



Munich Personal RePEc Archive

Why economics textbooks must, and how they can, be changed into a real-world and pluralist economics. The example of a fundamentally new complexity-economics micro-textbook

Elsner, Wolfram

15 August 2016

Online at <https://mpra.ub.uni-muenchen.de/73097/>
MPRA Paper No. 73097, posted 18 Aug 2016 10:50 UTC

**Why economics textbooks *must*, and how they *can*, be changed
into a real-world and pluralist economics.**

The example of a fundamentally new complexity-economics micro-textbook

Draft, June 2016 (prepared for the volume *Teaching Economics in the 21st century*, London, New York: Routledge, 2017)

Wolfram Elsner

University of Bremen

Abstract: We argue that economics *must*, and *can*, be taught in fundamentally different ways than the simplistic and ideology-laden “economics of x”. We illustrate this with a fundamentally new textbook, “Microeconomics of Complex Economies” (2015). The mainstream’s ambivalence between some relevant research and its simplistic teaching in terms of “optimum”, “equilibrium”, and “market”, and the resulting textbook structure, incoherent between the static and “optimal” equilibrium and some reference to more recent real-world phenomena, will be characterized. We show *how* this can be changed by showing the *process* of getting a “heterodox” complexity textbook published, and by the *structure* of its content.

(100 words)

JEL codes: A11, A20, B00, C63, C70, D00.

Keywords: microeconomics; textbooks; teaching economics; heterodoxy; complexity economics; evolutionary economics; institutional economics; game theory; computational economics; history of economic thought.

**Why economics textbooks *must*, and how they *can*, be changed
into a real-world and pluralist economics.**

The example of a fundamentally new complexity-economics micro-textbook

Draft, June 2016 (prepared for the volume *Teaching Economics in the 21st century*, London, New York: Routledge, 2017)

‘There is little or nothing in existing micro- or macroeconomic texts that is of value for understanding real markets. ... Their only (once-) scientific model so far, the neo-classical one, has been falsified. What is now taught as standard economic theory will eventually disappear ... were it engineering, the bridge would collapse. ... Existing standard economics texts are filled with scads of graphs, but those graphs are merely cartoons because they do not represent real data ...’
J.L. McCauley in *Physica A*, **371** (2006), pp. 606f.

1 Introduction: *Will this happen?*

D. Colander (2015), among others, has argued that, in face of serious uncertainties about correct explanations in the social sciences, including economics, some collective scientific rationality would require a comprehensive *pluralistic* approach. The argument has been developed and embedded in larger epistemological and methodological contexts in the chapters of the first part of the present volume and, thus, does not need to be further elaborated or discussed here.

But Colander also argues that mainstream economics textbooks *will not* change, due to some *petrified institutionalization*, how outmoded ever: Their content is “institutionalized”, a kind of common human capital of mainstream economists. Writing and teaching it would provide mainstream economists, consequently, with larger inherent *benefits* than they would otherwise achieve, since changing it would involve high costs (and capital depreciation) for them. So they would just pursue a least-effort approach. And mainstream textbooks, thus, are part of the dominant institutional structure.

On top of that, they would receive considerable “*external*” *financial incentives* (payments, financial funding) to continue repeating, and perhaps just carefully updating, their conventional content. And also *publishers* were part of this institutionalized conventional arrangement. Publishers, on their part, would avoid risks and would use reviewers to judge a new textbook proposal, who in turn are mainstream – in all, a self-reinforcing system ... And thus, apparently, also no crisis of the economics profession is recognizable (Colander, *ibid.*).

It might be considered a *coordinated situation* evolved in the larger writing-teaching-publishing-learning system, or, put more simplistic (and in Colander’s words), it would be “what most students want” and “what the market wants” [sic!]. We might, in particular, think of a *Pareto-inferior Nash equilibrium*, based on *social rules*, in a coordination problem with Pareto-different equilibria. That analogy would help us understanding that individualistic (short-term maximizing) agents involved in such an emerged ruled-based arrangement indeed have no unilateral “rational” incentive to deviate from it – even despite the fact that change costs might be quickly compensated in the future, if a superior coordination would be attained, and that changing extra-scientific circumstances might even let the superior coordination further deviate upwards from the received and current inferior one.

We will argue below that in the case of economics the game indeed is not just “endogenously” determined by the economists/students/publishers/reviewers system, but that mainstream economics has a larger role to play for the current system and the wealthy and powerful ruling forces of this socio-economy, and that mainstream economists indeed have a whole lot to lose, in terms of money and reputation, should they decide to no longer be the providers of the ruling ideas for the ruling interests. (So, perhaps in fact a *non-coordination* game, where the ruling forces support mainstream economists with so high incentives that these always will play the

exploitation strategy, being the “hawks”, and the others, as long as they remain “anti-coordinated”, have to play “dove”, remaining the exploited ...) Thus, it is quite probable that the leading textbooks for global higher mass education *will not change*.

