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Structured pluralism in ecological economics — A reply to Peter Söderbaum's commentary

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ABSTRACT

Peter Söderbaum argues in his commentary, concerning my article on sustainability economics (Remig 2015), for more open and radical ecological economics. I agree with that statement. However, I reject Söderbaum's interpretation that my arguments foster mainstreamed ecological economics or dictatorship. In my critique of sustainability economics, I raised several issues that have remained unspecified and that potentially lead to unsustainable development patterns, once put into practice. Söderbaum does not reply to these conceptual challenges of sustainability economics. In this commentary, I argue that "structured pluralism" (Dow, 2004) is a constituent element of ecological economics. I welcome Peter Söderbaum's proposal for a discussion about the definition of economics and suggest to rely on Ronald Coase's proposal to define economics as a science that studies the working of the economic system. I conclude that sustainability economics in its current form is closer to neoclassical than ecological economics.

1. Introduction

Ecological economics is, up to now, the relevant school of an economic analysis of sustainable development and socio-ecological systems. It has established a community, journals, societies, conferences, and chairs at universities. During the existence of the field for more than a quarter of a century – with roots that reach back far further (Martinez-Alier, 1990) – there have always been discussions where the academic discipline should evolve to. One of the most recent discussions is the one about sustainability economics proposed by Baumgärtner and Quaas (2010a,b). Söderbaum (2015) replied to my survey article on sustainability economics (Remig, 2015). I welcome the opportunity to continue the discussion about sustainability and ecological economics. I agree with many points Peter Söderbaum raises in his article. Nevertheless, I disagree with some of his core ideas.

I strongly reject his claim that my argument leads to unified, "mainstreamed" ecological economics and dictatorship (Söderbaum, 2015, p. 423). In my critique of sustainability economics, I raised several conceptual issues that have remained unspecified and that potentially result in unsustainable development patterns, once put into practice. Therefore, we need to develop a strong and sound theoretical founding for ecological economics and for sustainability economics. Söderbaum (2015) does not contribute to unravel the veil of fuzziness around the concept of sustainability and unfortunately misreads my argument: "In this community [of ecological economists] we should, according to Remig, reduce all versions of ecological economics to one paradigm which is clearly specified and presented." (p.420) On the contrary, my image of the "big tent" of ecological economics (Howarth, 2008; Spash and Ryan, 2012) illustrates the co-existence of varieties of ecological economics that have developed in contrast to the monolithic version of neoclassical economics. I fully agree with Söderbaum's (2015, p. 420) main argument "that it is natural and more constructive to expect 'varieties of economics' and also 'varieties of ecological economics'." Thus, I here argue for a "structured pluralism" (Dow, 2004) in ecological economics.

As I highlighted in my review paper (Remig, 2015), the relationship between sustainability economics and ecological economics is conceived differently by different authors in the debate. Diverse methodological and ontological foundations of sustainability economics thus co-exist. Söderbaum (2015) sees in the new concept a promising term: "I somehow felt that 'sustainability economics' was an appropriate term for more radical versions of ecological economics. I certainly accept that other ecological economists may use the term differently or may prefer to abandon it altogether." (p.423) Even though Baumgärtner and Quaas (2010a) also see in sustainability economics an alternative to ecological economics, I doubt that they share Söderbaum's understanding about sustainability economics. Their idea is less critical and less radical

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than current ecological economics because they borrow much more from neoclassical resource and environmental economics (see Section 4).

In the following, I respond to several other points, Peter Söderbaum raised. I agree that a discussion about the definition of economics is necessary and propose to refer to Ronald Coase's systemic understanding of economics (Section 2). I also argue that structured pluralism is a core feature of ecological economics (Section 3). By comparing neoclassical, sustainability, and ecological economics, I conclude that Baumgärtner and Quaas' understanding of sustainability economics is closer to neoclassical than to ecological economics (Section 4).

