

## Bibliography

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- Abbott, Edwin A. 1884. *Flatland: A Romance of Many Dimensions*. New York: Dover, 1952.
- Akerlof, George A. 1970. "The Market for 'Lemons': Quality Uncertainty and the Market Mechanism." *Quarterly Journal of Economics* 84:488–500.
- Albin, Peter S. 1975. *The Analysis of Complex Socioeconomic Systems*. Lexington, Mass.: Lexington Books.
- Anderson, Phil W. 1972. "More Is Different." *Science* 177:393–96.
- Andreoni, James, and John H. Miller. 1991. "Can Evolutionary Dynamics Explain Free Riding in Experiments?" *Economics Letters* 36:9–15.
- . 1995. "Auctions with Adaptive Artificial Agents." *Journal of Games and Economic Behavior* 10:39–64.
- Arrow, Kenneth J. 1951. *Social Choice and Individual Values*. New Haven: Yale University Press.
- Arthur, W. Brian. 1994. "Inductive Reasoning and Bounded Rationality." *American Economic Review Papers and Proceedings* 84:406–11.
- Arthur, W. Brian, John H. Holland, Blake LeBaron, Richard G. Palmer, and Paul J. Tayler. 1997. "Asset Pricing under Endogenous Expectations in an Artificial Stock Market." In *The Economy as an Evolving Complex System II*, edited by W. Brian Arthur, Steven Durlauf, and David Lane, 15–44 Redwood City, Calif.: Addison-Wesley.
- Axelrod, Robert. 1984. *The Evolution of Cooperation*. New York: Basic Books.
- Axtell, Robert. 2001. "Zipf Distribution of U.S. Firm Sizes." *Science* 293:1818–20.
- Axtell, Robert, Robert Axelrod, Josh Epstein, and Michael Cohen. 1996. "Aligning Simulation Models: A Case Study and Results." *Computational and Mathematical Organization Theory* 1:123–41.
- Bak, Per. 1996. *How Nature Works*. New York: Springer-Verlag.
- Bednar, Jenna, and Scott E. Page. 2006. "Can Game(s) Theory Explain Culture? The Emergence of Cultural Behavior within Multiple Games." *Rationality and Society* 18:345–73.
- Camerer, Colin. 2003. *Behavioral Game Theory: Experiments in Strategic Interaction*. Princeton, N.J.: Princeton University Press.
- Camerer, Colin, and Teck-Hua Ho. 1999. "Experience-Weighted Attraction Learning in Normal Form Games." *Econometrica* 67:837–74.
- Challet, D., and Y. C. Zhang. 1997. "Emergence of Cooperation and Organization in an Evolutionary Game." *PhysicaA* 246:407–18.
- . 1998. "On the Minority Game: Analytical and Numerical Studies." *PhysicaA* 256:514–32.
- Coates, Robert M. 1956. "The Law." In *The World of Mathematics*, Vol. 4, edited by James R. Newman, 2268–71. New York: Simon and Schuster.

- Crutchfield, James P. 1994. "The Calculi of Emergence: Computation, Dynamics, and Induction." *PhysicaD* 75:11–54.
- Darwin, Charles. 1859. *The Origin of Species*. New York: Mentor, 1958.
- Dawkins, Richard. 1976. *The Selfish Gene*. Oxford: Oxford University Press.
- Dennett, Daniel. 1995. *Darwin's Dangerous Idea: Evolution and the Meanings of Life*. New York: Touchstone.
- Eliot, Thomas S. 1942. "Little Gidding." *New English Weekly*.
- Epstein, Joshua M. 1999. "Agent-Based Computational Models and Generative Social Science." *Complexity* 4:41–60.
- Epstein, Joshua M., and Robert Axtell. 1996. *Growing Artificial Societies*. Cambridge, Mass.: MIT Press.
- Fischer, Shira H. 2004. "Bee Cool." *Science Now* 624:3.
