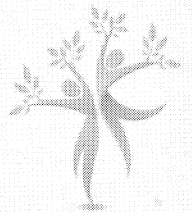
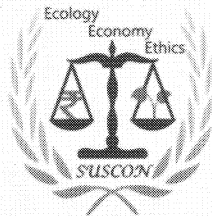


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Economical, Social and Ecological Challenges Enlightened by Ecological Economics

Professor Ove Jakobsen

Bodø Graduate School of Business University of Nordland, Norway

1. INTRODUCTION

To solve the most urgent economical, social and ecological challenges we are facing in the beginning of the 21. century, economic theory and practice must go through radical changes. Both the financial crises, poverty crises and the climate crises remind us of the gravity of the problems. Costanza is assuming that the situation is much worse than economic recession, defined as two or more successive quarters of declining gross domestic product. The real problem is that by some measures of economic performance the United States has been in recession since 1975; “a recession in quality of life, or well-being” (Costanza 2008). Most alternative measures of human well-being (alternative to the conventional measure of money flows as reflected in GNP) show that; “quality of life in the industrialized world peaked in the mid-1970’s and has been going downhill ever since” (Dawson 2006, p. 12). In the same period GNP has continued to climb. The consequences of this development are, according to Daly, that we in addition to a loss of well-being also face a “possible ecological catastrophe” (Daly 2007, p. 14). To avoid the very serious problems radical changes have to be made. A moderate business-as-usual scenario, based on United Nations projections of slow, steady growth of economies and populations, suggests that by 2050, humanity’s demand on nature will be twice the biosphere’s productive capacity. At this level of ecological deficit, exhaustion of ecological assets and large-scale ecosystem collapse become increasingly likely.

The present financial crisis has been explained as a mortgage meltdown, a housing bubble burst, and the collapse of fancy financial instruments. All of these explanations point to a problem that goes deeper and questions the neo-classical economic system at its core.

The problem is that the financial economy is floating free of firm connections with the real world. According to Daly, “It’s an economy built on the abstractions of numbers on paper – air money” (Stuckey 2009). Air money floats like a balloon out of reach of the ground. The only economic step that will make the economy sustainable is to stop multiplying numbers on paper and connect economy more firmly to the real world, which means, ultimately, to the world of ecosystems and social systems. Ecological economics is a branch of economics that could bring the economical and ecological crisis down to Earth. The policies introduced in the next few years will make all the difference. Three questions are of special importance and have to be solved.

Firstly; the scale of production and consumption must be sustainable in the long run. The worship of economic growth as an end in itself is based upon the questionable assumption that; “there are no limits to the planet’s ability to sustain it” (Pearce 2001, p. 7). Instead sustainability implies recognition that natural and social capital are not infinitely substitutable by built and human capital, and that; “there are real biophysical limits to the expansion of the market economy” (Costanza 2008, p. 33). Hence, a sustainable economy must at some point stop growing, but it need not stop developing. In other words, there is no necessary association between development and growth, conceivably, there could be development without growth (Georgescu-Roegen 1975).

Secondly; the distribution of resources and wealth must be fair. Fairness implies recognition that the distribution of wealth is an important determinant of social capital and quality of life (Costanza 2008, p. 33). We must move from an economy oriented toward the satisfaction of the wants of the rich part of the world, to an economy committed to satisfy the basic needs of all human beings. Instead of

focusing on economic growth and increasing profits the global economy must include moral considerations and equity.

Thirdly, the allocation of resources must be efficient. Real economic efficiency implies the inclusion of all resources that affect sustainable human well-being in the allocation system, not just goods and services being on the market. "Our current market allocation system excludes most non-marketed natural and social capital assets and services, which are huge contributors to human well-being" (Costanza 2008, p. 34). Boulding introduced the metaphor "Spaceship economy" to illustrate the conclusion saying that the only way; "Man can survive is by recycling earth's resources after use instead of continuing to exhaust its mines and pollute its reservoirs" (Kerman 1974, p. 14).

