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DIAGNOSIS OF SOCIAL SYSTEM. SPATIAL ASPECTS. THE CASE
OF POLAND*

*Natura incipit,
ars dirigit,
usus perficit*

Proper functioning of any management system implies a possibly perfect knowledge about the state and behaviour of the relevant system and of its environment. This requires a continuous critical scrutiny and judgement, i.e. a diagnosis, of the state and performance of the managed system. The use of the word "diagnosis" in this context may also have another meaning. It may regard recognition of a disease — or diseases — which interfere with the system's performance. The observed symptoms usually result from the syndrom of causes which are not so obvious as it may appear at the first glance. Their identification may pose considerable difficulties and call for very complex methods of analysis.

Miracles may sometimes happen. However, the management cannot expect them to happen only in response to its expectations. Besides they belong to non-material world and are conditioned by beliefs and not by phenomena which are commanded by the management system. The management's beliefs should be based solely on well founded conviction that all its decisions have been correct and effective. Such conviction may be achieved only through proper application of suitable decision-making methods — always constrained by the availability of the

* In the years 1981 and 1982 a multidisciplinary team of scientists organized by the Committee for Space Economy and Regional Planning of the Polish Academy of Sciences and headed by Professor A.R. Kukliński of Warsaw University worked out a "Diagnosis of the Polish Space Economy". Some results of this analysis have been published in *Biuletyn KPZK PAN (Bulletin of the Committee for Space Economy nad Regional Planning of the Polish Academy of Sciences)*, No. 166/1981, 117/1981, 118/1982, 120/1982 and 123/1983. The present paper is a reflection of one of the members of this team.

relevant and true information, due consideration of the overall goals, at which the managed system is aiming, as well as the use of common sense. Social systems, which are at the focus of our interest in the present, as well as their environments behave stochastically and thus their behaviour is not fully predictable but only with some probability. The task of planning, based on proper planning analysis, is to organize the system's future activities in such a way as to secure the highest probability that its behaviour and thus its performance — in spite of the erratic behaviour of its environment — will correspond to the management's expectations. In other terms: planning must be such as to enable the system to cope with uncertainties. This implies provision of certain reserves. Their quantity should be defined, and this is where the management's common sense should play decisive role. Roughly speaking, these are the conditions which should be created by the management to authorise its belief in miracles, like in the famous anecdote which says that "Allah should be given a chance to cause a miracle."

All this appears to be obvious, simple, and clear. However, our life is complex and thus appears as complicated and not so easily penetrable as desired. Relevant and proper information is not always available — at all or timely. Management system should function in "the world" of uncertainties. Moreover, management is working under several constraints some of which may be irrational, like, for example, ideas which are explainable only in utopian term, other may be not easily measurable and thus difficult to consider within any formalized mathematical framework, like the coefficient of human patience and the coefficient of human propensity to revolt.¹ Other constraints may result from the pressure to accept some axiometric premises or, what is equally dangerous, some dogmas which, at the best, interfere with the objectiveness of management's valuation criteria. These constraints may belong to the body of decision shaping the policy imposed on management which is obliged to follow and implement. Some of them may be legitimate for some limited period of time; however, extended over longer time-periods may cause serious damages to the system. Human beings cannot avoid making errors; however, being able to learn from its own experiences should not repeat errors committed in the past or, worst, continue doing things which are wrong. However, as it often happens, these wrong things may not be wrong in the light of valuation criteria imposed on management system by the policy. Of course, this calls for changes in the policy; however, in many cases the management sys-

¹ W. Kula, "Towards Typology of Economic Systems", in: *Essays on Planning and Development*, PWN Warszawa 1968.

tem may have difficulties in convincing the policy-makers about the need to alter policy or — worse—may be subjectively not interested in such changes, a feature typical of stagnant bureaucracies.

