

## FUNDAMENTAL AND APPLIED IN THE GEOGRAPHIC RESEARCH ON THE ENVIRONMENT

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**Abstract.** To know the reality in a scientific manner (holistic at the beginning and then more and more specialized) has been and will ever be the effect of complex efforts, whose conceptual and material difficulties have never succeeded to discourage the human desire/aspiration for knowledge. If under the fundamental aspect, the objectivity of the research brings to this one some solid and long living, so much conceptual as methodological truths, in a (negative) exchange, the fundamental demarche is ever slower in comparison with the application, fact which – at least for a short term – delays the useful efforts. Despite the depreciative generic sense of the term, the subjectivism of the applied research ensures to this one a massive and immediate utility, accompanied by remarkable cognitive bifurcations. Although, the rapid running of the applications is often enough marked by conceptual vices, infusing final failures, more or less recognized. Even worse, as a consequence of the different rhythms, the application comes to lose (in a temporary but repeated manner) the link with the corresponding fundamental domain. Evidently, the resulted collinear deficits circulate in the two senses.

### Introduction

The realism, the objectivity and the complexity of the study object of geography impose an enough advanced interaction of the fundamental demarche with the application. This benefic “constitution” of the object maintains the perenniality of the general interest for the results, an important conceptual and methodological suppleness and an exceptional interdisciplinary opening, consolidated, more than this, by the geographic possibility of the spatialization, put in action so much to investigate as to visualize the results. However, one must relativize this quasi-ideal image of the geographic research, because of the richness of specializations allowed by the extreme complexity of the object. The reductions/deficits are due less to subjectivism than to the blockings in these

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specializations and to a certain ecologizing mymetism of some very in fashion geographic studies. For the geographic research itself, these two emissaries have an impoverishing effect, capable to introduce a poorer image of geography in the frame of the general scientific research. That's why our domain's possibilities are scarcely known and poorly understood in the application, where the geographic research is accepted, either partially or in extremis. *The fundamental geographic research of the environment* is in fact the investigation of the Earth system. It is firmly sustained by the objectivity of the domain and by a particularly important aspect of the demarche: the completitude of the investigation, endorsing so much the latent actants/participants as the functions of the structures where these ones are operating. This way, finally, one can identify and visualize spatial cuttings with a complex, structural and dynamic motivation, very useful for an application and opening a conceptual and methodological way well argued for transdisciplinarity. The main difficulty of the fundamental geographic research of the environment consists in the interior incommunicability at the level of the research of the interactive functions, materialized in the almost constant refuting of the interface investigation. For the *application*, the concrete value of the geographic research of the environment consists firstly in the span of the application sphere and in the proportion and diversity of the methodological specialized apparatus. These premises ensure to this apparatus a perennial up-to-dateness and a progressive interest. However, to give a concrete and useful form to the fundamental concepts/principles/criteria is not easy. One must begin with the construction of a homogenous language, based on non-analytic and non-static indicators. The informatic treatment of an extremely rich and heterogeneous data base is often necessary, with qualitative information often enough quantifiable only by artifices and simplifications harming to the truthfulness of the results. Many of these commandments are still at their beginning or are desirable. In conclusion, despite the sonority of some appearances, the geographic research of the environment doesn't advance. The analytical commodity blocks the interior interdisciplinarity and the blocking of this communicant demarche forbids the geographic synthesises, necessary to the knowledge /management of the environment. The interior interdisciplinary handicap is mutilating for the possibilities of geography to approach the Earth and the environment as systems. It also reduces the credibility of the geographic research of the environment and discourages the contingency of exterior collaboration offers. The origin of many difficulties/failures gives emphasis to the necessity to fill up a great actual absence in most geographic studies about the environment – the functionality. Avoiding the caducity of the hurried synthesises for economic/financial reasons, the geographic pertinent studies concerning the environment will be in fact studies of applied geo-systemic.