If we try to solve these serious challenges by one-sided treatment of the most visible symptoms a number of paradoxes could be the consequence. To solve the financial crisis initiatives to stimulate economic growth are recommended, while we know that a continued growth in the economy worsen the environmental problems. When the rich countries use billions of dollars to stimulate growth in production and consumption, the result is increased difference between rich and poor in a global perspective. Growth in production and consumption in the rich countries leads to reduced resource efficiency (the products life cycle become shorter) and the amounts of waste is increasing. According to Daly (2007) most developed countries are now in a period of *uneconomic growth*, in which further growth in market economic activity is actually reducing well-being instead of enhancing it. Daly is asking; "How can we fight poverty without growth?" He comes up with following answer; "We might have to share!" (Daly 2007, p. 10). Daly's answer is different from the message in the report from the World Commission on Environment and Development (WCED) saying that the best solution to the problems was to initiate "more rapid economic growth in both industrialized and developing countries" (Brundtland report, WCED 1987, p. 89).

2. SYMPTOMS, PATHOLOGY AND ETIOLOGY

There seems to be a conflict between the physical impossible (continual growth) and the political impossible (limiting growth) (Daly 2007, p. 10). But the ecologic

and economic crisis we are facing in the beginning of the 21th century provides the most exciting opportunity for change. It is general acceptance for the idea that to break established habits it is appropriate to see the benefits of the change and the cost of following the old track. Now, when we can see clearly the downsides of the system we have been using, is the moment to change our habits, our accounting, and our assumptions about what the Earth can sustain. It's time to rein in our air money balloons and get our feet firmly planted on the real ground.

To describe and discuss the underlying explanation of some of the symptoms of the economic and ecological crises I will focus on both pathological conditions and etiological explanations of the symptoms characterizing the ecological and economical crisis. On the pathological level the ecological and economical crisis is the result of an imbalance between the financial economy and the real economy. On the etiological level we find the metaphysical conditions of economics.

According to Daly banks in recent decades were "engines creating money out of nothing (...) They extended credit, bought stocks on the margin, and dealt in derivatives – a fancy name for betting with unregulated, multiplying insurance policies" (Stuckey 2009). Because of the explosion of assets produced, it looked like wealth was increasing. But the wealth was only on paper. The domination of the financial economy to day is so big that; "the term anomaly may be appropriate - an infirmity phenomenon in society" (Berglund 2007, p. 140). Liquid assets within the financial economy are invested in stocks, bonds and currencies. What creates the anomaly is that the assets are only to a limited extent channelled back into the real economy. Following this line of this reasoning the disproportionate relationship between the real economy and the financial economy explains some of the necessary conditions behind the financial crisis.

According to Ormerod (1994) "economists normally suffer from a kind of metaphysical blindness, assuming that (economics) is a science of absolute and invariable truths, without any presuppositions" (Pearce 2001, p. 5). He is arguing that some go as far as to claim that economic laws are as free from metaphysics or values as the law of gravitation. In other words, since economic laws are compared with classical physics we can conclude that economics is based upon a mechanical worldview. Ormerod asserts that "conventional economics offers a

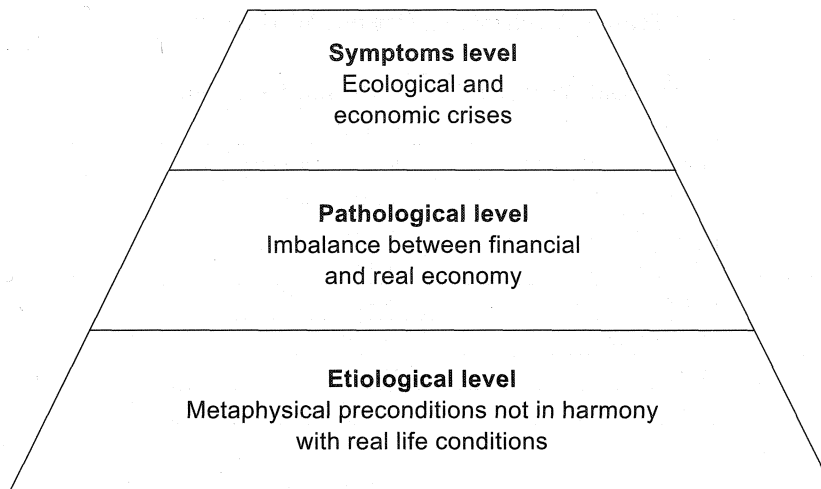


Figure 1 Symptoms, Pathology, and Etiology

very misleading view of how the world actually operates, and needs to be replaced (Pearce 2001, p. 5). Boulding is arguing that “economics has rested too long in an essentially Newtonian paradigm of mechanical equilibrium and mechanical dynamics” (Boulding 1981, p. 17). We can conclude that our current environmental and societal dilemmas are due, in part, to a much distorted perception of reality. According to Rees; “Modern economic society operates from an outdated mechanistic perception of the natural dynamics of the Earth” (Fabel & St. John 2007, p.104).

