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# **The Problem of Methodological Pluralism in Ecological Economics**

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# **Methodological Pluralism and Ecological Economics**

## **ABSTRACT**

Methodological pluralism advocates balanced consideration of multiple research methods. The concept rests upon the necessity of choice in the absence of conclusive principles to guide the preference of method. Ecological economics, however, has a coherent theory crafted along its biophysical worldview and moral commitments. These imperatives guide the choice of method and favour a reduced range of methodological possibilities to the exclusion of neoclassical economic options. If ecological economics is seen as an ideological opposite of neoclassical economics, it would require a selective methodological strategy rather than maintaining methodological diversity. Maintaining diversity may erode the basis of its heterodox criticisms by requiring openness to the orthodox alternatives. Ecological economics has shown difficulty in sustaining its long-standing pluralist commitments while increasingly seeking clear differentiation from its monolithic “enemy”.

## **KEYWORD**

Methodological pluralism; methodological diversity; value pluralism; ecological economics; neoclassical economics.

**JEL:** Q57, B41, B59

## **1. Introduction**

Since its inception ecological economics (EE) has been treated as a synthesis of multiple knowledge systems (Martinez-Alier 1987, Costanza and Daly 1987) in line with the emerging model of post-normal science (Funtowicz and Ravetz 1994, Müller 2003, Spash and Ryan forthcoming). Over the years many definitions and formal methodological structures have been proposed in an effort to forge a concrete disciplinary identity. There has been modification of definitive perspectives in the search of theoretical coherence. One example is concerned about the disciplinary recognition of and tolerance to competing theories about the ecological economy.

Within the field there is a shared belief that the multiple ways of understanding are incongruent. Norgaard (1994, p. 96) doubted that “our multiple ways of understanding different aspects of ecosystems can be merged into one coherent view”. The reason is that the multiple incomparable models of knowledge production have meaning only in the context of their respective models. Nonetheless, it is worthwhile to pursue interpretative consensus and engage in shared problem-solving processes. This is the ultimate goal of EE, which is defined as “an effort to hasten a particular merger by pushing ecological understanding towards economics, and economic understanding towards ecology” (Norgaard 2003a, p. 1). Historically, scientific advancements have benefited from strengthened methodological disciplines. The

“particular merger” seems to be undergoing a similar endeavour; it is tempting to strive for theoretical coherence, yet sometimes at the expense of pluralism.

Pluralism embodies the absence of an *a priori* rejection of ideas (Bigo and Negru 2008). Initially, EE was intended to be pluralistic, or moderately eclectic. Neither is it associated with a single methodology (Common 1995), nor seen as an alternative to any of the existing disciplines (Costanza et al. 1997a). Coexistence of competing paradigms and the legitimacy of expressing progressivist ideas were recognized in the pluralistic process of knowledge production (Maxwell and Randall 1989). Some mainstream economic ideas gained recognition from prominent ecological economists, such as tradable birth rights (Daly 1991) and monetization of Nature’s services (Costanza et al. 1997b). The discipline was amenable to the principle of methodological pluralism (Norgaard 1989), and not deemed to be in a dichotomous relationship with its mainstream counterparts (Røpke 2005).

This theoretical openness, however, is called into question in the wake of the social turn of EE (Spash 2011). The discipline is envisaged as a rival of neoclassical economics (Waring 2010, Pelletier 2010), and unlimited use of multiple methodologies is questioned (Spash 2012, Baumgärtner et al. 2008). Surveys show that monetary valuation studies, in particular, have received intense criticisms from the EE community (Illge and Schwarze 2009). Yet, the hostility to neoclassical

economics seems to ignore the fact that it represents a different set of values that may have moral legitimacy. For this reason Müller (2003) raises the concern that the open inter-disciplinary dialogues required by post-normal science are prematurely closed down by the belief that the ideas of EE are necessarily true whereas those of the neoclassical are not. EE may end up running in the direction of a normal science – not by accepting everything from mainstream economics, but precisely by doing everything exactly in the opposite way.

In creating a coherent theory the role of methodological pluralism requires reconsideration. A methodology involves a body of practices, procedures and rules used by those who work in a discipline or engage in an inquiry. Scientists rely upon methodologies to examine research hypotheses or to reach inductive conclusions. Methodological pluralism refers to the advocacy of the use of a range of methodologies for scientific inquiry and is justified by the absence of meta-principles for the choice of method (Dow 1997, Samuels 1997). The concept, however, may be incompatible with the imperatives of EE (Spash 2012, Lo, Ryan and Spash 2010).

Methodological pluralism has been a fundamental principle of EE since Norgaard's (1989) seminal article explicating its significance in advancing sustainability research. According to Norgaard (1989), contemporary societies are confronted with ecological challenges that are fraught with uncertainties and

complexities. Considerable system variability and instability makes no single way of knowing compelling or sufficient. Multiple insights are required to cope with unpredictable environmental changes and guard against mistaken actions resulting from single perspective. Conscious maintenance of methodological diversity is crucial to enhancing adaptive capacity.

