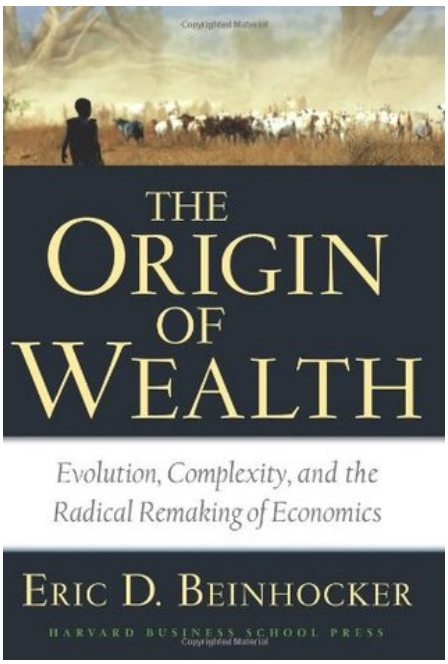

The Origin of Wealth: Evolution, Complexity, And the Radical Remaking of Economics

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Over 6.4 billion people participate in a $36.5 trillion global economy, designed and overseen by no one. How did this marvel of self-organized complexity evolve? How is wealth created within this system? And how can wealth be increased for the benefit of individuals, businesses, and society? In The Origin of Wealth, Eric D. Beinhocker argues that modern science provides a radical perspective on these age-old questions, with far-reaching implications. According to Beinhocker, wealth creation is the product of a simple but profoundly powerful evolutionary formula: differentiate, select, and amplify. In this view, the economy is a "complex adaptive system" in which physical technologies, social technologies, and business designs continuously interact to create novel products, new ideas, and increasing wealth. Taking readers on an entertaining journey through economic history, from the Stone Age to modern economy, Beinhocker explores how "complexity economics" provides provocative insights on issues ranging from creating adaptive organizations to the evolutionary workings of stock markets to new perspectives on government policies. A landmark book that shatters conventional economic theory, The Origin of Wealth will rewire our thinking about how we came to be here—and where we are going.

The Origin of Wealth: Evolution, Complexity, And the Radical Remaking of Economics Details

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From Reader Review The Origin of Wealth: Evolution, Complexity, And the Radical Remaking of Economics for online ebook

Tadas Talaikis says

I just saw some seminar notes about it. Finally, that book I had heard few years ago, about the end of left and right nonsense, - complex rational realism.

Anup Gampa says

I didn't have the advantage of Marx's theory when I read this book, but I enjoyed it. I might like it a lot more now!

Jerry Ward says

I can’t recall having ever read an author with the clarity of exposition and the depth and breadth of erudition that is demonstrated by Dr. Beinhocker in this book. It is an impressive work.

The opening sentence of the book asserts that “the field of economics is going through its most profound change in more than a hundred years.” Since much of the book directly addresses and analyzes that change and its implications, I think the book could have more accurately been entitled The Evolution of Economic Theory.

He notes “the two fundamental questions that economists have grappled with throughout the history of their field: how wealth is created and how wealth is allocated.” Adam Smith in his The Wealth of Nations (published 1776) directly addressed both these questions and, with some elaboration by others, established the basic notions of the Classical Period of economic theory; most of these concepts are still accepted today.

Adam Smith and his peers considered themselves philosophers, not scientists, and never attempted to reduce their ideas to mathematical expression. Roughly a century later Leon Walras wanted to change that, he wanted to make economics a science and to make quantitative economic predictions possible. So Walrus set about converting economic ideas into the language of mathematics. He devised a set of equations that represented the equilibrium of cleared markets. Production—how the stuff in the markets was created—was just assumed to have happened, and omitted from the representation. He made other simplifying assumptions. “Walrus’s willingness to make trade-offs in realism for the sake of mathematical predictability would set a pattern followed by economists over the next century.”

Joseph Schumpeter, with his thinking undistorted by trying to produce numbers, brought forth an entirely different vision of how an economy functions, and emphasized the heretofore largely neglected production side of the economy. Schumpeter put entrepreneurship and technical change front and center as the primary source of productivity improvement and therefore wealth creation. He saw the economy as never in equilibrium, always in a state of dynamic change.