But the times they are a-changin’. For instance, ever more mainstream economists nowadays may gain more reputation, when sticking not too slavishly to too simplistic “market” models, but turn to more appealing theories, models, and methods – at least in *research* –, now that *more demanding technologies, techniques, methods, models, and theories are available*, which can deal with more than simple mechanical systems.

And when the results of more than four decades of *neoliberal* “market” de-regulation – including unsustainable *distribution*, exploding richness of the rich, financialization and *financial meltdown*, and the lingering *Great Recession* – become ever less justifiable, and a *litmus test of reality* is increasingly demanded from the economic mainstream, the incentive structure for mainstream economists might change. In fact, some media and many practitioners have become more critical after 2008, and, not the least, many students of economics have begun to desert from the established camp.

Mainstream economists then may find it more profiting to enter more *real-world* and *complexity-economic* research with less conventional theories and models and more *cutting-edge methods* – to gain more *reputation*, at least in *research*. And they may then have to focus more on *reinterpreting* their more complex, real-world research results in favor of the received simplistic standard idea (the optimal equilibrium of the “market” economy), which serves the status quo of power structure and wealth distribution.

But is there, nevertheless, space also for *behavioral innovators, non-mainstream* economists, who deviate from that inferior coordination (or petrified anti-coordination between “mainstream” and “heterodox minorities”)? Would critical economists not only be able to *write fundamentally alternative textbooks*, but would they also be able to cut an aisle into the collective monopoly of mainstream textbook publishing?

Well, under a general requirement to provide real-world analyses and results, and to apply more demanding methods of analysis, mainstream economic *research may have somewhat diversified*, as even some critical economists suggest, and a window may have opened not only for an *upsurge of heterodox and complexity economics*, but also for some more real-world, non-simplistic, theoretically broader, and more *plural textbooks*.

In all, times have come in the last 15 to 20 years, where relevant numbers of economists, students, publishers, media, and practitioners have left the standard-economics camp, searching new answers, diversifying economics, acknowledging the role of the rich history of economic thought, returning to long-ignored ideas and knowledge, making use of them for today, developing “heterodox” interpretations – and textbooks.

It is against that background that we will argue in this paper

- that economics *textbooks* not only *have to* be changed (and from the scratch so), but also
- that they *can be* changed, and *how* we can bring together “critical masses” of research results and teaching experience that make such change feasible at points, even with *globally leading established textbook publishers* (being aware that many

critical textbook proposals still are choked off by the mainstream “system”), and, finally, show

- *how* such resulting critical, real-world, pluralist, history-of-thought-aware “heterodox” textbooks then might look like.

This chapter, thus, proceeds as follows: Section 2 briefly describes the increasingly problematic situation of the economic mainstream (in fact, a dichotomy, if not schizophrenia) between research and teaching. Section 3, in particular, explains the correspondingly increasing problematic structure (in fact, inconsistency) of the mainstream (micro-) textbook. Section 4 presents a case of how a radically new micro-textbook with a heterodox complexity-economics perspective could emerge at a world-leading conservative publishing house, and how it looks like. Section 5 briefly concludes.

2 A fundamental dichotomy (schizophrenia) of the neoclassical/neoliberal ”market”-myth mainstream

“I believe in God and I believe in free markets.”
Enron CEO K. Lay, San Diego Union-Tribune, 2001¹

Economics has been, and is, *the* contested discipline among all sciences and has always been a basically a *contested and multi-paradigmatic* science, how suppressed heterodoxies ever were (e.g., Elsner 1986; Elsner, Lee 2010). Its fundamentals for exact *measurement* are considerably weaker than in science, and its interlinkage with values and norms thus much more prevalent, so that it may easily become ideology-laden and subject to *immunization* strategies. This was

¹ Cited after *The Post-Journal*: <http://www.post-journal.com/page/content.detail/id/648693/What-Have-Free-Markets-Done-For----.html>; accessed July 16, 2016.

indeed brought to perfection by the neoclassical school (the classic methodological critique of “model-platonism” (H. Albert), e.g., Kapeller 2013), in its historical effort to become the economic mainstream, the allegedly exact “physics” of society (“social physics”), the scientific basis for this economy, and for the socio-economic status quo. Justifying the status quo of this “market” economy, in fact, was promoted by developing an analogy to the analytical, deterministic and little complex *mechanical physics* of the early 19th century, deploying a pre-determined equilibrium, usually unique and usually optimal, and presupposedly self-equilibrating (stable).