In EE, a seemingly similar concept “pluralism as a methodology” has recently gained prominence. Pluralism as a methodology refers to particular approaches which recognise that environmental issues can have plural and incommensurable values. Examples include multicriteria analysis and deliberative valuation. Along with this trend is the suspicion about the value-monistic methodology of neoclassical economics, exemplified by cost-benefit analysis (CBA). However, methodological pluralism precludes rejection of such methodology in *a priori*. To argue otherwise requires some meta-principle to define a methodological strategy. Tension may arise when the pluralistic approaches are justified by a unifying meta-principle, which entails a selective methodological strategy privileging a particular group of research methods, such as multicriteria analysis, and marginalizing others, such as CBA. Addressing value pluralism has better prospects within a well-defined cluster of methodologies rather than an all-encompassing domain.

Within the field of EE there actually is resistance in theory and practice to the

idea of methodological pluralism despite rhetorical use being made of. Spash (2012, p. 36), for example, rejects “the form of methodological pluralism which has been advocated since the start of this journal [Ecological Economics]”. He argues that unstructured methodological pluralism is the antithesis of creating knowledge and understanding within EE, which is in “ideological opposition” to the neoclassical economic schools of thought. The sceptical view coincides with the isolationist tendency of heterodox economics, in which pluralism is actually seen as a secondary priority and honoured only insofar as it does not conflict with its ideological preference (Garnett, 2006).

These concerns warrant clarifications about the justifications of methodological pluralism. The principle of pluralism, as understood by Norgaard (1994, p. 96), is predicated upon the incommensurability of multiple knowledge models. The reasoning is that contradictions between models which do not fit into a single account preclude reliance on a single methodology for dealing with multiple problems. I argue that, however, the mere lack of comparability between models and data sets does not warrant the virtues of pluralism. Irreducible conflicts between alternatives do not prevent making a choice between them. An alternative could be selected based on some pre-determined criteria, by which knowledge of differences would only make the choice easier. If we are uncertain that, for example, continued material growth is

impossible, then any model of growth that affirms such a possibility should be rejected; in that case, the more differences between these models we acknowledge, the stronger the reason *not* to consider the other one. Certainty in our preference allows a choice to be made between alternatives, regardless of their differences. This is not precluded by failures to make comparison in a meaningful way. An analogy is that multilingual broadcast creates confusion to those who can only speak English – making different languages available to them is unnecessary if not problematic. The incongruity or incommensurability of models is not a sufficient condition for pluralism.

The incongruity argument therefore cannot explain why methodological pluralism is rejected precisely because of the irreducible conflicts between neoclassical economics and EE in ontological and epistemological terms (e.g. Spash, 2012). Norgaard (1989) fails to explicitly recognize the sufficient condition for pluralism, i.e. the inconclusivity of methodological merits. Instead, pluralism is couched in terms of acceptance of multiple insights (Norgaard, 1994, p. 97). Such an all-encompassing approach is not consistent with the claim that EE is methodologically distinctive from neoclassical economics. Likewise, Tietenberg and Lewis (2010) believe that EE is methodologically pluralist but competing with the neoclassical. What has been ignored is that the rival relationship would eventually

discourage non-rhetorical advocacy of pluralism within the discipline, raising questions about the compatibility of this concept with EE.

The present paper aims to clarify the concept of methodological pluralism and elucidate the case against it. Being an “ideological opposition” to the neoclassical tradition, EE is not amenable to a strong form of pluralism<sup>1</sup>. Pluralism is *about* various monistic approaches and does not offer an argument against individual approaches. This paper provides explanations, beginning by unpacking the theory of methodological pluralism, followed by a discussion on its incompatibilities with the shared aspirations of ecological economists.

## **2. The Concept of Methodological Pluralism**

Plurality refers to the existence of a range of perspectives concerning a given issue which might be incompatible with each other. Pluralism is a normative principle that allows for an appreciation of plurality and provides an approach to settle the issue of plurality by clarifying the relationship between the different perspectives. The degree of pluralism is higher when the theories in question are substitutes than if they are complements (Mäki, 1997); it increases with the lack of a common ontological and epistemological framework.

Unlike “pluralism as a methodology”, methodological pluralism is a meta-

methodological position, providing a set of normative rules for the assessment of methodological positions (Dow 1997, 2004, 2011). At the core is a disposition to non-rejection of diverse positions, rather than an inclination to accept all of them. According to Samuels (1997), methodological pluralism 1) affirms either that there are no methodological or epistemological absolutes or that no such absolutes have been demonstrated unequivocally; 2) rejects any *a priori* exclusivist attempts that seek to establish a single methodology as unequivocally superior or to give a privileged position; 3) does not deny the usefulness of any one position constituting an antinomy; and 4) maintains that no position can be conclusively disregarded on *a priori* grounds. Methodological pluralists accentuate the argument of methodological inconclusivity.

A position that contrasts methodological pluralism is methodological exclusivism, which holds that there exists just one proper method for inquiry (Roth 1987). This concept presupposes one set of credentials as necessarily *a priori* superior to another. Methodological exclusivists adopt a single unequivocal, conclusive meta-principle by which to decide acceptance of epistemology and methodology. Methodological exclusivism has been championed by those who celebrate a unity of method between the natural and social sciences. In contrast, pure methodological pluralism entails a rejection of any unity-of-method thesis (Roth, 1987).

