INFRASTRUCTURE OF SUSTAINABILITY

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Abstract

Territory is entanglement of social and material constructions. Infrastructure is that what makes and keeps the modern societies running and functional. There is introduced the notion of deep infrastructure made of language distinctions, social practices, rules, codes and standards. This deep infrastructure lays basis for an overt (material) infrastructure that modern societies build in order to solidify themselves in their territory. It is proposed that over past several centuries, modern society was in a growth phase (while it expanded into the whole globe) which is reaching its climax and therefore the transition into the sustainable phase is at hand. It is argued that in order to make this transition, the change of the infrastructure of growth towards the infrastructure of sustainability is needed and some key characteristics and distinctions are proposed.

1   Introduction: living in transition times

We are living in transition times. Modern societies changed the Earth and relation of people to the Earth as well as relations among people during past several centuries more than during past several milleniums. But what is now in the middle of a process of change is the modern society itself.

Chart 1:
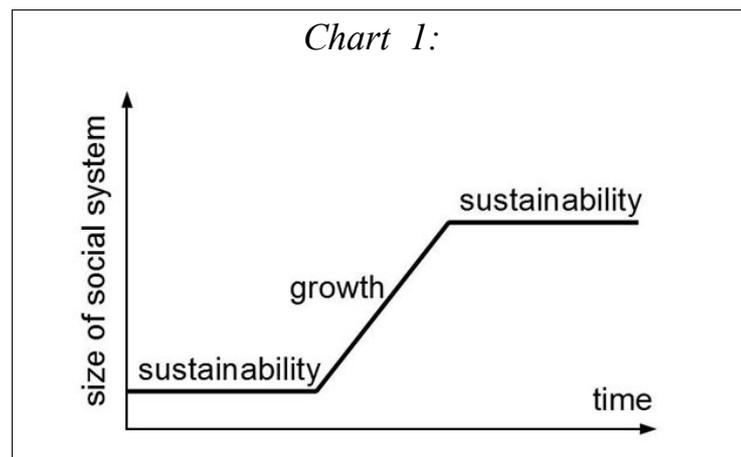
The structure and character of a modern society is deeply inscribed in its territory, in modern cities as well as in land uses that support these cities. Any social change, in order to be effective and lasting, needs to translate itself into the changes in territory where the change takes place. That is indeed what Henri Lefebvre means when he talks about the (social) *production of* (social) *space*

[1]. We are going to focus in this article on infrastructure of such territory. At first we introduce the concept of *deep infrastructure* in order to use it later to distinguish the *infrastructure of growth* from the *infrastructure of sustanability* and explore some of their characteristics.

The distinction between these two types of infrastructure is related to the different phases of the dynamics of social system as illustrated in chart 1. Infrastructure of sustainability is at the foundation of a social system whose size is relatively stable, while infrastructure of growth enables society to expand.

2   The concept of infrastructure

The word *infrastructure* usually denotes various transportation or technical networks (streets, roads, railways, harbours, water supply systems, sewarage, power lines, pipelines, information and communication networks) that are in place in order to keep the modern society running and functional. The word *infra* means hidden, underground, invisible, underlaying – and so are these structures that are produced by modern societies with great effort and at great cost. But the infrastructure is not only the material part made of tarmac, steel, concrete or plastic, it is also the social part: the rules, standards, practices, signs and codes that are *embodied* or *materialized* in these networks.

Digging deeper into the concept, we suddenly realize that for example *road* is much more than tarmac. It is the system of traffic rules (driving on the left or right, speed limits) and of standards of road design (the width of the traffic lane, design of junctions) as well as set of standards for the design of vehicles (dimensions, weight). But it is also the system made of parking places, traffic police, petrol pumps, refineries and oil wells. Going even further, the *road* also created the vast car-dependent suburbs as well as the concentration of military forces near the Persian Gulf region. Thinking wider about the *road* exposes its entaglement into other infrastructures as well as into the structure and character of modern society.