- Frette, Vidar, Kim Christensen, Anders Malthe-Sorensen, Jens Feder, Rorstein Jossang, and Paul Meakin. 1996. "Avalanche Dynamics in a Pile of Rice." *Nature* 379:49–52.
- Friedman, Milton. 1953. *Essays in Positive Economics*. Chicago: University of Chicago Press.
- Gardner, Martin. 1970. "Mathematical Games: The Fantastic Combinations of John Conway's New Solitaire Game." *Scientific American* 223:120–23.
- Glaeser, Edward L., Bruce Sacerdote, and Jose A. Scheinkman. 1996. "Crime and Social Interactions." *Quarterly Journal of Economics* 111:507–48.
- Gode, Dan K., and Shyam Sunder. 1993. "Allocative Efficiency of Markets with Zero Intelligence Traders: Market as a Partial Substitute for Individual Rationality." *Journal of Political Economy* 101:119–37.
- Grannoveter, Mark. 1978. "Threshold Models of Collective Behavior." *American Journal of Sociology* 83:1420–23.
- Hayek, Friedrich. 1945. "The Use of Knowledge in Society." *American Economic Review* 35:519–30.
- Hebb, Donald O. 1949. *The Organization of Behavior: A Neuropsychological Theory*. New York: Wiley.
- Henrion, Max, and Baruch Fischhoff. 1986. "Assessing Uncertainty in Physical Constants." *American Journal of Physics* 54:791–98.
- Hillis, W. Daniel. 1990. "Co-evolving Parasites Improve Simulated Evolution as an Optimization Procedure." *PhysicaD* 42:228–34.
- Holland, John H. 1975. *Adaptation in Natural and Artificial Systems*. Ann Arbor: University of Michigan Press.
- Holland, John H., Keith J. Holyoak, Richard E. Nisbett, and Paul R. Thagard. 1986. *Introduction: Processes of Inference, Learning, and Discovery*. Cambridge, Mass.: MIT Press.
- Holland, John H., and John H. Miller. 1991. "Artificial Adaptive Agents in Economic Theory." *American Economic Review, Papers and Proceedings* 81:365–70.
- Hooke, Robert. 1665. *Micrographia*. Reproduced digital edition, Oakland, Calif.: Octavo.
- Hopfield, John J. 1982. "Neural Networks and Physical Systems with Emergent Collective Computational Abilities." *Proceedings of the National Academy of Sciences* 79:2554–58.

- Hotelling, Harold. 1929. "Stability in Competition." *Economic Journal* 39:41-57.
- Huberman, Bernardo, and Natalie Glance. 1993. "Evolutionary Games and Computer Simulations." *Proceedings of the National Academy of Sciences USA* 90:7716-18.
- Ishii, Hiroshi, Scott E. Page, and Niniane Wang. 1999. "A Day at the Beach: Human Agents Self-Organizing on the Sand Pile." *Advances in Complex Systems* 2:37-63.
- Jacobs, Jane. 1984. *Cities and the Wealth of Nations*. New York: Random House.
- Jervis, Robert. 1997. *System Effects: Complexity in Political and Social Life*. Princeton, N.J.: Princeton University Press.
- Judd, Kenneth. 1997. "Computational Economics and Economic Theory: Complements or Substitutes?" *Journal of Economic Dynamics and Control* 21:907-42.
- . 1998. *Numerical Methods in Economics*. Cambridge, Mass.: MIT Press.
- Kirkpatrick, S., C. D. Gelatt Jr., and M. P. Vecchi. 1983. "Optimization by Simulated Annealing." *Science* 220:671-80.
- Kirman, Alan. 1997. "The Economy as an Interactive System." In *The Economy as an Evolving Complex System II*, edited by W. Brian Arthur, Steven Durlauf, and David Lane, 491-531. Redwood City, Calif.: Addison-Wesley.
