How do we approach practical, messy problems? A reflection on how to respond to the economic and ecological crises

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Abstract

[Slide 1]
The question how to approach practical, messy problems where problems are not well-defined remains actual. The recent financial and economic crisis, as well as an emerging ecological crisis, is an opportunity to reflect on deeper questions on how to approach and inform decisions in the real world. The expectation is that we do not only learn on how to do things better, but also on how to do things differently.

Preliminary readings suggest that to work towards a solution would include developing an approach that builds on a richer interpretation of the fullness of reality on an ontological level, and on an epistemological level includes at least three specific focus areas:

- a systems approach to messy problems that take account of both nature and culture
- an acknowledgment of and internalization of normative-ethical frameworks and
- the importance of visionary leadership.

These focus areas will be discussed against the backdrop of developments in especially the economic, but also in the environmental and policy sciences. It is expected that insights drawn from this analysis may also be relevant to approaches in other sciences as well.

1. Reflecting on responses to the financial and ecological crises so far

[Slide 2]

Integrated response in world to financial and ecological crises is Green New Deal. Green Economy strategies are launched. UNEP and ILO. Green Jobs (French et al 2009)

Krugman (2008:184):

> *What the world needs right now is a rescue operation…To do this, policy makers around the world need to do two things: get credit flowing again and prop-up spending*

Keynesian style stimulus in economies (public spending programs, incentives, tax credits and tax cuts) to counter credit crunch and associated weak demand. One measure (late 2008/early 2009) is 15.6% of worldwide stimulus in green funds. Leader South Korea (80.5%), EU (58.7%) and China (37.8%). US at 11.6%. (Nick Robins, Robert Clover, and Charanjit Singh, "A Climate for Recovery," HSBC Global Research, London, 25 February 2009, and corrected summary table "The Green Dimension to Economic Stimulus Plans," issued 26 February 2009).

Instrumental interventions (used existing structures and change):
Responses are instrumental. Focussed economic simplicity. May help in short term and buy some time.

BUT

[Slide 3]
Instrumental interventions (change in existing structures to change):

- Choice between instrumental interventions e.g. between spending, incentives or tax credits

Plea for more structural interventions:

- Interventions in real/real (as opposed to financial and real) economy: Responses of decoupling/material intensity and new green economy market niches suggested (Peter, Swilling et al 2011).
- Interventions in structure/architecture of financial economy

Plea for normative interventions (direction of structure)

- Deeper level questions on how individuals and culture operate; deeper underlying problems with prevailing ethics, religion, culture, e.g. as argued to manifest for example in unfettered capitalism; issue how people behave (excessive hubris and greed)
- Any scientific approach (incl. the dominant economic culture approach) to real world problems is rooted in a particular view on reality. These worldviews need to be made explicit.

Plea for 'ontological' reflection (rethink what nature of reality is, ontology is "study of being, of what there is, of categories of being and how they relate to each other"):

- humanity has not interpreted and acted on the fullness of reality, but on selected reduced parts of it, leading to the crises (lack of connectedness)
- how the development of a rational, Western philosophy with a high degree of autonomy to humans in relation to nature have played a part in the ecological crises (humans perceived as separate to reality)

2. When is something a messy problem?

[Slide 4]

We can characterize the problem of responding to the financial and ecological crises as a *messy problem*, also referred to as ill-structured or ill-defined problems.

Messy problems are defined as situations in which there are large differences of opinion about the problem or even on the question of whether there is a problem (Ackoff, 1974).

The most fundamental issue of ill-structured problems is the divergence between opposing formulations of perceptions of a problem (Mitroff & Mason 1980).

Vennix (1999) referred to messy problems as those where opinions (in a management team) differ considerably.

Lachapella et al (2003): *Wicked problems and messy situations are typified by multiple and competing goals, little scientific agreement on cause–effect relationships, limited time and resources, lack of information, and structural inequities in access to information and the distribution of political power.*

Rittel & Weber (1973:160) described all problems of social policy as wicked problems: *As distinguished from problems in the natural sciences, which are definable and separable and may have solutions that are findable, the problems of governmental planning—and especially those of social or policy planning—are ill-defined; and they rely upon elusive political judgment for resolution*.

3. Integration of hard and soft systems approaches in practice?

[Slide 5]
Are systems approaches part of the solution?