2. Defining Economics

I agree with Peter Söderbaum that a discussion about the definition of economics is required. Baumgärtner and Quaas (2010a, pp. 446-447) build their idea of sustainability economics on Robbins' definition of economics, i.e. the economics' mainstream definition: economics "studies human behaviour as a relationship between [given] ends and scarce means which have alternative uses" (Robbins, 2007 [1932]).

Yet, this definition is not without caveats: ¨The methodology of neoclassical economics ignores how our culture and history affect how we know and how what we have known affects the systems we are studying." (Norgaard, 1989, p. 53) For Backhouse and Medema (2009) the Robbins definition of economics fostered a specific kind of economics – the one that we ecological economists seek to avoid: "This laid a foundation that could be seen as justifying not only the narrowing of economic theory to the theory of constrained maximization or rational choice but also the 'imperialism' of economists' ventures into the other social sciences" (p.805) Colander (2009) highlights that not only an academic definition of economics is necessary, but also one defining the policy advice character of economics. Here, Söderbaum (2015) marks an important point because he includes the management of resources in his proposal for a definition of economics: "Economics is multidimensional management of (limited) resources in a democratic society" (p.421).

We should discuss what the mainstream definition of economic entails and which alternatives can serve best our cause for more sustainable lifestyles, harmony with nature, justice, and fairness. I propose yet another definition of economics based on Ronald Coase that is much closer to the idea of ecological economics because it shares a systemic understanding of the economy. Coase (1998, p. 73) defined economics as a discipline that studies "the working of the economic system." Such a systemic understanding of economics is congruent with the ideas of ecological economics and Coase's proposition can thus build an alternative to Robbins' definition. Of course, Coase's definition is very general – but so is Robbins'. Contrary to Robbins, Coase does not entail the neoclassical economics framework but rather builds bridges towards understanding the economy as a complex adaptive system (see Holling, 2001). Coase has been associated with the neoliberal program of economics but he has been "dissenting" from mainstream at various occasions (Medema, 2008). His article on the problem of social cost (Coase, 1960) is a classic in our field. Even though, he is often referred to, "most economists are unfamiliar with Coase's critiques and with the alternative approach that he is advocating, and are content, instead, to conveniently lump him into the Chicago mold" (Medema, 1995, p. 16).

Coase (1995) rejected to view economics as a positive science. Friedman (1953) argues for economics as a positive science free from any normative content: "In short, positive economics is, or can be, an "objective" science, in precisely the same sense as any of the physical sciences." (p.4) The goal of economics, according to Friedman, is to make accurate predictions: "The ultimate goal of a positive science is the development of a "theory" or, "hypothesis" that yields valid and meaningful (i.e., not truistic) predictions about phenomena not yet observed." (p.7) Coase (1981) on the contrary states: „Testable predictions are not all that matters. And realism in our assumptions is needed if our theories are everto help us understand why the [economic] systems works in the way it does. Realism in assumptions forces us to analyse the world that exists, not some imaginary world that does not." (p.18).

Both the importance of empirical foundations as well as the dynamics of complex adaptive systems are not sufficiently taken up in neoclassical economics. Spangenberg (2015, p. 101) thus states: "The standard models in neoclassic economics and its derivatives like environmental and resource economics have been developed based on assumptions which are not compatible with the observable real world, including the complexity of evolving systems." This is the kind of economics that Ronald Coase has called "blackboard economics" (Coase, 1988, p. 19). While different definitions of economics co-exist, we should be careful to choose the most relevant one for ecological economics. To understand the working of the economic system, plurality in theory and methodology is important.

3. Structured Pluralism in Ecological Economics

I very much welcome pluralism in ecological economics. We know to value diversity not least because of our interest in resilient social-ecological systems. Norgaard (1989) provides a very convincing argument why pluralism is required: "ecological economics will more likely evolve into a useful discipline if it maintains the breadth of the methodological base of economics and ecology and reaches out to the methodologies of other disciplines as well." (p.53) To Peter Söderbaum's question whether we need a more methodologically open and theoretically radical version of ecological economics, I clearly answer: "Yes, indeed."

