford University Press, 1987.

Selected Papers and Articles:

"Complexity Economics: A New Framework for Economic Thought," to appear in *Complexity and the Economy*, W. B. Arthur, ed., Oxford Univ/ Press, 2014.

"All Systems will be Gamed: Exploitive Behavior in Economic and Policy Systems," to appear in *Complexity and the Economy*, W. B. Arthur, ed., Oxford Univ. Press, 2014.

"Do Markets Lead Always to Best Outcomes? A Comment on Neil Kay's paper," *Research Policy*, 2013.

"The Second Economy," *McKinsey Quarterly*, Oct-Nov 2011.

"The Structure of Invention," *Research Policy*, 2007.

"The Evolution of Technology in a Simple Computer Model," with W. Polak, *Complexity*, 11, 5, May 2006.

"Agent-Based Modeling and Out-Of-Equilibrium Economics," *Handbook of Computational Economics*, Vol. 2, K. Judd and L. Tesfatsion, eds, Elsevier/North-Holland, 2006.

"Cognition: the Black Box of Economics," *The Complexity Vision and the Teaching of Economics*, D. Colander, ed., 2000, Edward Elgar Publishers.

Reprinted (in Italian) *Papers on Evolutionary Economics* edited by Flaminio Squazzoni Mauro Lombardi, Franco Angeli, Milan, Italy, 2003.

- “Time Series Properties of an Artificial Stock Market,” with B. LeBaron and R. Palmer, *Journal of Economic Dynamics and Control*, 23, 1487-1516, 1999.
- “Complexity and the Economy,” *Science*, 2 April 1999, 284, 107-109.
Reprinted in: *The Complexity Vision and the Teaching of Economics*, D. Colander, ed., Edward Elgar Publishers, 2000; *The Elgar Companion to Neo-Schumpeterian Economics*, H. Hanusch and A. Pyka, Eds. Edward Elgar Publishers, forthcoming, 2007.
- “Asset Pricing Under Endogenous Expectations in an Artificial Stock Market,” with J.H. Holland, B. LeBaron, R. Palmer, and P. Tayler, SFI Paper 96-12-093, *Economic Notes*.
Reprinted in *The Economy as an Evolving Complex System II*. Edited (with S. Durlauf and D. Lane), Addison-Wesley, 1997.
- “Beyond Rational Expectations: Indeterminacy in Economic and Financial Markets” in *Frontiers of the New Institutional Economics*, J.N. Drobak and J.V. Nye (eds.), Academic Press, 1997.
- “The End of Certainty in Economics,” in *Einstein meets Magritte*, D. Aerts, J. Broekaert and E. Mathijs, eds. 1999, Kluwer academic Publishers, Holland. Reprinted in *The Biology of Business*, J.H. Clippinger, 1999, Jossey-Bass Publishers.
- “How Fast is Technology Evolving?” Essay in *Scientific American*, Feb 1997.
- “Increasing Returns and the New World of Business,” *Harvard Business Review*, July-Aug 1996.
Reprinted in: *The Diamond Weekly*, Japan; *The Strategist Quarterly*, India; *Seeing Differently*, John Seely Brown, Harvard Business School Press, 1997; *The Knowledge Economy*, Dale Neef, ed. 1997, Butterworth-Heinemann, Boston; *Strategy for Business*, in *Managing High-Tech Industries*, HBR Press, 1999; Mariana Mazzucato, ed., The Open University, Sage Publications, 2002
- “Complexity in Economic and Financial Markets,” *Complexity*, 1, 20-25, 1995
- “Artificial Economic Life: a Simple Model of a Stockmarket,” with R. Palmer, J. Holland, B. LeBaron, and P. Taylor, *Physica D*, 75, 264-274, 1994
- “Inductive Reasoning and Bounded Rationality [the El Farol Problem],” *American Economic Review*, (A.E.A. Papers and Proc.), 84, 406-411, 1994.
Reprinted in: *Economic Herald of Rostov State University*. 1. No. 3, 2003.
- “On the Evolution of Complexity,” in *Complexity*, G. Cowan, D. Pines, D. Melzer (eds.) Addison-Wesley, 1994
- “Economic Agents that Behave like Human Agents,” *Journal of Evolutionary Econ.*, 3, 1-22, 1993.
Reprinted in *The Legacy of Joseph A. Schumpeter*, H. Hanusch, Ed., Edward Elgar Publishers, 2000
- “Information Contagion,” with David A. Lane, *Structural Change and Economic Dynamics*, 4, 81-104, 1993