- Kollman, Ken, John H. Miller, and Scott E. Page. 1992. "Adaptive Parties in Spatial Elections." *American Political Science Review* 86:929-37.
- . 1997. "Political Institutions and Sorting in a Tiebout Model." *American Economic Review* 87:977-92.
- . 1997. "Landscape Formation in a Spatial Voting Model." *Economic Letters* 55:121-30.
- . 1998. "Political Parties and Electoral Landscapes." *British Journal of Political Science* 28:139-58.
- . 1998. "Computational Political Economy." In *The Economy as an Evolving Complex System II*, edited by W. Brian Arthur, Steven Durlauf, and David Lane, 461-90. Redwood City, Calif.: Addison-Wesley.
- Kreps, David M., Paul Milgrom, John Roberts, and Robert Wilson. 1982. "Rational Cooperation in the Finitely Repeated Prisoners' Dilemma." *Journal of Economic Theory* 27:245-52.
- Krugman, Paul. 1995. *Development, Geography, and Economic Theory*. Cambridge, Mass.: MIT Press.
- Kuan, Chung-Ming, and Halbert White. 1994. "Adaptive Learning with Nonlinear Dynamics Driven by Dependent Processes." *Econometrica* 62:1087-114.
- Langton, Christopher G. 1989. "Artificial Life." In *Artificial Life*, edited by Christopher G. Langton, 1-47. Redwood City, Calif.: Addison-Wesley.
- . 1990. "Computation at the Edge of Chaos: Phase Transitions and Emergent Computation." *PhysicaD* 42:12-37.
- Leady, James. 2006. "Strategy Sophistication, Decision Costs, and Experience in Multiple Game Environments." In *Essays on Bounded Rationality and Strategic Behavior in Experimental and Computational Economics*. Ph.D. dissertation, University of Michigan.

- LeBaron, Blake. 2001. "Stochastic Volatility as a Simple Generator of Apparent Financial Power Laws and Long Memory." *Quantitative Finance* 1:621–31.
- Ledyard, John. 1986. "The Scope of the Hypothesis of Bayesian Equilibrium." *Journal of Economic Theory* 39:59–82.
- Le Guin, Ursula K. 1969. *The Left Hand of Darkness*. New York: Walker.
- Lewis, John P., and Richard C. Webb. 1997. *The World Bank: Its First Half Century* (Vols. I and II). Washington, D.C.: Brookings Institution Press.
- Li, Wentian, and Norman Packard. 1990. "The Structure of the Elementary Cellular Automata Rule Space." *Complex Systems* 4:281–97.
- Lohmann, Susanne. 1993. "A Signaling Model of Information and Manipulative Political Action." *American Political Science Review* 88:319–33.
- Malthus, Thomas. 1798. *An Essay on the Principle of Population, as It Affects the Future Improvement of Society with Remarks on the Speculations of Mr. Godwin, M. Condorcet, and Other Writers*. London: J. Johnson.
- Marx, Karl. 1845. *Theses on Feuerback (Thesis XI)*. First published as an appendix to Engel's *Ludwig Feuerback and the End of Classical German Philosophy* (1886).
- McBeath, Michael K., Dennis M. Shaffer, and Mary K. Kaiser. 1995. "How Baseball Outfielders Determine Where to Run to Catch Fly Balls." *Science* 268:569–73.
- McConnell, Steve. 1993. *Code Complete: A Practical Handbook of Software Construction*. Redmond, Wash.: Microsoft Press.
- McKelvey, Richard, and Thomas Palfrey. 1998. "Quantal Response Equilibria for Extensive Form Games." *Experimental Economics* 1:9–41.
- Metropolis, N., A. Rosenbluth, M. Rosenbluth, A. Teller, and E. Teller. 1953. "Equation of State Calculations by Fast Computing Machines." *Journal of Chemical Physics* 21:1087–92.
- Miller, John H. 1988. "The Evolution of Automata in the Repeated Prisoner's Dilemma." In *Two Essays on the Economics of Imperfect Information*, 49–97. Ph.D. dissertation, University of Michigan.