Unfortunately, my message has not come through, because Peter Söderbaum apparently mistook my argument and suggests in his reply that I foster monopoly and dictatorship: "mainstreaming by aiming at a single idea about economics or ecological economics is […] more compatible with monopoly and dictatorship than with democracy." (p.423) I have not claimed to mainstream ecological economics and strongly reject dictatorship, which to me, as an ecological economist, is incompatible with the values and normative foundation of sustainable development. Instead of claiming new labels, my point rather was that we should focus on developing ecological economics further. I have thus argued for pluralism in ecological economics and also in the theories of sustainable development (Enders and Remig, 2015). Yet, pluralism should not be confused with anything goes. Sheila Dow (2004) has coined the term "structured pluralism", which provides helpful insights to our discussion: "Structured pluralism, then, is the advocacy of a range of methodological approaches to economics which, like the range of social structures, is not infinite." (p. 287–288).

Ecological economics is an academic field that is deliberately diverse in contrast to the monolithic version of neoclassical economics. It has started out from a cooperation of economists and ecologists (Costanza, 1989; Røpke, 2004, 2005) and is open to different methodological approaches (Norgaard, 1989; Spash, 2012). The field's focus and its diversity of approaches require nonetheless some structures: "We cannot function as economists by adopting a pure pluralist perspective, allowing anything to go; we must make our own choices as how to proceed." (Dow, 2008, p. 90) Ecological economics has seen many discussions about its future and the idea of sustainability economics is yet another label that has been developed. It adds up to the following schools that sketch the various forms of ecological economics gathered under the "big tent":

- Ecological Economics (Costanza, 1989)
- Political ecology and ecological economics (M'Gonigle, 1999)
- Evolutionary ecological economics (van den Bergh and Gowdy, 2000)
- Post-normal ecological economics (Müller, 2003)
- Institutional ecological economics (Paavola and Adger, 2005)
- Feminist ecological economics (Perkins, 2007)
- Political ecological economics (Berger, 2008)
- Ecological economics and post-Keynesian economics (Kronenberg, 2010)

Table 1
Comparison of neoclassical, sustainability and ecological economics.

	Neoclassical economics (North (1995))	Sustainability economics (Baumgärtner and Quaas (2010a))	Ecological economics (Daly (1992); Müller (2001))
First step	Efficient allocation of scarce resources	Efficient allocation of scarce resources	Scale – absolute ecological limits, resilience, and tolerance levels
Second step	Maximization of social welfare and utility	Satisfaction of needs and wants of individuals	Distribution – more equitable distribution of resource uses (equity aspect)
Third step	Correction for externalities (not necessarily environmental)	Justice considerations (inter- and intragenerational, towards nature)	Allocation – efficiency considerations enter decision-making process

- Coevolutionary ecological economics (Kallis and Norgaard, 2010)
- Sustainability economics (Baumgärtner and Quaas, 2010a,b)
- Social ecological economics (Spash, 2011)
- Radical ecological economics (Barkin et al., 2012)
- Complexity economics for sustainability (Foxon et al., 2012).

Faced with this diversity of concepts, labels, and ideas, there is the risk for ecological economics to become a scattered academic discipline, without proper theoretical, methodological, and ontological foundation: "Ecological economics can either develop a more rigorous approach and establish a theoretical structure or become increasingly eclectic, unfocussed and irrelevant." (Spash, 2012, p. 46) I doubt that sustainability economics in its current form can help us in achieving this aim.

4. Why Sustainability Economics Has More in Common With Neoclassical Than Ecological Economics

To Peter Söderbaum, sustainability economics is a term more radical than ecological economics. Different definitions of the term coexist. I take this opportunity to further develop my argument by comparing neoclassical, sustainability, and ecological economics. When I refer in the following to sustainability economics, I use the term as specified by Baumgärtner and Quaas. Whether you are a neoclassical, a sustainability or an ecological economist changes the way in which you proceed your scientific endeavor (see Table 1). Neoclassical economics is all about efficiency and potential Pareto-Optimality. Efficiency and, secondly, deriving from that social welfare maximization are at the core of neoclassical economics. In a final step correction for externalities can enter the reasoning. Sustainability economics is also built on efficiency. Here, the neoclassical program is specified by the satisfaction of human needs and some criteria of justice. For ecological economists, the steps to follow are first ecological scale and limits, then equitable distribution, and finally efficiency considerations and allocation.

