Participation 20th International Sustainable Development Research Society (ISDRS) 2014 www.isdrs2014.org

Resilience – The New Research Frontier

Trondheim, Norway, 18-20 juni 2014

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Norway is perhaps the country with the best perspectives to be or become sustainable. It has abundant waterpower (hydro), large oil and gas reserves that are cleverly exploited, lots of land and space, an educated and relatively small population. Naturally, in line with evolutionary niche occupation and development (Adam Smith being a Darwinist *avant la lettre*), Norway specialized into electric railways, has many expensive electric (and heavily subsidized) Tesla cars driving around, and hosts a large meeting this week on offshore windturbine parks as a complement to the offshore oil and gas business.

The notes below give an impression of some of a few of the presentations at this well-organized conference, with some 200 participants. Obviously, they do not reflect the large diversity in topics and speakers.

The first keynote speech was given by Garry Peterson of Stockholm University and the Stockholm Resilience Center: **Using resilience thinking to create a sustainable Anthropocene**. There is in resilience thinking and application a shift from optimizing for low uncertainty and high controllability, with lock-in risks, to a new paradigm: optimize for high uncertainty and low controllability, with adaptability as key notion. Resilience can be desired or perverse, and resilience thinking and applications may therefore focus on causes of persistence or levers for transformation. Much of the thinking and research on resilience in Peterson's group can be found at www.resalliance.org.

Solér (Goteborg) discusses **rebound effects** in the context of the consumer culture as created by the market: now that the consumer is liberated from tradition and collective norms, "the market as most important norm provider in Western consumer culture." (cf. Douglas). Main tool: branding for the benefit of corporations, creating idealized identities. What are then rebound effects if people save money by energy efficiency measures? Favourite spending is on fast fashion (changes), home decoration, exotic travel.

Aall (caa@vestforsk.no) gives talk on **(un)sustainable tourism** (see also Hoyer 1997 for a hierarchy of SD-concept). Interesting presentation about why present 'sustainable tourism' is not sustainable, reasons for this being the vagueness of the term and its operationalization and the addiction to economic growth. He proposes to recouple sustainable tourism and sustainable *development* and distinguishes tourism as cause of unsustainable development, as victim of unsustainable development, and as part of the solution to a sustainable development.

The second keynote speech was by Ezio Manzini of Politecnico di Milano: **The Cultures of Resilience.** His key message: there is a shift underway from 20th century 'to control, to optimize and to be effective' (needed: big problems ask for big projects) to 21st century 'to be errorfriendly, to be

acceptable and to be adaptable'. This paradigmatic difference also shows up in the tension between corporate power and social creation of meaning. In the new adaptive projects that happen in distributed systems, a culture of dialogue and democracy (as the most resilient system) is needed as a platform for globalized society, in order to generate rich ecosystems of ideas. He calls it cosmopolitan localism. There is great diversity (see the site www.7billionothers.org): global ideas with different meanings locally (cf. distinction universal vs. global). Manzini gives quite some example of small-scale local projects, illustrating the social and cultural innovation that is needed (see www.desis-network.org).

Jansson (Umea School of Business and Economics) gives interesting presentation of the **ethanol/E85 introduction in Sweden:** a failure, in retrospect (cf. paper bij Van Vliet et al.). There was a rapid increase in ethanol/E85 pumps and car sales (a peak in biofuel car sales of 20% of new cars in 2008, after which it dropped quickly to near zero). In the meantime, a large pump infrastructure was built up. Reason of the hype was a large advertising campaign by the giants (Ford, Volvo) in 2005, stressing that you had much additional power etc.; the rapid increase in fuel efficiency in gasoline and especially diesel cars; fading of climate change concern; food vs fuel debate; some technical and maintenance issues. Important conclusion: multiple motives and multiple alliances play a role, appreciate norms and comfort as you cannot go against it, consider the whole system and prepare for backlash, have political agreement on long term vision – and understand consumers, manufacturers and policymakers. Any lesson for the (in Norway heavily subsidized) electric car (Tesla)?

Henriksson et al. (KTH Stockholm) on **electronics use and waste**. What do consumers strive for: possess technology that is mandatory (for a citizen), find new uses of ICT, take advantage of economic opportunity, compare and compete socially and identify with others, specialize and multiply particular devices, match products, experience fashion shifts and novelty (cf. Jackson), and not get my habits disrupted.