Whatever the reasons, or original causes, for — let us call it — misbehaviour of the management system, it may cause several distortions in the social system and its sub-systems resulting in its inefficiency which, if continued over longer time-period, may lead to system's stagnation, decline, and even decay. However, such misbehaviour may also, and usually does damage the management system itself leading to its progressing atrophy, i.e. its inability to steer the system and to regulate its functioning. Social system having a built in self-defense mechanism which is governed by the survival component of the system's objective function will thus behave more or less independently of the will or intentions of the management system. This behaviour, if the conditions are not timely changed, will—sooner or later—result in the system's decline and the system may face the danger of its decay. Of course, it is difficult to expect the decay of a social system, although history knows such cases, because much earlier the built in self-defense mechanisms will be put in motion, triggered by the above-mentioned coefficients of human patience and, thereafter, propensity to revolt. Of course, these are extremal situations, however, they have to be mentioned because they are helpful in proper setting of our analytical premises and besides they are not so theoretical as they appear to be — such situations do happen in the real life.

Saying so it is necessary to point out that they result only from very protracted, long-lasting weaken processes and are associated with some phenomena of which the most important is the loss of contact between the reality and the management system. The latter, obeying to Parkinson's law begins to seal itself and live for itself its own "happy" bureaucratic life, and the real social system tries to survive within the narrowing constraints imposed on him by the management system.

In such conditions the real shape of the managed system becomes slowly to be irrelevant and begins to be seen as desired by the management and required for its publicity purposes (information system may be manipulated to conform with such requirements). After a while the picture of the real state of the system begins to be more and more blurred. People begin to feel discomforts but are disinformed by publicity and do not know the real causes of the deteriorating living conditions. Slowly a situation emerges in which nobody knows nothing for sure generating a wide spectrum of different opinions — the state of disin-

formation spreads and becomes general. Such a state is very dangerous because many people, among them even serious knowledgeable scientists, do firmly represent some very different scraps of information which they believe to be true (none of which may be correct); this creates a real havoc. This is where the science should step in and produce a true, unbiased and relevant information about the country's social system. Obviously, such an undertaking would not be very popular among the managing bureaucrats; rather seldom do they bear any resemblance with M. Weber's idealistic model.

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All what was said above regards the social system as a whole as well as its management meta-system. However, we are concerned with the spatial features of the social system which, by definition, is spatial and temporal, i.e. four-dimensional. Thus the system's² structure³ is organized within a well defined — by country's political borders—geographic space which, considered as a set of material objects, represents a part of this social system. Thus in our considerations "space" appears both as a conventionally accepted and abstract reference basis, and as a material object which have its well-defined material properties and is an integral part of the considered system. However, simultaneously, it is also the natural milieu of the remaining part of the social system composed of the society itself and the man-made objects. Thus we can distinguish within the system's structure three types of objects which belong to the social system: (a) the people (the society), (b) the nature, and (c) the man-made objects.

The people are there, the nature is given, and thus the freedom given to the management concentrates on man-made objects. The problem is how to manage them to make the best use of the nature for the benefit of people and to assure the best conditions for the society's development. This implies creation of the suitable man-made structure and such organization which will best accomodate the people and maximize the level of their needs satisfaction minimizing the use of natural resources which includes resources conservation and environmental protection. It goes here without saying that the system's structure can be defined only in the process of its organization, i.e. its distribution in respect of place, time, and function. This is important because it con-

² Set of system's objects and their relations.

³ Structure's distribution in respect of place, time and function.

tradicts the classic economic approach to the problem of system's structure designing which did not consider the system's spatial dimensions overlooking their social and economic implications.

However, not only economics can be blamed for "spatial mismanagement". The "spatial science"⁴ did not correctly understand the part which it should play in shaping the system. Many prominent scientists did consider their task as limited to the spatial distribution of a given structure without their participation in its shaping. That such an approach prevails is confirmed by the so-called localization theory — considered as a part of microeconomics — which remains subjective and static and thus largely irrelevant in respect of the system's organization. The system's structure must be shaped in the process of its organization, i.e. considering the way in which it will function in conditions changing over time.

Of course, the possibility to participate in the system's structure shaping exist only in a centrally managed, i.e. *implicite*, centrally planned, country. In a capitalist country where investment (fixed capital formation) decisions are made by a multitude of subjectively motivated people much less can be done in this respect; there are some possibilities on the side of preventive actions and of some corrective actions in respect of locational decisions, particularly in urban areas. However, no decisive influence can be executed in respect of the overall system's structure and even less in respect of its spatial organization. The ineffectiveness of stimulatory incentives has been proved several times and beyond any doubts.⁵ However, much depends on institutional arrangements. Where the so-called spatial planning is built into the economic or socio-economic planning, i.e. where the state of integrated planning is achieved—much more can be done, even in a market economy, using indirect policy implementation devices, and particularly through a planned creation of conditions (accommodation opportunities) favourable for entrepreneurs.