Stochastic versions of such relatively simple, static, deterministic systems became *systems with “non-organized complexity”*: many components and variables, but a presupposition that interactions among these would average out, applying the famous *Brownian motion* (originally of blossom pollen on a fluid), such as those of molecules of a gas or fluid in a container under static conditions, the simplistic idea of just *random* distributions of characteristics and events (system motions). This, in turn, justified the most basic assumption of simple systems or systems with non-organized complexity, resp.: the *representative* agent, thus, aggregation as summation, and simple *linear* characteristics of the economic system. The assumption – justified in some natural circumstances, but of course rarely ever in socio-economies with interacting human agents – was such that *normal distributions* of components’ properties and systemic events could be taken for granted, with existing mean values, with calculable risk, as “rational expectations”, existing, finite, and easily manageable variance etc. (see, e.g., the financial market models leading until, and leading into, the financial meltdown 2008) (for the distinction among simple systems, systems with non-organized, and with organized complexity, see Weaver 1948).

To make a long story short: The “perfect” optimal and self-equilibrating “market” economy was established by the economic(s) mainstream as the institutional monopoly – and the only analytical option, thus goal, essence, end and climax of human history.

But the critiques of all that also have been permanent, fundamental, and overwhelming, establishing the great heterodox paradigms, be they Marxian, Veblenian, Sraffian, or Keynesian, and further increased with the upcoming of dynamic systems analysis, evolutionary and institutional modeling, complex physical statistics, social network analysis, and agent-based computational economics in the last two to three decades. They referred to the heroic and unrealistic assumptions, e.g., on information and rationality, convenient function shapes, non-interdependence among agents, exclusively negative/equilibrating feedback etc., on the computational impossibility of predicted equilibrium and optimality results (for overviews among myriads, e.g., Keen 2001/2004, 2009; Albin, Foley 1998).

In the early 1970s, H. Sonnenschein, R. Mantel, and G. Debreu (e.g., Sonnenschein 1973) had already shown that the simplistic assumptions of neoclassical theory could not determine (unique, optimal) supply and demand functions as presupposed, and, thus, no general equilibrium of a “market economy”, the virtual inherent impossibility of a unique general equilibrium. This already signaled, in fact, the *exhaustion and end of the neoclassical research program* to prove the historical superiority of a liberal “market economy” – an exhaustion, which, however, still is a most protected secret in the discipline.

Alternative approaches to model, analyze, and compute “market economies” under more realistic assumptions than, e.g., the Walrasian auctioneer (which prohibited exchange at “non-equilibrium” prices, a centralistic, authoritarian, and anti-liberal implication of a perfectly individualistic and “liberal” initial narrative), if they were after general equilibria stemming

from interaction processes, demonstrated *multiple equilibria*, but far beyond social optima, most of them exhibiting cumulative *uneven distributions*, which indeed is essential to capitalism (e.g., Albin, Foley 1998).

Under such continuing attacks by multiple “dissenters” and “heterodoxers” at epistemological, theoretical, analytical, computational, ethical, and policy levels, increasingly so in the last two to three decades, and under the pressure of an upcoming *agent-based computational complexity economics* with its more demanding methods, and after the mainstream exposure of the 2008ff. crises, many ambitious mainstream researchers have continuously and increasingly shifted towards more real-world, more complex research with its more interesting questions and its more rewarding methods – often enough *heterodox issues*, many of them long-standing ones.

But, as indicated, there are massive extra-scientific forces and incentives to maintain the narratives and models of neo-“liberalism”, “market” superiority, de-regulation, minimal state, privatization, marketization, and financialization, a science of the status quo of power and wealth distribution that only mainstream economics can provide. And, therefore, huge efforts are made by an “industry” of funded research towards *(re-)interpretations* of research results in a pro-“market”, pro-status-quo, neoclassical or neo-“liberal” perspective. Unsurprisingly, thus, no serious paradigm change of the mainstream has occurred after the financial crisis or in face of the lingering Great Recession.

In our view, there is only one “residual” explanation, after all “better arguments” have been put forward but could not change anything, for the ongoing dominance of the economic mainstream that has surprised, and remained a major puzzle for many (for some overview of post-2008 media comments, e.g., Elsner, Lee 2010; Lee, Elsner 2010): Economics has a specific “external” function, it is *the* generator of the *ideological identity* of the socio-economic *status-*

quo and its distributional and power structures, *the* ideology provider for the powerful and ruling vested interests (the “elites”).

The neoclassical (and largely neo-“liberal”) mainstream, thus, has largely remained, and will remain unswayed by any academic critique, and even by any disregard and disrespect by individual entrepreneurial or political practitioners (except for providing the proper *rhetoric*), and will even have the resources to *counterattack* in terms of academic *recruitment*. Thus, hardly any other discipline nowadays is to such an extent *non-modern*, because simplistic rather than complex, as famous physicist-economist M. Buchanan (2008) stated.