- . 1996. "The Coevolution of Automata in the Repeated Prisoner's Dilemma." *Journal of Economic Behavior and Organization* 29:87–112.
- . 1998. "Active Nonlinear Tests (ANTs) of Complex Simulations Models." *Management Science* 44:820–30.
- Miller, John H., Carter Butts, and David Rode. 2002. "Communication and Cooperation." *Journal of Economic Behavior and Organization* 47:179–95.
- Miller, John H., and Scott Moser. 2004. "Communication and Coordination." *Complexity* 9:31–40.
- Miller, John H., and Scott Page. 2004. "The Standing Ovation Problem." *Complexity* 9:8–16.
- Mitchell, Melanie. 1997. *Introduction to Genetic Algorithms*. Cambridge, Mass.: MIT Press.
- Mitchell, Melanie, James P. Crutchfield, and Peter Hraber. 1994. "Dynamics, Computation and the 'Edge of Chaos': A Re-examination." In *Complexity: Metaphors, Models, and Reality*, edited by George Cowan, David Pines, and David Melzner, 497–513. Reading, Mass.: Addison-Wesley.

- Moore, Christopher, and Martin Nilsson. 1999. "The Computational Complexity of Sandpiles." *Santa Fe Institute Working Paper*.
- Newman, Mark J. 2003. "The Structure and Function of Complex Networks." *SIAM Review* 45:167–256.
- Ostrom, Elinor. 2005. *Understanding Institutional Diversity*. Princeton, N.J.: Princeton University Press.
- Ott, Edward. 1993. *Chaos in Dynamical Systems*. Cambridge: Cambridge University Press.
- Packard, Norman H. 1988a. "Intrinsic Adaptation in a Simple Model for Evolution." In *Artificial Life*, edited by Christopher G. Langton, 141–55. Redwood City, Calif.: Addison-Wesley.
- . 1988b. "Adaptation toward the Edge of Chaos." In *Dynamic Patterns in Complex Systems*, edited by J. A. S. Kelso, A. J. Mandell, and M. F. Shlesinger, 293–301. Singapore: World Scientific.
- Page, Scott E. 1997. "On Incentives and Updating in Agent Based Models." *Computational Economics* 10:67–87.
- . 1998. "On the Emergence of Cities." *Journal of Urban Economics* 45:184–208.
- . 2006. "Essay: Path Dependence." *Quarterly Journal of Political Science* 1:87–115.
- Plott, Charles. 1967. "A Notion of Equilibrium and Its Possibility Under Majority Rule." *American Economic Review* 57:787–806.
- Poe, Edgar Allan. 1836. "Maelzel's Chess-Player." *Southern Literary Messenger* 2:318–26.
- Pynchon, Thomas. 1973. *Gravity's Rainbow*. New York: Viking.
- Rapoport, Anatol, and Melvin Guyer. 1966. "A Taxonomy of  $2 \times 2$  Games." *Yearbook of the Society of General Systems Research* 11:203–14.
- Richardson, Lewis. 1960. *Statistics of Deadly Quarrels*. Pittsburgh, Pa.: Boxwood Press.
- Rust, John, John H. Miller, and Richard Palmer. 1992. "Behavior of Trading Automata in a Computerized Double Auction Market." In *The Double Auction Market: Institutions, Theories, and Evidence*, edited by Daniel Friedman and John Rust, 155–98. Redwood City, Calif.: Addison-Wesley.
- . 1994. "Characterizing Effective Trading Strategies: Insights from a Computerized Double Auction Tournament." *Journal of Economic Dynamics and Control* 18:61–96.
- Samuel, Arthur. 1959. "Some Studies in Machine Learning Using the Game of Checkers." *IBM Journal of Research and Development* 3:210–29.
- Samuelson, Larry. 2001. "Analogies, Adaptations, and Anomalies." *Journal of Economic Theory* 97:320–67.