Schumpeter’s ideas were valid and persuasive, but his failure to put them into mathematics held them back

from getting the affirmation they deserved. Most economists were still trying to describe economic phenomena in a mathematical language that was inadequate to the task, resulting in the need for simplifying but unrealistic assumptions. The three that stood out was, first, that people were always economically rational in their behavior, second, that the economic system was in equilibrium, and third, that innovation—both technical and behavioral (social) change—were not considered part of the system (considered to be exogenous variables).

Robert Solow, a Harvard-trained professor at MIT, won the 1987 Nobel Prize by producing a model of a dynamic economy driven by technical change.

[This whole history is a good illustration of "the rule of the tool": the idea when one possesses a tool there is a strong tendency to want to use it whether or not it is really appropriate to the task at hand. The result is often that the task is modified to fit the tool. It is often illustrated by the observation that when you give a small boy a hammer is just turns out that nearly everything needs bashing.

The transistor was invented in the 1940's. This technological discovery made the digital computer possible, and by the latter part of the century had put an entirely new tool in the hands of analysts, largely removing much of the pressure to modify the task to fit the tool.]

The digital computer opened the door to new powers of analysis, and lessened the need for simplifying assumptions made to allow any quantitative analysis at all. The computer is capable of simulating most phenomena, providing versatility to quantitative analysis heretofore not available using conventional mathematics. Complex systems—systems in which the macro behavior emerges from the interaction of the fundament agents—could be simulated and therefore studied. The economy is a prime example of a complex, adaptive system in which the fundamental agents are people and institutions that through their behavior and interaction produce the macro behavior of the total system. For the first time the goal of deriving macroeconomic behavior as an emergent property of microeconomic activity is in sight.

Beinhocker discussed in depth the implications of these events, and provided substantially more color than this brief summary here. He discussed the properties of networks as they affect economic behavior, cognitive phenomena and the unreality of the rational man, and the dynamics of systems with feedback. He illuminated many of the ideas and implications of the economy as a complex system by describing actual computer simulations of various types. He notes that "Complexity Economics is still more of a research program than a single, synthesized theory . . ."

These first two parts of the book focused on the evolution of economic theory. He also mixes in a kind of running tutorial on the terminology and often very surprising properties of complex systems. The third part addressed how evolution creates wealth. It begins with a description and illustration of the generic evolutionary process itself, including a fairly detailed presentation of the story of our biological evolution. He makes the point that the evolution of our economic system and creation of wealth are analogous processes. It seemed to me that while it is of some gee-whiz interest that the generalized patterns were the same, the specific mechanisms were so different that the fact of algorithmic or schematic similarity added very little real understanding of the economic process itself.

He notes that economic evolution is driven by the coevolution of changes in physical technologies, social technologies—how people organize and set rules, and business plans—how people behave to exploit the technical and social innovations.

The rest of the book is devoted to the detailed description and analysis of these three elements. It is very

exhaustive, but at a high level of abstraction. For example, there is little or no discussion of the actual technological innovations in our history (except that of making stone tools, which is included to make a point about the properties of invention). He examines all these phenomena from many different angles which I will make no attempt to summarize.

Beinhocker is a master of inductive reasoning, going from the detailed reality to abstract patterns. His grasp of the consilience of the many dimensions of economic behavior is impressive, and the range of his interests and knowledge is downright astounding. I will admit that my reaction on my first reading of the initial chapters was negative: I thought he was painting a negative picture of past economic thinking with the intent of resurrecting it under new labels as new thinking. I was wrong, although I think much of old thinking has held up better than he seems to sometimes imply. But this profound book leaves little doubt that digital-computer-enabled Complexity Economics has and will open the window of our understanding of the creation of wealth very much wider than it has ever been.

Saku Mantere says

I am deeply ambivalent about this book. On the one hand, it is a splendidly written introduction to the limitations in classical economics. It is also a great intro to complexity theory. Yet, in its insistence that complexity is a theory for everything (from doing firm strategy to transcending the left-right dichotomy in politics), the book's main argument is trivialized and becomes almost ridiculous.

??????? ????????? says

Before reading this book I had almost no idea about economics. In university I studied computer science, and we had a half-year course of economics which was meant to be one of a few ‘humanitarian’ courses, just in order to avoid making from us, students, finished computer nerds. All I remember was two intersecting curves for supply and demand, and a boring lecturer talking not that much about economics as about the Dulles' Plan aimed to undermine the Soviet Union. It was in 2001 when the Soviet Union was 10 years dead.