From this rough sketch of the discipline’s mainstream, a fundamental *schizophrenia* of the mainstream results: Its basic research generates in large parts interesting cutting-edge results, often converging in theoretical explanations, models, and methods with the broad streams of long-standing heterodoxies, which converge, on their parts, into complex systemic micro-macro dynamics, evolutionary and institutional processes, social network analyses, agent-based modeling, and complex systems simulations. But, after proper reinterpretation, its policy advice, its writings and messages in their often privately funded expertise, its public and media statements etc. – all areas, where the mainstream clearly dominates – maintain the standard “market” and neo-“liberal” perspectives and largely remain *unswayed* by (even its own) cutting-edge research results (e.g., Elsner 2008, 2011, 2013).

And even more so in its *mass teaching* and *textbook writing*, as in academic recruitment, the same old simplistic, infeasible, wrong, and dangerous (partial-)“market” model consumes most of the time of the study programs of generations of BAs, MAs, MBAs etc. – and the largest parts of the million-selling textbooks: the ideology of a unique, pre-determined, “optimal”, self-

stabilizing “market” (system), where allegedly the model resembles the economy “out there” (or v.v.), just properly simplified.

As said, the “trick” requires a deliberate, methodologically sophisticated, and (in more than hundred years) *elaborated fuzziness* of analytic-normative ontology, axioms, assumptions, and propositions. All the more strong and *crypto-normative* are its *political* prescriptions: If there is one given optimal point in the universe, then “there is no alternative” – TINA (M. Thatcher) – to “market” de-regulation, privatization etc.

Generation after generation of students worldwide, thus, will be sent into a complex, dynamic reality, with simple static models in their minds and no idea of intricate decision structures, lasting tensions, time, process, evolution, cumulation, and dis-equilibration.

3 Why this change *must* happen: The dichotomy, inconsistency, and peculiar outmodedness of the „mainstream“-economics textbook

An earlier critical view on the neoclassical mainstream textbook

Steve Keen, in his much-praised critical economics textbook *Debunking Economics* (2001/2011), argued that, why, and how the neoclassically-driven economics orthodoxy was unable to predict even the second most obvious economic crisis in history, the financial meltdown of 2008ff., while a handful of heterodox economists (including himself), running complex (heterodox) models of the economy, did (pp.12-15). In fact, the history of real economic crises had never caused the neoclassical mainstream to enter into any paradigm shift (pp.4f.). Keen, thus, vivisects the orthodoxy’s higher “education into ignorance” (p.19), showing through calculus, simulations, and empirical data analysis that, among many others,

there are no such things as a downward-sloping demand curve, a horizontal supply curve, a quickly rising unit-cost curve, a perfectly “rational” consumer (unless she has a brain as large as the universe, in order to make a “rational” choice among the trillions of alternative good bundles existing in any regular supermarket, or solving infinite-dimensional differential equation systems) or an isolated, non-interacting representative agent. But: “Don’t tell the children!” (p.57) As said, the dismantling and termination of the neoclassical research program by Sonnenschein, Mantel, and Debreu (above) has been one of the best-kept secrets of the discipline.

Keen already used the example of *H. Varian’s Microeconomics* (Varian 2014), arguing that it displays a typical “neoclassical ignorance”, being, at the critical points,

“so opaquely that it’s no surprise that most PhD students – including those who later went on to write the next generation of undergraduate textbooks – didn’t grasp how profoundly it challenged the foundations of neoclassical theory” (Keen 2001/2011, p.58).

The example there was nothing less than the *problem of aggregation*. Already Varian’s language was treacherous: “Suppose that” all individual consumers demand and consume “independent of the level of income of any consumer [and the distribution of those incomes – W.E.] and also constant across consumers [...]” (cited from Keen, *ibid.*). Ignoring, or, in fact, concealing, that exactly this *eliminates the very core of any real economy* and of any process, dynamics, development, or crisis, he continues:

“[...] it is sometimes convenient to think of the aggregate demand as the demand of some ‘representative consumer’ who has an income that is just the sum of all individual

incomes. The conditions under which this can be done are rather restrictive [sic!], but a complete discussion of this issue is beyond the scope of this book” (Varian 2014, p.271).

Note that his book has 790+ pages and still cannot explain at proper level the fundamental economic problem, and one of the classical critiques, e.g., of P. Sraffa or J.M. Keynes, i.e., the (complex) systemic interdependence of supply and demand functions.

In sum, textbooks and mass teaching, in this way, with many “let’s assume”s and rhetoric tricks, play a major role in maintaining the ruling ideology. And it is the true *tragedy* of the scientific discipline of economics that it dismisses ten thousands of young people worldwide every year, considered to be academically trained, into a complex world, both into professional positions and their surrounding socio-economic systems, with simple tools and little strategic, systemic, or procedural understanding beyond optimum and equilibrium.

