

---

# Interdisciplinarity in (ecological) economics. Evidence of disciplinary evolution through networks of co-publications

Gael Plumecocq\*<sup>1</sup> and Rachel Levy

<sup>1</sup>Institut National de la Recherche Agronomique (INRA) – INRA – INRA - SAD - UMR AGIR Chemin de Borde-Rouge – Auzeville CS 52627 31326 Castanet-Tolosan, France

## Résumé

According to Ropke (2004), the journal *Ecological Economics* is the primary institution designed by the pioneers of ecological economics in order to structure the community. An important reason for creating this movement, was to fill a gap in the scientific knowledge: nor ecology, neither economics provided methods, theories or political recommendations to understand and properly address the ecological crisis that became obvious in the 70s. The need for transdisciplinary work was put to the fore from the beginning (e.g. Noorgard, 1989).

Since then many analysis of the extent to which *Ecological Economics* actually promote transdisciplinarity were conducted. Studies mostly concluded that the journal remains dominated by economists (Costanza and King, 1999; Luzadis et al., 2010). However, 40% of papers submitted in 2012 for publication in the journal were rejected before reviewing on the ground of lack of interdisciplinary (Editor-in-Chief's personal communication to the authors). This questions the kind of "transdisciplinary economics" produced by *Ecological Economics*. We propose to assess it through a network analysis of coauthors publications (i.e. authors cooperating in writing and publishing a paper in the journal).

To assess the ways in which transdisciplinary have evolved, we look for article published by a minimum of two authors in *Ecological Economics* between 1991 and 2011. In order to propose a dynamic analysis of the network, we have distinguished five periods: 1991-1995; 1996-2000; 2001-2005; 2006-2008; and 2009-2011. The data used are the name of authors writing together the same article. These data come from the Web of Science® online database.

The method we use follow two steps. First, we conduct a social network analysis of coauthors and identify the authors who have central positions in the network. We distinguish the two classical measure of centrality inside network analysis literature: the centrality of degree measuring the number of co-publications of an author, and the centrality of intermediarity measuring the role of intermediary of one author inside the network. Second, we focus on these central authors and analyze their background and career-path from their online resume. Telling oneself is relevant because not only it translates the actual career of individuals, but it also refers to the ways in which one sees itself and the image it want to reflect.

---

\*Intervenant

Results suggest:

- That the community is getting more and more scattered. In our opinion, the reason for this is that (i) the number of article published per years has increased over time, and (ii) the ranking of the journal has increased over the years, attracting more and more authors unrelated to the community of ecological economics.

- That less and less authors from different disciplines and background are cooperating in transdisciplinary works. This may question the editorial choices in regard to the primary objectives of the community.

- Yet, the study of disciplines and career-paths of key authors suggest that more and more authors playing key roles define themselves as "ecological economists".

We conclude discussing the possibility that transdisciplinarity has evolved from a collective level to an individual level ("embodied cognition/transdisciplinarity"), and that ecological economics becomes an interdisciplinary field of research. Disciplinary hybridization finally questions the power asymmetry between discipline, and in particular within economics between heterodox and standard economics.

**Mots-Clés:** Transdisciplinarity, Bibliometric analysis, Social network, Co, publications, Career, path