I should admit that ’The Origin of Wealth’ by Eric Beinhocker is one of the most brilliant books I’ve read. And the reason is not only in the subject, in economy per se. It’s a wonderful sample of a wide view which is so important these days, on the current level of science development. Yes, science becomes more and more specialized. There are, for example, no more ‘just’ physicists but rather astrophysicists, specialists in the solid state physics, in the molecular physics, etc. So they say there is no more room for universal geniuses like Leonardo da Vinci. At the same time we can see that some puzzles, especially those ones in traditionally ‘humanitarian’ field, require approaches which are conventional in natural sciences like physics or biology for example. Indeed, you can’t measure a feeling with a ruler (though even this is already controversial). But it’s more and more obvious that many social processes can be modeled using mathematical and physical apparatus. What used to be thought of as rational in human nature is not that rational. What used to be thought of as random in the life of society is not random in fact, but pretty deterministic. It’s just that even deterministic interactions do not presume possibility to solve and to predict the future behavior. And it’s really astonishing to read how modern economics is reconciled with the famous laws of thermodynamics! Which basically creates a new starting point for a new theory of economy.

Author starts with the description of Traditional economics which found its origins at the second half of XIX century and hasn't changed much up to the end of XX century. It's here we have those two curves of supply and demand with a single intersection point which assumes an equilibrium... which is never reached. However the Traditional model is limited with some unrealistic assumptions like perfectly smart people, comprehensive information available immediately to anyone, deals taking no time and no transaction costs, etc. Another problem is that Traditional model keeps many important phenomenons outside the door considering them as external forces. So technological progress, innovations, development of social structures and entrepreneurial drive are left aside. Well, they exist, they definitely impact economy, but they are external forces, they do not find any place and any explanation within the economy theory.
Ok, that could be fine if only such theory worked. But it does not! And it's another very interesting though not direct outcome of this book. How sticky we can be to some theories which at some time were found bright. Even when such theories are not supported with real data, still! It's all about a power of authority. Many really prominent people made their fortune and some even got Nobel prizes on the wrong ground. But it's not this that is sad. Sad is that it took many decades after first voices against this model had been heard before something started changing.

Then Beinhocker presents a Complexity economics approach. This approach is based on a quite rapidly developing scientific tool: complex adaptive systems. A phenomenon is modeled with introduction of some number of interacting agents. Each agent is endowed with a few rules for interaction with the environment and with other agents. These rules are taken from real life observations. Like for example instead of thinking about any person as perfectly rational we can introduce an agent with such close-to-real-life rules: 1) if very hungry -> buy some food in the very first store, no matter the price; 2) if not hungry -> find the cheapest food in stores not farther than 5 minutes walk from the agent's place; 3) if it's a weekend and an agent possesses any information on discounts in food stores -> allow him/her to buy food in proximity of 20 minutes walk. Then there can be introduced agents representing food stores with their own rules for setting prices and discount policies. And then such system can be programmed on a computer and run. An emergent result of such system is very difficult to calculate analytically. Mathematically it's a huge system with many variables and time-lags. Basically impossible to solve. But programmed model can give really interesting insights into behavior of such system. One may expect quite chaotic picture. But after a number of iterations some patterns may crystallize. Then playing with agents' or environment's parameters a researcher can find interesting phenomenons in the system.
This approach was applied to economy. And test results were remarkably close to those from real markets.

After this Beinhocker goes further: what basically makes the things go round? Why do new businesses pop up here and there? Why do they collapse? Why is entire wealth growing? The answers to these questions should be a part of the model, not just external magic forces. And in order to answer author makes quite a natural choice. The answer is evolution. In economy the same laws of evolution work. If in bio-world it's genes who compete for resources and for reproduction by means of their hosts - biological creatures, then in the world-market such genes are small bits of technologies - physical and social - which make some bigger 'organs' (management approaches, production tools, products' features, customer service offers, logistic solutions, performance improvements, etc) which in turn make 'organisms' - business plans for making some products or services. So it's not exactly companies who compete. It's technology-genes many numbers of which make business-plans. The same as in bio-world the complexity is growing. Inventing one new great thing expands horizon even further making a ground for new improvements or inventions.

