ROMANIAN REVIEW OF REGIONAL STUDIES, Volume V, Number 1, 2009

GEOSPATIAL ABSORPTION AND REGIONAL EFFECTS

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ABSTRACT - The geospatial absorptions are characterized by a specific complexity both in content and in their phenomenological and spatial manifestation fields. Such processes are differentiated according to their specificity to pre-absorption, absorption or post-absorption. The mechanisms that contribute to absorption are extremely numerous: aggregation, extension, diffusion, substitution, resistivity (resilience), stratification, borrowings, etc. Between these mechanisms frequent relations are established determining an amplification of the process and of its regional effects. The installation of the geographic osmosis phenomenon in a given territory (a place for example) leads to a homogenization of the geospatial state and to the installation of the regional homogeneity.

Keywords: geospatial absorption, absorption phase, mechanisms, territorial effects.

The approached theme benefits, by itself, from a complex content. This feature derives, first of all, from the implication of the absorption process into the energetic and material transformations that take place between various substances, objects and entities at different scalar levels. Its complexity is also explained by the conservative character of the natural and socio-human entities that can be found in all of the human existence stages, from the primary levels of development and functionality to the superior ones. On the other hand, the absorption process can be identified both in the core of the system's functionality, as well as in the outer inter-systemic interactions. The absorption process has a sequential development, being possible to identify in this way a pre-absorption phase, followed by the absorption itself and a post-absorption one. Each of these phases is described by specific aspects; each of them benefits from specific individual features, but also from connecting relations. The territorial effects mirror, in their structure and physiognomy, the character of the phenomenon's stadial state and depth.

The geospatial absorptions interfere in many directions as: the phenomenological dynamics of the geospheres (lithosphere, atmosphere, hydrosphere, biosphere); the territorial processes as well; the geospatial structure interface fields. The absorption processes appear at various levels, from the level of the material masses (solid, liquid, gaseous etc.) to their properties: plasticity, flowing, temperature, humidity, mineralization (salinity) or to the territorial wholes (entities) regardless of their nature. In the case of the last mentioned dimension, the absorptions are essentially geospatial, with obvious regional effects.

The geographic regions, as spatial entities, have not an a priori existence, they were edified gradually, developing new and new characteristics during time and gaining identity through the action of the diverse processes of selection, integration and assimilation. Absorption was usually followed by rejection, the two notions forming together a dialectic couple leading to many geospatial aggregations and homogenizations, or, on the contrary, to fragmentations and territorial disjunctions and further to regional disparities.

If referring to their manifestation (development) character, absorptions can evolve both calmly, during long periods, as in the case of the individual emigrants' assimilation, or aggressively, in short periods, as the atmospheric storms, the tectonic sea waves, territorial hyper-urbanization and the constitution of the metropolitan areas, a concrete example in this respect being the Cluj-Napoca

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Metropolitan Area. At the same time, from the perspective of the participative elements, it is worth to mention that the analyzed process can behave both individually, when it refers to distinct individualities of the geographic systems, associatively or even globally, in this case the phenomenon covering the entire territorial entity. The selective or general character determines the appearance of regional inequities, or, on the contrary, the decrease of the existing territorial gaps up to the installation of some stereotype homogenizations. The phenomenon of the geographic osmosis neutralizes the pre-absorption and the post-absorption differences.

The geospatial absorption process takes place through various mechanisms that can behave individually or conjugated. In the most of the cases, the initiation of such a process through one of the two mentioned mechanisms is followed by a spatial diversification or extrapolation. Thus, the transformations through absorption are directed by a synergic auto-projection and by auto-development processes.

From the multitude of the absorption mechanisms that take place within the geosystem, the following ones are worth mentioning:

- **Aggregation –** mechanism through which the geographic elements and phenomena in a territory loose their identity and congregate into new structures, of another type, as a result of the absorption initiated by some catalyzing factors (relief, climate, waters, vegetation, land use, population, extrapolated habitat). Aggregation may occur both in natural and human complexes. Thus, the spatial extension of settlements (rural, urban), the economic development up to reaching the function of “pole” of territorial aggregation, constitute significant models through which the regions’ architecture and content suffer essential changes;

