

# **Circular economy – Reducing negative symptoms or increasing positive synergy? It depends on ontology and epistemology**

*For the special track on ecological management*

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## **Abstract:**

*The research focus:*

In this paper, we interpret and draw theoretical and practical implications of circular economy in different ontological contexts, mechanical and organic. To do this we clarify epistemological presuppositions connected to the different ontologies, disciplinary (natural and social sciences) and transdisciplinary (life sciences). The paper is conceptual and the research methods are based on critical realism, combined with secondary empirical materials.

Our hypothesis is that circular economy has different focus in the two perspectives. On the one hand, within a mechanical ontology, focus is on reducing negative symptoms in nature and society connected to the existing economic system (reducing negative consequences). On the other hand, within an organic ontology, focus is on developing life-enhancing connection between economic activity and nature and society. In other words, how to develop a circular economy in harmony with the environment (increasing positive synergy).

*If circular economy is the answer – what is the question?*

The call for papers asks ‘if the current situation demands the transformation to the circular economy in order to ensure the sustainability of Earth’s life support systems on the one hand, while precisely business management can be seen as one of the root causes of the ecological crisis we face today, the question emerges what exactly is the nature of management, why it contributes to environmental problems like global warming, and what alternative ways of conceptualizing management are available that contribute to the stewardship of planet earth? What does the transformation to the circular economy require from our management practices?’ We go back one step and ask, if the circular economy is the answer, what is the question? For it is by understanding the root causes of the environmental problems we face today and the

ontology and epistemology of the concept 'circular economy' that we can find a lasting solution to our problems rather than a symbolic and superficial quick fix to the symptoms.

### *Circular economy within a mechanical ontology*

We understand mainstream economics as operating within a mechanical ontology. Circular economy that does not critically examine and challenge the ontological basis of unlimited growth operates within the same mechanistic ontology. In a mechanical worldview, economic activity is understood, explained and predicted by causal theories and mathematical formulae. A consequence of the mechanical worldview is that the whole universe is causal and deterministic. Economics based on the mechanical perspective is characterized by the idea that individuals are isolated actors and society represents no real unity in itself. The market is nothing more than a mere mechanism based on the interplay between egocentric individuals seeking their own ends.

Mainstream Economics' origins lie in utilitarianism and its atomistic view that society's wellbeing is the sum of the utilities of individuals (Pratten 2015). Societal wellbeing is maximized by achieving 'the greatest happiness for the greatest number of people' (Stanton 2007). The perspective that we can maximize societal wellbeing by maximizing individual utility gave birth to the earliest formulations of utility theory. The Marginalist welfare school of economic thought formalized this notion by using two assumptions: 1) individuals act to maximize their utility and 2) utility is 'diminishing on the margin' (Stanton 2007, p.5). William Stanley Jevons, Carl Menger and Leon Walras were central figures in the Marginalist welfare school and they contributed to formalization of 'utility' theory using mathematical models (Ackerman 1997). Utility maximization subject to budgetary constraints and the assumption of fixed resources were central to their mathematical models (Cooter and Rappoport (1984) cited in Stanton 2007). With this approach the Marginalist Welfare school associated utility to the 'material necessities of life, using money as a "measuring stick"' (Stanton 2007, p.6). Utility or 'well-feeling' was not directly observable but could be represented by preferences (Gasper 2007, p.25). These preferences are 'revealed' when people make choices regarding what goods and services to consume. The implicit connection here is, since utility is expressed through choices in the market, consumption became directly linked to utility. Since income gives individuals the possibility to make choices and to consume, higher income became associated with higher wellbeing. At the societal level, this translates into increasing national income (GDP) per capita; the argument for unlimited economic growth (Phillips 2006).

Circular economy that continues to operate within this mechanical ontology does not challenge the association of human wellbeing with consumption. It will focus on how to increase materialistic welfare and economic growth in a more green and sustainable manner. It does not challenge the ontological and methodological individualism that ignores networks and processes and focuses only on outcomes (material consumption). As natural resources are limited and there is limited substitution between natural and built capital, circular economy will help to postpone the problem to a later date but will not find a lasting solution.

#### *Circular economy within an organic ontology*

Circular economy within an organic ontology focuses on developing life-enhancing connection between economic activity and nature and society. In an organic perspective, the global ecosystems and social systems are comprised of closely interacting and interdependent subsystems. The earth itself and all its living and non-living components are interrelated and the human being is a member of this integral community. Every system is connected to and depends on all the others in continuous evolving processes.

