ELSEVIER

The Journal of Socio-Economics 37 (2008) 444–454

The Journal of Socio-Economics

www.elsevier.com/locate/econbase

Book reviews

Microeconomics: Behavior, Institutions, and Evolution, S. Bowles. Princeton University Press, Princeton and Oxford (2004). 608 pp., Price: US$ 75, ISBN: 978-0-691-09163-1 http://press.princeton.edu/titles/7610.html

Standard graduate textbooks in microeconomics frequently frustrate students and instructors because they typically devote little attention to institutions, contain few empirical facts about real-world economies, and address normative questions almost exclusively from the standpoint of the Fundamental Welfare Theorems despite their limited scope. I have encountered such frustration personally, both as a Ph.D. student and as an instructor of Ph.D. microeconomic theory. Samuel Bowles' new graduate-level textbook, *Microeconomics*: *Behavior*, *Institutions*, *and Evolution*, provides a remedy. The book dares readers to ask fundamental questions about the role of institutions in structuring social interaction. It presents engaging historical and empirical cases to motivate theoretical inquiry and the development of technical tools. And it regularly reminds readers that economic models inevitably contain normative content, and that the interplay between choices in specification and the normative implications of different models is to be transparently investigated rather than obscured by exposition which presumes pure description as its goal.

Those sympathetic toward behavioral economics, especially its subset dealing with bounded self-interest and experimental studies of altruism and trust, will find much to admire in Bowles' work. More remarkably, those with doubts about behavioral economics and a strong preference for standard neoclassical methodology will also find this book useful. Readers from many backgrounds are likely to appreciate Bowles' thorough and determinedly even-minded coverage of canonical economic theory (especially Adam Smith, Alfred Marshall and Vilfredo Pareto) and distinguished champions of laissez faire policy such as Friedrich von Hayek, Gary Becker and Ronald Coase.

Economic institutions are the primary focus of the book. Bowles defines institutions as "the laws, informal rules, and conventions that give a durable structure to social interactions among the members of a population" (p. 47). Bowles models institutions as games or, alternatively, as equilibria of games. According to Bowles' usage, institutions are distinct from individual firms, trade unions, and central banks, which he instead refers to as *organizations*. The institutional focus allows Bowles to pose important social scientific questions one rarely finds in standard textbooks. These include abstract questions such as: How can there be persistence in the absence of design?; Why are persistent outcomes so frequently inefficient?; and Are there evolutionary constants that can be identified across different times, places and starting points?

Bowles gives empirical flesh to such abstract questions by posing more specific instantiations of them, such as: What explains the fall of communism?; Why did the Chinese custom of binding young women's feet suddenly fade out of existence in the early 1900s after enduring for more than 1000 years?; Why does money enable one to purchase a swimming pool, but not an integrated neighborhood?; and How come more than 500 sovereign bodies governed Europe in the fifteenth century but consolidated to fewer than 30 by 1914?

With scarcely a polemic, untested opinion, or instance of relativism, Bowles carefully reveals the ineluctable presence of normative content in virtually all descriptive models. Rather than describing inseparability of normative and descriptive goals as a limitation, Bowles encourages readers to identify such links. He writes: "Contrary to its conservative reputation, economics has always been about changing the way the world works . . . Economists have never been strangers to policy making and constitution building" (pp. 6–7). Bowles quotes Marshall in his *Principles* justifying the pursuit of facts and inferences in economics as a means for trying to eliminate poverty and suffering. Bowles suggests that Marshall would have been disappointed, however, by the progress made since he wrote *Principles* because the "neoclassical paradigm that Marshall helped found is ill-suited to the task he set" (p. 7).

Bowles' critique of the limitations of the Walrasian model, its minimal institutional content, and unstable dynamics will surprise readers who anticipate an argument linking neoclassical economics to laissez faire ideology. In fact, Bowles devotes several pages to showing the absence of such a link. Bowles cites Pareto remarking on the absence in neoclassical economics of a clear reason for preferring private ownership over central planning. Bowles cites the 1928 American Economic Association Presidential Address of F.M. Taylor, which similarly remarks on the allocational equivalence of laissez faire versus planning. And Paul Samuelson's proof of the "Walrasian equivalence of worker-run and capital-run firms" provides additional illustration of the institutional irrelevance which follows from the overly strong assumptions of symmetric information and complete contracting.

For Bowles, "institutional differences have important allocative consequences where conflicts of interest exist among actors whose interdependence is not governed by complete contracts" (p. 484). Therefore, societies and governments can make a large difference to economic well being by choosing institutions that more closely align rights of control and residual claimancy, so that individuals own as much of the payoff consequences of their actions as is possible. Choosing the right institutions can also improve efficiency by reducing conflicts of interest over non-contractable elements of transactions, and by altering the available information to facilitate more complete contracting.

A clear methodological advantage of Bowles' institutional focus and evolutionary game theoretic approach is its capacity to illuminate issues of economic governance without a priori exogeneity assumptions. Another advantage of the evolutionary approach is that stability of aggregate distributions (over individual behaviors or types) does not require stability at the individual level. Exchange at non-competitive-equilibrium prices and other forms of non-best-response behavior may persist as non-stable individual-level elements within stationary distributions.

Bowles reflects briefly on methodological reductionism, which he defines as a mode of analysis that "prefers explanations based on lower-level entities (cells, for example) rather than simply postulating the higher level entities that they make up (multi-cellular organisms, for example)" (p. 478). He writes: "Methodological individualism is an expression of reductionism in social science that insists that explanations of group-level phenomena such as institutions or aggregate output must be built up from the actions of individuals."