### **1. Scientific research/the knowledge on a fundamental and applied way**

The initially holistic and later more and more strongly specialized scientific knowledge of the reality has been and remains the effect of some complex efforts, whose difficulties and material costs did never succeed to discourage the human intrinsic desire/aspiration towards knowledge.

On a fundamental plan, the main advantages of this knowledge come from its point-blank objective character: the results of the fundamental research, in any domain, are realistic and express truths with a very high degree of generality, ensuring them a strongly argued place in the universal research/knowledge. To this objective realism is also due the conceptual and methodological (relative) longevity of the results. These ones are the foundation stones of the general advance/progress of humanity.

But, the same objective character of the fundamental research implies also aspects/consequences capable to delay the benefic effects of the demarche, diminishing their efficiency, at least on a short or even middle term. Firstly, the fundamental demarche is "reprimanded" by the applied one, because the long duration and the complex running of the results checking frequently impose desynchronizations with the more and more hurried application, asking for rapid rhythms. The synchronization efforts cannot always eliminate serials of negative consequences, which follow each other in cascade. Otherwise, very many of all these are inherent to the financial-economic dependence of this research form, indifferently of the manner and of the level of the social/economic/political organization of the structure in which they grow apace. The mentioned dependence is strong enough in order to be able to impose both objectives and precise terms, the respective compulsory forms producing often not only the emulation and the favourable rhythms counted on, but also the alteration of the free creation climate, the corruption of the results by the speed excess imposed, break intervals, blockings and even the elimination of some valuable actants.

On an applied plan, by its nature, the scientific research loads itself with subjectivism (not only with that of human origin which, implicit also to the fundamental research), firstly specific to the domain.

At the same time with the specialization, the demarche "breathes" easier: its sphere becomes more accessible, its domain being outlined/defined by an option, fact which circumscribes the methodological apparatus and allows/stimulates the refining of the methods. In a deliberated manner, the results of the applied research have a direct utility, which has also, besides the dominating pragmatic aspect, an extremely important cognitive one, the application being a permanent innovating source, as much on a conceptual as on a methodological plan.

But, utilitarian by its nature, the applied demarche induces as well a "self-immune pathology", the identity pragmatism (strictly determined on an economic

way and developing in specific time limits), imposing frequently the transgression/compression/elusion of the correct applicative frame. The negative consequences become almost immediately evident, their sizes can be not only estimated but also precisely calculated, so as the spatial extension, the longevity and the costs of the sequels. More (and, surely, worse), the taint of the application frame generates also false, wrong schemes, trying to "cover" rapidly the objectives by extrapolations that are wrong as sphere (as much concerning the specific as the dimensions).

This last negative aspect expresses (and, concomitantly, keeps) a losing separation tendency, at least for some periods, from the fundamental affiliation domain. The resulting applicative and cognitive deficits circulate co-linear and have, evidently, an "efficiency" in both senses.

## **2. The geographic scientific research**

May be more than in any other domain of the knowledge, in the geographic scientific research the interactive interference of the fundamental with the applied is an organic one. This state comes from the realism, the objectivity and the complexity of the object of study, in the respect of its sphere – so much conceptual as dimensional – because geography doesn't privilege and doesn't omit anything of the structural and (natural, anthropized, anthropic) functional reality of the whole Earth.

This benefic „constitution” of the domain ensures to the specific research a permanent interest (Geography being always topical), so as the conceptual and methodological suppleness, allowed/imposed by the object having a diverse, ever and, as a consequence, variable substance. With the mentioned identitary data, the geographic scientific research offers an exceptional interdisciplinary opening, which is still more amplified, so much in the investigation as in the visualization of the results, by the specific possibility of the spatialization.

If the analysis stops only on these aspects, a – false – image of an almost ideal research form could be created, research meeting no difficulties, with a gentle/predictable course and with a flawless interdisciplinary opening. But the relativity imposed to the demarche by the exceptional structural and functional complexity of the object of study requires important rectifications and reductions of the initial appreciations.

