

Tópicos de modelos con racionalidad acotada

1) Introducción

- Introducción general del curso
- Modelos de aprendizaje adaptativo

- Anderson, P.W. (1972): "More is Different", *Science*, 177, 393-396
- Conlisk, J. (1996): "Why Bounded Rationality?", *Journal of Economic Literature*, Junio
- Epstein, J. (2001): "Learning to be Thoughtless: Social Norms and Individual Computation", *Computational Economics*, 18: 9-24
- Evans, G. y S. Honkapohja (2001): *Learning and Expectations in Macroeconomics*
- Foley, D. (1998): "Introduction", en Albin. P.: *Barriers and Bounds to Rationality*
- Durlauf, S. y P. Young (2001): *Social Dynamics*, MIT Press
- Hansen, L. y T. Sargent (2001a): "Acknowledging Misspecification in Macroeconomic Models", mimeo
- Hansen, L. y T. Sargent (2001b): "Robust Control and Model Uncertainty", mimeo
- Heymann, D. y P. Sanguinetti (1998): "Business Cycles from Misperceived Trends", *Economic Notes*
- Heymann, D., R. Perazzo y A. Schuschny (1997): *Dinámicas no lineales y modelos de agentes múltiples en Economía*, mimeo
- Hofstadter (1979): *Gödel, Escher and Bach*
- Hopfield, J. (1982): "Neural Networks and Physical Systems with Emergent Collective Computational Abilities", *Proceedings of the National Academy of Sciences*, 79, 2554-2558
- Howitt, P. (1997): "Expectations and Uncertainty in Contemporary Keynesian Models", en G. C. Harcourt y P. A. Riach, eds: *A "Second Edition" of The General Theory, Vol. I*, Routledge
- Kirman, A. y M. Salmon, eds. (1995): *Learning and Expectations in Economics*, Basil Blackwell
- Leijonhufvud, A. (1993): "Towards a Not-Too-Rational Macroeconomics
- Rauch, J. (2002): "Seeing Around Corners", en <http://www.theatlantic.com/issues/2002/04/rauch.htm>
- Sargent, T. (1993): *Bounded Rationality in Macroeconomics*, Oxford University Press
- Science (1999): Artículos sobre complejidad, número 4511, 2 de abril (varios autores)
- Taylor, J.
- Velupillai. K. (1999): *Computational Economics*, Oxford University Press
- Weisbuch, G. (1991): *Complex System Dynamics*, Addison-Wesley

Tesfatsion, L. (2002): "Agent-Based Computational Economics: Growing Economies from the Bottom Up", mimeo
Young, P. (1998): *Individual Strategy and Social Structure*, Princeton University Press

2) Esquemas alternativos de aprendizaje

- Redes neuronales
- Modelo de Hopfield; Redes en capas; algoritmos de aprendizaje; aplicaciones
- Algoritmos genéticos; ejemplos y aplicaciones

Arifovic, J (2001): "Evolutionary Dynamics of Currency Substitution", *Journal of Economic Dynamics and Control*, 25, 3-4 (Marzo)

Arifovic, J. (2000): "Evolutionary Algorithms in Macroeconomic Models", *Macroeconomic Dynamics*, 3: 373-414

Arthur, B. (1994): "Complexity in Economic Theory: Inductive Reasoning and Bounded Rationality", *American Economic Review*, Mayo

Arthur, B., J. Holland, B. LeBaron, R. Palmer y P. Tyler (1997): "Asset Pricing under Endogenous Expectations in an Artificial Stock Market", *Economic Notes*, 26, 2, 297-329

Bullard, J. y J. Duffy (1998): "A Model of Learning and Emulation with Artificial Adaptive Agents", *Journal of Economic Dynamics and Control*, 22, 179-207

Chen, S. y C. Yeh (2001): "Evolving traders and the business school with genetic programming: A new architecture of the agent-based artificial stock market", *JEDC*, marzo

Dopazo, H. et al. (2002): "A Model for the Emergence of Adaptive Subsystems", mimeo

Dopazo, H., M. Gordon, R. Perazzo y S. Risau-Gusman (2001): "A Model for the Interaction of Learning and Evolution", *Bulletin of Mathematical Biology*, 63, 117-134

Frank, S. (1996): "The Design of Natural and Artificial Adaptive Systems", en *Adaptation*, Academic Press

Goldberg, A. : *Genetic Algorithms in Search, Optimization and Machine Learning*, Addison-Wesley

Gudfreund, H. y G. Toulouse (1994): *Biology and Computation: a Physicist's Choice*, World Scientific Co.