Pearce goes a step further and argues that the failure to address metaphysical questions has led to many of the central errors of conventional economics. Therefore, economics need an internal metaphysical critique. Instead of focusing on physics, quantitative measures and products economists should discuss metaphysics, qualitative values, and processes (Pearce 2001) In my opinion the critique from Ormerod and Pearce are both valid and relevant for understanding the pathological and etiological explanations of the symptoms of the failure in mainstream economy. In Figure 1. I give an illustration of the connectedness between symptoms such as; “unemployment, falling worker wages, biodiversity loss, environmental degradation, and disintegration of the social fabric” (Costanza 2008, p. 31), the pathological conditions, characterized by

an imbalance between financial and real economy, and on the deepest level, I am arguing that the problems are connected to the metaphysical preconditions economic theory and practise are based upon.

Costanza argues that people have lost sight of the aim of the economy. Rather than competing for monetary gain at all costs, he argues the true goal has always been to improve human well-being and quality of life. This line of argumentation is in accordance with Georgescu-Roegen’s (1971) assertion that the true output of the economic process is the enjoyment of life. Without recognizing this fact and without introducing the concept of enjoyment of life into our analytical armamentarium we are not in the economic world (Georgescu-Roegen 1971, p. 282). Since the industrial revolution, the world has been fixated on the growth of marketed goods and services measured by GNP, or gross domestic product as a way of improving well-being. This made sense at the time, when there were enough natural resources to go around. But in the last 50 years, the human footprint has grown so large that this is no longer sustainable. It is not so important that we compete in the global economy, but the most important thing is quality of life in the local environment. It follows that significant changes in socio-cultural beliefs, attitudes, and behaviour will be required before these problems could be solved.

Table 1. Mechanic vs. Organic Worldviews

Mechanic Worldview	Organic Worldview
Atoms	Relations
Linear connectedness	Circular interconnectedness
Instrumental values	Inherent values
Physical laws	Co-creation
Deterministic	Creativity
Substance	Process
Individualism	Collectivism
Objectivism	Subjectivism
Ego centered self	Extended self

The etiological explanation of this misfit is that neo-classical economics is based upon metaphysical preconditions not in harmony with the real world condition. Georgescu-Roegen (1971) is arguing that we cannot arrive at a completely intelligible description of the economic process as long as we limit ourselves to purely physical concepts. As an illustration, enjoyment of life do not correspond to “an attribute of elementary matter or is expressible in terms of physical variables” (Georgescu-Roegen 1971, p. 282). The parts of a machine have purely external relations with one another, hence the machine could be completely understood from without. By changing from a mechanic to an organic worldview, it is possible to acquire new insight into several different fields of economics leading to a fundamental understanding of the pathological conditions underlying the symptoms of climate and finance crises of today. The methodology of investigation should depend heavily on the nature of the system that is being investigated, and a lot of wasted effort – especially in the biological and social sciences – has been caused by attempts to apply a methodology that is quite appropriate, for instance, in mechanics (a system where the basic parameters do not change) to systems that are highly stochastic, probabilistic, and where parameters change (Boulding 1984, s. 17)

3. ECONOMICS BASED ON AN ORGANIC WORLDVIEW

The earth is a system comprised of closely interacting and interdependent subsystems based upon dissipative structures. Since every system is connected to and dependent of all others, everything evolves together over

time. Co-evolution is characterized by path-dependency and change is the rule rather than the exception. We have to appreciate that the Earth itself and all its living and nonliving components is a community and that the human is a member of this integral community and finds its proper role in advancing the well-being of this community. Berry concludes in the following way; “There can be no sustained well-being of any part of the community that does not relate effectively to the well-being of the total community” (Fabel and St. John 2007, p. 63).