- **Extension –** it is related with the process of aggregation, but it manifests synergically when a process or phenomenon undergoes a territorial extrapolation. The spatial extension is followed by a geographic homogenization through the absorption of new territories by phenomena, processes or structures that are generated from an initial nucleus (place). The university extensions in Romania transform the classical university landscape from a monocentric into a polycentric one, with multiple territorial effects, especially of cultural geographic type. Thus, the inserted geographic region is endowed with new structural and functional dimensions. The jurisdictional absorption, through spatial extension, led to the constitution of some extended regional jurisdictional systems (Zlatescu, D. V., 1981): the Romanian – German system, established in Central and Southern Europe and in Latin America; the common-law system, covering some continental and insular areas, with generation from the Great Britain, traditional jurisdictional systems (Hindu, Indian), the jurisdictional systems of the Extreme East;

- **Diffusion,** approached as a mechanism to penetrate the material, energetic, informational and technical elements through relatively stable territorial entities. An example in this respect is the absorption of new areas in a territorial system by the diffusion of the technical innovations, process that changes gradually the economic and functional quality of the territory. The affected region, as space of diffusion, is endowed with new structural and functional features. Clear examples offer the diffusion of modernism (politic, economic) through the less developed countries in the third world, the diffusion of pollutants (acid rains) over territories with a relatively “clean” environment, fact that determines a new environmental regionalization. Pollution should not be regarded in the strict sense, as physical, chemical, bacteriological, but also in a wide sense, including the moral or esthetical one (the vestimentary pollution for example).The absorptions initiated from some catching territories usually lead to the installation of some regional instability states and the appearance of behavioral crises;

- **Substitution,** progressive or violent, operates with two factors, the substituting factor and the substituted factor (replaced through absorption). The mechanism manifests within both in natural

(geomorphology, hydrology, biogeography etc.) or human systems. As examples we can mention: incorporation of the peri-urban into the urban, incorporation of isolated households into the built area of a village, substitution of the various types of land use (substitution of forests by agricultural cultures etc.). Analyzed retrospectively, the substitution process reveals a geographic transfer at individual, regional or even global level. The historical epochs and the human practices temporal succession occurred as a result of an intense manifestation of the substitution process. Substitution played also an important role in the structuring of the historical regions. Another edifying model of substitution, with deep regional effects, is the desertification phenomenon;

- **Resistivity/Resilience.** Once established, a region, as the most complex geographic system - an optimal open thermodynamic and informational system with dissipative structure, proceeds its non-linear evolution through mechanisms of resistivity and resilience. The material and energetic absorptions face the filter resistance. Perturbations can be absorbed by the system, meaning resilience and development, or, they can be stopped in some points of the system's dynamic cycle, meaning a confrontation with various "thresholds" and bifurcations, or new levels of evolution and development. The complexity of the regional system is reflected directly into its great resistance to change. It is thus explained the rather long periods during which geospatial absorptions are assimilated. As a consequence, the regional effects are not spontaneous, usually the slow rhythm of absorptions' metamorphosing determining a difficulty in distinguishing the regional effects;

- **Stratification (juxtaposition)**, a mechanism of absorption that determines an accumulation of elements (solid, gaseous, liquid, structural, functional etc.) that will contribute to the formation of the geospatial entities (stratified geo-structures) - alteration layer, dunes fields, piedmonts, snow layers, glaciers, cloud layer, constructions etc.- and will bring obvious effects in the geographic landscape and in the geographic regions' pattern both in their vertical and horizontal profile;

- **Borrowings** (ceding-receiving relations), phenomena specific to the natural, human or economic interchange processes within which the transfer of substance, energy and information from a territory to another, close or far, increases the geospatial absorption quantitatively and scalar. The charge/discharge flows induce changes within the places', regions' or even the global surface's systems. The absorptions of the warm air masses by the cold ones, of the population from the oicumena to the non-oicumena and vice-versa, the absorption of natural resources to the processing centers, determine important changes in the content and dynamics of the Upper Terrestrial Layer, which will be at their turn reflected into the regions' profile and landscape.

The briefly mentioned mechanisms are not exclusive and do not exclude other forms through which the geospatial absorption is achieved. The focused theme provides with a very extended and multispectral scientific debate field. The further studies in this direction will evidently bring valuable contributions to the understanding of the non-linear trajectory of the geographic systems.

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