The underlying reasoning behind holding a methodological pluralism position is self-insufficiency of individual theories. Each system of knowledge captures only a partial view of reality (Dow 1996). Since knowledge is in general held with uncertainty, there is no single conclusive basis for identifying the best way of building knowledge (Dow, 2004). The necessity of methodological pluralism decreases with the capability of distinguishing good theories from bad ones (Caldwell, 1989). The more capable the scientists are of identifying conclusive criteria of assessment, the more limited set of theories they could and would adhere to. Should they be successful, eventually a single theory would be sufficient. “Assessment would be a straightforward matter; if a methodology accorded with the criteria, accept it; if not, reject it” (Caldwell 1989, p. 44). Certainty about the validity or legitimacy of theories renders methodological exclusivism more compelling than pluralism.

Among these pluralists there are nuanced views about the notion of certainty. The definition by Samuels (1997) is grounded on the ethical argument that irreducible diversity should be maximally tolerated and every set of methodological credentials be recognized. For Samuels (1997), “pluralism at all levels is the key” (Caldwell 1997, p. 102). Caldwell (1982, 1989) proposes a less eclectic alternative called “critical pluralism”, where methodological pluralism is understood as “instrumentally good” by capturing a range of theories for evaluation. Since it may be associated with

“some bad results” such as anarchism, criticisms in the methodology’s own terms are essential to combat the deficiencies, through which “some methodological views are shown to be better than others, and the number of competing positions is reduced” (Caldwell, 1989, p. 45). Dow (1997, p. 95) is critical of Caldwell’s account as the latter “appears to regard a wide plurality of methodologies as a regrettable necessity, and looks forward to the outcome of methodological pluralism as being a narrowing-down of possibilities”.

The idea that the total set of methodological choice can ultimately be reduced to a narrower set pertains to a closed-system epistemology. According to this view, there is a hierarchy of theory and the task for researchers is to clarify it through inspection of a broader set. However, justifications for methodological pluralism become unclear when it is subtly associated with a unitary epistemology and/or ontology (Dow, 1997). Dow (1997, 2004) is convinced that a pluralist epistemology is essential as certainty of knowledge is inherently unattainable and each methodologist interprets the uncertain parts and tells their own “story” from subjective experience. When the understanding of reality is construed as being socially constructed and value-laden, no criteria of assessment can be universally accepted. If an objective truth could be demonstrated, only the method by which it is validated would be needed to advance the science<sup>2</sup>. Otherwise invalidated subjective judgements entail balanced

consideration of multiple methodologies.

None of the named methodological pluralists accepts an “anything goes” approach. The thrust is to encourage scholars to recognize alternative methodological credentials and make their own studied determinations as to which set of credentials to accept and within what limits (Samuels, 1997). Dow (1997) is particularly concerned about the possible outcome of methodological anarchy, noting that unstructured forms of methodological pluralism imply an unproductive “non-methodology” position where no scientific discourse could be considered tenable. Dow (2004) insists that constraints are needed and proposes the idea of “structured pluralism”, which is based on a pluralist epistemology but does not accept the range of methodological approaches as infinite.

Mere recognition of differences is not a sufficient condition of methodological pluralism. Awareness of incompatible features does not automatically lead to affirmation of plurality; it is compatible with and indeed required for justifying considered exclusion of alternative positions. Ecological economists aspire to merge economics and ecology, and increasingly demand for theoretical coherence within the field. The endeavour is guided by a set of meta-principles by which the merits of various methodologies could be determined. While their arguments indicate the distinctive elements of EE, they are actually compatible with a diminishing range of

methodological possibilities.

### **3. The Methodological Preference of Ecological Economics**

Integrating knowledge requires the ability to decide on the validity and legitimacy of theories and methodologies. Only when diversity is deemed to be an impediment to knowledge advancement or collective action is integration a relevant issue. Faber (2008), concurring Røpke (2005), worries that the field is not well structured and fragile, and its identity is weak. The lack of coherence remains a concern to Waring (2010) and Spash (2012), among others. There is a growing interest in enhancing theoretical coherence and sharpening disciplinary identity by demarcating from alternative economic traditions, notably neoclassical economics.

#### *3.1 Resistance to methodological pluralism*

Diverse ways of defining research problems can lead to incongruity, which is conceived as a major impediment for the field: “Persistent disagreement both as to the interpretation to be given to sustainability, and as to the relation between ecological and economic sustainability, has hindered the development of an ecological economics” (Common and Perrings 1992, p. 7). To Norgaard (2004), fragmentation of knowledge is a regrettable reality of the current science, hampering prospects for

collective action. He posits that EE is devoted to aggregating the fragmented understandings of complex problem across disciplinary confines into a coherent, shared set which brings scientists closer to reality. The science involves the art of weaving pieces into a bigger picture within a yet-to-be-recognized frame. Such a perspective portrays methodological pluralism as being a means to an end. While the absence of conclusive meta-principles of scientific practice is a premise of maintaining methodological plurality, adherence to the requirements of methodological pluralism can become a barrier to the integration of straddled fields.

Concerns have been raised as to the possible outcomes of methodological anarchy. There is support for a unity of science under the scope of the biophysical economy. Martinez-Alier (1987, p. 211), for example, endorses Otto Neurath's proposal for a unified science, which involves "elimination and overcoming of contradictions between the propositions of difference sciences". Irreducible conflicts between research methods are alluded to but avoided: "Neurath believed in a strict unity of method, but this question can be left aside" (Martinez-Alier 1987, p. 207).