Bowles' evolutionary game theoretic approach does not break entirely with methodological individualism. Many of the models he presents do not depart at all from standard modeling practice in economics. His approach is more flexible, however, allowing aggregate phenomena to feed back into individual behavior, thus providing a greater range of dynamic paths for the aggregate social phenomena, including contemporary economies, he sets out to study. Bowles succeeds at adding much needed realism without displacing the standard model entirely. Thus, Bowles' project reveals itself to be one of incremental generalization rather than radical paradigm shift. Although some working in various heterodox traditions would no doubt prefer different emphases of topics and techniques, the book is a bold pedagogical departure that should encourage those who are impatient for a refined behavioral economics to emerge as a viable competitor in the market for economic ideas.

The book is organized into 14 chapters. Problem sets covering the chapters are collected into a separate section at the end. A brief but informative "Additional Readings" section is included as well.

Chapter 1 introduces Pure Conflict games, whose possible outcomes are all Pareto Optimal, and Assurance Games (sometimes referred to as coordination games), in which Pareto-inferior equilibria exist and auxiliary assurance mechanisms are therefore required to coordinate on socially optimal play. Bowles provides definitions for basic concepts such as strategic complementarity, Nash Equilibrium, payoff- and risk-dominance. Basic concepts are then deployed to demonstrate how the introduction of new institutions (in this case, adoption of a liability rule) can transform Prisoners Dilemma into an Assurance Game that achieves the social optimum as a unique Nash Equilibrium.

Chapter 2, "Spontaneous Order: The Self-Organization of Economic Life," introduces basic tools of evolutionary modeling, contrasting it with the general competitive equilibrium model (which Bowles describes as "By far the most fully developed population-level approach in the social sciences" [p. 59]). The Hawk Dove Game provides fertile ground for exploring a variety of institutional solutions to the socially wasteful competition that occurs when Hawks meet Hawks. Bowles presents an evolutionary model of residential segregation to illustrate historical contingency, local versus global heterogeneity, and the persistence of Pareto-inferior outcomes. Discussion of evolutionarily stable strategies, the replicator dynamics, and the themes of unintended consequences and self-organization in economic theory are provided.

Later chapters continue building up a repertoire of evolutionary game theory models used to address key topics such as endogenous preferences, bargaining, and the interaction between credit constraints and the distribution of wealth. Chapter 6, "Utopian Capitalism: Decentralized Coordination," presents the standard general equilibrium theory and Fundamental Welfare Theorems in greater detail, with insightful elucidations of both strengths and limitations. A mix of examples and mathematical models are used to illustrate the Coase Theorem and the Theorem of the Second Best.

The final four chapters are perhaps the most cutting edge. In these, Bowles presents the Price equation, different dynamical models corresponding to various updating and learning mechanisms, and the background needed to explore interaction of within- and between-group variance as determinants of population-level behavioral frequencies in equilibrium. Chapter 13 makes one of Bowles' most original points: that reciprocal altruism (i.e., enlightened self-interest) cannot explain commonly observed forms of human cooperation, especially those that occur in one-shot encounters. Instead, strong reciprocity is required.

Bowles models the coevolution of individual and group traits and investigates the stability of different forms of reciprocity when individuals face within-group and between-group selection resulting from periodic wars. Because the model becomes intractable using standard analytical

techniques, Bowles presents an agent-based simulation to determine conditions under which the individually costly and group-beneficial trait of strong reciprocity can proliferate and endure. Those determinants include the frequency of group conflict, the frequency of individual updating rules, group size, and between-group migration. Chapter 13 is devoted to the agent-based study, which proves to be an exceptionally good tutorial for model-specification, reporting results from simulations, and appropriate caveating in agent-based research.

Finally, in Chapter 14, Bowles turns to economic governance, normative economics, and policy analysis. He takes few stands on particular policy questions in the book and duly acknowledges this. The tools he lays out, however, are immensely insightful for understanding the role of economic theory in normative debates. Bowles writes (p. 36):

> Many of the differences among scholars and policy makers grappling with questions of institutional design can be traced to whether they believe that the ills of society are the result of common interest problems like traffic jams or of conflicting interest problems like the division of a fixed pie. In one case, institutions may be represented as problem solvers and in the second as claim enforcers .. . . [M]ost institutions do both. Thus, it may be impossible to analyze the problem-solving and distributional aspects of institutions in isolation.

Bowles' *Microeconomics* offers a real departure from the standard pedagogical tools currently available, while surveying a surprisingly large sampling of core material covered in standard textbooks on price theory and general equilibrium. Students who use the book will find that their knowledge overlaps significantly with that of standard textbooks. Many instructors may nevertheless feel that, used as the main textbook in a Ph.D. microeconomics course, supplemental texts covering additional technical material are needed. Bowles' balanced exposition of symbols and text is, however, at once rigorous and distinctly fun to read. After working through the book, readers will find themselves in possession of contemporary tools for studying coevolutionary dynamics. Readers will also enjoy an unusual awareness of economic theory's historical figures. And I suspect many of them will feel energized by Bowles' curiosity-provoking questions concerning social interaction and the prospects for future investigation within Bowles' framework of evolutionary social science.

Nathan Berg [a,b,*]
[a] *School of Economic, Political and Policy Sciences, University of Texas-Dallas, Box 830688, GR 31 Richardson, TX 75083, United States*
[b] *Center for Adaptive Behavior and Cognition, Max Planck Institute for Human Development, Berlin*

[*] Correspondence address: School of Economic, Political and Policy Sciences, University of Texas at Dallas, Box 830688, GR 31 Richardson, TX 75083, United States. Tel.: +1 972 883 2088; fax: +1 972 883 2735.
E-mail address: nberg@utdallas.edu
URL: http://www.utdallas.edu/∼nberg/

doi:10.1016/j.socec.2006.12.043