While thinking about modern society at world-scale, we can realize how deeply it is connected with a whole set of infrastructures, codes and practices as well as with their unintended consequences. We can think about the infrastructure of diplomacy and international treaties that creates the system of sovereign states, border checkpoints, arms race, refugees or Olympic Games. What binds such and other disparate things together may be called *deep infrastructure*, an infrastructure made of language distinctions, social norms, codes, rules and values that we usually even do not conceive of as socially constructed [2].

3   Infrastructure of growth

Let's call *infrastructure of growth* that *deep infrastructure* that layed basis for an expansion of modern society into the whole globe. We can trace its origins into

the formation of modern world-system in parts of Europe and the Americas in 16th century [3]. This deep infrastructure is based on several commonly accepted notions: „more is better" (notion of growth), „new is better" (notion of change) and „material world is the only world that really matters" (notion of universality and of the primacy of material world). This short list is by no means exhaustive but let's keep it simple for the sake of this article.

It can be infered [4, 5] how are these notions connected with capitalism (notion of growth and of change), with science (primacy of material world and notion of change), with urbanization (notion of growth and of the primacy of material world), with political representation (notion of change – regular elections) and so on. Notion of material world as *the only world* encompass also an universalist claim that echoes even in the „there is only one God" notion or in scientific presumption that „there is only one reality, ruled by universal laws of nature". From such universalist notion probably stems also all the unification and standardization efforts ranging from unified theory of particle physics or universal human rights to the imperial conquests to rule the world or neoliberal ideology of „there is no alternative".

Nevertheless, what interest us here is just the effort to build *one world*, the effort to connect all the discovered territories and societies into one conceptual and social world and plug them into the modern world. To establish a connection between the worlds means to devise and costruct the infrastructure that link that particular world to the modern one world. It can be, for example, just an exchange point, a translation or an education of the natives. But usually, it means also taming, rooting out or destruction of the unknown – a destruction of that what was *lost in translation* or *lost during transformation* into something that can be handled or used in a modern world. This is the dark side of the notion of change and of modern universalism: it connects and modernizes by way of stripping out of original substance and character and by way of artificially creating *tabula rasa*.

Just remember what usually means to *develop a territory*, build a modern city or create a mine or an agricultural field: claim the ownership (that almost equals to overriding any older meanings), cut down the forests, dry the swamps, displace the natives, create a monoculture, build up the streets and houses. The infrastructure of growth is ready to supply all the means to do this: to legitimate the action, do away with opposition, mobilize the necessary energy, people and machines and gradually connect such a *new territory* to the modern system.

4   Signs of transition: limits of growth, reflection, popular protests

Certainly, there are some limits to the growth of whatever society on this Earth. It may be availability of certain indispensable resources, degree of complexity of a given society [6] or getting out of range of certain parameters of environment (temperature, concentration of gases in atmosphere, exposure to radiation). But

it is almost equally certain that long before reaching some of those limits, there will be a plenty of warnings that some profound changes are necessary.

Modern society is very much based on values of emancipation (freedom, equality and brotherhood) and remarkable is also its ability to predict the possible consequences of its decisions as well as to rationally criticize itself and to make conscious choices. It is indeed much more complex issue – the relation of people to the society, the distribution of power, knowledge etc. – but here we want to stress just this one thing: that modern society as well as modern people *are not* determined or destined, they are free to choose their future or reply unexpectedly to the impulses from inside and outside. It is therefore entirely possible that the modern society change its course when it perceives some limits or threats – even if there may be many signs that render it impossible.

During the last half of the century, a whole avalanche of critique has been spelled on modern society and its either destructive or unsustainable relation to the nature, other societies, other life forms and increasigly also to the inner nature of our human bodies. Nevertheless, the modern social system seems to be robust in a sense that it has a great inertia and resistance to a change. We can say with Jürgen Habermas that system colonizes the lived world [7] but also that there is a chance of overcoming the limitations of instrumental rationality of the system and its subsystems by *communicative rationality*. And indeed, truthful, proper, credible and understandible use of language is seen also by many other critics as most lacking today.