Baumgärtner et al. (2008, p. 391) unambiguously state that methodological pluralism "requires a unified basis", as the otherwise unfocused framework might result in an "unconditional and arbitrary openness" confusing the selection of method. A "general and unifying methodology" is proposed "to develop a common basic

construction of the world”, through the application of generic modelling to individual cases (Baumgärtner et al. 2008, p. 388-389, see also Baumgärtner and Quaas 2009). Baumgärtner et al. (2008, p. 391) believe that their proposal is able to provide “a meta-methodological *criterion* of how to do EE”, and “can serve as *guidance*...for every individual contribution to EE”. The purpose of inter-disciplinary research is understood as to link up various research traditions to form a coherent whole with greater problem-solving capacity. The heterogeneity of method is to be reduced in search of coherence.

Likewise, Venkatachalam (2007, p. 556) complains that the scope of EE has been “too vast”, “focusing on too many areas”, and that the ideological divide between disciplines has made “hurdles for inter-disciplinary research”. Behavioural and experimental economics are identified as a unifying basis for EE to realize a “convergence in the theoretical frameworks” (Venkatachalam 2007, p. 552) that could then be applied to an incredibly wide range of applied topics, from resource allocation, economic valuation, the role of technology, population, ethics, to the maintenance of capital stock. Venkatachalam (2007, p. 556) believes that EE should strive, but has so far failed, to provide such a “widely accepted theoretical framework”.

Methodological pluralism has been regarded as a barrier to knowledge

advancement. As suggested by Waring (2010, p. 719):

ecological economics seems to be casting the net too wide.....It is not that pluralism per se is damaging, but rather that science depends on having both a subject matter and consistent means of addressing it.

In a similar vein, Spash (2012) argues that uncritical pluralism creates contradictions within the field. Methodological pluralists “must either indiscriminately accept everything” at the expense of knowledge coherence, or accept some grounds for rejecting objectionable ideas (Spash, 2012, p. 41)<sup>3</sup>. He is convinced that the “incompatible orthodox [economics]” has to be excluded to move ahead with alternative theories and practice, and there is a clear need to jettison the current form of methodological pluralism. Not all differences are tolerated within the frame of a pluralist methodology (Spash, 2011). His recognition of pluralism is preceded by expelling the orthodoxy and neoliberal ideas.

These ecological economists recognize the fact of plurality, but not a permanent place for methodological pluralism. Underlying this view are predispositions to an alternative worldview and associated ethical imperatives, by which methodologies can either be accepted or rejected conclusively, both violating the principle of pluralism.

### *3.2 Demarcation criteria defining the scope for pluralism*

Ecological economists generally share a biophysical conception of economy and a moral commitment to long-term sustainability and inter-generational equity. There is a firm belief that the economy is embedded into the ecosystems and human activity should not exceed the carrying capacity of the earth or the well-beings of future generations would be compromised. The shared worldview and commitments manifest as a set of “demarcation criteria” (Garnett, 2006, p. 531) which favour engagement with a limited range of methodologies.

The study of EE was initiated by a group of concerned scholars aspiring to draw economists’ attention to the role of the entropic and other related concepts (Røpke, 2005). Its scientific foundations are couched in terms of energy and material flows. The environment-economy relationship is interpreted in ways that the laws of energy and matter allow. The discipline is characterized by a cross-disciplinary application of concepts and beliefs like the laws of thermodynamics, ecological resilience, irreversibilities in production, non-linear equilibrium, and limited substitutability of goods, etc (Costanza 1991, Costanza et al. 1997a, Daly and Townsend 1993, Perrings 1997). These presuppositions constitute what Özkaynak et al. (2001, p. 3) called “a consensus in the ecological economics literature about how the world works”.

Herman Daly’s (e.g. 1987, 1996, 1999) contributions were particularly influential suggesting that even a seemingly healthy modern economy has biophysical

limits. In search of a shared perception of an ultimate end, however, Daly has distanced himself from the “modern devotees of pluralism”, when he avers that “we must have a dogmatic belief in objective value, an objective hierarchy of ends ordered with reference to some concept of the ultimate end” in favour of “subjective opinions” (Daly and Farley 2011, p. 43). Daly’s “dogmatic belief” indicates a closed-system epistemology (Dow, 1997, 2004) by which what should be included in analysis and how can be determined.

This macro-ecological perspective affirms the possibility of unifying principles (Pelletier 2010). Conceptual grounds for a unifying science are based upon an “ecologized” view of the economy. The realities outlined by this view, called “second law realities” (Rees 2003, p. 36), which refer to the second law of thermodynamics, or entropy law, are regarded as the single most important foundation for the field striving for coherence. The “dogmatic belief” in the biophysical realities entails a radical form of economic restructuring, i.e. steady-ready economy (Daly, 1996), or even de-growth, which is seen as a “necessity” (Klitgaard and Krall in press, p. 5). Alternative conceptions of the economy are not part of the unifying project.

