

## H. PEYTON YOUNG

### Curriculum Vitae

**ADDRESS** Nuffield College Telephone 44 (0)1865 271 086  
Oxford OX1 1NF [peyton.young@economics.ox.ac.uk](mailto:peyton.young@economics.ox.ac.uk)

### EDUCATION

B.A. 1966 Cum Laude in General Studies, Harvard University.

Ph.D. 1970 Mathematics, University of Michigan.

### CURRENT POSITIONS

2015 - Centennial Professor, London School of Economics

2008 - James Meade Professor of Economics, University of Oxford

2007 - Professor of Economics Emeritus, Johns Hopkins University

2005 - Professorial Fellow, Nuffield College Oxford

2012 - Research Principal, Office of Financial Research, US Treasury Department

### PREVIOUS POSITIONS

1997-15 Senior Fellow in Economics, The Brookings Institution

1994-07 Scott and Barbara Black Professor of Economics, Johns Hopkins University

1982-94 Professor of Economics and Public Policy, School of Public Affairs, University of Maryland, College Park

1976-82 Research Scholar and Deputy Chairman, Systems and Decision Sciences, International Institute for Applied Systems Analysis, Austria.

1971-77 Associate Professor of Mathematics, Graduate School of the City University of New York.

### OTHER PROFESSIONAL POSITIONS

2009-15 Co-Editor, *Handbook of Game Theory*

2006-08 President of the Game Theory Society

- 2009-12 Member of the Selection Committee, BBVA Frontiers of Knowledge Award in Economics, Finance, and Management (Chairman, 2010).
- 2004-06 Executive Vice President of the Game Theory Society
- 2001-05 Member, Science Steering Committee, The Santa Fe Institute
- 2004- International Advisory Board, *Journal of Institutional Economics*
- 1999- Associate Editor, *Games and Economic Behavior*

#### **HONORS, AWARDS, FELLOWSHIPS, ETC.**

- Member of the American Academy of Arts and Sciences
- Fellow of the British Academy
- Fellow of the Econometric Society
- Fellow of the Game Theory Society
- Fellow of the Society for the Advancement of Economic Theory
- George Hallett Award, American Political Science Association (2007)
- Fulbright Distinguished Chair in Economics, University of Siena (2003)
- Arne Ryde Lectures, University of Lund (2002)
- Lester R. Ford Award, Mathematical Association of America (1976)
- Sumner B. Myers Thesis Prize, University of Michigan (1971)

#### **BOOKS**

- Strategic Learning and Its Limits*. Oxford UK: Oxford University Press, 2004.
- Fair Representation*, 2<sup>nd</sup> edition (with M. L. Balinski). Washington, D. C.: The Brookings Institution, 2001.
- Individual Strategy and Social Structure: An Evolutionary Theory of Institutions*. Princeton, NJ: Princeton University Press, 1998.
- Equity In Theory and Practice*. Princeton NJ: Princeton University Press, 1994.

## EDITED BOOKS

*Handbook of Game Theory, vol. IV* (with Shmuel Zamir), Amsterdam: Elsevier, 2014.  
*Social Dynamics* (with Steven N. Durlauf), Cambridge, Mass: MIT Press, 2001.

*Negotiation Analysis*, Ann Arbor MI: University of Michigan Press, 1991.

*Cost Allocation: Methods, Principles, Application*, Amsterdam: North-Holland, 1985.

*Fair Allocation. Proceedings of Symposia in Applied Mathematics, vol. 33*, Providence RI: The American Mathematical Society, 1985.

## PUBLICATIONS

“Stochastic Learning Dynamics and Speed of Convergence in Population Games,” (with Itai Arieli), *Econometrica* 84 (2016): 627-676.

“Contagion in Financial Networks,” (with Paul Glasserman), *Journal of Economic Literature* 54 (2016): 779-831.

“Learning in a Black Box” (with H.H. Nax, M. Burton-Chellew, and S. West), *Journal of Economic Behavior and Organization* 127 (2016): 1- 15.

“Systemic Importance Indicators for 33 US Bank Holding Companies (with Meraj Allahrakha and Paul Glasserman), Office of Financial Research Brief 15-01, Washington DC (2015).

“The Evolution of Social Norms,” *Annual Review of Economics* 7 (2015), 359-387.

“How Likely Is Contagion in Financial Networks?” (with Paul Glasserman), *Journal of Banking and Finance* 50 (2015), 383-399.

“The Limits of Compensation in the Financial Sector” (with Thomas Noe), in *Capital Failure: Rebuilding Trust in Financial Services*, eds. N. Morris and D.Vines. Oxford University Press, 2014.

“Rapid Innovation Diffusion in Social Networks,” (with Gabriel E.Kreindler) *Proceedings of the National Academy of Sciences* 111, Suppl 3 (2014), 10881-10888.