The principle of relativity is saying that all actual entities are constituted by their relations to other entities and each thing arises out of its social relations and is internally constituted by these social relations. One important consequence of accepting the fundamental interrelatedness in reality, is that the society is not reducible to autonomous social atoms (it is a pattern of social relations). The relations between the social entities are of special importance for understanding the changing processes

How an actual entity becomes, constitutes what that actual entity is. This means that ‘being’ is constituted by ‘becoming’. The actual world is not composed ultimately of unchanging substances with changing attributes. What is ‘really’ real is not the unembodied eternal objects but the actual entities that embody such forms (Plato turned upside down).

According to Georgescu-Roegen the true economic output is the enjoyment of life (an immaterial flux), not growth in GNP. He is arguing that thermodynamics is more relevant to understand economics than classical physics. An economics based upon thermodynamics leads amongst

other things to a conclusion saying that all input to the economic process represents valuable natural resources and what is thrown out is valueless waste. Matter/energy enters the economic process in a state of low entropy and comes out of it in a state of high entropy. There are no free recycling just as there is no wasteless industry.

Boulding went a step further and argued that it is possible to turn the process of increasing entropy by introducing evolutionary principles. The continuing struggle between evolution and entropy is very important in Bouldings evolutionary economics. Evolution keeps adding; “useful, improbable, sometimes beautiful things to our world, while entropy keeps tearing down this improbable organization to its eventual end as a thin brown soup” (Kerman 1974, p. 14). Knowledge is a kind of magic which does not obey the laws of entropy. It is not diminishing when it is spent, in fact, knowledge often grows in the sharing.

The interplay between economy, nature and culture possess properties like dynamism, evolution, integrity and change. Throughput of material and spiritual energy are affecting the integrating structures and processes. Economy has the ability, through human action, to restruct-

ture and reform processes in ecosystems and societies of which they are a part. Sustainable economy presupposes that economic activities are in constructive interplay with the cultural and natural effects that originates from them. The exclusion of wisdom from economics, science and technology was something which we could get away with for a little while, as long as we were relatively unsuccessful, but now that we have become successful, the problem of spiritual and moral truth moves into the central position (Schumacher)

Ecological economics is a trans-disciplinary field of science studying the conflict between the growth of the economy and the destruction or negative modification of the environment from different scientific disciplines. Boulding once said that “the pursuit of any problem of economics draws me into some other science before I can catch it” (Kerman 1974, p. 6). He was looking for connections between fields of knowledge, for the threads of theory that would tie together economic man, biological man, sociological man, psychological man, perhaps even religious man. Ecological economics presupposes that economic activities are in constructive interplay with the cultural and natural effects that originates from them.