Hertz, J. A. Krogh y R. Palmer (1991): *Introduction to the Theory of Neural Computation*, Addison-Wesley

Holland, J. (1992): *Adaptation in Natural and Artificial Systems*, MIT Press

Holland, J. (1995): *Hidden Order. How Adaptation Builds Complexity*, Addison-Wesley

Kirman, A. y N. Vriend (2001): "Evolving market structure: An ACE model of price dispersion and loyalty", *JEDC*, marzo

Maynard Smith, J. (1975): *The Theory of Evolution*, Cambridge University Press

Perazzo, R. (1994): *Sobre cerebros, Mentes y Máquinas*, Fondo de Cultura Económica

Szathmáry, E. y J. Maynard Smith (1995): "The Major Evolutionary Transitions", *Nature*, 374, 227-231

3. Modelos con interacciones locales

- Introducción general de autómatas celulares
- Ejercicios y aplicaciones:
 - BAM / Juego de la minoría (con modelos probabilísticos)
 - Modelo de Schelling con hipótesis alternativas; discusión de extensiones
 - Análisis del dilema del prisionero extendido en la topología de un anillo mediante uso de algoritmos genéticos
- Teoría de grafos: "Mundos pequeños"
- Ejemplos y aplicaciones de autómatas celulares: BAM con interacciones locales, juego de la minoría "local", cooperación y conflicto en redes

Albin, P. (1998): *Barriers and Bounds to Rationality*, Princeton University Press

Amaral, L., A. Scala, M. Barthélémy y H. Stanley (2000): "Classes of small-world networks", *Proceedings of the National Academy of Sciences*, 97, No 21: 11149-11152

Axelrod, R. (1984): *The Evolution of Cooperation*, Basic Books

Axelrod, R. (1997): *The Complexity of Cooperation: Agent-Based Models of Conflict and Cooperation*, Princeton University Press

Axtell, R., J. Epstein y P. Young (2001): "The Emergence of Classes in a Multi-Agent Bargaining Model", en S. Durlauf y P. Young, eds, *op. cit.*

Axtell, R. (1999): "The Emergence of Firms in a Population of Agents. Local Increasing Returns, Unstable Nash Equilibria and Power Law Size Distributions", Brookings, Working Paper 3

Axtell, R. (2002): "Non-Cooperative Dynamics of Multi-Agent Teams", mimeo

Axtell, R. (2001): "Zipf Distribution of US Firm Sizes", *Science*, September 7

Bak, P. : "How Nature Works"

Bak, P., Chen, K., J. Scheinkman y M. Woodford (1993): "Aggregate Fluctuations from Independent Sectoral Shocks: Self-Organized Criticality in a Model of Production and Inventory Dynamics", *Ricerche Economiche*, 47, 3-30

Batten, D. (2001): "Complex Landscapes of Spatial Interactions", *The Annals of Regional Science*, 35, p. 81-111

Epstein, J. y R. Axtell (1996): *Growing Artificial Societies*, Brookings

Schelling. T. (1978): *Micromotives and Macrobehavior*, W. W. Norton

Wilhite, A. (2001): "Bilateral Trade and 'Small-World' Networks", *Computational Economics*, 18: 49-64

Zimmermann, M. y V. Eguiluz (2002): "Cooperation, Social Networks and the Emergence of Leadership in a Prisoners' Dilemma with Adaptive Local Interactions", mimeo

Zimmermann, M., V. Eguiluz y M. San Miguel (2001): "Cooperation, Adaptation and the Emergence of Leadership", en A. Kirman y J.-B. Zimmermann, eds.: *Lecture Notes in Economics and Mathematical Series 503*, 73-86