4.1. Neoclassical Economics

"Scarcity hence competition" coupled with methodological individualism and instrumental rationality are the core components of neoclassical economics as defined by North (1995). According to Robbins (2007 [1932], p. 15) "economics is the science which studies human behaviour as a relationship between ends and scarce means which have alternative uses" (see also Backhouse and Medema, 2009; Colander, 2009). Neoclassical economics has become the dominant school of economic thinking today, combining modified subjective value theory, general equilibrium theory and welfare economics (Müller, 2001, pp. 417–418).

Neoclassical economics is built on the two fundamental theorems of welfare economics:

> "The first asserts that Pareto efficiency is implied by maximisation of preferences under budget constraints and maximisation of profits under given technology. The second follows that almost any Pareto efficient outcome can be supported with appropriate lump sum transfers" (Gowdy and Erickson, 2005, p. 209).

Neoclassical economics is interested in the efficient allocation of resources to maximize social welfare. Bromley (1990) uses here the term "ideology of efficiency" to underline that the focus on efficiency is an ideological choice, i.e. it is a value judgement instead of a scientific standard. Only in a final step "market failures" are corrected. In the case of sustainable development these market failures can be (environmental or social) externalities (Kapp, 1950, 1970; Vatn and Bromley, 1997). This characterization of neoclassical economics is somewhat schematic and the reality is more complex (Colander et al., 2004; Davis, 2008), but for the purpose of this section it is sufficient (for a more in-depth treatment see Gowdy and Erickson, 2005).

This approach results in the following: According to Gerlagh and Sterner (2013) environmental and resource economists agree upon protection measures for the environment if and only if "resource conservation passes a cost-benefit test" (p.157) or if "resource loss would result in an unsustainable path, which is jargon for a substantial probability of a strict welfare decline; say, a catastrophe" (ibid.). In their contribution, being critical of their own field, they argue for more "constructive contributions in theory and practice" that go beyond the "danger of catastrophe" argument (p.159).

The application of the neoclassical framework to the environment has led to a proliferation of monetarizing the environment (Baveye et al., 2013) and "selling nature to safe it" (McAfee, 2012). Through this market-oriented lens, the environment is conceptualized in the economist's language as ecosystem services that you can buy and sell on the marketplace (Redford and Adams, 2009).

"While there is plurality at the level of theory and even of type of evidence in orthodox economics, there continues to be monism in terms of methodological approach, and in attitude to methodological alternatives." (Dow, 2008, p. 76) The discourse of neoclassical economics has thus proven to remain powerful (McCloskey, 1983) and has shown the ability to incorporate new developments in the mainstream thinking (Colander et al., 2004). Its rhetoric has – through abstraction, mathematization and claimed scientific objectivity ("value free science") – gained influence in science, politics and society.[1] Funtowicz and Ravetz (1994, p. 197) explain this success as follows: "Economics has traditionally been able to maintain its credibility by relegating uncertainties in knowledge and complexities in ethics firmly to the sidelines. It has provided puzzles, theoretical and practical, that could be solved within a paradigm that was explicitly modeled on classical physics."

4.2. Sustainability Economics

Sustainability economics also undertakes three steps according to Baumgärtner and Quaas (2010a): First, the efficient allocation of scarce resources is of central importance. Second, the satisfaction of needs and wants of individuals is fulfilled. Third, criteria of justice within and between generations as well as justice towards nature are included in the reasoning. In short: For sustainability economists the analytical steps are efficiency, satisfaction of needs and wants, and justice (Baumgärtner and Quaas, 2010a, p. 447).