The dichotomy, inconsistency, and deficient quality of the “mainstream” (micro-) textbook

While the general image of million-selling established mainstream textbooks, with their often considerable number of editions, the most powerful publishing houses in their back (Thomson/Cengage, Pearson, Springer, Elsevier; Sage ...), and lots of nice supplementary online technology, still is one of “standard”, “established truth”, “disciplinary consensus”, “hard science”, “solidity” and “reliability”, “cutting-edge method” and the like, a closer look at them reveals that their pattern is not only one of extreme arbitrariness, unexplained conventionalism, simple additiveness of diverse critical issues, very conventional methodology, relatively simple math (often the maximum level is the Lagrange algorithm, with usually no explanation of its theoretical roots and severe restrictions and implications), and little computation (for details and examples, see my extensive review of leading neoclassical textbooks: Elsner 2016).

There is also a typical *trivialization of new and more recent issues* (such as network analysis, different and repeated games, network technologies, informational collective goods, social dilemmas, open information and innovation, commons problems, emerging and changing institutions etc.) and *non-integration of new themes* or methods, lots of remaining inconsistencies between these and the simple standard model of the first half of their books, and, thus, in all, of a peculiar *inferior quality*.

And their strategy of arguing is of that unclear, flawed *positive-normative twilight*, the old, perfectly elaborated strategy of neoclassicism (Model Platonism, see Kapeller 2013). Their basic model do not only *not resemble the world out there*, they *obscure and obvert it*.

Thus, the mainstream million-selling textbook has two virtual parts, usually some hundred pages for the standard static partial-“market” equilibrium and its variations and applications to standard questions, and, depending on how many editions they already have gone through, a second half of simply added more recent issues (as mentioned above), each of which has the potential to make the first half of the book, the standard model, implode. But not the slightest feedback of all that material over many editions to that standard model. These are just “exemptions”, “deviations”, “curiosa”, “varia”, “miscellaneous”, or “What-else-is-out-there?”, including, as said, externalities (incl. the Commons), information technology (incl. network externalities), public (collective) goods, or asymmetric information. While each of these issues, together with some game-theoretical interpretations or behavioral economics would provide a bomb for the standard content of the book, the standard message remains: that the “market economy” can be saved from all these “peculiarities” and “curiosities” in reality.

Thus, thousands of students will be dismissed into reality with a world view that there is a “market” out there, which makes everything largely optimal and equilibrated, with, regrettably,

some peculiar “disturbing” other isolated aspects on top – which however can be remedied by *ever “more market”*.

Such textbooks would need a fundamental overhaul, integrating the newer themes and issues, and new methods from scratch, which, however, would make their standard models and message break down ... which, in turn, is unlikely to happen (agreeing to Colander above). So a change of the textbook scenery is unlikely to happen through an endogenous change of the million sellers.

It will happen only through *new textbooks*. But how can their acceptance by the leading, usually conservative publishing houses and their final publication happen, when the environment over all is adverse, and most curricula still prescribe, even for critical economics teachers, the received standard structure?

4 How this *can* happen: The example of a new, complexity-based, evolutionary-institutionalist and pluralist micro-textbook

The substantial starting point

Luckily, there has a whole number of critical micro textbooks come out in recent years, from S. Bowles through S. Himmelweit et al., N. Goodwin et al., Dollars&Sense, S. Keen, P. Dorman, J. Watkins, S. Bowles/D. Foley to W. Elsner et al. Also, handbooks and collections on critical economics teaching with substantial and methodological teaching concepts have come out (e.g., Mearman 2007). We will briefly focus on our own (Elsner, Heinrich, Schwardt 2015) to illustrate how this can emerge and what a critical, complexity- and real-world oriented structure may look like.

This micro textbook represents a radical deviation from the usual “demand—supply—market—equilibrium” paradigm, which usually is also pursued by many critical textbooks, either in an effort to criticize in strict parallelism with mainstream textbooks, or to undercut mainstream curricula with the conventional structure, but with critical arguments in detail. This textbook does not display the supply—demand—“market” scheme at all. Its perspective is that “markets” can be all or nothing, the worst human nightmare and catastrophe or some mechanism serving human needs in some reasonable way – if not clearly defined by the *institutional arrangement* that that decentralized spontaneous mechanism (with some role for prices) represents and is embedded in. So the whole perspective is one of the more fundamental needs, motives, and mechanisms that make agents capable of *coordinating* (in coordination problems) or *cooperation* (in social-dilemma problems). These *informal, self-organization mechanisms* and the processes of their emergence in complex structures are basic and prior to any “markets” or any other arrangements and allocation systems, which more generally are diverse network forms, more central or more decentralized. The book integrates all the modern issues mentioned above from the scratch.