Is this all? No! Beinhocker admits that Complex economics and evolution view make things very complex. So if Traditional economics tried to predict the market behavior (though wrong) with the new theory it's almost impossible to do. But although this theory doesn't give us a tool for predictions it explains how all this really works. And it's a very important knowledge. It can be used both on a relatively micro level like

managing a company in the ever changing evolution system and on a macro level like understanding the reasons for some states being very rich and some incredibly poor or solving the 200 years old false dichotomy “Left-Right”. How this all relates to culture (as an environment for fostering particular economy-development-genes). How this all relates to moral (Beinhocker introduces thoughts of the many prominent anthropologists, contemporary philosophers, political-thinkers and other). How this all impacts society and is impacted by society. And at the end of the book the economics as a piece of puzzle takes its place in the picture of the whole culture, whole human civilization.

Really exciting reading. Even though many pieces of puzzle still should be discovered and Beinhocker honestly admits this. The author doesn’t make a hero from himself. The number of mentioned scientists, thinkers and businessmen is overwhelming. And he gives them all deserved respect including those whose assumptions were eventually wrong and made the science to take the wrong turn for decades.

S.P. says

When I was studying engineering at University one of the subjects we had to have an overview of was economics. I wanted the read this book because to me at the time the traditional macro economics theory just didn’t make sense – too many assumptions that were self evidently wrong, and I wanted a more up to date perspective. This book, I was pleased to discover, not only explained traditional economic theories in detail but also agreed that there are basic flaws in this traditional macro economic view. More interestingly, for me anyway, the book discusses much about complex adaptive systems in economics by comparing them to those in biological and social systems. The treatment of complex adaptive systems I found to be both fascinating and enlightening, probably more than the economics they were being used to illuminate. Certainly I could recommend this book for no other reason than the discussion of ‘Sugarscape’ which illustrated economics, evolution and complex adaptive systems in one very simple thought experiment and model.

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dh Lee says

Another eye-opening book.

I've read circa one fifth of the book and the stuff in the part was enough to break down all the stereotypes and misconceptions that I had, partly due to the conventional education of economics- I am an economics major.

Still yet, of the things argued by the author there are some that I cannot fully understand or know whether the argument is true or not. One of them is this ;

Economics activity is firmly rooted in the real, physical world, and thus economics theory cannot escape the laws of thermodynamics.

While it may be true for the REAL economy, where we sell and exchange goods and service for another, I don't think at the moment that it also makes sense for the financial economy where nearly everything is 'pure information' and processed through computers and web. Of course the author said even it *is* based on a real thing, but how much? The connection in my perspective is very weak to the point where the inflow of energy (like electricity to make the computer and server used to maintain the stock market) is negligible.

Could we make case also for the stock market ?

gotta read more...

Juan Pablo says

I've been meaning to thoroughly destroy economics for some time now and after finishing this book, I'm saying to myself "Heck, maybe I will if only for its necessary rebirth."

I studied econ back in college and the more I learned, the more painfully I experienced the disparity between reality and the "science" most powerfully endowed to observe and prescribe the measures for our understanding of human and societal interaction. Let me clear up the "": economics became over a hundred years a powerful form of mathematical masturbation in the hope of becoming a science.

Let's put it this way: What the fuck was that in 2008?

It is too bad this book was written before the 2008 meltdown, as there are various fine ideological points espoused within which would stand reexamination given the newest of crises, but the value of the fundamental aspects of this book remains unchanged.

In short, this books describes the understanding and the undertaking of economics as an enterprise in complex dynamic systems, and what a breath of air it is to know of anyone in economics looking beyond the equilibrium paradigm! It's already well past the time when neoclassical economics gave its fruits and soured, yet, unlike all other fields which deem themselves sciences, economics has managed to stagnate incredibly in a web of power and sink in a swamp of scientific backwaters.

I hope the studies described in this book bear more and more fruit and are granted the recognition they deserve; I hope these economics dethrone the orthodoxy in the search for truth, as we strive for in any scientific pursuit.

I like to think Joseph Schumpeter would be proud of academic destruction of this magnitude.