- Samuelson, Paul. 1954. "The Pure Theory of Public Expenditure." *Review of Economics and Statistics* 36:387–89.
- . 1999. Foreword. In Michael Szenberg, *Passion and Craft: Economists at Work*. Ann Arbor: University of Michigan Press.
- Schelling, Thomas. 1978. *Micromotives and Macrobehavior*. New York: Norton.
- Schumacher, E. F. 1978. *A Guide for the Perplexed*. New York: HarperCollins.

- Shannon, Claude. 1948. "A Mathematical Theory of Communication." *Bell System Technical Journal* 27:379–423 (July) and 623–56 (October).
- Simon, Herbert. 1955. "On a Class of Skew Distribution Functions." *Biometrika* 42:425–40.
- . 1969. *The Sciences of the Artificial*. Cambridge, Mass.: MIT Press.
- Smith, Adam. 1776. *An Inquiry into the Nature and Causes of the Wealth of Nations*. London. Edited by Andrew Skinner. New York: Pelican Books, 1970.
- Stigler, George J. 1961. "The Economics of Information." *Journal of Political Economy* 69:213–25.
- Stuttaford, Andrew. 2002. "Chick-Tac-Toe: A Prized Fight in Las Vegas." *National Review*, December 23.
- Tesfatsion, Leigh. 1997. "How Economists Can Get Alife." In *The Economy as an Evolving Complex System II*, edited by W. Brian Arthur, Steven Durlauf, and David Lane, 533–64. Redwood City, Calif.: Addison-Wesley.
- . 2006. "Agent-Based Computational Economics: A Constructive Approach to Economic Theory." In *Handbook of Computational Economics, Vol 2: Agent-Based Computational Economics*, edited by Leigh Tesfatsion and Kenneth L. Judd, 831–80. Amsterdam: North-Holland.
- Thompson, D'Arcy W. 1917. *On Growth and Form*. New York: Dover, 1992.
- Tiebout, Charles M. 1956. "A Pure Theory of Local Expenditures." *Journal of Political Economy* 64:416–24.
- Turing, Alan. 1937. "On Computable Numbers, with an Application to the Entscheidungsproblem." *Proceedings of the London Mathematical Society* (series 2) 42:230–65.
- Ulam, Stanislaw. 1976. *Adventures of a Mathematician*. Berkeley: University of California Press.
- Von Neumann, John, and Oskar Morgenstern. 1944. *Theory of Games and Economic Behavior*. Princeton, N. J.: Princeton University Press.
- Vriend, Nick J. 2000. "An Illustration of the Essential Difference between Individual and Social Learning, and Its Consequences for Computational Analyses." *Journal of Economic Dynamics and Control* 24:1–19.
- Watts, Duncan J. 2003. *Six Degrees: The Science of a Connected Age*. New York: Norton.
- Weaver, Warren. 1958. "A Quarter Century in the Natural Sciences." In *The Rockefeller Foundation Annual Report*, 7–15. New York: Rockefeller Foundation.
- Wellman, Michael, Amy Greenwald, Peter Stone, and Peter Wurman. 2003. "The 2001 Trading Agent Competition." *Electronic Markets* 13(1):4–12.
- Wolfram, Stephen. 1984a. "Computer Software in Science and Mathematics." *Scientific American* 251:188–203.
- . 1984b. "Universality and Complexity in Cellular Automata." *PhysicaD* 10:1–35.
- . 2002. *A New Kind of Science*. Champaign, Ill.: Wolfram Media.
- Wolpert, David H., and William G. Macready. 1997. "No Free Lunch Theorems for Optimization." *IEEE Transactions on Evolutionary Computation* 1:67–82.
- Zambrano, Eduardo. 2004. "The Interplay between Analytics and Computation in the Study of Congestion Externalities: The Case of the El Farol Problem." *Journal of Public Economic Theory* 6:375–95.