

SUMMARY OF THE LECTURES

MAR-E1006 – Landscape architecture and research

Initial thoughts on sustainability

To even be able to consider the necessity and effects of sustainable development is a luxury that a large part of our global population cannot afford to indulge in. To many the immediate survival of themselves and their family weighs more heavily. Sustainability may be a global issue, but the responsibilities and actions to reach it cannot be the same for everyone, to every nation. Those that are in the position to do more should do so. That said, everyone can ask themselves what they would be willing to do to live in a more sustainable manner.

As mentioned, I believe we humans are more driven by the concern of our immediate survival and also the pursue of instant gratification rather than concerns towards our species future survival. This of course is a generalization, but I do believe it to be characteristic of the majority of our global population. It is also perfectly normal behavior, but it causes me concern over our chances of attaining sustainability as I believe that achieving it will require a complete change in our lifestyle.

I was reminded about these thoughts of mine during Hannin's presentation in our introductory lecture session. In her presentation she talked about the co-responsibility project in Curitiba Brazil. I could not help but feel that the main reason for majority of the people to participate in it was the promise of food and money in exchange, not because they were worried about sustainable development [1]. Perhaps this is how it needs to be. Perhaps the public doesn't need to care about sustainability per se, but through strong incentives their actions and choices are limited to those that advance sustainability? Where do we draw the line between freedom and the continued existence of our species? I would rather not have these thoughts as they depress me.

Catherine's presentation, during the same lecture session, offered another view on strong incentive driven sustainable development. An approach that might provide clues for economic sustainability. Regen.Network's approach to advancing sustainability is to monitor the ecological state of an area, detect changes in it and reward those who have contributed towards a positive change [2]. Perhaps this is the only approach that works due to our nature. Maybe we're incapable of committing to something if there's no clear reward in doing so? Whether this is the case or not, I do share Catherine's view that we need to better leverage all our tools in tackling the sustainability issue, including ICT. However, before we start choosing tools we need to come to an understanding about what it is that we try to achieve.

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Even if I were to forget everything I've said thus far, I have some concerns regarding the very concept of sustainable development itself.

The problem of sustainability, at least how I currently view it, is the core essence of life itself (continuous growth/procreation) inside a system (Earth) with finite resources. Constant growth requires resources that renew faster than our rate of growth. Through breakthroughs in science we've been able to tap into new resources and continue our growth, but this is nothing more than a momentary remedy to a persisting problem. Infinite growth isn't possible in a system with finite usable resources. We might be able to continue push that boundary further, but it's still there. It will always be there as long as we're bound to this ecosphere. Perhaps that's the essence of humanity's existence. Keep pushing that boundary as far as we can and see how far we can go.

I acknowledge that my views are restricted by my current experiences, knowledge and limited ability to foresee the Black Swans in the horizon. Who knows, perhaps this year a group of researchers will announce a substantial breakthrough in creating a clean and sustainable energy source, thus embarking humanity towards a new energy revolution. A revolution that might free us from the shackles of our current ecosphere. I just hope that whoever does come up with a solution is able and willing to share it with the rest of the world. I guess this is where some of my pessimistic views stem from. For some reason I seem to harbor distrust towards humanity's ability to work together towards a common goal.

For you, the reader, to better understand my thoughts and conclusions I felt it necessary to include these initial thoughts in this summary.

"If you do not know where you come from, then you don't know where you are, and if you don't know where you are, then you don't know where you're going. And if you don't know where you're going, you're probably going wrong."

— Terry Pratchett, *I Shall Wear Midnight*

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Resilience

One concept that kept coming up in almost every lecture is resilience and its meaningfulness to sustainability. Resilience can be viewed as a type of elasticity / malleability. A resilient system has the capacity to mitigate and adapt to changes and stresses introduced to the system without it changing its core function. This means that a resilient system is capable of redefining / rearranging itself to a certain degree.

In Simon Bell's lecture we briefly touched on the relation between resilience and sustainability which got me thinking about the following excerpt from the Brundtland Commissions report:

"...sustainable development is not a fixed state of harmony, but rather a process of change in which the exploitation of resources, the direction of investments, the orientation of technological development, and institutional change are made consistent with future as well as present needs. Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs." [3]

To me the above definition of sustainability carries a notion of resilient design. However, I'm not trying to imply that resilience and sustainability are the same. Achieving resilience might require exploitation of resources at a rate that cannot be sustained and would therefore likely have negative effects on both current and future generations - thus being against the very core concept of sustainability. The above definition however clearly states that sustainability is not a fixed state of harmony, implying that it is perhaps more like a fluctuating state of balance that is maintained by adaptation/mitigation of changes enabled by strong resilience. Resilience that is built in sustainable way.