Given the limitations of reductionist scientific disciplines, a systems approach may be required for messy problems. Any model is an abstractions of reality, and can never be interpreted as reality itself.

General systems theory does recognise the limitations of mechanistic scientific approaches in explaining reality without disregarding its valuable, although partial contributions (Boulding 1956, Von Bertalanffy .1972).

There are many different types of systems approaches, supported by various ontological starting-points, and applied to various different problems.

Hard modelling approaches are limited in developing an understanding the full system, and can usually at best describe the physical and biotic parts of reality. Such models are generally not well-designed to include the social and political dynamics of systems behaviour and control. The latter is a key aspect in implementing workable adaptation strategies.

The more complex a system is the less applicable hard systems approaches are. Hard systems approaches emanate in the engineering tradition and demand that objectives can be well defined. To better understand complex systems may involve lower level more determinative models with limited amount of state variables that give insight into certain partial aspects of the system. It may even include models that focus on the dynamics of the system on a higher level.

An alternative is the soft-systems approach that focuses on a better understanding of a system through an iterative learning process and purposeful action based on this understanding. It is participatory in nature and accommodates the perceptions, judgements and values of system actors. This approach is helpful in engaging human beings, and provides a conceptual model of what could exist in the real world. It does not guarantee that this conceptual model conforms to reality though and the approach does not provide space for an ordered physical and social reality where structures and laws already exist to a large extent (Bergvall-Kareborn 2002).

Checkland (1981), the founder of the soft-systems approach further argues that human activity systems are fundamentally different from natural systems and needs a different approach. Soft-systems approaches have been further enhanced by group learning techniques (Vennix 1999).

There are real challenges in applying hard systems approaches to practical, social problems, but this does not necessarily justify the singular use of soft-system approaches. Ryan (2008), for example, observed that the deep divide between hard and soft system approaches runs in the belief in the one or the many, or the dichotomy between reductionism and pluralism.

It could be tentatively taken as a point of departure that the hard and soft systems approaches exclude each other, a premise that is not very helpful in solving real-world, messy problems that involve both nature and culture. Soft-systems approaches tend to focus on human freedom and hard systems tend to focus on understanding and controlling the determinative laws of nature, which is often described in a mathematical language. The Kantian attempt to integrate nature and freedom is failing in defining an integrated systems approach that includes the fullness of reality.

Further work needs to concentrate on whether such an integrated approach is possible, and what the implications are of leaving each approach in its own domain with an ex post integration of results. There is some promising work on multi-modal systems theory that does recognise this problem and provides a solution by operating from a different philosophical ground-motive (De Raadt, 1989; Mirijamdotter 1998). Mediated systems approaches also provide some bridges between hard and soft systems (Van de Belt, 2005). The possibility of using such approaches for approaching messy problems needs to be further investigated.

Integrated systems analysis and modelling approaches are not new (Fiksel, 2006). Such models can assist in more effective decision making for sustainability, but are not a replacement of policy action and implementation

5. What is the response of ecological-economic theory?

[Slide 6]

Kallis et al (2009)*: *The root of the crisis is the growing disjuncture between the real economy of production and the paper economy of finance.* Exposition of economics taken too far – economism, ending with lots of paper assets with no real-world collateral, but real-world debts. Disjuncture real and paper economies, between ecology and economy (cost of ecol crises orders of magnitude higher). According to ecological economist Herman Daly, the current crisis is due to the overgrowth of financial assets relative to the growth of real wealth; there is too much liquidity, not too little.

Ecological Economics focus on putting nature back as key factor in economic analysis, positions economic system as subsystem of larger local and global ecosystems. Rejects homo economicus. Recognise multiple, incommensurable values. GDP critique.

Rise of globalised market as wedge between our contact with nature and with the moral consequences of the decisions we make. Gains from specialisation and exchange come at cost of detachment actors from (natural) realities and the moral implications of their decisions

Questions: What Reality, Whose Morality, Who drives change?
Begs question what reality is and if we can perceive it in its fullness? If not, what are options?

Morality? Kallis et al paper points to Aristotelian ethics of living well. Guided by oikonomia. Safe to say that there is no one well-defined ethical theory of ecological economics

6. A philosophical detour: Nature/Culture dialectic

[Slide 7]

Whether philosophy has delivered the knowledge that does justice to the fullness of reality is an open question. The fullness of reality cannot be achieved in a singular theoretical philosophy. Even the greatest philosopher has limitations.