In conformity to these assumptions, EE is committed to developing a common analytic framework in which the embeddedness of human economy in the geobiosphere of the Earth is recognized (Faber, Manstetten and Proops 1996, Proops

1989, Røpke 2005). According to Faber et al. (1996), EE is an interdisciplinary inquiry providing a “forum”, or a space for theorizing human-natural interactions in various terms. They suggest that the growing interest in the entropic foundations “has encouraged the opening up of world views” (Faber et al., 1996, p. 10 and 14). Yet this “forum” remains open up to a point, which is confined to the “same concepts” in their ecological discourse, e.g. the entropy concepts. These concepts enable ecological economists “to use one language to speak on problems of both economy and ecology” for the reformulation of economic theory, with “teleology as a unifying approach to natural and social phenomena” (Faber et al., 1996, p. 169). The use of multiple “languages”, such as the neoclassical market theory, should then be discouraged. The “forum” operates in the presence of shared terms of reference.

The outcome is an ideological tendency influencing the choice of methodologies. This has been admitted by a group of founding ecological economists, including Daly and Norgaard, in a textbook on EE (Costanza et al., 1997a). In spite of their stated commitment to methodological pluralism, they note that although ecological economists are diverse, “the largest “cluster” works from the initial premise that the earth has a limited capacity for sustainably supporting people and their artifacts...” so that the textbook “pursues one dominant approach to the field” (Costanza et al., 1997a, p. 75). In fact, there is an increasing proportion of formal and empirical

methods being used in EE research since 1989, suggesting the declining popularity of their alternatives (Silva and Teixeira 2011). The range of research methods actually adopted has not gone more diverse over time.

Ecological economists address the social goals of intergenerational fairness and justice under the scope of the biophysical economy. Many of them are frustrated by the narrow focus of mainstream economics on anthropocentrism, methodological individualism, and technological optimism. As an alternative, EE is steered toward those theories of ethics benign to collective well-being. The theory of justice and political philosophy of John Rawls (1971, 1993) appear particularly attractive to ecological economists. David Pearce (1987) devoted a whole paper to defend the Rawlsian conception of justice as a foundation for EE. According to this theory, intergenerational ethics is interpreted in terms of an “original position”, where an individual would operate with no knowledge of her own individual status and interest in the society when she is going to make a decision regarding allocation of collective resources, that is, no knowledge of whether she would be advantaged or disadvantaged as a result. This idea of “veil of ignorance”, in effect, asks individuals to inhibit personal interest and think about every other current and future individual. Prominent ecological economists such as Costanza (1996, 2000), Daly (1987), Howarth (1995, 2007) and Norton (1989) have generally appeared positive to the

relevance of the work of Rawls.

The influence of the Rawlsian concepts is evidenced in the debates on values and valuation methodology. In EE environmental values are analyzed at a social and institutional level. Howarth's (2007) sustainability criterion is in part couched in Rawlsian terms. This approach to rights and entitlements is underlying his theory of deliberative monetary valuation (Howarth and Wilson 2006, Wilson and Howarth 2002). Pelletier (2010) is not convinced by the Rawlsian approach. Alternatively, he advances a communitarian conception of justice as the ecological economic ethic which proceeds from an understanding of the economic actor as community member. In either case, a departure from self-interested orientations and methodological individualism is expected.

To work within the Rawlsian or communitarian conception does not require a wide range of methodological possibilities. The Rawlsian theory of democracy deals with the challenge of value plurality by enforcing an institutional framework crafted with a liberal political values storyline (Rawls, 1993). An ideal outcome is convergence of plural values towards a particular end - a singular end. A methodological criterion can then be specified for EE by outranking impartial interest as a moral foundation. As such public value is no longer defined around the individual, there is no compelling reason to devise or employ methodologically individualistic

valuation techniques. Practitioners should then choose those research methods that can capture other-regarding rather than self-regarding values and interests, and facilitate collective rather than individual considerations.

The substantive definition of subject matter means that the choice of method is far from inconclusive. When the subject matter of EE can be defined by an ever sharper social-individual dichotomy, the choice of method would become dependent upon which side of the dichotomy the researcher supports. Consequently the choice could only become more straightforward as a particular set of methodologies would prove consistently more attractive than others. Examples include the use of deliberative valuation techniques (Lo and Spash in press). Allowing an exclusive focus on impartial considerations has been suggested by Wilson and Howarth (2002) and Soma and Vatn (2010) as the justification for adopting deliberative approaches.

For ecological economists, the type of uncertainty that justifies the use and study of plural methodologies is based on acknowledged ecological and ethical complexities, rather than the epistemological or methodological assumptions. The latter case in its purest form provides no conclusive criterion for assessment of theories or methodologies as explained in the previous sections, but the former is itself such a criterion. That is, the states of the human-nature dynamic are uncertain, making uncertainty-acknowledging research approaches necessary. The science is not entirely

uncertain as to whose expertise and values count (e.g. thermodynamics) or do not count (e.g. neoclassical theory of value). It is not inconclusive as to the merits of available methodologies.

The vision of EE is largely shared among practitioners at an abstract level: “The first-priority policy question is a scientific one” (Peet 1992, p. 220), and environmental sustainability is a “*priori*”, “higher” value (Norgaard 2003b, p. 31). The product is a weak form of methodological pluralism grounded upon a hierarchy of theory. Although it is recognized that no single way of portraying the ecological economy is generally right (Norgaard 1989), there is a generally wrong one, i.e. the neoclassical way.

### *3.3 Scepticism over neoclassical economics*

The widely shared physical and social criteria of EE support a compelling case for ruling out the methodologies permeating neoclassical economics. Full enforcement of these criteria would exert both upward and downward effects on the growth in the range of methodology. The former comes from the introduction of new research methods, such as ecological footprint assessment and multicriteria evaluation. The latter is evidenced by the general resistance by many EE practitioners to reductionist research approaches, notably CBA.