Tyler says

The first 85% of this book was worthy of a 5 star rating and one of the most interesting books I've ever read. His analysis and linkage between Evolutionary Theory and the Economy was compelling. It provides us with a whole new lens to see the economy through and Benhocker's ideas of complex adaptive and open systems, I believe, to be extremely relevant. The case he makes against Neo-classical economic theory is long overdue. As Beinhocker makes clear at the opening of the book "Origin of Wealth" also targets a wide range of audiences and is intended for anyone interested in business, society, and politics. It is a must read for those trying to grasp the complexity of the world economy and the international system.

I said that the first 85% was worthy of a 5 star rating because the ending of the book was long and I disagreed with many of his statements about culture and the causes of poverty. I actually with they weren't there because they left a sour taste in my mouth when I closed the book. Even with, this book should come to

be very influential indeed. I recommend!

Kristin says

About 5 years after finishing college, I started to feel that there was a major, glaring deficiency in my liberal arts education. As a young, naive, and somewhat annoying undergraduate, I had a deep and mostly indefensible aversion to the idea of taking an economics class. It's all a bunch of B.S., I thought--and whatever isn't B.S. would certainly offend my pale pink sensibilities at the time. I managed to get by without having to take one. However, as I got to be a little older, I starting to develop a curiosity (or at least an insecurity about my cluelessness) about markets: where do they come from? How do they work? What holds them together? And, what is it that all these finance people and investment bankers keep rattling on about that mostly goes right through me? Economics was shrouded in a veil of mystery, but I wasn't sure how to begin to address my lack of understanding.

And, so, when I stumbled upon this book, I figured it would be a perfect introduction. It turned out to be exactly that, and then some. Much to my surprise and delight, it actually affirmed some of the suspicions I formed in my youth about the discipline. Beinhocker spends the first half of the book raking traditional economic theory through the coals. In their desperation to be taken seriously as "real" scientists, economists of the 19th century began borrowing heavily from emerging theories in physics and applying them to the dynamics of the economy. Not only that, they believed they could explain the entire workings of the economy with equations in the same way that, say, Maxwell did with electromagnetism. As Beinhocker shows, this was to disastrous effect, forcing these "scientists" to push aside anything that didn't fit with their equilibrium equations as a black-box, exogenous force. And, as Beinhocker goes on to demonstrate, it is precisely these "exogenous forces" that not only make economics interesting, but also are the very engine of the economy itself. Indeed, they are responsible for the incredible growth in wealth experienced throughout the world's economies starting in about 1750.

And so, the second half of the book is an introduction to the emerging field of "complexity economics," which views the economy not as a closed system seeking equilibrium but as a complex, ever-changing, adaptive system. In other words, it is an evolutionary system in the same way that life on earth is. And so, much of the language and theory for describing it comes out of evolutionary theory. Now, Beinhocker is at great pains to prove that he isn't falling into the same trap-of-analogy as the traditional economists by borrowing from the sciences. He repeatedly points out that the traditional economic view is that economic equilibrium is **like** mechanical equilibrium. In contrast, complexity economists say that the economy is not like an evolutionary system but rather **is** one. As we've no choice but to use language and mental models to describe and understand these systems, this distinction might leave some of us (myself included) a little wary.

Fortunately, much of what complexity economics--which is still in its infancy--offers is very compelling and convincing. At times, it seems a little over-enamored with computer science (particularly the section on "if-then" rules, which had my eyes rolling) as a method of modelling and explaining complex systems. But, once it moves beyond that, it has a fascinating story to tell about how organizations survive (or don't), why so many industries experience boom and bust, and--most interestingly--how our economy grew from one with just a few "products" to one with tens of billions.

The last few chapters are my favorites, when Beinhocker discusses the political and policy implications of complexity theory. The best bit is about how complexity economics takes us beyond the stale, old boring

left-vs.-right debates and offers a new way of looking at the economy and the best ways to nurture it.

Overall, I found this to be a terrific, extremely thorough, and very satisfying book.

Katia N says

This is entertaining, intellectually stimulating and well researched book about complexity economics. If you are interested in the alternative views on economic theory, you would find it worth paying attention to. It is written in 2007, but still stands alone as a popular introduction into this field. I am surprised it has not been updated and there is nothing more recent on the topic.

The book is more than 500 pages, but I never felt bored. There is a part where Mr Beinhocker is trying to formulate his own theory of economic growth borrowing from the theory of evolution and applying it to the economy. These chapters and his theory, respectively, I found not very convincing and relatively sketchy. And he admits himself that he might be wrong in certain conjestures. However, the effort to produce any theory within the complexity framework was worthwhile nevertheless.