This requires synthesis, which in turn requires a reference framework, an overarching worldview on which basis this synthesis can be achieved. Such convictions provide a point of departure for any philosophy.

More study is required to identify an ontology that does justice to the richness of reality. The important point to note at this stage is that any scientific approach to the real world problems is rooted in a particular view on reality.

Throughout Western history, nature and culture have grown as separate concepts. From Greek philosophers dualism between mind and matter/body

and soul to nature and freedom motives. Env management trapped nature/culture dialectic (Loubser 2005).

Loubser: Polar dualism of nature and culture. From Greek philosophers dualism between mind and matter or body and soul to a dualism of nature and freedom (e.g. there are no limits)

hierarchically organized in Western ontology. Based on transcendental critique of worldview underlying this polar relationship outcome is less radical deconstruction and non-dualistic, less reductionist conception of nature and culture. How?

Tension between Humanity's arrogance of all-encompassing Reason and Nature as Archimedean point (Kantian system of Nature-Freedom), but reason resides in humans, living systems and ontologically part of nature (Loubser).

Is there philosophy that recognises diversity without sacrificing unity and coherence, incl. nature and culture? (Loubser 2005:17). Aspects of reality governed by laws – *anankaistic* (could not be disobeyed gravity) and normative. Every aspect of reality has normative and natural side.

There is an inherent tension between concepts of nature and culture in Western philosophical history. Is this a key underlying driver of ecological crises?

Practical instrumental and structural solutions to the financial and ecological crises have a limited reach, but how far can we go?

6. Normative ethics (moral theory)

[Slide 8]
Normative ethics (moral theory) is the study what makes actions right or wrong.

Practical situation: many different ethical theories, and it can be expected that different actors will have different ethical reference frameworks:

- Old Greek ethics focuses on self-knowledge (Socrates), self-realisation (Aristotle) or sereneness/being content (Stoic).
- Based on Aristotlean ethics, virtue ethics is focused on the intentions and character of a person, rather than on the acts itself.
- Consequential ethics is focused on good outcomes. In hedonistic, utilitarian ethics, such as applied in the discipline of economics, the focus is on maximising pleasure and minimising pain
- Deontological ethics certain types of acts are seen as intrinsically right or wrong. For example, in Kantian ethics, the focus is on duties and rules.
- In divine command theory, another form of deontological ethics, obedience to God's commands is the source of ethics.
- Postmodern ethics focuses on relational aspects and on the complex situation of actions, often assisted by narratives

7. Ethics in economics

[Slide 9]
Consequential, Utilitarian ethic: pleasure and pain (Bentham)

Socially desirable outcomes from self-interested motivations

Adam Smith position (In Mills 1993):

> *(Men) could safely be trusted to pursue their own self-interest without undue harm to the community not only because of the restrictions imposed by the law, but also because they were subject to built-in restraint derived from morals, religion, custom and education*

What happened to such in-built restraints?

- Runaway consumerism and onerous debt (Easterbrook, 2003)
- *Always more is the silliest formula to live by.*. (Goudzwaard 2001)
    - rather focus inner growth of economy than output growth

8. Visionary leadership

[Slide 10]
World in a dominant economic culture with autonomous humans increasingly detached from reality and morality. Obsession with material growth and consumption

In messy, practical situations visionary leaders will have to connect a (partial) understanding of a system with achievable objectives for that system.

Such leaders are willing to learn and adapt while systems change, but at the same time provide clear and purposeful direction for a system improvement. How to identify and work with visionary leaders in achieving objectives for adaptation strategies needs to be a specific focus.

Visionary leaders communicate and live real hope in troubled times

Gardner (1995) makes this point in his study of 20th century leaders, when he says:

> *The formidable challenge confronting the visionary leader is to offer a story, and an embodiment, that builds on the most credible of past syntheses, revisits them in light of present concerns, leaves open a space for future events, and allows individual contributions by the persons in the group*. (p. 56)

9. Concluding thoughts

[Slide 11]
Any theoretical scientific (incl. economic) model/prescription has limited view of reality, cannot make claims that affect all of reality. This also applies to systems approaches.

Caution in conclusion, humility in presenting results

Economic science has become the dominant 'intellectual feeder' of culture – institutionalised and politicised

Science as a roleplayer, not as a sole shaper of culture, a need for ethical and political checks and balances

Role for visionary leadership, real hope mobilises practical action

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