Nevertheless, we do not change much in the beginning, apparently: We just assume *direct interactions* among agents that always have *different options* to act (as modeled in *games*). But this little change has huge implications for the totality of microeconomics. It implies a phylogenetic approach, e.g., 2x2 interactions played in *populations, behavioral diversification* in a *process* and over historical *time, structural emergence*, namely endogenously emerging institutions and endogenously evolving *network structures*, with huge variations in outcome. Thus, the whole perspective is one of direct interactions of agents in populations, acting on different topologies, solving different specific common and collective problems.

The tools used are game theory, we start with simple thinking in interaction process and more or less intricate common and collective decision problems, introduce some easy static standard game-theoretical normal form decision problems, but we quickly proceed to embedding games in narratives and modeling that make us depart from standard game-theory, entering evolutionary game theory and evolutionary replication. It is easily shown then that structures may emerge that are not reducible, i.e., cannot be traced back to the properties of the individual agents – a basic element of the definition of complex systems and their dynamics.

This is all introduced easily, for undergraduate (2nd year) studies, where we have taught it for fifteen years. Having worked outside academia for ten years before, we quickly apply the first simple technical apparatus to real-world problems of value chains, innovation networks, network technologies, and simple coordination and cooperation problems.

We derive the processes of the *real global corporate economy*, such as *size growth*, *powerization*, *oligopolization*, *collusion*, as well as *standard wars*, *first-mover* strategies, waiting and non-action, but also local *clustering*, regional systems of innovation, *networking* and combinations of *power/hierarchy* with network forms in global *hub&spoke* supplier networks – all as different, interrelated forms of, progressive or regressive, *reaction to increasing complexity of firms' environment*, attempts to *reduce such complexity* and *(re-)gain control* over their ecological conditions.

We then proceed, with a real-world focus, to a “*markets*” part of chapters and contrast the *standard neoclassical theory* (including critical Lagrange maximization and general equilibrium) with *real-world markets* of “size”, power, oligopolization, and the overlap of local oligopolistic network structures into global systems of “market” *networks*. The well-known *oligopoly models* form some common ground with neoclassical textbook standard chapters.

Neoclassical *price theory* is contrasted with institutional post-Keynesian price theory. Sraffian and “Stiglitzian” models round this part.

We easily and increasingly integrate real-world and related theoretical developments of the last decades, dealing with intricate common and collective problem structures, direct interdependence and coordination/cooperation, non-ergodic, path-dependent, and often idiosyncratic process in real time. After a second batch of chapters introducing formalisms of evolutionary game theory and replication, we enter into chapters on agent-based modeling and simulation, and evolutionary and increasingly complex systems in general, which are considered to be reserved for advanced graduate and PhD-levels.

We proceed with a chapter on some fifteen selected core models of modern complexity economics, which have proved to be important in some broader array of theoretical perspectives, be they critical neoclassical, institutionalist, biological core models, or network models, covering such diverse angles as those of Axelrod, Arthur, Schelling, Kaufman, Ostrom or P.D. Bush. A critical selected *history of economic thought* then illustrates that HET has always been a *history of complex economic thinking*, starting with A. Smith’s theory of institutional emergence in his *Theory of Moral Sentiments* (1759) and the idea of *unintended systemic consequences*. Applied chapter follow with themes such as the size and “*meso*” *dimension* of economics, *innovation* economics, which usually is complex economics, *information* and open information economics, *policy* implications of complex systems’ dynamics, and *epistemological* reflection. For more detail, see the chapter structure in the *appendix*.

There are very few textbooks out that meet the demand for *high-quality, cutting-edge complexity* micro and thus are *not obviously a “usual suspect” heterodox* book, as many critical

and alternative textbooks are, even those that follow the standard structure of “demand—supply—market”. Closest to ours are only Bowles (2004) and Bowles/Foley (still only online).

Reviews of the book (such as in the *Journal of Economic Methodology* and *Journal of Economic Issues*) have clearly realized that we not just are offering

- a *cutting-edge complexity* micro textbook,
- covering *undergraduate, graduate and advanced* levels,
- an *array of established courses* (micro econ, industrial econ, innovation and information econ, game theory, methods/simulation/ABM, economic philosophy and methodology), and also
- a *pluralistic* one, with neoclassical, evolutionary, institutional, complexity and some other heterodox perspectives, but also that here
- a first *heterodox* embedding of cutting-edge complexity economics

is supplied.

The process towards a full-fledged textbook publication

The book has evolved from fifteen years of teaching micro at undergraduate and graduate levels. And the book project matured in around twelve years.

Edward Elgar (in person) was the first we had approached with the idea as early as 1999. And a contract was concluded that early. But *Elgar*, in fact, was not the right publishing house in the end, not being a full-fledged textbook publisher in 2011/2012. He did not dare to publish the “big” version. So we offered a “light”, max. 250pp. version, which in fact was a selection of the more core chapters, a more conservative project, which then came out at Elgar in 2012.

