

Ecological Economics is Post-Autistic

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Autism: A psychiatric disorder of childhood characterized by marked deficits in communication and social interaction, preoccupation with fantasy, language impairment, and abnormal behavior, such as repetitive acts and excessive attachment to certain objects. It is usually associated with intellectual impairment. (American Heritage Dictionary of the English Language: Fourth Edition. 2000)

The post-autistic economics movement has correctly identified many of the failings of mainstream economics. With reference to the definition above, mainstream economics is autistic in its deficits in communication and social interaction with other disciplines, preoccupation with mathematical fantasy, language impairment in its limited and specialized vocabulary, and excessive attachment to certain objects (assumptions and models). This intellectual impairment has led to its inability to address many important real world problems.

Ecological economics has moved well beyond the autism of the mainstream and represents a viable post-autistic alternative. This paper describes briefly what ecological economics is, how it developed, and why it is post-autistic.

Ecological economics is a transdisciplinary effort to link the natural and social sciences broadly, and especially ecology and economics (Costanza 1991). The goal is to develop a deeper scientific understanding of the complex linkages between human and natural systems, and to use that understanding to develop effective policies that will lead to a world which is ecologically sustainable, has a fair distribution of resources (both between groups and generations of humans and between humans and other species), and efficiently allocates scarce resources including natural and social capital. This requires new approaches that are comprehensive, adaptive, integrative, multiscale, pluralistic, evolutionary and which acknowledge the huge uncertainties involved.

For example, if one's goals include ecological sustainability then one cannot rely on the principle of "consumer sovereignty" on which most conventional economic solutions are based, but must allow for co-evolving preferences, technology, and ecosystems (Norton et al. 1998). One of the basic organizing principles of ecological economics is thus a focus on this complex interrelationship between ecological sustainability (including system carrying capacity and resilience), social sustainability (including distribution of wealth and rights, social capital, and coevolving preferences) and economic sustainability (including allocative efficiency in the presence of highly incomplete and imperfect markets). A major implication of this is that our ability to predict the consequences of economic behavior is limited by our ability to predict the evolution of the biosphere. The complexity of the many interacting systems that make up the biosphere means that this involves a very high level of uncertainty. Indeed, uncertainty is a fundamental characteristic of all complex systems involving irreversible processes and ecological economics is particularly concerned with problems of uncertainty. More particularly, it is concerned with the problem of assuring sustainability under uncertainty. Instead of locking ourselves into development paths that may ultimately lead to ecological collapse, we

need to maintain the resilience of ecological and socioeconomic systems by conserving and investing in natural and social assets.

Ecological economics has historical roots as long and deep as any field in economics or the natural sciences, going back to at least the 17th century (Costanza et al. 1997). Nevertheless, its immediate roots lie in work done in the 1960s and 1970s. Kenneth Boulding's classic "The economics of the coming spaceship Earth" (Boulding 1966) set the stage for ecological economics with its description of the transition from the "frontier economics" of the past, where growth in human welfare implied growth in material consumption, to the "spaceship economics" of the future, where growth in welfare can no longer be fueled by growth in material consumption. This fundamental difference in vision and world view was elaborated further by Daly (1968) in recasting economics as a life science - akin to biology and especially ecology, rather than a physical science like chemistry or physics. The importance of this shift in "pre-analytic vision" cannot be overemphasized. It implies a fundamental change in the perception of the problems of resource allocation and how they should be addressed. More particularly, it implies that the focus of analysis should be shifted from marketed resources in the economic system to the biophysical basis of interdependent ecological and economic systems and their co-evolution over time.

Ecological economics is not, however, a single new paradigm based in shared assumptions and theory. It is instead a *metaparadigm*. Rather than espousing and defending a single discipline or paradigm, it seeks to allow a broad, pluralistic range of viewpoints and models to be represented, compared, and ultimately synthesized into a richer understanding of the inherently complex systems it deals with. It represents a commitment among economists, ecologists, and other academics and practitioners to learn from each other, to explore new patterns of thinking together, and to facilitate the derivation and implementation of effective economic and environmental policies. Ecological economics is deliberately and consciously pluralistic in its conceptual underpinnings. Within this pluralistic metaparadigm, traditional disciplinary perspectives are perfectly valid *as part of the mix*. Ecological economics therefore includes some aspects of neoclassical environmental economics, traditional ecology and ecological impact studies, and several other disciplinary perspectives as components, but it also encourages completely new, more integrated, ways to think about the linkages between ecological and economic systems.

Ecological economics has also developed a solid institutional base. After numerous experiments with joint meetings between economists and ecologists, the International Society for Ecological Economics (ISEE) was formed in 1988 and currently has over 2000 members worldwide (<http://www.ecologicaleconomics.org/>). The journal of the society, *Ecological Economics*, published its first issue in February of 1989 and is currently publishing 12 issues per year, with an impact factor ranking it in the top 1/5 of all economics journals (<http://www.elsevier.com/inca/publications/store/5/0/3/3/0/5/>). Major international conferences have been held since 1990 (<http://www.ecologicaleconomics.org/conf/conf.htm>) with attendance as high as 1500. Several ecological economic institutes have been formed around the world, a significant number of books have appeared with the term ecological economics in their titles (e.g. Martinez Alier 1987, Costanza 1991, Peet, 1992, Jansson et al 1994, Barbier et al. 1994, Krishnan et al. 1995, Costanza et al. 1997), and a fair number of university courses, certificate programs (e.g. http://www.uvm.edu/giee/giee_certif.html), and graduate degree programs (e.g. <http://www.rpi.edu/dept/catalog/97-98/Interdisciplinary/ecological.html>) have also developed.

So, is ecological economics post-autistic? The Kansas City Proposal (2001) lists seven changes needed to move to post-autism: (1) a broader conception of human behavior; (2) recognition of culture; (3) consideration of history; (4) a new theory of knowledge (beyond the positive-normative dichotomy); (5) empirical grounding; (6) expanded methods; and (7) interdisciplinary dialogue. Ecological economics certainly has all of these characteristics. Its explicit links with the natural sciences result in a more scientific approach, which is inherently more pluralistic (Fullbrook 2001) and empirically grounded. It places humans and human behavior in a broader historical, evolutionary, and ecological context (Costanza et al 1993). Humans are seen as a part of the natural world, not abstractions in isolation from nature and each other. It is problem-based, not tool-based, and its methods include any that are applicable to the problems at hand. These include everything from participatory processes (Campbell et al. 2000) to envisioning alternative futures (Costanza 2000, Farley and Costanza 2002) to complex systems simulation modeling (Costanza et al. 1993, 2002, Boumans et al. 2002). It

recognizes the importance of envisioning and the limits of the positive-normative dichotomy (Costanza 2001). It goes well beyond interdisciplinary dialogue. It aspires to be a truly transdisciplinary science.

One question is: given that ecological economics has been around since 1990 and seems to fit the bill for post-autistic economics, why has it not been recognized as such by the post-autistic economics movement which began around 2000? I can only conclude that this is just one more symptom of the autism of mainstream economics, which has been so hermitically sealed from the real world that it has not noticed (or more likely aggressively ignored) these developments and has not made its students aware of them. Now that the veil of that autism is finally being lifted, we can join forces and move together to create a transdisciplinary, pluralistic science that can help solve the pressing problems the world faces today and help create a sustainable and desirable world for the future.

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