



KARL-FRANZENS-UNIVERSITÄT GRAZ
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Industrial Ecology and Degrowth

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Structure

- Underlying question
- Industrial Ecology - some basics
- Method (matrix of principles of IE [tools] and Degrowth criteria)
- Preliminary results
- Provisional recommendations and the way forward

Context/research question

- Two concepts: Industrial Ecology (IE) on the one hand, Degrowth on the other hand
- Key question for my talk: Are there any discrepancies, conflicts, synergies, ... when exploring the relationship between those concepts? Benefit through merging?
- Method: Principles of IE (tools) reviewed against a set of criteria representing the Degrowth paradigm

Some basics on IE (tools)

- Studies the material and energy flows and their transformations through industrial systems, considering the actors' behaviour
- Systems view, multidisciplinary approach
- Transition from linear processes to cyclical processes (Type I, II, III system)
- Key tools: Life cycle assessment (LCA), material flow analysis (MFA), Input-Output-Analysis (I/O-A)

Principles of IE (tools)

- Minimizing environmental impacts of industrial processes
- Idea of “industrial metabolism” (output from factory A is input for factory B) → cyclical processes instead of linear throughput economy
- Decarbonisation, dematerialisation → efficiency improvement
- Life cycle thinking (“cradle to grave”)

Degrowth criteria (selected)

- Correlation between income and environmental pressure
- Growth is unsustainable, increases inequity and decreases the environmental quality
- Downscaling of production of consumption (“sufficiency”), but considering “developing countries”, whilst increasing human well-being

Van den Bergh, Kallis (2012): Growth, A-Growth or Degrowth: to Stay within

Planetary Boundaries? *Journal of Economic Issues*, Vol. XLV I No. 4

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Method: Matrix (preliminary)

IE principles against Degrowth criteria	Correlation income/env. pressure	Sufficiency needed	Downscaling production and consumption	More equal distribution of resources
Cyclical processes (industrial metabolism)	?	?	+	?
Minimizing environmental impacts	?	?	+	?
Life cycle thinking	?	?	?	+
Decarbonisation, dematerialisation	?	+	+	?
Systemic view	+	+	?	+
Multidisciplinary approach	+	?	?	+

“+“: coherent; “-“: contradiction; “?“: not clear, yet

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Preliminary results

- No (clear) political claim in IE philosophy
→ no vision of an alternative economy rather than optimizing the existing one
- IE tools useful for studying the life cycle of (global) energy and material flows:
Who profits and who loses? → Analysis as base for Degrowth requirements
- Some overlaps identified with potential benefits in the future, no obvious contradictions detected

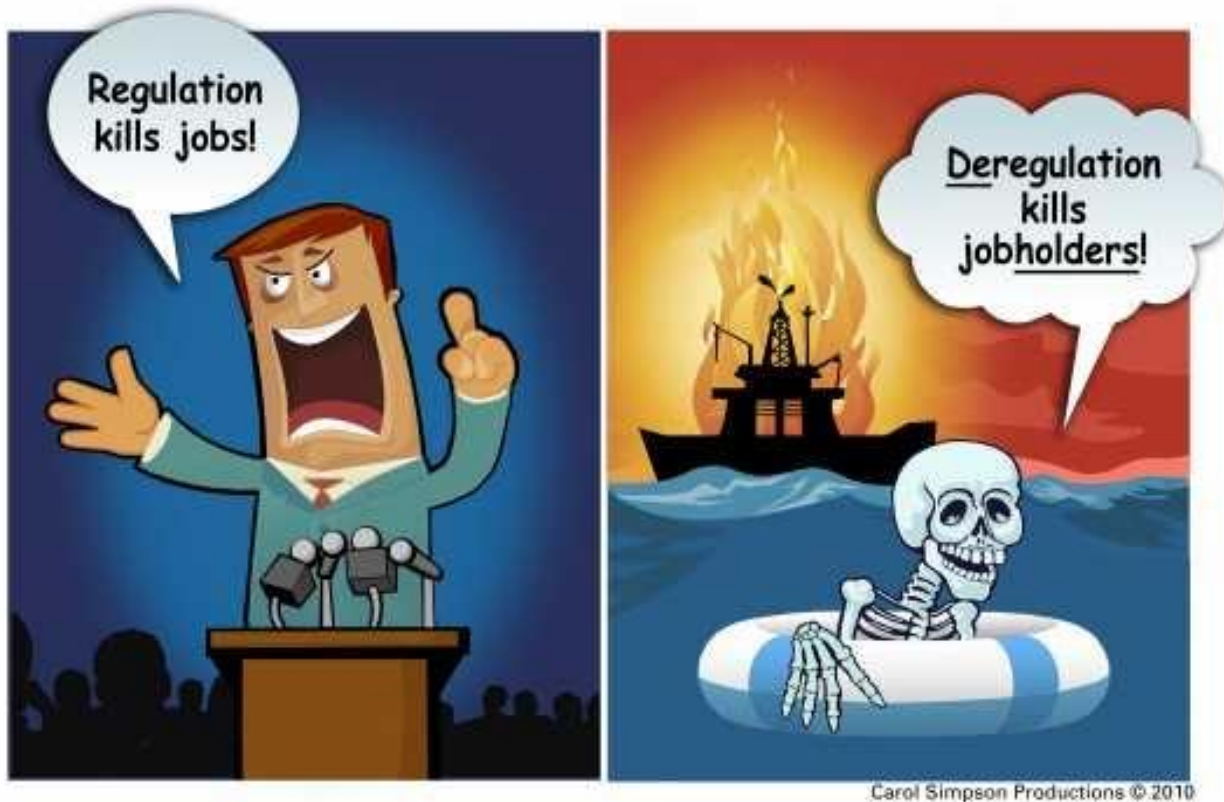
Provisional recommendations and the way forward

- Matrix should be consolidated and enlarged, based on key literature for both IE and Degrowth
- Maybe a starting point for a research project that needs experts from both fields
- IE projects like Kalundborg could be analysed from the Degrowth perspective
- Degrowth criteria might be assessed from the IE perspective

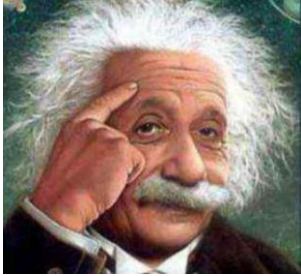
Final remarks

- Really very preliminary thoughts, controversially discussed with my colleagues in Graz
- Matrix elements should be chosen in a way that they can be both operationalized and compared with each other
- But from my point of view the approach is a worthwhile exercise

Cartoon



Credits: <http://www.cartoonwork.com/details.php?gid=57&pid=1365>



Thank you for your kind
attention, köszönöm szépen!



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