The rest of the book is a delight. He gathers the relevant knowledge from the scientists working in the complexity field and convincingly presents it. He also explains why the traditional neoclassical theory does not quite work.

Below is what he is considering in the book:

- the economy is complex adaptive system (Complex - contains many agents interacting with each other and demonstrates the phenomena of emergence; adaptive - the agents adapt their behaviour in response to certain feedbacks; There is no long-lasting equilibrium within these systems. The system is also dynamic (evolving with time).

- the economic laws should be consistent with the biological theory of evolution and physics (thermodynamics, specifically 2nd law); He describes in the book what does it all mean.

- if one models the economy using this paradigm, the results would be much closer to the empirical data but would totally debunk many findings of the traditional economic theory.

- the field is relatively new, so there is no complete theory developed so far, but a lot of interesting patterns are emerging.

The implications of this are massive of course. He demonstrates it with lots of example and the related models. I will just mention the two of them here, the ones I found quite striking:

Sugarscape model:

The model has been developed in 1996 by J Epstein and R Axtell. It is a computer simulation of economic interactions between the agents trying to obtain and eat sugar (the only resource available which is spread unevenly within limited landscape). In the simplest model the agents could do only 3 things: look for sugar; move; eat sugar. To do that, they receive randomly a “genetic endowment” for vision and metabolism (the slow the better). So, the one with better vision and slower metabolism would be genetically better off, but the

geography where are they would matter as well. For starters, they ran this game with 250 agents. And even at this simplest model they found a striking thing:

“At the beginning the sugarscape was fairy egalitarian society with bell-shaped distribution of wealth and with only a few agents were rich and a few were poor, the rest was solid middle class.” And the gap between the richest and the poorest was relatively small. As time passes, however, this distribution has changed dramatically. “Average wealth rose, but the distribution of wealth became very skewed, with emerging super-rich, a long tale of upper class yuppie agents, shrinking middle class, and then a bog, growing underclass of poor agents.”

Does it remind you something? Indeed, what the Bible said “For whosoever hath, to him shall be given, and he shall have more abundance: but whosoever hath not, from him shall be taken away even that he hath! “ And the reason for this is “emerging macro behaviour out of micro behaviour of each agents” - geography, genes, and sheer luck in combination! Beinocker describes the outcomes and the assumptions in a very clear and detailed way. He also shows more complicated models with the possibility of exchange, agents’ reproduction, etc. However, even the basic model is very revealing.

Any policy-maker should be familiar with this if she is serious addressing the inequality issues.

Stock market

According to Beinocker, the stock market is the only place where the economic theories are tested almost in real time and where there is a massive amount of empirical data. The book has been written before the latest financial crisis. However, when I read this book, I was amazed that all the knowledge describing the inherent instability of the stock market were already there! It seems, just no-one wanted to open their eyes and look. And i am not even talking about the financial system as whole. Just pure stock market.

The traditional wisdom (well, actually an academic theory by a few Noble price winners) is called “Perfect Market Hypotheses” (PMH):

- all information you might know about the company is already in its share price;
- therefore, it is impossible to learn from the shares’ past performance. The prices follow totally random walk;
- the market will reach its equilibrium;
- the price reflects the fair value of the company

All of it leads to the following conclusions:
-that the bubbles are impossible (only might be coursed by exogenous factors, not inherent in the system);
- no big money can be made at stock exchange - ha!
-the management should care about its share price and maximise the value of the company calculated as per financial results (i am simplifying here, but this is the jest);

This is the PMH to you. And it was evident in 2008 already that this theory is total rubbish (excuse my French)! Beinocker shows how and why it is the case through the models of David Farmer, the physicist, turned into a stock broker and then finance theorist.

Surprisingly in 2008, against the evidence he himself presents, Beinocker still seemed to agree with Paul Samuelson that “It is not easy to get rich in Las Vegas, at Churchill Downs, or at the local Merrill Lynch office.”. He argues that no single broker would have sufficient liquid funds easily available. But i think, it

was more a self-delusion, than the conclusions from his own research. We all know by now know that the broker could easily borrow…

The theory of maximising shareholder's value (i.e. financial result = share price) has created a culture of short-term view with management focusing on the quarterly financial results instead of more strategic long-term vision of the company's goals. It is evident now that the share price does not reflect the company value and respectively, the management does not have a direct control over it.