There are indeed many signs that the transition to another social system has already begun. It is not only scientists, academics and civil society organizations that have been criticizing certain aspects of modern society for years, but nowadays, there is also wide popular movement, demonstrations and protests in different parts of the world that raise the critical voice and organize themselves in order to change their society. There is a strong feeling that change, reforms or revolution are necessary and that the growth and many other (associated) social and material practices simply cannot go on as before.

5   Infrastructure of sustainability

Infrastructure of sustainability is a name for that *deep infrastructure*, on which should be based also the *overt* (material) *infrastructure*, that should replace the infrastructure that was designed for growth. What are the attributes of such infrastructure?

Most of them are not new at all. They much more resemble the wishes and efforts of ancient philosophers and thinkers of Renaissance and Enlightment era. These attributes and claims are usually 'just' an actualization of the meaning of modernity in changed social, historical or environmental conditions. It is now, as

well as before, about the content and meaning of such basic concepts as truth, nature, man, freedom or justice.

We can put the claims on infrastructure of sustainability in contrast to the infrastructure of growth: The notion „more is better" should be replaced by „do the best with that what you already have". So it is no more the logic of expansion, domination of nature and people but the logic of saving the resources, optimization of their use as well as caring about the others. It is the logic of closing the cycles, logic of „no more junk", shortening the transportation distances and producing and consuming more things and food and energy locally. Infrastructure of sustainability will be less abstract and therefore less about money and more about the energy (with emphasis on renewables). We should care less about the efficiency of production but more about the fairness of distribution and use.

Since the knowledge and informations will be rather universally accessible, there will be more ingenuity in their use in every concrete and specific territory (or place) with differet mix of available resources and people's skills. This is how information society should look like: be able to solve the unique and practical issues, not just copy few 'universal' recipes. Here comes also the *communicative rationality*, the imperative „talk and understand before you do the change". We must learn to ask and *listen*, act slowly but legitimately.

We need to recycle: not just things and waste but also territory, cities, ideas or social practices that were forgotten in that furious search for something new and better. There will be more durable and easily repairable products and there will blossom the 'art of recombination' of various ideas and products. „Diversity is good" is therefore another significant notion: it may be a little less efficient in a short term but also less vulnerable to unpredictable risks.

We can also think about the paradigm that combines a degree of local (personal, territorial) self-sufficiency with temporary or issue-oriented association of such smaller units at the basis of shared values, practices or codes.

In most of the above listed issues is very important the common and public communication infrastructure. It should be more about assembling and clarifying meanings of the words than about data cables and computers, more about distribution of knowledge and public (and in elementary schools taught) knowledge about „who know what" and „how the modern world works". The public space is nowadays flooded either by meaningless informations, by systemic propaganda (ads) or by specialized knowledge that is for most people equally useless.

How to foster the transition towards infrastructure of sustainability? Nonviolently fight for your emancipation and for emancipation of other people! Provide them with means on which to base their own living as well as rights and tools for direct democracy in common issues (that concerns economy –

economic democracy, energy, food, transportation). The more are the people able to cater for all their *fundamental human needs* [8] by themselves and locally the less they are dependent on large, distant and hard-to-influence systems. Once a critical mass of people disconnects from oppressive and uncontrollable systems, these systems, designed for growth, will soon die out – or starts to be redesigned and transformed for more sustainable use.

6   Conclusion

It may seem to the engineers that we talked most of the time about society, communication and words and said very little about the material infrastructure that they design and build. But that is preciselly the point: infrastructure and engineers should be more conscious about society and about practices that go with the 'technical' part of the infrastructure. Even infrastructure is about values – they are in a way embedded in it – so the discussion about values and about the way we live can and should, in the end, result in consciously remaking the infrastructure.

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