For the full-fledged, +550pp. version, the usual top addresses were approached in 2013. The top conservative publishers, *Thomson/Cengage* and *Pearson*, and even “our heterodox” publisher, *M.E. Sharpe*, straightforwardly declined. One of the friendly denial letters said, the book were just “too innovative”.

Surprisingly, *Elsevier*, the one with the most conservative image, with its textbook branch, Academic Press, was interested. And a remarkable, one year-long intense process started. But a very clear and very helpful Elsevier book editor greatly managed that process, e.g., with clear and constructive to-do lists. Our proposal, then about 70% finished, was made subject not to the usual two reviewers, not three, not four ... *twelve anonymous reviewers* were engaged! They represented, as we could infer from their reviews, the whole spectrum of perspectives from hard-core neoclassicals to some radical. In the first round we received a huge diversity of comments, most extremely useful for a future implementation in the main geographical area, USA. A revised proposal was submitted to second referee round. And the reviewers did clearly converge on the supporting side, with the two clear hardcore neoclassical outliers still unswayed, but a clear majority saying “Yes, I would use the book”, “Yes, it can make it”, “It might be one of the future textbooks”. The second revision then went into the in-house editors’ conference, which took a favorable decision. The final decision was taken by an in-house top-level decision. And it was a “Go!”, a victory after one year of most intense struggle. The book is well considered since by the publisher, and said to be selling better than expected (where expectations probably were rather moderate, we assume).

What does the story of this adoption process tell us? Let us briefly conclude.

5 Conclusion

A real-world, pluralistic, critical, cutting-edge, complexity teaching and learning of (micro-) economics is possible, and related textbooks have a chance to appear even at the global first level of publishers. A consequent break with the “market” ideology and the “demand—supply—market plus variations/exemptions” structure is also possible, surprisingly. Under the *changing environment*, as described, even top-level conservative publishing houses may want to diversify and take on textbooks of quality and of some embedding of formal methods, both conventional and new. Himmelweit et al. (2001) and Bowles (2004), alternative-textbook pioneers, appeared at conservative publishers Thomson and Sage, resp., P. Dorman’s Micro and Macro textbooks appeared at Springer recently. Pluralism plus high quality has a chance under given (changed) conditions. Critical and radical heterodoxies have to take themselves serious and appear as serious contenders or serious critical extensions of the mainstream, rather than obviously “the usual suspects”. The publishing of heterodox pluralistic textbooks at conservative top level publishers, rather than at “our” good and courageous alternative and critical publishers, who, on their part, have a huge supply of most exciting economic(s) (text-) books, is a step in a process of the contested (and in total still “dismal”) discipline – a step to the better, not more, but also not less.

Appendix

The Microeconomics of Complex Economies.

Evolutionary, Institutional, Neoclassical, and Complexity Perspectives

W. Elsner, T. Heinrich, H. Schwardt

Amsterdam, Oxford, San Diego et al. 2015: Elsevier/Academic Press

Table of Contents

Preface: Post-crisis teaching and textbooks

Didactics: How to teach Complexity Economics

I. BASICS OF THE INTERDEPENDENT ECONOMY AND ITS PROCESSES

1. Introduction to the Microeconomics of Complex Economies
2. Tools I: An Introduction to Game Theory
3. Problem Structures and Processes in Complex Economies
4. Approaching Real-World Interdependence and Complexity: Empirical Phenomena in the Global Economy

II. MARKETS: GENERAL-EQUILIBRIUM THEORY AND REAL-WORLD MARKET STRUCTURES

5. The Ideal Neoclassical Market and General Equilibrium
6. Critiques of the Neoclassical “Perfect Market” Economy and Alternative Price Theories
7. Real-World Markets: Hierarchy, Size, Power, and Oligopoly, Direct Interdependence, and Instability

III. FURTHER TOOLS AND THE ANALYSIS OF COMPLEX ECONOMIES

8. Tools II: More Formal Concepts of Game Theory and Evolutionary Game Theory
9. Tools III: An Introduction to Simulation and Agent-Based Modeling
10. A Universe of Economies: Interdependence and Complexity, System Trajectories, Chaos, and Self-Organization
11. Dynamics, Complexity, Evolution, and Emergence—The Roles of Game Theory and Simulation Methods

IV. HISTORY OF THOUGHT AND CONTEMPORARY MODELS IN COMPLEXITY ECONOMICS

12. Themes of Complexity in the History of Economic Thought: Glimpses at A. Smith, T.B. Veblen, J.A. Schumpeter, and Others
13. Recent Core Models of Complexity Microeconomics
14. The Size Dimension of Complex Economies—Towards a Meso-Economics

V. FURTHER APPLICATIONS: INFORMATION, INNOVATION, POLICY, AND METHODOLOGY

15. The Information Economy and the Open-Source Principle
16. Networks and Innovation—The Networked Firm, Innovation Systems, and Varieties of Capitalism
17. Policy Implications: New Policy Perspectives for Private Agents, Networks, Network Consultants, and Public Policy Agencies
18. How to Deal with Knowledge of Complexity Microeconomics: Theories, Empirics, Applications, and Actions.