These are just two examples how complexity approach and the related modelling is changing the traditional economic paradigm.

In the last part of the book, Beinocker considers possible policy implications of the complexity economics. Specifically thinks about inequality, development and the role of the government in the economy. He hopes that the theory would put an end to the traditional left and right divide on the economic issues. I would like to hope together with him… However, it seems we are moving backwards not forwards in terms of the divergence between the theory and practice…

All of this might sound very dry to you, but the book is not dry. He is fantastic and patient storyteller. He takes time explaining the concepts and models. I have to make a warning though, if you are easily irritated by the management consulting verbiage, you might find bits of this book quite annoying. But it is not intolerable and not everywhere (the majority is focused in Chapter 14 which might be easily skipped).

Definitely, complexity economics is the one of the most promising ways of looking at the economy. Complexity and convergence seem to be the trends developing in the natural sciences for quite sometime. I am glad it is starting to reach the social sciences as well.

Jonathan Jeckell says

I went through a ridiculous number of highlighters and tape flags marking this book. It provided a fascinating look at how theorists are bringing economics into the 20th Century. Existing economics models borrowed from physics, and thermodynamics in particular, most notably with the concept of equilibrium. This book shows how the economy (and much else) are not so simple, but follow rules found in complex adaptive systems and evolution. Moreover, it provided some fascinating insights into organizations, strategy, and politics (social capital and cooperation actually) and much more that transcended a narrow topic like economics. That makes perfect sense because economics is so intertwined with everything else people do. It was also fascinating how it broke evolution in the economics down by physical technologies, social technologies, and business plans (aka strategy) to generate diversity and adapt, while the market selects and amplifies a fit combination.

Jonas says

Part I starts out with a nice overview of the development of "traditional economics" since Adam Smith. The characterization of the work of Walras as a "false turn", importing physics metaphors into economics, is

particularly striking. The physics framework was maintained until well after WWII with the neoclassical synthesis, while 20th century physics had already moved away from its deterministic 19th century predecessor. Chapter 3 talks about the work at the Santa Fe Institute (SFI), where complexity economics was born, according to Beinhocker. However, Beinhocker exaggerates in my view the extent to which traditional and complexity economics are irreconcilable, and the extent to which the "complexity" work of scholars outside the SFI was ignored by "traditional economics". Just think of Stiglitz or Kahnemann, who received nobel prizes for their critiques of perfect information / full rationality. Still, Beinhocker makes a convincing case that economics must move on.

Part II describes the elements of "complexity economics" and contrasts the traditional and complexity perspectives on dynamics, networks, agents, emergence and evolution. This part cites some interesting research from other disciplines.

After that the book deteriorates in my opinion. Parts III and IV contain some unsubstantiated und superficial claims on the role of evolution in wealth creation (to be fair, Beinhocker acknowledges that he is speculating here). For example, the discussion of the industrial revolution is a mere two pages long. Beinhocker connects the neolithic and the industrial revolutions with the biological concept of "punctuated equilibrium". This simplistic metaphor avoids a more informed discussion of these events. Beinhocker also focusses mainly on evolution, and little on the other elements given in part II. The following chapters on management advice seem out of place and too wordy.

I award the first half of the book 4 stars, but the second only 2.

Lee Robinson says

As an economist who has grown very disillusioned with mainstream economics (or was never illusioned to begin with), I am so happy this book exists.

It is a brilliant outline of how the newly emerging field of complexity economics can help to reform economics from its reliance on static, equilibrium concepts that have hampered the discipline and held it back for over a century. And although this book is subversive, it is not one of the run of the mill straw man range of books having a pop at economics and offering only utopian ideals as an alternative. It is a technical critique and proposes an alternative that is drawn from evolutionary theory which is a fascinating, complex, realistic take on how individual activity leads to emergent patterns in the economy which drive growth and wealth creation.

It is very pragmatic and not not anti-establishment or socially radical. In fact, the author is a senior McKinsey fellow and the proposed model champions business. And this is one of the drawbacks - in some parts the text veers into a business managerial 'how to' guide. Another drawback is that the arguments on culture do not convincingly show the direction of causality and sometimes brush aside a wealth of research in this area.