See Shove and Warde (2002), Inconspicuous Consumption: the Sociology of Consumption, Lifestyles and the Environment. See Gabriel and Lang (1995) paper on consumer lifestyles.

Floris van de Berg (Utrecht) on vegetarianism or, actually, **veganism**. He warns the audience in advance that it will be very personal and he look very sternly. Mancini argues that he is fundamentalist, blocking the dialogue when you say that non-vegans are not ethical. Other comment: conflating footprint and ethics. He challenges the status quo in 5 points.

1. SD is anthropocentric. Admission to the moral club should be broadened. Key criterium for moral admission (called sentientism) are Bentham's words: can they suffer (but Buddha talked about sentient beings 2500 years ago).
2. Veganism as bridge between SD ethics and animal ethics. Animal products are damaging environment; eating them is unnecessary.
3. Veganism is easy: living life without harming others.
4. Veganism is the beginning of all sustainable development.
5. It is not a game but a moral prescription, without it ethical life is not possible. It challenges the status quo – as it was when we had slaves and discriminated women and homosexuals... only in this way we can be part of the problem.

My view is that deep ecology gives a better perspective than the anthropocentric command of FvdB to be a vegan. If I relate to nature, cutting a tree is causing suffering and pain, at least in me, and similarly organic farming is not harmful inasfar as it respects the role of animals in the larger whole [ecosystem].

I attended a presentation about the quality and extent of **sustainability reporting in Canadian mining industry** (Toronto stock exchange listed companies) by Dilling of New York institute of Technology. Integrating reporting is still in the beginning stage: many discrepancies between Annual Report and Sustainability / CRS reporting. She cannot assess the reliability of the reporting. For instance, there is massive opposition against a big 1000 mile pipeline – here mistrust plays a big role, because there is lots of advertising about how safe the pipeline is and companies never report about things that failed… One test might be to make carbon debt one of the KPIs, because then the financial assets all of a sudden would look differently to shareholders. In the USA, actually shareholders start to push for disclosure. One issue hardly addressed in these presentations is the context: competitive capitalism in which genuine sustainable business operation implies death for the company.

Sustainability performance of public organizations in Portugal – Ana Rita Domingues arsd@fct.unl.pt. In essence, there is no priority and little attention for **sustainability performance in public institutions** [in Portugal]. In this context, European procurement rules are an obstacle, perhaps.

Mauerhofer (Vienna) presents work on **property arrangements**. Confrontation of rights holder and situation of change vs. rights holder's legal position (Schlager and Ostrom 1992). It is about conservationist plans for change and whether and how they have been realized according to a selection of published papers (criterion: reference to Schlager and Ostrom paper). The value of the approach is to frame conflicts about property rights in relation to nature conservation related projects (motorway, wildlife etc.).

Sheate and Partidario (Imperial London and IST Lisboa) present about **knowledge brokerage in environmental management** (Strategic Environmental Assessment SEA), based on work that originally started at Utrecht University. How to get new forms of knowledge and from diverse sources? They distinguish expert knowledge, lay knowledge, variations in between (whether explicit or not) as a context to explore expert vs. lay disputes. Case-study 1. on Bovine tcb: tension between 'eradication' paradigm of veterinaries vs. "nature as known' among farmers, and focus on culling instead of disease dynamics. Case-study 2. On flooding in winter 2013/14. Is it farming lobbying or farming values? Case-study 3. Fracking where government and oil industry are opposed by NGOs and citizens. How to broker knowledge in these disputes? How to engage constructively lay knowledge? Case 4 Climate narratives. See e.g. paper by Lejano, Tavares-Reager and Berkes (2013) on Climate and Narrative in ESP (31). Case 5 EH2050 European electric highways www.e-highway050.eu/e-highway2050/.

They work on a model of knowledge brokerage for science policy dialogue and social learning. There is a lot of experience in the area of development, where traditional knowledge is becoming more acknowledged ('battlefields of knowledge'). Question is whether it is knowledge brokering or, broader, interest brokering.

