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Social Geographical Challenges and Search for Adequate Answers in East-Central Europe of the 21st Century

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SOCIETY AND ITS ENVIRONMENT

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Gaiai hypothesis, as the baseline of environmental protection

Dr. James Lovelock described the idea of Gaiai hypothesis in plain terms in his documentary book called "Gaia: A new look at life on Earth" in 1979. Lovelock describes Gaiai as a ***complex, cybernetic system*** including biosphere, atmosphere and geosphere, which is able to create and maintain the optimal environment for life. According to his theory, living creatures and biochemical systems cooperates in order to establish the ideal living conditions. Each biotic and abiotic factor of our planet builds together a coherent, self-regulating system. A new scientific field, new scientific demand and new possibilities emerged from this theory. **Network science** appeared, which was a new research area demanding new approach and new method. It analyses interactions on micro-level; patterns created by those interactions on macro-level. Network scientist describes our world by *nodes* and *edges*.

Unity of natural systems

Technical achievements in informatics provide new tools to understand natural systems, *the interactions and connectivity between water systems, vegetation, humans and abiotic factors* (Teleki 1917); although practical environmental protection omits this approach. Demands of environmental protection **focus on individual segments** rather than the big picture in both practice and law. We believe that it is necessary to consider **environmental protection** as a **complex system** of the interactions between society and its environment. We should propose new demands towards *network science* in order to be able to handle environmental protection as a complex system. *Impact measurements* which authorize land use could be more precise than present practices if decision making is supported by a map based **multi-criteria DGIS system** (Miklós-Németh-Verrasztó 2015.)

Need for standard impact measurements

Nowadays, increasing percentage of human population inhabits towns where infiltration of rainwater is almost impossible due to the build-up areas. On the other hand, growing demand for food supply require more agricultural land which means previous deforestation. Besides the more frequent extreme weather events, due to global warming; floods also become more common as a result of decreasing water holding capacity of deforested landscapes. Oxygen production declines as a result of water pollution and deforestation. Moreover, carbon is emitted into the atmosphere by burning fossil fuel which has taken million years to accumulate. Biodiversity declines because of the loss of habitats. Deforestation also accelerates soil erosion. However groundwater supplies decreases, its exploitation increases. Population growth, urbanisation, demand of luxury goods-requires more build-up area, more agricultural lands and we will emit more pollution and toxic waste into the air and water. Human population occupy the natural habitat of other living creatures, in addition, it has impact on the landscape far behind its actual surroundings by pollution. It is obvious that humankind has more power than knowledge (Cholnoky 1930). We destroy our surroundings by overexploitation of natural resources, changing natural environments and by polluting the food chains. **We need to limit our aims, actions and demands by the capacity of the environment. If we force nature to satisfy our needs it will result social catastrophe.** We need to keep in mind that all the societies evolved under the control of the environment; its development was determined by environment. Lifestyle, attitude towards nature of different races and countries were formed over decades. Now we need more knowledge in order to be able to live in **balance with nature again**

- Environment as a system,
- Natural resources,
- Changes in environment-effects and reasons,
- Interaction between society and environment,
- Decision making for target environment,
- Land use and its effect on the environment,
- Our surroundings as our habitat.

Landscape as the subunit of environmental systems

It is known that important questions are related to more than one field of science, like *sustainable development*. It is barely understandable for science, although its goals should be applied in all aspects of life. It also means that concepts and ideas get *mixed up* as different sciences might have different interpretation. Basic idea of sustainable development is a ***sustainable landscape,*** **which requires *sustainable biosphere*. Whole is greater than the parts; geological definition of landscape** reflects this old wisdom. Thus, we have to define,