Georgescu-Roegen (1971) argues that we cannot arrive at a completely intelligible description of the economic process as long as we limit ourselves to purely physical concepts. The true economic output is 'enjoyment of life', not growth in GNP. As an illustration 'enjoyment of life' does not correspond to "an attribute of elementary matter [n]or is it expressible in terms of physical variables" (Georgescu-Roegen, 1971, p. 282). An increase in the enjoyment of life must be combined with a reduction in the consumption of natural resources. This makes it relevant to question two long-lived principles in economics; firstly, to be healthy, the economy must constantly increase the amounts of energy and raw materials that flow through it in order to generate ever greater wealth. Secondly, in order to be happy, people must have more and more of this wealth to have access to consumer goods.

Research in quality of life/wellbeing has identified a negative relationship between material consumption and human wellbeing. In Western societies that have achieved a high level of material living standard, a reduction in consumption can lead to an increase in wellbeing, a 'wellbeing dividend' (Guillen-Royo 2010, p. 384). Theoretical discussions on quality of life identify paths where this is possible. Examples are by expanding the capabilities and intrinsic empowerment of individuals (Schäpke and Rauschmayer 2014), by reducing social pressures to conform to a materialistic lifestyle (Guillen-Royo 2010) and enhancing the quality of social relations (Bruni and Stanca 2008) among others.

A shift from mechanistic to an organic ontology also requires a movement from circular to circulation economy that includes the life-enhancing connection between economic activity and nature and society (Ingebrigtsen and Jakobsen 2006, Ingebrigtsen and Jakobsen 2011).

*Circulation economics in an organic worldview represents a shift from a mono-disciplinary focus to inter- and transdisciplinarity*

In transdisciplinary research, a disciplinary cross-fertilization makes the borders between the different sciences more transparent, and practice and culture are integrated. Unlike specialized knowledge, a transdisciplinary and holistic approach can help prevent a domination of reductionism, and thus to a certain extent, reduce the risk of falling into the trap of abstraction. Such an approach also loosens up the theoretical and methodological restrictions imposed by traditional disciplinary boundaries. Circulation economics is more than pure effective resource economy; it connects economic activity to nature and to the society (or culture).

*A reactive and proactive circular economy:*

We argue that to solve the complex challenges connected to environment, society and economy, implementing circular economy could in both ontological contexts be an important part of the answer, within the existing mechanic system by reducing symptoms (reactive), in an alternative organic system by increasing the life forces (proactive) in economy, society and nature. In the paper, we will discuss more in-depth circular economy in the two ontologies, their related epistemological presuppositions and relevant philosophical schools (utilitarianism, hedonism, eudemonia and deep and shallow ecology) to make this argument.

*References*

Ackerman, F. (1997). *Utility and Welfare I: The History of Economic Thought*. Human Well-Being and Economic Goals. F. Ackerman, D. Kiron, N. R. Goodwin, J. Harris and K. Gallagher. Washington, D.C., Island Press.

Bruni, L. and L. Stanca (2008). "Watching alone: Relational goods, television and happiness." Journal of Economic Behavior and Organization **65**(3): 506-528.

Gaspar, D. (2007). *Human Well-being: Concepts and Conceptualizations*. Human Well-Being, Concept and Measurement. M. McGillivray. New York, United Nations University: 23 - 64.

Georgescu-Roegen, N. (1971). *The Entropy Law and the Economic Process*, Harvard University Press.

Guillen-Royo, M. (2010). "Realising the 'wellbeing dividend': An exploratory study using the Human Scale Development approach." Ecological Economics **70**(2): 384-393.

Ingebrigtsen, S. and O. Jakobsen (2006). "Circulation economics – a turn towards sustainability." International Journal of Social Economics **33**(8): 580-593.

Ingebrigtsen, S. and O. Jakobsen (2011). Circulation economics - An ecological image of man based upon an organic worldview. Environment, embodiment and gender. A. F. Aarø and J. Servan, Hermes Text

Phillips, D. (2006). Quality of Life : Concept, Policy and Practice. Florence, Florence, KY, USA: Routledge.

Pratten, S., Ed. (2015). Social Ontology and Modern Economics. London and New York, Routledge.

Schäpke, N. and F. Rauschmayer (2014). "Going beyond efficiency: including altruistic motives in behavioral models for sustainability transitions to address sufficiency." Sustainability : Science **10**(1): 29-44.

Stanton, E. A. (2007). The Human Development Index: A History. Workingpaper Series. Amherst, Massachusetts, Political Economy Research Institute: 1 - 36.