- “Why do Things become more Complex?” Essay in *Scientific American*, May 1993
- “Dynamic Equilibria in Markets with a Conformity Effect,” with Andrzej Ruszczynski, *Archives of Control Sciences*, 37, 7-31, 1992
- “Learning and Adaptation in the Economy,” Santa Fe Institute Paper 92-07-038 , 1992
- “Dynamics and Structures,” with Michael Landesmann and Roberto Scazzieri, *Structural Change and Economic Dynamics*, 2, 1-7, 1991.
- “On Classifier Systems and Models of Learning in the Economy,” mimeo, Santa Fe Inst, 1990
- “Designing Economic Agents that Act like Human Agents: A Behavioral Approach to Bounded Rationality,” *American Economic Review (A.E.A. Papers and Proc.)* 81, 353-359, 1991.
Reprinted in *The Economic Legacy of Robert Lucas, Jr.* K.D. Hoover, Ed. 1998, Edw. Elgar
- "Positive Feedbacks in the Economy," *Scientific American*, 262, 92-99, Feb. 1990
- “A Learning Algorithm that Mimics Human Learning,” Santa Fe Institute Paper 90-026, 1990
- “Silicon Valley Locational Clusters: When do Increasing Returns Imply Monopoly?" *Mathematical Social Sciences*, 19, 235-251, 1990
Reprinted in *New Economic Geography*, J. Vernon Henderson, ed., Edward Elgar, 2005.
- "The Economy as a Complex System," in *Complex Systems*, D. Stein (ed.), Wiley, New York., 1989
- "Nash-Discovering Automata for Finite-Action Games," Mimeo. Santa Fe Institute, 1989
- "Self-Reinforcing Mechanisms in Economics," in *The Economy as an Evolving Complex System*, pp 9-33, P. Anderson, K. J. Arrow and D. Pines (eds.), Wiley, New York., 1988
- "Competing Technologies, Increasing Returns, and Lock-In by Historical Events," *Economic Journal*, 99, 116-131, 1989, (IIASA Paper WP-83-90, September 1983).
Reprinted in: *The Economics of Technical Change and International Trade*, G. Dose, K. Pavitt and L. Soete, eds. 1991, New York Univ. Press, N. York; in *Technical Change and Economic Theory*, G. Dosi, ed, 1992, IFIAS Research Series; in *The Economics of Productivity*, E. N. Wolff, 1997, Edward Elgar Publishers; in *Economics of Innovation*, Christopher Freeman, ed. 1997, Edward Elgar Publishers; in *Market Process Theories*, P.J Boettke and D. L. Prychitko, eds. 1998, Edward Elgar Publishers; in *The Economics of Increasing Returns*, ed. G. Heal, 1999, Edward Elgar Publishers; in *The Economics of Structural Change*, ed. H. Hagemann and M. Landesmann and R. Scazzeri, 2002, Edward Elgar Publishers; in *Complexity in Economics*, J. Barkley Rosser, 2002, Edward Elgar Publishers
- "Immigration Policy and Immigrants' Ages," (with T. J. Espenshade), *Population and Development Review*, 14, 315-326, 1988

- "Adaptive Growth Processes Modeled By Urn Schemes," (with Yu. M. Ermoliev and Yu. M. Kaniovski) *Kibernetika*, No.6, 49-57, 1987. Translated in *Cybernetics*, 6, 1987
- "Urban Systems and Historical Path-Dependence," Chapt. 4 in *Urban systems and Infrastructure*, J. Ausubel and R. Herman (eds.), National Academy of Sciences, Washington, D.C., 1988
- "Competing Technologies: An Overview," Chapt. 26 in *Technology and Economics*, G. Dosi, C. Freeman, R. Nelson, L. Soete, G. Silverberg, (eds.), 1988
- "Non-Linear Urn Processes: Asymptotic Behavior and Applications" with Yu. M. Ermoliev and Yu. M. Kaniovski, I.I.A.S.A. Working Paper 87-85, 1987
- "Strong Laws for a Class of Path-Dependent Urn Processes," (with Yu. M. Ermoliev and Yu. M. Kaniovski) in *Proc. International Conf. on Stochastic Optimization, Kiev 1984*, Springer, Series Info. and Control, 81, 1986
- "Path-Dependent Processes and the Emergence of Macro-Structure" (with Yu. M. Ermoliev and Yu. M. Kaniovski), *European Journal of Operations Research*, 30, 294-303, 1987,
- "Some General Relationships in Population Dynamics" (with James W. Vaupel), *Population Index*, 50, 214-255, 1984
- "Competing Technologies and Economic Prediction," *Options*, April 1984, 10-13
Reprinted in *The Social Shaping of Technology*, D. MacKenzie and J. Wajcman, Open University Press, 1999.
- "A Generalized Urn Problem and its Applications" (with Yu. M. Ermoliev and Yu. M. Kaniovski) in *Kibernetika*, 19, 49-56, 1983. Trans. in *Cybernetics*, 19, 61-71, 1983
- "An Analysis of Indirect Mortality Estimation" (with M. Stoto), *Popul. Studies*, 37, 301-314, 1983
- "Age and Earnings in the Labor Market: Implications of the 1980's Labor Bulge," Chapter 21 in *Human Resources, Employment, and Development*, Vol. 2, Paul Streeten and Harry Maier, eds., Macmillan, 1983
- "The Analysis of Linkages in Demographic Theory," *Demography*, 21, 109-128, 1984
- "The Ergodic Theorems of Demography: A Simple Proof," *Demography*, 19, 439-445, 1982
- "Immigration and the Stable Population Model," (with Thomas Espenshade and Leon Bouvier), *Demography*, 19, 125-133, Feb. 1982
- "The Economics of Risks to Life," *American Economic Review*, 71, 54-64, 1981
- "Why a Population Converges to Stability," *American Mathematical Monthly*, 88, 557-563, 1981
- "An Analytical Survey of Population and Development in Bangladesh" (with Geoffrey McNicoll), *Population and Development Review*, 4, 23-80, 1978

- "Stochastic Control of Linear, Discrete-Time, Distributed-Lag Models," *International Journal of Control*, 28, 611-619, 1978
- "Samuelson, Population and Intergenerational Transfers" (with Geoffrey McNicoll), *International Economic Review*, 19, 241-246, 1978
- "Control of Linear Processes with Distributed Lags Using Dynamic Programming from First Principles," *Journal of Optimization Theory and Applications*, 23, 429-443, 1977
- "Optimal Time Paths with Age-Dependence: A Theory of Population Policy" (with Geoffrey McNicoll), *Review of Economic Studies*, XLIV (i), 111-123, 1977
- "Large-Scale Simulation Models in Population and Development: What Use to Planners?" (with Geoffrey McNicoll), *Population and Development Review*, 1, 251-265, 1975
- "Optimal Control Theory with Time Delay" (Ph.D. Thesis), *Operations Research Center Report*, 73-37, University of California, Berkeley, 1973