examine and model our landscape as a complex system considering the facts and data we know about it (Verrasztó 1979). Landscape changes as a whole, by the changes of *landscape elements*, it is the room for biotical and abiotical factors; also landscape is where society evolves. The first step of practical analysis is to **group** the similar elements together, because grouping is necessary as we talk about complex systems (e.g. society, ecosystems or even cells). Only social networks have been studied in details so far, thus its connection system has been proved. Social connections evolved which became grouping orders. Its stability might have been caused by its simplicity (Csermely 2005). We have developed our model based on this concept. Groups are formed by environmental factors (Verrasztó 1993). Definition of *environment* is clear now, as well as the scientific interpretation of *environmental data* and its structure. Data connection will be applied in *operating systems* which gives us the systematic order of *thematic mapping*. By following the above described process, **environmental data** will be placed **into the actual landscape** and transferred into spatial data. If we model the process which takes place in the **landscape** with modern, dynamic GIS, then we will be able to predict the possible impact of our decisions and help adapting society to environment (Rapcsák-Verrasztó 2002). Some scientist states that environment and natural environment should not be considered as the same. Culture was created from nature by society, as they say. In our opinion, urban areas-the most artificial environments-are the most exposed to environmental hazards, yet they can be mitigated. Pollution of distant areas, like oceans, is known to be more dangerous. Environment includes everything which surrounds us, which affect us. Modern science considers society as one of the landscape elements. On the other hand, we suggest that humans are not landscape elements since they have influence and *impact within the mode of action.* This philosophical concept guarantees the clarification of *environmental data* and the possibility to *systematize* them. We argue that urban development should be the target environment for humans. Future holds dangerous effects unless we protect the diverse landscapes which are essential for the evolution and maintenance of social and biological living conditions required by humans.

From practical environmental protection to Regions of Europe

Disagreements between western ideologies (like nazism, liberalism) have not vanished in the XX. century, but these well-known fights began again, as Huntington has wisely predicted. In case civilisations *remain*, the **battles** between civilisations-instead of ideologies-will be dominant in XXI. century. We need to ask **whether civilisations and society will survive** considering humans' enormous overexploitation of natural resources and the fact that we make our environment inhabitable for *Homo sapiens*. **Interactions between society and its**

environment need be clarified as soon as possible. **We need to find our way back to the lost harmony** and our aim is to provide a practical tool for that in this paper. This harmony consists of many aspects, such as our identity which is the complexity of: our gender, family patterns, religion and belief and-one of the most important-cultural and national identity. Landscape takes a key role in those identities because development of our family and society has been shaped by the landscape over the decades; it has caused *social diversity*. The modern tools, used to satisfy our needs, easily step over political and natural boundaries. Our environment used to be exploited to satisfy society's need based on one sided decision. NGOs and modern policies aim to force economics to ***also*** consider environmental protection in decision making. **Humbleness** is also **needed** in decision making, as people ***still want to rule*** the world. Shumacher phrased ***that each development region needs an inner comprehensive identity*** (Shumacher 1980). *Cultural structure is required as well as economic structure*! In addition to this, their interactions with natural and landscape factors need to be considered. **That is how we end up at Regions of Europe from environmental protection.** In addition to the spatial expansion and landscape change made by humans, now the technocrat civilisation has effect on our wider surroundings too. Besides the biosphere, social actions also have an impact on the natural cycles in the lithosphere, hydrosphere or the atmosphere. World leaders now accept the disturbing fact of global warming and its hazards. Our activity has a feedback effect on the planet, although the society is **less and less aware the limitations either on individual or on social level. Those ambitions and activities will generate global conflicts.** Natural world is clearly *determinate*, while *free will* rules society. Even short term survival of human civilisation will be in danger if *decision making* **confront with the limitations** and resources of nature and loose contact with *landscape diversity*. **Nowadays, countryside is considered as the area for agriculture and it has no place for social territory of people**. Moreover, humans are considered as working biomass instead of a society which has been adapted to the diverse landscape. It means that efficiency of production is the primal motivation in **land use** change. This will lead to landscape degradation, natural destruction and decreasing productivity which will be followed by social conflicts. Practice of production and consumption, social-community-and cultural functions of the countryside are unwanted for economics. Others realized that the values and functions of the countryside are essential for our society. Urban and rural areas are connected in many ways; farming can be effective if it deals with social, natural and economical possibilities at the same time.