“Achieving Pareto Optimality through Distributed Learning” (with Jason Marden and Lucy Pao), *SIAM Journal on Control and Optimization* 52 (2014), 2753-2770 [Best Paper Prize *SIAM J. Control and Optimization* 2014-15].

- “Stochastic Evolutionary Game Dynamics” (with Chris Wallace), in *Handbook of Game Theory vol. IV*, eds. H. P. Young and S. Zamir. Amsterdam: Elsevier 2014.
- “Fast Convergence in Evolutionary Equilibrium Selection,” (with Gabriel E. Kreindler), *Games and Economic Behavior*, 80 (2013), 39-67.
- “Learning Efficient Nash Equilibria in Distributed Systems” (with Bary S.R. Pradelski), *Games and Economic Behavior*, 75 (2012), 882-897.
- “A Strategy-Proof Test of Portfolio Returns” (with Dean P. Foster), *Quantitative Finance*, 12 (2012), 671-683.
- “The Dynamics of Social Innovation,” *Proceedings of the National Academy of Sciences*, 108, no.4 (2011), 21285-21291.
- “Gaming Performance Fees by Portfolio Managers,” (with Dean P. Foster), *Quarterly Journal of Economics*, 125 (2010), 1435-1458.
- “Social Norms,” (with Mary A. Burke), in the *Handbook of Social Economics*, vol. 1A, edited by Jess Benhabib, Alberto Bisin, and Matthew Jackson, Amsterdam: North Holland, 2010.
- “Innovation Diffusion in Heterogeneous Populations: Contagion, Social Influence, and Social Learning,” *American Economic Review*, 99 (2009), 1899-1924.
- “Payoff-Based Dynamics in Multiplayer Weakly Acyclic Games,” (with Jason R. Marden, Gurdal Arslan, and Jeff Shamma), *SIAM Journal on Control and Optimization*, 48 (2009), 373-396.
- “Learning by Trial and Error,” *Games and Economic Behavior*, 65 (2009), 626-643.
- “Social Norms,” *The New Palgrave Dictionary of Economics, Second Edition*, Steven N. Durlauf and Lawrence E. Blume, eds. London: Macmillan, 2008.
- “Adaptive Heuristics,” *The New Palgrave Dictionary of Economics, Second Edition*, Steven N. Durlauf and Lawrence E. Blume, eds. London: Macmillan, 2008.
- “Stochastic Adaptive Dynamics,” *The New Palgrave Dictionary of Economics, Second Edition*, Steven N. Durlauf and Lawrence E. Blume, eds. London: Macmillan, 2008.
- “The Possible and the Impossible in Multi-Agent Learning,” *Artificial Intelligence*, 171 (2007), 429-433.
- “Regret-Testing: Learning to Play Nash Equilibrium Without Knowing You Have an Opponent” (with Dean P. Foster), *Theoretical Economics*, 1, 341-367, 2006.

- “Social Dynamics: Theory and Applications,” in *Handbook of Computational Economics, vol. II*. Ken Judd and Leigh Tesfatsion, eds. Amsterdam: North Holland, 2006.
- “Customary Contracts,” in *Legal Orderings and Economic Institutions*, Fabrizio Cafaggi, Antonio Nicita, and Ugo Pagano, eds. Oxford: Routledge, 2005.
- “The Cultural and Genetic Evolution of Human Cooperation” (with J. Henrich et al.), in *Genetic and Cultural Evolution of Cooperation*, Peter Hammerstein, ed. Cambridge MA: MIT Press, 2003.
- “The Power of Norms,” in *Genetic and Cultural Evolution of Cooperation*, Peter Hammerstein, ed. Cambridge MA: MIT Press, 2003.
- “The Diffusion of Innovations in Social Networks” in *The Economy as a Complex Evolving System, vol. III*, Lawrence E. Blume and Steven N. Durlauf, eds. Oxford University Press, 2003.
- “Learning, Hypothesis Testing, and Nash Equilibrium,” (with Dean P. Foster), *Games and Economic Behavior*, 45 (2003), 73-96.
- “Equilibrium Selection in Bargaining Models,” (with K. Binmore and L. Samuelson), *Games and Economic Behavior*, 45 (2003), 296-328.
- “On the Limits to Rational Learning,” *European Economic Review*, 46 (2002) 791-99.
- “On the Impossibility of Predicting the Behavior of Rational Agents,” (with Dean P. Foster), *Proceedings of the National Academy of Sciences of the USA*, 98, no. 22 (2001), 12848-12853.
- “Competition and Custom in Economic Contracts: A Case Study of Illinois Agriculture,” (with Mary A. Burke), *American Economic Review*, 91 (2001), 559-573.
- “Adaptive Dynamics in Games Played by Heterogeneous Populations,” (with A. Kryazhimskii and Y. Kaniovski). *Games and Economic Behavior*, 31 (2000) 50-96.
- “Conventional Contracts,” *Review of Economic Studies*, 65 (1998), 776-792.
- “On the Nonconvergence of Fictitious Play in Coordination Games,” (with Dean P. Foster), *Games and Economic Behavior*, 25 (1998), 79-96.
- “Cost Allocation, Demand Revelation, and Core Implementation,” *Mathematical Social Sciences*, 36 (1998), 213-228.