References

Albin, P., Foley, D. (1998). *Barriers and Bounds to Rationality: Essays on Economic Complexity and Dynamics in Interactive Systems*, Princeton: Princeton Univ. Press.

Bowles, S. (2004). *Microeconomics. Behavior, Institutions, and Evolution*. New York: Sage, and Princeton, NJ: Princeton Univ. Pr.

Buchanan, M. (2008). "This Economy Does Not Compute", *The New York Times*, OP-ED, October 1.

Colander, D. (2015). "Why economics textbooks should, but don't, and won't, change", *European Journal of Economics and Economic Policy (EJEEP)*, **12.2**, 229-235.

Elsner, W. (1986). *Ökonomische Institutionenanalyse. Paradigmatische Entwicklung der ökonomischen Theorie und der Sinn eines Rückgriffs auf die ökonomische Klassik am Beispiel der Institutionenanalyse ("Property Rights")* [On multi-paradigmatic development of economics and the function of a systematic recourse to the history of economic thought.] (Habilitation Thesis). Berlin: Duncker & Humblot.

Elsner, W. (2013). "State and future of the 'citadel' and of the heterodoxies in economics: challenges and dangers, convergences and cooperation", *European Journal of Economics and Economic Policy (EJEEP)*, **10.3**, 286-298.

Elsner, W. (2011): “Evolutionary Institutionalism. Sources, history and contemporary relevance of The Association for Evolutionary Economics – AFEE”, *Intervention. European Journal of Economics and Economic Policies*, **8.1**, 29-41.

Elsner, W. (2008). Art. “Market and State”, *International Encyclopedia of Public Policy*, ed. by P.A. O’Hara, GPERU: Perth, Vol. III, *Global Governance and Development – Public Policy*, <http://pohara.homestead.com/Encyclopedia/Volume-3.pdf>, 370-389.

Elsner, W., Lee, F.S. (2010). Editors’ Introduction to “Evaluating Economic Research in a Contested Discipline. Rankings, Pluralism, and the Future of Heterodox Economics”, *Studies in Economic Reform and Social Justice*, Wiley-Blackwell Publ., repr. of a special issue of the *American Journal of Economics and Sociology (AJES)*, **69.5**, 1-12.

Elsner, W., Heinrich, T. and Schwardt, H. (2015), *Microeconomics of Complex Economies. Evolutionary, Institutional, Neoclassical, and Complexity Perspectives*, Amsterdam, Oxford, San Diego: Elsevier/Academic Press.

Elsner, W. (2016). *The Dichotomy, Inconsistency, and Peculiar Outmodedness of the „Mainstream“ Textbook*. <https://mpira.ub.uni-muenchen.de/70471/>; accessed July 15, 2016.

Himmelweit S., Simonetti, R. and Trigg, A. (2001). *Microeconomics. Neoclassical and Institutional Perspectives on Economic Behaviour*. Andover, Hampshire, UK: Thomson Learning.

Kapeller, J. (2013). “‘Model Platonism’ in economics: on a classical epistemological critique,” *Journal of Institutional Economics (JoIE)*, **9.2**, 199-221.

Keen, S. (2001/2011). *Debunking Economics. The Naked Emperor Dethroned?* London, New York: Zed Books, 2nd ed.

Keen, S. (2009). “A pluralist approach to microeconomics”, in: J. Reardon (ed.), *The Handbook of Pluralist Economics Education*, London, New York: Routledge, 120-150.

Lee, F.S., Elsner, W. (2010). “Assessing economic research and the future of heterodox economics. Failures and alternatives of journals, departments, and scholars rankings”, *Intervention. European Journal of Economics and Economic Policies*, **7.1**, 31-42.

McCauley, J.L. (2006). “Response to ‘Worrying Trends in Econophysics’”, *Physica A*, **371**, 601-609.

Mearman, A. (2007). “Teaching heterodox economics concepts”, *The Handbook for Economics Lecturers*, <https://www.economicnetwork.ac.uk/handbook>, accessed July 7, 2016.

Sonnenschein, H. (1973). “Do Walras’ identity and continuity characterize the class of community excess demand functions?”, *Journal of Economic Theory*, **6(4)**, 345–354.

Varian, H. (2014). *Intermediate Microeconomics*, New York, London: W.W. Norton, 9th ed.

Weaver, W. (1948). “Science and Complexity”, *American Scientist*, **36(4)**, 536-544.

(5,920 words)