Florence Convention, as the baseline of landscape protection

Some reputable scientists often differentiate nature, environment and landscape, while others mix up those definitions or use them as synonyms. Thus we need to refer to Florence Convention which was created by European Council. It states that **the landscape reflect the identity and diversity of Europe which is our cultural and natural value**, either it is a common or extraordinary, urban or rural, land or aquatic landscape. *"The European Landscape Convention - also known as the Florence Convention, - promotes the protection, management and planning of European landscapes and organises European co-operation on landscape issues. The convention was adopted on 20 October 2000 in Florence and came into force on 1 March 2004. It is the first international treaty to be exclusively concerned with all dimensions of European landscape."* The convention provides an excellent legal framework to promote the technical concept *which considers landscape and environment the same, also considers* ***region*** *as the connection of landscapes*. *River basins* would be an ideal unit to examine social and natural interactions. In case landscape-as a natural unit- became the baseline for decision making in politics which determines the path of landscape development, then it will lead to positive results (Verrasztó 2010). A good example for this goal was ***sustainable development*** described by UN:*"Development* ***that meets the needs of the present without compromising the ability of future generations to meet their own needs****."* It proposed that overuse of the environment is unacceptable, although it also requires continuous economic development, social equality and justice. However no guidelines or tools were provided by the UN, in addition overuse and environment has not been defined. **European Landscape Convention also includes the following demand:** *"In addition to their local significance, Europe's landscapes are of value in various ways to all Europeans. They are cherished outside the locality and beyond national borders. In addition, there are landscapes which have identical characteristics on both side of the border and therefore require trans-border measures to implement action principles. Finally landscapes bear the consequences, whether positive or negative, of processes which may originate from elsewhere and whose impact is not checked by national boundaries. This is why it is legitimate to be concerned with landscape at the European level.* "**We propose that European Landscape Convention need to be the baseline for conceptions of conservation, environmental protection, and area development and above all, regional development**. **It should be applied in practice, within Environmental Impact Assessment, to support Rio Convention (1992) which is aimed to protect biological diversity. Water framework directive, habitat and species policies and laws are also a part of that.** Scientific definition of region needs be clarified because ***region development*** policies-which is based on the **Regions of Europe**-uses this phrase. According to us, it is the

interconnectivity of landscape. The convention precisely describe landscape as it **reflects the identity and diversity of Europe** *which is our cultural and natural value, either it is a common or extraordinary, urban or rural, land or aquatic landscapes.* Social groups with different customs, culture, styles of living have such differences such different species have in nature. Thusly, it is our duty to protect both. Ecological balance has been developed as a result of different needs of different species over millions of year. It is fundamental to examine the **society-environment** connection, as it had been recognized even by politics. *There were no serious conflicts until society depended on its environment. Yet, ignoring the difference in environments was enough to destroy the Habsburg Monarchy-which is known as the precursor of EU. They left out of consideration the fact that social differences evolved due to the difference in groups and their environment.* Natural, social and economic processes take place at the one given location; hence, compromise requires *transdisciplinary **and** multi-criteria* decision making which is based on the most important elements of the processes. Multi criteria decision making is widely uses by *economists* in *environmental protection*; that is also the starting point of *environmental economics*.

Multi criteria decision making in environmental protection

Credibility of the tool is highly **questionable**, if we think about the fact that different interest groups have different goals. It is possible that the outcome will not take environmental protection as a primary goal. Decisions are driven by the demand to *maximize profit*; they ignore the impacts on diverse social pattern of a landscape. It means that our modern, urbanized, technocrat society lost all connection with environment, **our personal dependency on nature is lost! Social conflicts of environmental protection are actual conflicts of land use. Expectation of interest groups, difference of social demands, contest between present and future also play a key role in this conflict.** *Social and environmental systems* work like living **organisms**, so their examination as complex, connections has been recognized before. Although, it was not possible to explore them in a **standardized system** due to the differences in factors, dimensions and methods. This conflict is solved by the fact that **environment is the same as landscape** in our system. Those processes which take place in the same spatial unit-landscape-has to be examined in their own dimension, and then use the values and results to help **multi-criteria decision** making. *Stability of nature and society is based on those numerous but weak connection* which made it possible for humans to reach a highly organized level of civilisation from primitive human herds. This development was formed and enhanced by diverse landscapes and natural resources. **Political subsidiarity** aims to protect this by the

Florence Convention. This framework is **essential** to understand conservation and environmental protection issues. **Practical decision making in politics** totally neglects the need for this harmony. This leads us back to EU's main principle, such as *subsidiarity*, which perfectly fits the concept of ***Regions of Europe.*** Now we can finally understand Huntington's warning: ***"The most dangerous cultural conflicts are those along the fault lines between civilizations. Another world war could be avoided by remaking world order."*** We would like to mitigate conflicts by the tool of *GIS* based decision making. ***It is time for the towns and regions to become an active partner to create a new Europe!***

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