- “Individual Learning and Social Rationality,” *European Economic Review*, 42 (1998), 651-663.
- “Social Norms and Economic Welfare,” *European Economic Review*, 42 (1998), 821-830.
- “Learning with Hazy Beliefs” (with Dean P. Foster) in *Game Theory, Experience, Rationality*, W. Leinfellner and E. Koehler, eds. Amsterdam: Kluwer, 1998.
- “The Economics of Convention,” *Journal of Economic Perspectives*, 10 (Spring, 1996), 105-122.
- “Dividing the Indivisible,” in *Wise Choices*, Ralph Keeney, James Sebenius, and Richard Zeckhauser, eds. Cambridge Mass: Harvard University Press, 1996.
- “Group Choice and Individual Judgment,” in *Perspectives on Public Choice*, Dennis Mueller, ed. New York: Cambridge University Press, 1996.
- “Learning Dynamics in Games with Stochastic Perturbations,” (with Yuri Kaniovski), *Games and Economic Behavior*, 11 (1995), 330-363.
- “Dividing the Indivisible,” *American Behavioral Scientist*, 38 (1995), 904-909.
- “Optimal Voting Rules,” *Journal of Economic Perspectives*, 9 (Winter, 1995), 51-64.
- “Equilibrium Selection Through Adaptation and Experimentation,” in *Learning and Rationality in Economics*, Alan Kirman and Mark Salmon, eds. New York: Basil Blackwell, 1995.
- “Cost Allocation,” in *The Handbook of Game Theory, vol. II*, Robert J. Aumann and Sergiu Hart, eds. Amsterdam: North-Holland, 1994.
- “Apportionment” (with M. L. Balinski), in *Operations Research and the Public Sector. Handbooks in Operations Research and Management Science*, vol. 6, Steven M. Pollock, Michael H. Rothkopf, and Arnold Barnett, eds. Amsterdam: North-Holland, 1994.
- “The Evolution of Conventions,” *Econometrica*, 61 (1993), 57-84.
- “An Evolutionary Model of Bargaining,” *Journal of Economic Theory*, 59 (1993), 145-168.
- “Cooperation in the Short and in the Long Run,” (with Dean P. Foster), *Games and Economic Behavior*, 3 (1991), 145-156.

- “Stochastic Evolutionary Game Dynamics,” (with Dean P. Foster), *Theoretical Population Biology*, 38 (1990), 219-232.
- “Progressive Taxation and Equal Sacrifice,” *American Economic Review*, 80 (1990), 253-266.”
- “Distributive Justice in Taxation,” *Journal of Economic Theory*, 44 (1988), 321-335.
- “Condorcet's Theory of Voting,” *American Political Science Review*, 82 (1988), 1231-1244.
- “Measuring the Compactness of Legislative Districts,” *Legislative Studies Quarterly*, 13 (1988), 105-115.
- “Individual Contribution and Just Compensation” in *Essays in Honor of Lloyd Shapley*, Alvin J. Roth, ed. New York: Cambridge University Press, 1988.
- “Condorcet” (with H. Moulin), in *The New Palgrave*, John Eatwell, Murray Milgate, and Peter Newman, eds. New York: Stockton Press, 1987.
- “On Dividing an Amount According to Individual Claims or Liabilities,” *Mathematics of Operations Research*, 12 (1987), 398-414.
- “Progressive Taxation and the Equal Sacrifice Principle,” *Journal of Public Economics*, 32 (1987), 203-214.
- “Equal Sacrifice in Taxation” in *Measurement in Economics*, Wolfgang Eichhorn, ed. Heidelberg & Berlin: Physica-Verlag, 1987.
- “Optimal Ranking and Choice from Pairwise Comparisons” in *Information Pooling and Group Decision Making*, Bernard Grofman and Guillermo Owen, eds. Greenwich CT: JAI Press, 1986.
- “Monotonic Solutions of Cooperative Games,” *International Journal of Game Theory*, 14 (1985), 65-72.
- “Producer Incentives in Cost Allocation,” *Econometrica*, 53 (1985), 757-765.
- “Cost Allocation in Water Resources Development,” (with N. Okada and T. Hashimoto) *Water Resources Research*, 18 (1982), 361-373.
- “Fair Representation in the European Parliament,” (with M. L. Balinski), *Journal of Common Market Studies*, 2 (1982), 361-373.
- “Parliamentary Representation and the Amalgam Method,” (with M. L. Balinski), *Canadian Journal of Political Science*, 14 (1981), 797-812.

