



## Methodological and Ideological Options

## New foundations for ecological economics

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## ABSTRACT

Ecological economics has been repeatedly described as transdisciplinary and open to including everything from positivism to relativism. I argue for a revision and rejection of this position in favour of realism and reasoned critique. Looking into the ontological presuppositions and considering an epistemology appropriate for ecological economics to meaningfully exist requires rejecting the form of methodological pluralism which has been advocated since the start of this journal. This means being clear about the differences in our worldview (or paradigm) from others and being aware of the substantive failures of orthodox economics in addressing reality. This paper argues for a fundamental review of the basis upon which ecological economics has been founded and in so doing seeks improved clarity as to the competing and complementary epistemologies and methodologies. In part this requires establishing serious interdisciplinary research to replace superficial transdisciplinary rhetoric. The argument places the future of ecological economics firmly amongst heterodox economic schools of thought and in ideological opposition to those supporting the existing institutional structures perpetuating a false reality of the world's social, environmental and economic systems and their operation.

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## 1. Introduction

Early on, in the modern history of ecological economics, both Costanza (1996) and Daly (1991) appealed directly to Schumpeter's preanalytic approach as something which should inform the new movement, and in so doing both quoted the same paragraph of his *History of Economic Analysis* (Schumpeter, 1994 [1954]: 42, paragraph two). This shows early recognition of the need to clarify what is ontologically different about ecological economics and where its key concerns might lie. However, the project seems to have stalled at birth as no distinct set of coherent phenomena appeared, nor currently can be readily identified, as forming the basis of our analytical efforts. This seems to be due to the readiness to accept diversity at the cost of coherence, but more generally, to the lack of theoretical underpinning provided after the initial establishment of the society and journal.

In the first issue of this journal, ecological economics was defined by Costanza (1989: 1) as including neoclassical environmental economics and ecological impact studies, as well as encouraging new ways of thinking. The name was taken to signify an "interdisciplinary, and holistic view", although soon Costanza (1991, 1996) strongly advocated

transdisciplinarity. The journal was stated to be pursuing "a strategy of pluralism", which was left for definition, in that first issue, by Norgaard (1989) under the title of "methodological pluralism". That article remains one of the few attempts to explore the philosophy of science behind ecological economics. Norgaard discussed a specific form of positivist epistemology in economics and ecology and concluded this could neither be accepted as 'the' way ahead, due to its flaws, nor rejected, due to the practical consideration of its dominance in economics. I will question this argument and conclusion while clarifying the role and meaning of positivism. I will also argue against the all encompassing pluralism which has been advocated ever since, not least because of the resulting incoherence and brushing over of fundamental conflicts between different worldviews and the need to question the validity of those views in light of reality.

The first introductory book (Costanza et al., 1998), by leading American figures in the society, maintained an uneasy balance between requesting a new worldview, to address our social and environmental woes, and not ejecting the body of orthodox thinking. Daly, as a co-author of that book, appears to have later developed a seemingly more radical position. The introductory textbook by Daly and Farley (2004) invokes the concepts of both a new preanalytic vision for economics and a Kuhnian revolutionary change. At one point Daly and Farley propose rejection of a value basis in subjective preferences and deride pluralism. They state: "we must have a dogmatic belief in objective value, an objective hierarchy of ends ordered with reference to

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some concept of ultimate end” (Daly and Farley, 2004: 42).<sup>1</sup> However, this lacks explanation and, elsewhere, they call upon what they have attacked (e.g. marginal analysis, utilitarian explanations, mainstream models and concepts), and are happy to endorse tradable permit markets as consistent with ecological economic principles. Their main message is then that scale and distribution must be addressed prior to the pursuit of efficiency. The other main introductory text has no revolutionary claims to make but rather falls back on standard orthodox economic theory and methodology (Common and Stagl, 2005). This includes using the same philosophy of science (a form of logical empiricism) and ethical theory (utilitarianism) as associated with neoclassical economics. Such a position seems to ally ecological economics closely with mainstream environmental and resource economics. On the basis of such books, perhaps we should not then be surprised by Ehrlich (2008: 1) stating that he regards environmental and resource economics as identical to ecological economics, or that the *Journal of Economic Literature* classifies ecological economics under “Q5—Environmental Economics”.<sup>2</sup>

Such misclassifications are possible because ecological economists have not themselves made a sufficient stand as to where the differences lie. A keyword search of this journal covering 3402 articles gives one result for ontology (Baumgartner and Quaas, 2010), and four for epistemology (Baumgartner et al., 2001; Bromley, 2008; Mayumi, 1997; O'Connor, 2000). Lack of attention to the theoretical foundations of ecological economics has left it in a precarious and epistemologically confused position. Faber (2008: 4), in bemoaning the fragility of ecological economics, states: “a generally accepted theoretical framework or methodology has yet to be defined”. Similarly, Röpke (2005) has argued that the knowledge base is not well structured nor systematically organised, and that the identity of the field is weak. The conflict between a proposed new outlook and reliance on existing economic theory and methods leaves authors visibly struggling in their attempts to reconcile the differences.