All that is leading to a clear-cut conclusion that the spatial features of any social system, i.e. its spatial order, as A. Lösch called it pervasively, are not its autonomous features and can be identified and assessed only through a complex analysis which will consider the functioning of the whole system nested in its geographical space.

⁴ "Spatial science" to avoid confusion with W. Isard's "regional science".

⁵ The case of Mezzogiorno is perhaps the best known example. However, there is perhaps a delicate problem of the measurement of these incentives possible impact when compared with existing conditions in other areas. It seems that the latter have always been underestimated and thus the incentives set below the necessary level.

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It is thus clear that such a holistic problem requires a correspondingly complex methodological approach, a kind of approach which is diametrically opposed to anything, so far conceived by "spatial science". Saying so one should appreciate that originally it is an outgrowth of urban architecture later strengthened by geographers. Economists did, in a way, intermingle with its development, among them, most prominently A. Lösch. However, later the economists' participation, which at the beginning was very promising, became hopelessly entangled in formal, econometric approach losing from sight the real objective of their activities. Meanwhile, the limitations inherent in the purely econometric approach have been recognized, unfortunately much too late; lot of time, effort, and resources have been wasted — and there are still scientists who do not realise this fact. This explains the methodological retardation of the "spatial science" and leaves us poorly armed to cope with urgent problems. The real difficulty is mental in kind being related to the traditional Cartesian way and method of thinking which is diametrically opposed to the holistic requirements.

The most pervasive feature of our time is the growing complexity of everything. S. Beer calls it "complexification" and says that in the past all of us were trained to cope with things, now we have to learn how to tackle the complexity. And his answer is that through organization, i.e. the theory of the system's steering and controlling their functioning. It is thus clear that anything that regards social system setting and working requires a complex integrated approach, i.e. — for the science — a pluridisciplinary approach in which sociology, economy, and organization play the central roles followed by geography, biology, ecology, urban architecture, mathematics etc., resulting in an integrated planning of social system development. One may rightly say that such a set of disciplines is just what the "spatial science" is supposed — and has the ambition — to unite with and to be. However, to be such, it must create a common axiologic basis for all participants, which is, so far, missing. Clearly enough, neither economy nor geography or architecture cannot supply such axiology. Sociology is, of course here the undisputable *primus inter pares*, because all what is considered is for the man, through the man, and by the man; however, it is also unable to supply the said axiologic basis only like the other can contribute to it. Thus it becomes clear that it is only the scientific organization that is capable to create a common axiologic basis necessary

for the relevant problem — its own basis: theory of systems and cybernetics. There is no question who should be the leader or, rather which science should be regarded as leading; no one, of course; all should equally and loyally contribute. The problem of the leader, or rather of the “doorkeeper”, is a personal and not scientific problem *per se*. It requires team building and managing talent, personal authority, and the knowledge of meta-languages used by the scientific disciplines involved—although a common meta-language will hopefully develop in the process of co-operation.

From the methodological viewpoint, the problem represents considerable difficulties. However, some positive experience, particularly the French intellectually brilliant achievements⁶, is available and demonstrates that the said difficulties are surmountable.

These difficulties are related to the use of system approach which is still — in respect of the high ranking classes of systems⁷ — not fully developed, particularly in respect of systems’ modelling and their mathematical formalized treatment. This, however, did not hamper the development of heuristic methods useful for research purposes. Among them the best developed is the scenarios method of analysis useful for both today diagnostic and prognostic purpose. It is difficult to say who was the first to use this method — most probably it was already used by the priests of the famous oracle located in Delphi as well as by Cassandra. Its modern development is related to the application of the system approach.

Most important is that the method produces excellent and useful results. However, it is not so easily applicable as it may appear at first glance. The difficulty is somehow prosaic and related to team-building problems. It is not easy to gather the necessary group of scientists — all of which have a system-oriented mentality — for a very protracted time-period in one, rather secluded, spot and ask them to devote all of their time to the analysis and elaboration of the scenario. High level scientists — and such are required — are seldom related to one institution and usually have multifold preoccupations, often related to extensive travelling. They do not readily relinquish their usual activities, particularly teaching, contacts, working habits etc. in-

⁶ DATAR/OTAM, “Un image de la France en l’an 2000”, *Travaux et recherches de prospective*, No. 20 et 30, 1971/1972, La Documentation Française, Paris; M, Mesarović, E, Pestel, *Mankind at the Turning Point*, 2nd Report to the Club of Rome, 1974.