The most important deficits come from the specialized geographic approaches which can not be indicted for an analytic subjectivism (because the geographic analytical demarche is integrative) but for the blockings in the specializations, generating conceptual and methodological difficulties and deficiencies which certainly affect the quality of the issues. For example, without illustrating excessive specializations, neither the indicator of the bio-climatic

comfort nor the so-named "relief cube" or other quantificated specialized expressions don't include some – natural or social-economic - important enough, co-ordinates of the analyzed situations (in the case of the mentioned indicators – the dynamic specific and the electric state of the air, the climatic-hydric and pedological specific of the analyzed geomorphologic area etc.).

This blocking aspect is still worse made by partial domain amnesia, opening the way to the specializations to corrupt their own results. An example in this sense is the general adoption in the geography of the settlements of the "indicator" named "habitat energy" (the difference between the extreme values of the absolute altitude in the respective inhabited area), with a total ignoring of the complex potential-dynamic signification of the established morphometric indicator, having the highest importance for the favorability and the comfort of the habitat. Still more glaring, the absolute ignoring of the reality represented by the mountainous area of the southern extremity of the Eastern Carpathians, with its exceptional properties concerning the diversification of the active surface, confers sometimes an at least queer aspect to the isopleths of the special climatic maps, the respective lines keeping a parallel aspect, from the Apold Depression until the northern part of the Danube Delta.

To all these, we can often add specialized approaches and a sort of ecologizing mimetism, which neither enriches nor strengthens but reduces and simplifies the relevance of the integrated research of the relief, of the waters, of the air, of the human settlements etc., diminishing and dimming the geographic mark of the demarche. The loss is, firstly, of course, that of geography, which doesn't extract and doesn't turn to good account the information to which it would have had a good access and would have obtained polyvalent results.

At least of the same gravity is the fact that this imitatio sine ratio diminishes the credibility of the domain and determines the ignoring – or the accepting only in extremis and partially – of the scientific research and of geographic documentation in the application in very many domains (urbanism and territorial management, administration of the contaminated sites, designing of the civilian and industrial buildings etc.)

### **3. The geographic scientific research of the environment**

From the fundamental side, the geographic approach of the Earth system is realized in its integrality, without any preferential subdomains and without any omissions. Extremely important is the fact that the geographic demarche has a complete structure, referring not only implicated (active or passive) sides but also functions (which take over inheritances, produce actual states, manifest tendencies, allow prognoses). As a direct result, the geographic research of the environment

identifies and visualizes spatializations with a complex and mobile motivation: geographic maps of the environment render cuttings out in evolution.

With this conceptual and methodological basis, the geographic research of the environment opens in an argued manner a way towards transdisciplinarity. It is eloquent, in this sense, the diversified offer ensured by geographic demarche of advanced interactive integration<sup>2</sup>, focused on the identification of the morpho-dynamic sensibility, of the favorability for the settlements etc. Remaining only on a single aspect, on only one of the mentioned offers, stands out, for example, as a very interesting one, from the fundamental aspect (and certainly efficient under the applied aspect) the different approach – neither abusively technical nor exclusively geographic – of the problem of the stability of the grounds.

The main difficulty of a fundamental order in the geographic research of the environment is that of the internal interactive correlation. Even in the (rare) situations when this objective exists, the tendencies to impose the specialized mark and the “building” difficulties of some interdisciplinary work tools push always the conceptual and methodological communication to a second plan. So, in most cases, the interface approaches meet constant obstacles, although the respective investigation spaces and the dynamic conjunctures are of the highest interest. For example, indicators with a fine resolution of the interfaces microrelief – microclimate, dynamics of the phreatic aquifers – aero-hydric complex of the soil, secondary salinization of the soil – agricultural occupational structure of the population etc. could ensure not only a beneficial thoroughgoing/detailed specialty research, but also a more complete and correct substantiation of some decisions about the organization/fitting out of the territory, the improvement of some administrative documents with a strategic character a. o.

In the respect of the concrete value it can produce, the geographic research of the environment imposes, firstly, by the size of the applied sphere (which supposes, in an equal measure, as much geographic analytic, independent as interdisciplinary approaches). In the second place, (and consequently) the size of the sphere ensures also a corresponding size and diversity of the specialized methodological apparatus.