An exclusivist stance influencing the choice of methodologies is evidenced in many writings. For example, Common and Perrings (1992, p. 8) argues that “[a]n ethical shift away from the values that privilege consumer sovereignty” is vital. However, this is followed by an affirmation of just another hierarchy of theory that licenses for a transfer of the privilege to another category of value: “an ecological economics of sustainability implies an approach that privileges the requirements of the system above those of the individual” (Common and Perrings, 1992, p. 32).

To account for systems uncertainties, non-reductionist approaches are advocated (Holt and Spash, 2009). Ecological and neoclassical economics are then seen as a dichotomy because the latter is characterized by methodological reductionism (Douai 2009). Advocates of EE who consistently argue for holism have to confront their neoclassical counterparts. Thus Douai (2009) rejects neoclassical economics and questions Martinez-Alier et al.’s (1998) position of “not against giving economic value”. There is little confidence in the mainstream: “the neoclassical paradigm and its value concept have to be given up” (Söllner 1997, p. 175). Divorce from the orthodox school is supported by Spash (2012, p. 46): “If people wish to undertake such [neoclassical] approaches they should do so elsewhere”. Ecological economists act as “paradigm warriors” (Garnett 2006, De Langhe 2010) in search of demarcation criteria that render EE distinct from and superior to neoclassical economics.

CBA is the definitive methodology of the orthodoxy under prolonged attack for the assumption of value commensurability, denial of the existence of inalienable rights, privileging consumer sovereignty, and contributing to distributional inequity (Söderbaum 2000, 2008, Spash 2008, Gowdy and Erickson 2005). Given these views, the role of CBA must be considerably limited. As Bergström (1993) argues, CBA is defensible only in individual choice case. It is unsuitable for the case of strong sustainability invariably involving ethics and uncertainty (Munda 1996, Spash 2002). Ecological economists troubled by the omnipresence of CBA in economics are convinced that limitations on the choice of method are necessary. Peet (1992, p. 222) avers that CBA “is no longer seen as an appropriate methodology”, since it cannot achieve ends determined by ecology and ethics. More generally, “[t]he methodology of economic investigation is failing” (Spash, 2002, p. 198). The practitioner survey conducted by Illge and Schwarze (2009) has shown that the EE community is generally hostile to monetary valuation of the environment.

While few ecological economists completely deny any role for CBA, many of them have a common understanding about the biophysical economy and share a hierarchy of theory. The shared, substantive ontological and epistemological premises define the range of methodologies allowed. On this basis, some methodological options are ruled out. Ruling out rival claims results in lowering heterogeneity.

Scepticism over the neoclassical economic theory has been followed by a preference for a narrower methodological spectrum. The clear resistance to the use of CBA, in particular, goes hand in hand with the rising concerns over the eclectic scope of methodological pluralism. In confronting with the neoclassical schools, ecological economists struggle to appreciate the virtues of methodological pluralism. The next section shows how some ecological economists struggle with this concept and how EE, as they define, is incompatible with it.

#### **4. The Challenges of Pluralism under Defined Preference**

##### 4.1 Struggling on pluralism

EE has a broader scope of analysis, but its normative premises are built upon a preanalytic vision diverging from neoclassical economics in significant aspects. The necessarily exclusive focus on these premises delimits the range of values admissible to EE research. For example, an ideological belief shared among ecological economists concerns the necessity of managing population growth and the scale of economic activity (Daly 1996, Spash 2012). EE is thus critical of any policy agenda in favour of continued material growth, which nevertheless has received general support from many people living in the global South and may be considered legitimate in consideration of their historical sufferings and distributional justice (Ikeme 2003).

The conservative commitments impose restrictions on the choice of research methods.

The pluralist claim then becomes hard to sustain.

The proposed marginalization of CBA alike indicates a belief that the field would be better served by a limited range of research methods. Individual research approaches, such as induction and deduction, or reductionism and holism, do not directly compete with the concept of methodological pluralism. Failures to understand the non-exclusive nature of pluralism result in inconsistencies and ambivalence among practitioners regarding the appropriate methodological strategy for EE. Costanza and Daly (1987, p. 7), for example, define EE as an attempt to effect “a true synthesis of economics and ecology”, which seems at odds with their latter view that it is “not a new single paradigm based in shared assumptions and theory” (Costanza et al., 1997a, p. 49). The question that how such a “true synthesis” could be achieved in the absence of converging beliefs remains unclear. Although the discipline is claimed to be deliberately conceptually pluralistic, it has been steered toward a holistic systems approach in preference to a reductionist one (Sahu and Choudhury 2005, Costanza et al. 1997a).

Martinez-Alier (2005, p.35) concurs with this view by suggesting that “ecological economics, based on methodological pluralism (Norgaard, 1989), must not follow the reductionist road”. Yet, this is not only in conflict with his appreciation

of Otto Neurath who may be identified as a methodological exclusivist, but also self-contradictory, because pluralism does not require repudiation of reductionist research approaches. Likewise, O'Neill (2004, 2007), in defending the methodological pluralist position of Neurath, rejects reductionist approaches. Neurath advocated an "orchestration of the sciences", in which propositions which do not connect with the "general structure of laws" "have to disappear" (Martinez-Alier, 1987, p. 211). Expelling alternatives (e.g. CBA) that are not attuned to the main rhythm is required to pursue a unity of science. In these studies, the advocacy of methodological pluralism is conditioned upon the existence and acceptance of a common framework for the choice of methods, rather than the absence of it. It is understood as an attempt at integration guided by defined principles, by which, however, exclusion of incompatible approaches is permitted.