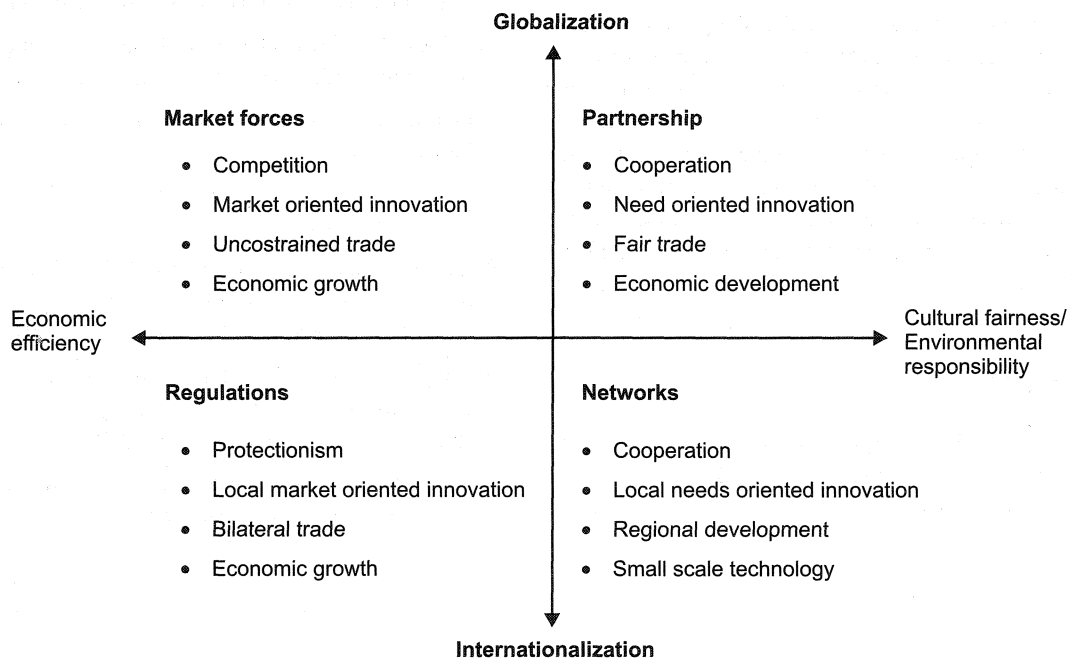


Figure 2

Referring to Lovelock's Gaia hypothesis we can argue that ecological economics recognizes that economy, nature and culture are integrated parts within a 'living' organism (Lovelock 1988). The art of progress is to preserve order amid change (Whitehead 1925/1967). Figure 2 indicates change along two dimensions. Firstly there must be a change towards cultural fairness and environmental responsibility. Secondly there are arguments for both internalization and globalization.

Internationalization, on the one hand – is based upon a federated community of real national communities. Boulding is arguing that international trade is based upon treaties alliances between different states and nations. Structures have parts and the relationship among its parts is an important element in the structure and behavior of any system.

Globalization, on the other hand – represents a cosmopolitan direct membership in an abstract global community. There are no national borders the whole world is one. Free trade presupposes free mobility of goods, capital and people. "We are no longer writing the rules of interaction among separate national economies. We are writing the constitution of a single global economy" (Ruggiero WTO)

Teilhard de Jardin is arguing that the principles of the "creative union" indicates that wherever a genuine union in human relations exists "persons do not merge into a homogenous collective, but, rather, each enables the others to develop their distinctive uniqueness" (Fabel and St. John 2007, p. 215). Collaboration can enhance human economic survival and advancement, since much mutual cooperation provides great scope and encouragement for individuality and creativity in the cause of evolutionary progress.

REFERENCES

- Berglund, S. (2007). The Function of Banks in the Economy, in Ingebrigtsen S., and Jakobsen, O., 2007, *Circulation Economics – Theory and practise*, Oxford, Peter Lang.
- Boulding, K. (1981). *Evolutionary Economics*, Sage publications, London.
- Brundtland report, (1987). *Our common future*, WCED, Oxford University press.
- Costanza, R. (2008). Our three-decade recession, Los Angeles Times, March 10th 2008.
- Costanza, R. (2008). Stewardship for a "Full" World, *Current History*, January.
- Daly, H.E. (2007). *Ecological economics and sustainable development*, Edward Elgar Cheltenham UK.
- Dawson, J. (2006). *Ecovillages – New Frontiers for Sustainability*, Green Books, Dartington.
- Fabel, A. & St. John, D. (2007). Teilhard in the 21st Century – The Emerging Spirit of Earth, Orbis Books, New York.
- Georgescu-Roegen, N. (1971). *The Entropy Law and the Economic Process*, Harvard University Press, Cambridge Mass.
- Georgescu-Roegen, N. (1975). *Energy and economic myths*, Southern Economic Journal, Vol. 41 no. 3 January.
- Kerman, C.E. (1974). Creative tension: Life and thought of Kenneth Boulding, University of Michigan press.
- Lovelock, J. (1988). *The ages of Gaia – A biography of our living Earth*, Oxford University Press.
- Ormerod, P. (1994). *The Death of Economics*, Faber and Faber, London.
- Pearce, J. (2001). *Small is Still Beautiful*, Harper Collins Publishers, London.
- Ruggiero, Renato cited in Daly, H.E. (2000). Disintegration of national economies (a post to the electronic conference of the World Bank Institute, May, 2000).
- Stuckey, P. (2009). Air money—or bringing the financial crisis down to Earth, This lively earth 10.03.2009 (<http://thislivelyearth.com/2009/03/10/air-money>).
- Whitehead, A.N. (1925/1967). *Science and the modern world*, new York, The Free press.