I did not attend the 3rd keynote speech; the 4th was given by Jorgen Randers of the Norwegian Business School: **The 2052 Global Forecast**. Perhaps the two key messages are best summarized as:

- The future is fairly well predictable (because 'the world' did not listen to the Limits to Growth report in 1972 (of which Randers was one of the authors), and
- Societies and the world are unable to deal with long-term problems because of the short-term focus of the two dominant mechanisms: democracies (for short-term political power) and capitalist business (for short-term shareholder profit).

In democracies, the majority will always vote for the lowest price; in capitalism, the entrepreneurs choose for the highest profit. Because we do not [wish to] change these mechanisms, we can make a solid 40-year forecast – which is what Randers did in his book 2052. He has marketed his book 2052 very well since the date of appearance in 2012 (see www.2052.info). Population will increase to 8,1 billion by 2045; world GDP will saturate around that time at 150 G$/yr, as the effects of all women working and stagnating service sector productivity ('Baumol's disease') operate. Because many uinintended side-effects will require massive investments (e.g. to compat impacts of climate change), there will be an estimated 15% of GDP go into non-discretionary investments on top of the business-as-usual investment flow of 24% of GDP. In other words: incomes rise but the freely spendable part by consumers stagnates.

Given the pervasive short-termism in the world, no effective policies (for instance: heavy taxation) are to be expected because doing nothing is in the short term less expensive. Some countries will nevertheless manage to have significant development, and perhaps countries with some form of (enlightened) dictatorship may fare better than democracies. Other countries will remain in misery, despite all the plans and dreams about economic growth.

An afterthought about scientific communities

The organization of science in disciplines, as it has emerged since the 19thy century, has led to many strong disciplinary professional communities with established venues and journals. Objective and detached as scientists pretend to be, these communities have certain tribal characteristics with, on occasion, ideological components (see e.g. Bourdieu). This is also true for the theme-oriented [networks of] communities that are arising as part of multi- and interdisciplinary research and education. I had ample opportunity to learn about some of the rituals in the Church of Science, so characteristic of Modernism. Battles among the ambitious warrior-leaders; annual meetings, membership criteria, honorary members; board meetings about the next chairperson, the annual fee and the location and topic of the next meeting; and the joint publication of papers and reports and the founding of a journal. The meetings are quite interesting events for an anthropologist. Some tribes are very disciplinary, with strict rules about where the interesting frontier is and about the accepted methods. In sustainability country, the tribes are usually generalist and inter- or multidisciplinary. Self-organizing networks like these are effective and, for the participants, pleasant and enriching experiences. They have great flexibility and adaptability, because scientists tend to be individualists and are less constrained in their actions, words and thoughts than, for instance, diplomats or business people. The network culture is rather egalitarian in nature, with often an important role for one or more charismatic scientists who offer(ed) the leading concepts, tools or visions.

Successful networks are, for instance, the System Dynamics Society with its own society and journal, and the more recent network evolving around the concept of resilience that manifests itself in the Resilience Alliance, a Resilience Center, resilience science a.o. and also has its own journal. Their 2014 Annual Conference in France had 900 participants; over 500 presentations have been given. One problem in these networks is that participation (travel, fees, accommodation) is often too costly for people from low-income countries, and a sizeable amount of attention and funds are involved in getting a certain geographical (and also gender) diversity. At conferences about themes such as sustainability and resilience, this is of crucial importance as so many of the issues relate to socio-ecological systems in such countries.

This conference was organized by yet another network: the International Sustainable Development Research Society (ISDRS), grown around some, mostly European, social science oriented scientists. It considers itself to represent the 'sustainability research community' of the world. Walter Vermeulen is presently President of the Board of Directors. There were some 200 participants and over 150 presentations. Not surprisingly, quite a few presentations were for small audiences – which is an advantage (niche specialization) and a disadvantage (fragmentation). The presentations covered a wide array of topics, but most had not much to do with resilience and there were only a few presentations related to sustainability science and education. It suggests that, like in most other networks, the topic of a conference indicates an attempt at steering but the actual presentations are often determined as much by the core groups in the network and their research and affiliations. It was interesting to observe that the announcement for next year's meeting in Australia was largely filled with a pr-movie with waterfalls, boats and beaches.