Value pluralism is an imperative of EE (Costanza et al. 1997a, Spash 2011). Ecological economists who are sympathetic to plural values tend to be suspicious of the mainstream economic methodology. Douai (2009, p. 274, original emphasis) contends that as far as Nature is concerned, there is no place for the neoclassical-utilitarian conception: "the various modes of valuation of natural wealth relate to realms such as politics, ethics and aesthetics, *and not to the economic realm*". This position fits oddly to his pledge to deal with "plural modes of human valuation"

(Douai, 2009, p. 262). A similarly self-contradictory claim is made by Pelletier (2010) arguing for rejection of the neoclassical economic account to achieve a plurality of objectives. The kind of plurality recognized by Douai (2009) and Pelletier (2010) does not acknowledge the fact that the neoclassical approach represents an alternative moral end supposed to be subsumed under a pluralist framework. There is a lack of understanding of pluralism as a meta-position that regulates the interaction of various positions.

The calls for inter-disciplinary dialogues are not open to the orthodoxy and its methodologies. Söderbaum (2000, p. 214) argues that neoclassical economics should be actively debated and “issues related to values, ethics, and ideology should be discussed more often” in EE. Yet he suggests one way to do this is “to exclude papers built on cost benefit analysis and so-called contingent valuation” (Söderbaum, 2000, p. 215), because “[a]s scholars we cannot suggest methods (cf. Cost–Benefit Analysis) that are incompatible with democracy” (Söderbaum 1999, p. 162). One may then wonder how much space would be left to the discussion in the absence of the defenders of CBA which happens to be a dominant type of what is meant to be discussed. Söderbaum (2000, 2008) has reiterated his recognition of the existence of multiple and competing ideological orientations, but only one of them, i.e. “radical interpretation of sustainable development”, is seen as the cornerstone of EE. Pluralism

is thus sought from within a single ideological domain, rather than across ideological divides.

Silva and Teixeira (2011) define post-normal science in terms of multiplicity of methods and claim that it has been realized in the field of EE. However, their citation analysis indicates a research trend of empirical formalism, which is an initial sign of declining, rather than increasing, openness to different methodologies, coinciding with Sagoff's (2011) observation. Changes in positions have also been observed. For instance, Spash's (2012) rejection of methodological pluralism is preceded by a preference for it (Spash, 2009, p. 256). Pearce's (1987) affirmation of Rawls's theory of justice as a foundation of EE is slammed by his later claim that "non-economic approaches have failed" (Pearce 1998, p. 206).

There are persistent struggles on formulating an appropriate methodological strategy for EE. Methodological pluralism does not fit squarely into the defined ambits of the field. Indeed, as I explain in the next section, diversity is a hindrance when coherence is needed to complete a theory.

#### 4.2 Methodological diversity as a problem

The theoretical justifications for a strong form of methodological pluralism in EE are

not clear. The pluralist would refrain from consciously denying any of the existing economic methodologies on *a priori* grounds. If EE is the diagonal opposite of neoclassical economics, any relative methodological advantage it has must be a weakness of the other. Justifying the use of a research methodology for EE would mean downplaying its alternatives adopted by its neoclassical counterpart. The success of EE would then be negatively related to the popularity of neoclassical economic methodologies. It would eventually benefit from a diminishing range of methodological possibilities (e.g. by rejecting CBA), rather than an increasing one. This begs the question that if there is any room for the virtues of pluralism to flourish to the greatest extent.

The answer seems to be negative. EE is defined by some researchers as competing with its neoclassical counterparts (Pelletier 2010, Sahu and Nayak 1994, Spash 2012). The identity of EE thus depends on its ability to demonstrate the fallacies of and its superiority over neoclassical economics. This strategy actually cannot make a consistent case for a methodologically pluralistic programme. At best, it is merely conducive to nurturing “antagonist pluralism” where no consensus is possible without some exclusion (De Langhe, 2010). As Caldwell (1989) elucidates, if one is trying to demonstrate a methodological position to be wrong, one must have a replacement in hand. Attempts to sharpen the criticisms and make effective the

portrayal of a preferred alternative are best served by building arguments for a particular methodological approach rather than many. An otherwise eclectic position is futile to tell exactly what and why the incumbent should be rejected and why its alternative is better. Methodological diversity is a hindrance to launch an effective attack against rivals.

As this logic goes, practicing methodological pluralism would make EE less competitive rather than more. An oppositional tradition is differentiated by not doing those things that its rival is doing. The most favourable strategy for EE is to downplay those approaches that do not attend to its biophysical and social arguments and to adopt holistic, pluralistic mode of inquiry exclusively. As the pluralistic approach becomes dominant whereas the reductionist, monistic one wanes, methodological diversity would eventually diminish. Indeed, the more compelling and successful this strategy is, the less the need to maintain a diversity. Ascending support for pluralism as a methodology does not guarantee pluralism at meta-methodological level.