For the reasons stated above I believe resilience to be a key concept of sustainability. Whatever forms of environmental, social and economic sustainability we hope to achieve, we won't achieve if we're not able to design them to be resilient.

Everything around us is in a constant state of change.

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Growth

At the moment our global economy relies too much on a continuously growing consumption of physical goods. This also affects the resilience of the economy.

The international community today is committed to global a growth model that increases material consumption through liberalized trade in an expanding world market characterized by competitive relationships, individual choice, the rise of transnational corporations and private capital accumulation.[4]

How to redefine our economic system so that growth expectations are inline with the social and environmental agendas of sustainability? How to define a sustainable level of growth?

I found my earlier thoughts regarding infinite growth inside a system of finite resources echoed by William E. Rees

Whatever the state of technology, human society remains in a state of obligate dependence on the ecosphere for both the production of useable energy/matter and for waste assimilation (in addition to many other life support services). [5]

Until we find another world to inhabit, we are dependent and restricted by our current habitat (Earth). As our continued existence depends on the consumption of its energy and matter we cannot detach ourselves from it and can therefore only try to lessen the negative impacts our actions have on it. This is the reality that everyone needs to accept.

We need to find a way to decouple our economic growth from the environment. This however would require us to completely redefine how our economy works and what are its drivers. To decouple two systems from each other would require removing the inter-relationship between said systems, after which neither system could no longer have any negative (or positive) effects on the performance of one another. To achieve this we would however require a paradigm shift in our way of living. Are we capable of fundamentally changing something that our current societies are build upon?

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Empowerment

Social sustainability has been and perhaps still remains to be less prominently discussed aspect of sustainability. To me the it has been something that I've often thought about during the lectures, but never really gave enough time to delve in deeper. For that reason I do not have any profound insights into how to tackle the social part of sustainable development. I will however try to provide some thoughts that I've had regarding improving people's feeling of empowerment as I feel that this is one of the key factors in improving social sustainability.

I feel that we have an innate psychological need to be able to have control, or at least believe to have control, over our surroundings. This need can be linked to Sen Amartya's idea of individual substantive freedom, which he describes as the ability to choose and realize a life that a person has reason to value.

I strongly believe that the desire and determination to live in a sustainable manner needs to come from within the people themselves, not from policies enforced and dictated by governments and other authorities in a top-down fashion. For this to be possible people need to feel that their actions towards sustainability have actual meaning, they need to feel empowered.

One of the ways to perhaps achieve this is to provide people with accurate and perhaps even real-time data about the effects of their actions (energy and water usage, co2 emissions, how much non-recyclable waste they produce, etc.) which could even lead to people self-regulating themselves as they become more aware of the effects their actions may have on the environment.

I've already mentioned that I believe our economy needs a paradigm shift for it to achieve sustainability. As I believe sustainability to be a way of living it thus needs to permeate its way to every part of our lives, including our notion of quality of life.

Designing sustainability

Sustainability consist of several different parts that have complex interactions and connections that are difficult to predict. Therefore, it is more than a mere sum of its individual elements. It is the connections and relations of these elements that provide means for understanding the system known as sustainability. Instead of focusing on analyzing its individual elements we need to identify and understand the connections and relations of said elements. We need Systems thinking.

In natural processes/systems change (increase of entropy/disorder) cannot be avoided. As change is unavoidable, for any natural system to be sustainable it needs to possess the means in which to minimize any negative outcomes brought forward by changes in the system's structure. This requires resilience. In a natural system diversity can perhaps be viewed as the individual element's ability to form diverse connections and new patterns in various scenarios that the increase of entropy will introduce to the system. Therefore, for any natural system to be sustainable it needs to possess the ability of self-organization (resilience) in order to redesign/rearrange its elements when needed, thus increasing its abilities to form new connections. It also needs to be able to do this in in such way that the system remains a suitable environment for humans to benefit from. Strength of these benefits then depends on the amount of connections as Green Infrastructure areas that host diverse ecological connections, for example forests, are normally seen as strong providers of different Ecosystem Services. This would then mean that designing sustainable environments we need understand its current qualities(connections) and find ways to improve and also create new ones to increase resilience.

Sources

1. SBS NEWS, Curitiba - City of Dreams, <https://www.sbs.com.au/news/curitiba-city-of-dreams>,
2. Regen.Network, <https://www.regen.network/>
3. Our common future: the world commission on environment and development (also known as Brundtland Report)
4. Willian E. Rees (2003). Economic development and environmental protection: An ecological economics perspective, p. 43
5. Willian E. Rees (2003). Economic development and environmental protection: An ecological economics perspective, p. 35