But for me, these are not serious enough drawbacks to lose this book a star because the parts discussing economics more broadly are so interesting. One of the best popular economics books I have read in years.

Don says

Beinhocker tells us that there is a revolution in the making in the world of economics. The orthodoxies of the equilibrium models have long since ceased to tell the truth about the way markets work. Not only are they not able to render a proper account of the reasons why they periodically fail, but also what is positive about them in the sense of what they do well.

The book tells a good story of what economics attempts to be as a science and the tools it has developed to fulfil its mission. Right from its earliest days, in the searches made by Walras, Pareto and the other luminaries it aimed at a model of predictability which matched that of the physical sciences. Mathematics lured the pioneers down the path of equations which suggested that equilibrium was the outcome of all the encounters which brought buyers and sellers together in the marketplace. Success in outlining the shape of business cycles lured the nascent science in towards an orthodox account of the way systems work which made the new profession very useful to rising economic elites.

But Beinhocker sets out the compelling argument that it was a mansion built on sand. Neither buyers nor sellers work the way they are supposed to in the traditional accounts of markets, and the inconvenient facts of time and imperfect knowledge were permanently present to send apparently ordered systems skittering off into crises and depressions for reasons which were unfathomable to the cognoscenti.

For Beinhocker, the problem for the pioneers of economics was that they chose the wrong physical science as the model to guide their endeavours. Physics, which in Newtonian terms, tended to emphasis the conservation of energy within systems that transformed it through the phases of matter and energy, was yet to properly work through all the implications of entropy, which saw a rise in the amount of disorder over time. It is not equilibrium which represents the endpoint of the mechanical processes of the universe, but formless chaos.

Yet still we exist. And not just that, we go out and do things which certainly give the impression that we are producing higher levels of order all the time. Beinhocker says that there is a science which, whilst being rooted in the depressing fact of entropy, offers and understanding of the way in which local systems or order do arise all the time. It is the science of evolutionary theory.
So, the revolution promised in this book is fundamentally about a change of perspective. Instead of expecting the existence of order to be confirmed by number crunching equations, we have to learn to think of it as something dragged out of chaotic conditions and always capable of slipping back there. Evolutionary theory provides the best way to think about the way in which economies are constructed over time by agents who start off with very simple needs and simple ways of meeting them, to become in time the sort of people who need shopping malls, eBay and international spot markets to get through the day.

Like a lot of evolutionary enthusiasts, Beinhocker often seems to strain to find the mechanisms in the realm of actual economics which does the work of genes and DNA in biological evolution. He comes up with candidates in the form of the firm and business plans to perform this role. The most unconvincing part of his argument is the one which strives to show how bog standard accounts of business success, like Jack Welch of General Electric, do the business of running the Red Queen Races which are supposed to be the perfect analogy for evolution.

The reason why this doesn’t entirely work for me is due to the fact that the idea the firm is not constituted in

the way that biological evolution requires its agents to be, as a discreet entity marked off from its environment by a membrane which controls the interactions with things like food, air and germs, and which is capable, through the additional agency of a cooperating mate, or reproduction. It is rather a product of law, culture and practices each of which is capable of independent adaptation to environmental prompts which are only tangentially related to the interests of the firm.

The examples of the stakeholder and shareholder models of the firm illustrate this point. In the former, the firm survives because it serves the interests of a wide group of people – workers, customers, economic planners, government ministries, local communities as well as shareholders – whilst the latter is only concerned with shareholders. Beinhocker says the difference is illusory, and in fact all different types of firm really have shareholders at heart.

This is just wrong, but it services the author in making the case that that the revolution in thinking he wants to promote will leave markets more-or-less intact and in their present form. Shareholder firms have DNA (business plans) which allow them to adapt better to the turbulence of unrestrained free markets when stakeholder firms would be lumbered with the messy business of brokering agreements and deals which look after the concerns of all the parties. A particular type of economic growth, of the bubble kinds which have emerged since the 1980s, would be curbed if shareholders conceded more to stakeholders, but writing from the standpoint of Europe, November 2011, which would seem to be a good thing.

But like many of these books which seek to apply evolutionary theory to the social world, the errors of epistemology are not complete barriers to insight and inspiration. There’s stuff here that is well worth thinking about, particularly for those who’d like to see an even more radical revolution than the one Beinhocker was thinking about.
