

**The Analysis of the Spatial Structures Shaped as
Geographical Axes
Applications in the Process of Sustainable Territorial Development**

Habilitation Thesis

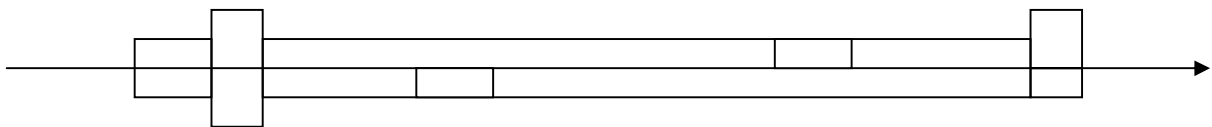
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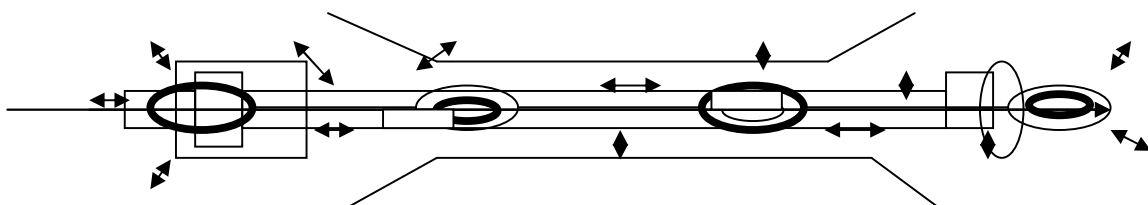
ABSTRACT

The habilitation thesis is developed having as reflection and action themes the integrated, inclusive and integrating nature of the geographical science, the behavior of the structures of geographical axes type in the process of sustainable development, the role of the spaces cargo as geographical axes in the sustainability of the polarized territory, the importance of knowing the relationships between the axis and the entire territory, the need of geographical studies "at the scene" etc. This thesis is based on three core values which comply with the requirements of such a work. The first is for the scientific approach of the realities of geographical axes form specifying the site, the development, the functioning and impact of such a theme. The second is intended for academic achievement across the geographic overall of the author and for the proposed future development in general and the academic career specifically. The third concludes the thesis by highlighting the real possibilities of the future work by mentioning the potential PhD topics.

The definition and composition of the geographical axes. The geographical axis can be defined as a line of spatio-temporal force allowing in a temporal-spatial manner the geographical diagnosis and prognosis of a territory that can take different geometric conformations and sizes according to the capacity of componental polarization (Pop, 2003).



Pattern of the geographical axes as a linear structure and elongated space



Exemplary composed for the spatial structures of geographical axes type

The geographical axes consist of elements and the way they behave reflects the operating conditions. The operation links in a unified complex the ensemble of the aspects that act on these types of structures integrating them to their natural environment, the historical background and relations, offering them the means with which they can accommodate to the higher complex (region, country, continent) and can integrate the lower complexes (networks, nodes, scenery). In a geographical axis the relations are diverse, complex and perform material, energetic, informational and relational functions. The relations stand as subject to permanent, temporary and random factors, which also influences and directs them. The relationships are of a synergistic, coevolutive and mutual support type. Reflecting the relations, it results at different times varying fragility, degradation, stability or regressive conditions. Regarded as territorial structures the geographical axes fulfill, offer and carry at least three of the characteristics of the smart structures namely: the geographical axes are ordered structures; the geographical axes are coherent structures; the geographical axes are organizational structures. The geographical phenomenon is structured according to specific dimensions, which allow the systemic ordering for the factual geography, which thus will put new states, always different from the previous ones, but with proportional loads according to the material, energetic and informational potential from the system of origin or acceptance. The dimensions of the geographical axes as systems are functions of the collecting and operation capacity of that system. Moreover, the axis disposes of other territorial charges such as history, demography, settlements, the social charge, education, politics, government, culture, religion, ethnicity, technics etc. The present state of the axis (S_p) does not depend only on the present action, but it is a sum, an accumulation of all the already undertaken, past actions (A_t). The future status of the geographical axes (S_v) will also depend on the present actions of this (A_p). Therefore, under the form of equations we have: $S_p = \sum A_t$; $S_v = S_p + \sum A_p$.