The contention of this paper is that ecological economics requires solid foundations in the philosophy of science to clarify how natural and social sciences can cooperate and the extent to which they can combine in a way which meaningfully advances knowledge. Ecological economics must clarify its position on such issues as the use of mathematical formalism, the role of empiricism and the meaning of pluralism. A distinct and radical synthesis is called for in order to establish new foundations. This can be seen as relating to various calls for developing a preanalytic vision (Costanza, 1996; Costanza et al., 1998; Daly, 1991; Daly and Farley, 2004; Munda, 1997; Özkaynak et al., 2002). In doing so, we should not be afraid to articulate our ideological positions (Söderbaum, 1999). Indeed, as Schumpeter (1994 [1954]) explained, this is to be expected in the formation of a new or innovative development in economic thought.

In conducting this discussion I hope to be more precise than the seminal paper by Norgaard (1989) because he confuses, fails to address or fails to clarify the differences between ontology, epistemology and methodology, between methodological and value pluralism, and between diversity in methods as opposed to methodologies. Epistemology (from the Greek *episteme*, meaning knowledge) concerns the theoretical basis on which we create understanding of the world. This involves theories about the origin and limits of knowledge. It describes how we can form knowledge about the world and what is the meaning of truly knowing something. What comes prior to how we can know is the metaphysical (ontological) question of what exists, and so what are

the primary entities of concern in any given field, and what are their most general features and relationships. What comes after is methodology. The tools of scientific investigation form the methods and the term method should not be confused with or used as shorthand for methodology (as is too often done). Methodology concerns the principles that determine how such tools are deployed and interpreted. Methodology is used in two senses referring to (i) the principles and practices that underlie research in a discipline or subject area, and (ii) the appropriateness of the methods. This requires general principles about the formation of knowledge in practice and so becomes interrelated with the theory of knowledge (i.e., epistemology); in economics, methodology is often used as synonymous with epistemology. Overall we can simplify the philosophy of science as a progression from ontology to epistemology to methodology to methods.

This paper does not pretend to be definitive but rather aims to provide some theoretical reflections about the type of ontology, epistemology and methodology which appear most suited to such an interdisciplinary enterprise as ecological economics. Next, in Section 2, the background to epistemological confusion in ecological economics is explained as deriving from a misinterpretation of logical empiricism and its role in economics. This has led to arguments simultaneously attacking positivism in general while arguing for its inclusion alongside conflicting epistemologies under a supposed pluralism. Understanding this confusion requires placing positivism and logical empiricism in context and explaining the development of the latter and its role in economics. This also provides some introduction to key aspects of an empirical epistemology which should inform ecological economics. Section 3 follows this discussion with the case against the existing form of methodological pluralism in ecological economics. Section 4 moves on to explore the concept and meaning of a preanalytic vision and pursues this in the context of refining an ontology and epistemology for ecological economics. Section 5 brings the discussion together via a set of tentative propositions on ontology, epistemology, methodology and ideology. The overall aim is to initiate a debate within ecological economics as to its meaning and future direction.

## 2. Epistemology in Science and Economics: Positivism and Logical Empiricism

In economics, standard undergraduate texts start by distinguishing positive (value free) economics from the normative (value laden); the is/ought dichotomy going back to Hume. The former is generally regarded as the ‘scientific’ branch, and the division is one which claims facts are separable from values. Furthermore, the implication is that positive economics can establish causal relationships as true in an objective sense, i.e. which nobody could logically deny.

Norgaard (1989: 51) has argued that ecological economics should include the dominant methodology in economics, which he believes is logical positivism. He claims that adopting an alternative would exclude “nearly all of economics”. Simultaneously, he is highly critical of the approach and advocates a conflicting historical descriptive methodology, with reference to the German historical school.<sup>3</sup> More recently, Söderbaum (2011: 1019) has stated that “there will certainly be a role for positivism also in the future”, although he then proposes social constructivism and hermeneutics, as better able to aid our understanding of sustainability policy. These types of ‘pluralist’ proposals leave unanswered how such divergent and conflicting approaches are to be made compatible. The implication is that ecological economics needs positivism, even if supplemented, but what exactly is being recommended?

<sup>1</sup> This position is left rather unexplained with merely a reference to a book by C. S. Lewis, the Christian apologist. God is mentioned as a possible ultimate end and so source of objective value. There then almost seems to be an implicit appeal to Natural Law behind this.

<sup>2</sup> The more specific entry is “Q57—Ecological Economics: Ecosystem Services; Biodiversity Conservation; Bioeconomics; Industrial Ecology”.

<sup>3</sup> For a brief overview of the historical school see Sandelin et al. (2008: 64–78).

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