The program of sustainability economics shares the first level of analysis with neoclassical economics. In the second step, neoclassical economics aims towards maximizing social welfare, sometimes using

[1] Lepenies (2014), for example, shows that the characterizing features of the current economists' discourse are already to be found at the birth of modern economics with Townsend and Malthus.

intertemporal reasoning. Sustainability economics substitutes here the satisfaction of "human needs and wants". This definition is too broad for rigorous sustainable development, because unspecified needs and wants can include very unsustainable development patterns. For example, current consumption and production patterns in industrialized countries, though far from sustainable, shape needs and wants of many individuals in other parts of the world. Only in the third step of the reasoning, concerns for justice come into play. Yet, as argued in my review paper (Remig, 2015), these criteria for inter- and intragenerational justice, and justice towards nature remain unspecified and hence unoperational. Söderbaum does not add any clarification on these points in his commentary.

4.3. Ecological Economics

The reasoning of ecological economics starts the other way round. Scale, distribution and allocation (Daly, 1992)[2] are the steps to be followed. Scale refers to certain ecological criteria such as carrying capacity or resilience. These are not absolute categories, because they are societally determined. Daly (1992) calls this "social decision reflecting ecological limits" (p.188). According to Daly, the relevant policy instruments for distribution, the second step, are taxes and welfare payments. Only at the last step of the reasoning, economics comes into play: allocation decisions - through relative prices and the dynamics of supply and demand in competitive markets - are delegated to economics.

Müller (2001) argues in a similar way that the scientific reasoning of ecological economics consists of, first, a "scale effect" recognizing absolute ecological limits and tolerance levels, second, an "equity-aspect" arguing for a more equitable distribution, and third "efficiency considerations" of resource allocation within the "remaining socio-economic transformation space" (pp.440–441). Thus, environmental limits and thermodynamics (Ayres, 1998; Ozkaynak et al., 2012) as well as equity and justice within and between generations (Godard, 2003, 2004) determine the corridor of possible sustainable development paths.[3]

Contrary to environmental and resource economics, the integration of neoclassical economics in ecological economics has been subordinated to principles of sustainable development. This conception appears already in the founding contributions of ecological economics: "It will include neoclassical environmental economics and ecological impact studies as subsets, but will also encourage new ways of thinking about the linkages between ecological and economic systems" (Costanza, 1989, p. 1). In terms of modeling approaches, this new way of thinking has led to systemic modeling of the interaction of economics and ecology (Beckenbach, 2001; Van der Ploeg et al., 1987).

Both its theoretic underpinning and analytical program make ecological economics more apt to address sustainable development than the current proposal of sustainability economics by Baumgärtner and Quaas (2010a).

5. Conclusion

The debate about sustainability economics, triggered by Baumgärtner and Quaas (2010a), has led to a number of publications that discuss various aspects of sustainable development and ecological economics. Söderbaum (2015) has written a commentary to my review paper (Remig, 2015). I agree with many of his arguments and join his call that we need more radical ecological economics. I also agree that a discussion about the definition of economics is relevant for ecological economics. To Peter Söderbaum's proposal, I add the reference to Ronald Coase, who defined economics as a discipline that seeks to understand the working of the economic system. I strongly reject the suggestion that my arguments lead to a mainstreamed version of ecological economics. Interdisciplinarity, diversity, complexity, empiricism, and radicalism are all constitutent features of ecological economics.

[2] Within the community of ecological economists, different views on sustainable development and the role of markets are present. Bonaiuti (2011), for example, retraces the conflict between Daly and Georgescu-Roegen about the role of the market mechanism in allocating resources. It would be a fruitful conversation to discuss whether Ecological Economics ought to follow Daly or Georgescu-Roegen.

[3] A fundamental distinction between neoclassical and ecological economics is furthermore the treatment of the discount rate and how to value the interest of future generations. Ecological economists tend to value the future more than neoclassical economists. (See also Godard, 2008; Voinov and Farley, 2007)

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