When diversity within discipline is in a minimum, the degree of differentiation from an internally coherent alternative is in a maximum. Promoting “niche diversification”, as celebrated by Sahu and Nayak (1994), therefore is unlikely to render promising the programme of methodological pluralism. If EE is to confront with neoclassical economics, it would need to sharpen its meta-methodological

position by excluding methodologies adopted by the alternative. Success of EE is in a negative relationship with the range of allowed methodological possibilities to the extent in which it is construed as an alternative to the orthodoxy. The obsessive concern among some ecological economists with the uniqueness and separateness of the discipline leads to an isolationist tendency. Consequently, they are doomed to be “paradigm warriors” who must be monists despite utilizing pluralism as a strategic sword (De Langhe 2010, Garnett 2006).

This tendency explains some of the self-contradictory claims discussed above and poses challenge to the “democratization” of the discipline. Many ecological economists are of the view that EE should be made more democratic and deliberative in order to deal with the plurality of values and the complexities of the human-environment systems (Lo and Spash in press, Norgaard 2007, Söderbaum and Brown 2010, Zografos and Howarth 2008). A democratizing economics would accommodate ideological pluralism and allow paradigm co-existence (Maxwell and Randall, 1989; Soderbaum and Brown, 2010). Neoclassical economics and its political variant neoliberalism have audience from the developing world and expressing these concerns in democratic debates is legitimate. If EE is firmly placed in ideological opposition to neoliberalism and the pro-growth movement (Martínez-Alier et al. 2010, Spash 2012, Waring 2010), it will lose capacity to deal with the diversity of existing

ideologies and accommodate paradigm co-existence. Such an antagonistic position precludes “reciprocal enrichment” that facilitates that understanding of complexity (Max-Neef 2005, p. 15). Democratizing economics would become a dubious attempt as rival theories are excluded in *a priori*. The “paradigm warriors” are no ideological democrats seeking to promote tolerance and critical engagement with their “enemies” (Garnett, 2006).

## **5. Conclusions**

What makes methodological pluralism important is not simply that there are multiple incongruent methods for research, but that it is inconclusive as to what constitutes an appropriate methodology. The concept is given by the inconclusivity in determining the legitimacy or validity of various methodologies on *a priori* grounds. Arguments for any conclusive criterion for the choice of methods counteract the fundamental justifications of methodological pluralism. A conception of science compatible with researchers attempting to unify or downplay alternative methodologies ultimately provides little grounds to permanently maintaining a methodological plurality.

Contrary to Spash (2012), I doubt that methodological pluralism has much value for EE not because it means everything could be accepted, but precisely the opposite, i.e. it effectively means nothing could be accepted. Generalized principles for the

choice of method are not absent from the field. The shared ontological and epistemological premises define its disciplinary uniqueness and allow demarcation from neoclassical economics. Consequently, a different selection of methods is favoured. Attempts at differentiation can be supported by affirmation or rejection of methodologies. Non-rejectionist disposition, which defines the concept of methodological pluralism, does not help.

If EE is construed as a substitute to neoclassical economics, then its distinct identity and superiority would depend on a sharpening dichotomy with diminishing space for alternative methodologies. Strengthening theory is best served by promoting some sort of unity within disciplinary confines. This endeavour could gain more success by all practitioners adhering to a particular set of methodology, eventually reducing the range of methodological possibilities and hence the potential for pluralism. Advocating pluralism is a hindrance to differentiating from an alternative methodological tradition. A pluralist ethos can hardly flourish as ecological economists engage in such exclusionary campaign.

Committed pluralist has no enemy. The opposite of a monistic ideological system is not a pluralistic one which accounts for competing ideologies, but another monistic system turning the theory of the other one upside down. Methodological pluralism is important to a research discipline being reluctant or unable to affirm the

validity and legitimacy of the methodological propositions of individual research traditions. Otherwise there would be less a need for maintaining methodological diversity. The opposite of the economic monist is no pluralist.

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<sup>1</sup> Nevertheless this does not mean that I believe that EE should be defined as the opposite of neoclassical economics, although a number of ecological economists lean toward this view. This paper does not argue for or against such dichotomous treatment, but merely suggests that it is inconsistent with the notion of methodological pluralism in the context of EE.

<sup>2</sup> Objective reality is believed to be a core element of the theory of EE. Spash (2012), for instance, affirms the notion of “critical realism”, which recognizes the inability to demonstrate discovery of objective truth, but does not reject the existence of an underlying objective reality. Yet the inability to provide objective proof precludes conclusive validation of the merits of subjective judgments. The unprovable knowledge of truth is incapable of falsifying subjective judgments on it. Verification of alternative claims to validity is then inherently inconclusive, thus justifying pluralism.

<sup>3</sup> The concept of methodological pluralism has been misunderstood by Spash (2012). As explained in the previous section, it does not mean *accepting* all methodological positions, but rather *not rejecting* them on *a priori* grounds. Acceptance of all is a logically incoherent definition by which other forms of

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pluralism, including value pluralism (Spash, 2008, 2009), can also be easily rejected. Pluralism neither means accepting nor rejecting something. Non-rejection is a plausible definition in the face of knowledge uncertainties and is a precondition for developing mutual understanding and respect in the spirit of value pluralism.