- “The Webster Method of Apportionment,” (with M. L. Balinski), *Proceedings of the National Academy of Sciences*, 77 (1980), 1-4.
- “Criteria for Proportional Representation,” (with M. L. Balinski), *Operations Research*, 27 (1979), 80-95.
- “Quotatone Apportionment Methods,” (with M. L. Balinski), *Mathematics of Operations Research*, 4 (1979), 31-38.
- “Exploitable Surplus in N-Person Games” in *Applied Game Theory*, Steven Brams, Andrew Schotter, and Gerhard Schwodiauer, eds. Wurzburg: Physica-Verlag, 1979.
- “The Nucleolus as a Noncooperative Game Solution” (with Martin Shubik), in *Game Theory and Political Science*, Peter C. Ordeshook, ed. New York: New York University Press, 1978.
- “A Tactical Lobbying Game” in *Game Theory and Political Science*, Peter C. Ordeshook, ed. New York: New York University Press, 1978.
- “The Jefferson Method of Apportionment,” (with M. L. Balinski), *SIAM Review*, 20 (1978), 278-284.
- “Stability, Coalitions, and Schisms in Proportional Representation Systems,” (with M. L. Balinski), *American Political Science Review*, 72 (1978), 848-58.
- “Power, Prices, and Incomes in Voting Systems,” *Mathematical Programming*, 14 (1978), 129-148.
- “The Allocation of Funds in Lobbying and Campaigning,” *Behavioral Science*, 23 (1978), 21-31.
- “A Consistent Extension of Condorcet's Election Principle,” (with Arthur Levenglick), *SIAM Journal on Applied Mathematics*, Part C, 35 (1978), 285-300.
- “Matroid Designs of Prime Power Index,” (with Barbu Kestenband), *Journal of Combinatorial Theory*, Series A, 24 (1978), 211-234.
- “On Permutations and Permutation Polytopes,” *Polyhedral Combinatorics: Mathematical Programming Study* 8 (1978), 128-140.
- “On Huntington Methods of Apportionment,” (with M. L. Balinski) *SIAM Journal on Applied Mathematics*, Part C, 33 (1977), 607-618.
- “Apportionment Schemes and the Quota Method,” (with M. L. Balinski), *American Mathematical Monthly*, 84 (1977), 450-455.



- “The Quota Method of Apportionment,” (with M. L. Balinski), *American Mathematical Monthly*, 84 (1977), 701-730.
- “Extending Condorcet's Rule,” *Journal of Economic Theory*, 16 (1977), 335-353.
- “Environment, Energy, and Capital in the Fossil Fueled Electric Power Industry,” (with R. G. Thompson et al.), *Computers and Operations Research*, 3 (1976), 241-257.
- “Social Choice Scoring Functions,” *SIAM Journal on Applied Mathematics*, 28 (1975), 824-838.
- “A Note on Preference Aggregation,” *Econometrica*, 42 (1974), 1129-1131.
- “Interpreting von Neumann Model Prices as Marginal Values,” (with M. L. Balinski), *Journal of Economic Theory*, 9 (1974), 449-463.
- “A New Method for Congressional Apportionment,” (with M. L. Balinski), *Proceedings of the National Academy of Sciences of the USA*, 71 (1974), 4602-4606.
- “An Axiomatization of Borda's Rule," *Journal of Economic Theory*, 9 (1974), 43-52.
- “Matroid Designs,”(with Jack Edmonds), *Journal of Research of the National Bureau of Standards*, 77B (1973), 15-44.
- “Affine Triple Systems and Matroid Designs,” *Mathematische Zeitschrift*, 132 (1973), 343-359.
- “Existence Theorems for Matroid Designs,” *Transactions of the American Mathematical Society*, 183 (1973), 1-35.
- “Least -Cost Allocation and Valuation Model for Water Resources,” (with R. G. Thompson et al.). *Water Resources Research*, 9 (1973), 1186-1195.
- “Forecasting Water Use for Electric Power Generation,” (with R. G. Thompson et al.). *Water Resources Research*, 9 (1973), 800-807.
- “Forecasting Water Use for Policy Making: A Review,” (with R. G. Thompson et al.). *Water Resources Research*, 9(1973), 729-299.
- “A Quick Proof of Wagner's Equivalence Theorem,” *Journal of the London Mathematical Society*," 3 (1971), 661-664.