With the very favorable mentioned premises, the geographic research of the environment is of a perennial up-to-dateness and in a continuous growth. This situation involves also the certain possibility to reduce the economic-financial dependence of the applying demarche and – by extension - of the fundamental one.

But, objective and subjective difficulties intervene in the concrete, specialized application of the fundamental concepts, principles and criteria. From a quite great series of obstacles, some ones are particular. Firstly, it is very difficult to realize a methodological “language” of a homogenous type, based on non-analytic and non-static indicators. Then, there are important difficulties in the

informatic treatment of a database extremely rich and heterogeneous, from the quantitative and the qualitative points of view, some of them being even quantifiable only by artificializations, often so advanced that they can alter the results. We also encounter the difficulty to surprise a rapid dynamics of some realities, very relevant for the geographic analysis, but having an aleatory motivation or being dependent of some exterior mobile conjunctures, being under impulses decided in distant functional areas (for example, the will/the possibility to enterprise on a local plan; the rural – urban mechanic movement, the duration of the foreign investitional “courage” etc.

### **Conclusions**

a. A concise analysis of the specific possibilities and of the difficulties met by the geography of the environment, associated with the personal (conceptual/methodological and applied) experience in this domain and with the general information about the quality of the environment in Romania, in all its complexity, points out the fact that our specialty is still far of a profitable capitalization of what is at its disposition concerning the knowledge and the conservative use of the environment.

b. Paradoxically, the deficit is a self-induced one: the majority of the greatest mentioned difficulties come from an area corresponding to scientific research, in which the step of the utilization of the analytic accumulations in the synthesis imposed by the study of the environment still has not been made. In this manner, although the appearances are frequently voiced (and many times profitable), the geographic research in this field does not progress. The subjectivism of the analytical research, the narrowest possible specialized, blocks the interior interdisciplinarity, the synthetic approaches being abandoned somewhere in an area of the history of the geography considered revoluted (but, in which the spatial variability of the investigated phenomena/states was interpreted by functionality and the geographic reasoning had a double, fundamental and applied value – (s. Simion Mehedinți, *Discordanțe antropogeografice*, 1933).

c. The quasi-general blocking of the communicant demarche builds analytic results, sometimes remarkable, moreover reciprocally appreciated in the scientific festivities, but having very seldom some intention of complex relationning, although many approaches refer to environment and to anything else. The interior interdisciplinary incapacity annulates the opening ensured by the study object, reduces the credibility of the geographic research of the environment and so also discourages a possible offer of co-operation with other research domains.

d. The massive weight of the category of subjective difficulties in the more frequent genesis of some deadlocks than of some successes of the geography of the environment obliges to a concentration of the attention and of the effort on an

other landing of the research, more difficult, sporadically approached till now, in which the demarche doesn't roll any more on still open and checked ways, doesn't dispose of a methodological run in apparatus, suppose many testings and possibly closed lines, where the results may appear later and more slowly. It is the research landing of the functionality, that one which corresponds to the half absent as a rule in the majority of the geographic studies about the environment.

e. The scientific reference to functionality imposes, more obvious than any time, the systemic approach of the objective in view. In this sense, a - conceptual and methodological - fundamental review could ensure the integration of the geographic structural approach of the environment (which has also been, more or less realized until now) with the functional one, even if this one supposes not only an ameliorative effort but also a creative one.

f. But, the implantation, at this level of the research, of some strict and exclusively economic principles, pragmatic with any price, will induce hurry and – in its direct consequence – superficiality. Knowing what valoric effects generates this last one in the analyses, one can deduce that the synthesis on the environment, built on an (structural and functional) analytical basis, should be not only useless but loser and even noxious.

g. Taking into account the specific possibilities, the difficulties and the origin of most of these ones, one can conclude that the pertinent studies of geography of the environment must be, in fact, studies of applied geo-systemic.