The main scientific and educational results. The analysis of the spatial structures shaped as *geographical axes* has been developed by the undersigned since 1997 along with the admission to PhD studies with the thesis entitled: *The geographical dimension of the natural, social and economic axis Jibou - Zalău - Șimleu Silvaniei - Marghita in the perspective of sustainable development. Integrated Geography Study*, sustained in 2002 under the coordination of the professor Ioan MAC. The thesis was published under the title *The geographical dimension of the axis Jibou - Zalău - Șimleu Silvaniei – Marghita. Integrated Geography Study* (262 pages) in

2003. The issue of *geographical axes* has been studied and discussed in essays and exams during the doctoral studies to date through a series of articles, books and presentations at symposiums on structures of *geographical axes* type theme, published or supported by the undersigned. For the book "*The geographical dimension of the axis Jibou - Zalău - Șimleu Silvaniei - Marghita. Integrated Geography Study*" I was awarded the "Diploma of the Scientific Research Council of Babeș-Bolyai University" which awarded me the "Babeș-Bolyai University Reward" in 2003.

The main directions of development of the academic career. The term of career is associated with the idea of upward movement or advancement of a person in the desired field of activity, in order to obtain more responsibility or acquire more prestige. The career development or as it is called professional development is a more complex process than training, aiming to acquire useful knowledge both in relation to the current position and to the future one. The career offers an occupational identity: the profession, the occupied position, the working organization take part of the individual's identity. People are different from each other but, at the same time, we can determine things they have in common. Using classification systems there can be identified similarities and differences in career orientation. The career orientation is therefore that relatively stable pattern of the skills, values, attitudes and occupational activities.

The design of the future activity.

The Romanian Carpathians - generator (bidder) of structures of the geographical axes type. The territory of the geographical units has fulfilled different functions, from ancient times until today, united by close ties and reflecting objective realities of the natural and human environment, as expression and guarantee of the unity and individuality of the whole Romanian land. The Carpathian valleys and passes have been the compulsory points of passage through which the Carpathians have integrated into inter-conditioning relations with the neighboring regions, being axes of convergence and dispersion of people, property and spiritual values.

The urban-units and structures of the geographical axes type. The unitary system concept of settlements reaffirms the structural necessity of the urban systems as integral, dynamic formations of settlements of different size mutually conditioned in territory, through functional links and the community of the economic base, thus joining a hierarchical subordination in administrative and socio-economic terms. The economic base of these systems constitutes a

single branch of production with the auxiliary sub-branches, usually the industrial processing of the agricultural products from the area of gravity. The complex integrated systems are formed on the basis of the elementary ones, having as a core generator the big or medium cities with complex regional or interregional functions. The integrative connections of these systems are achieved through a range of cities of different sizes, hierarchically subordinated. Within such systems, the small towns acquire complementary functions compared to the main town.

The industrial groups – generators of geographic axes type units. The industrial groups are hubs of high concentration of the industrial production, a well congealed industrial network, which, together with other taxonomic units, forms the industrial national system. However, there are industrial groups in which the urban factor is closely associated with the exploitation of the methane gas, salt, oil, coal, construction materials and other raw materials as well as the use of railway axes.

The communication paths – generators of structures of geographical axes types. Since the early Middle Ages, probably continued from Antiquity, there were preserved numerous names of roads with significant names to the history of the Romanian economy, as well as for development of the transport network: Sării Road, Sărarilor Road, Ocnei Road, Bușilor Road, Rachiului Road, Oii Road, Mierii Road, Cerii Road, Peștelui Road, Fierului Road, Olacului Road, Poștei Road etc.