⁷ Following the system’s classification proposed by K.E. Boulding, “General System Theory—the Skeleton of Science”, in: *General Systems*, Vol. 1, Society for General System Research, Ann Arbor 1956.

remains unknown up to which extent do they contribute to the phenomena which, are caused by several factors. At best it may be possible to gather some idea about their impacts ranking and this only when their strength and direction are easily discernible, i.e., *inter alia*, well differentiated and the number of factors limited. More complex situations are much more difficult — if at all possible — to dissect and assess; correctly because each answer does not identify all factors and measure their impact; of course, in most cases qualitatively — using their own specific valuation criteria largely imposed on them by the question itself. These remarks may be more explicit when one is aware that each question is answered by a separate and parallelly working team of specialists familiar with the question's subject matter. Co-ordination possibilities are thus very limited. Some may be assured by the leader steering the work of all teams; however, experience demonstrates that best results are obtained by arranging as frequently as possible exchanges of findings and opinions among all the (separately working) teams, e.g. organizing conferences or seminars.¹¹ Of course, each of these studies uses its own approach and method of analysis: the one which is considered most suitable by each team to perform its task.

However, this approach has also some positive features which should not be overlooked. The liberty given to each team makes it dialectic; it implies looking at the general problem from different viewpoints and the resulting opinions are differentiated. The individual search for a suitable method gives the opportunity for innovative approaches and thus contributes to methodological development.

As has been said, this method was used in Poland to assess and evaluate the state of country's social system with particular emphasis on its spatial aspects. Certainly, it did not yield a complex synthetic result, which, after all, was not expected, particularly by teams engaged in the analysis. Nevertheless, it did provide the necessary information for immediate action and particularly about the causes of errors committed in the past by the management system, particularly in respect of the system's structure and its organization as well as in respect of the causes of the ineffectiveness of the so-called spatial planning of the type which was used by the management system. There have been many sources of these errors; two, however, have been predominant: (a) lack of social and a wrong economic policy, and (b) lack of suitable

¹¹ In the above-mentioned case of the analysis performed in Poland these gatherings have been very valuable because other scientists, personally not involved in this research, did extensively contribute either by their specific knowledge or by their critical remarks.

planning method. As the policy can be conceived only using a relevant planning analysis, the main sources of errors remain—technically—with planning.

The kind of planning methods used has been unable to demonstrate that the basic policy concepts imposed on it have been wrong and—what is perhaps most important—that these policy concepts lacked the minimum complexity required. More particularly the planning methods used focused exclusively on the economic sub-system, with little attention paid to social problems, and complete neglect of spatial implications of economic activities. Planning did not cover all activities of the system, among them one which is particularly important—the development of the settlement sub-system.

This is where the ambiguity of the words “plan” and “planning” did play its disastrously important role. Any dictionary distinguishes several meanings of the word “plan”, and, what may appear paradoxical, none of them corresponds to its meaning as understood by the organization and management science. The word “planning” is explained better, particularly in some modern and more progressive dictionaries; however, still not correctly from the managerial viewpoint, particularly when the country’s top-central management level is considered. None of dictionaries explains that the task of planning is to organize the system’s future activities in conditions of uncertainty. Such an explanation may be found only in some professional books. Of course, all this is leading to a set of misunderstandings, particularly notable for bureaucracy, which is thus able to interpret these words conveniently for itself. However, this—as past experience demonstrates—leads also some scientists and other professionals to use subjectively convenient explanations of these words.

And thus “planning” was interpreted as the activity aiming at the preparation of a “plan”. On the other hand, “plan” was understood in architectural-cum-cartographic terms as a visionary picture of the future distribution of man-made objects within the country’s geographic space. Activities aiming at the preparation of such visionary pictures have been called “spatial planning”. Consequences of such a state of affairs are obvious and there is no need to comment about. Thus elaborated “plans” can be—at best—considered as pre-planning studies or an early designing stage of the analysis.

This confusion is, of course, still much broader than it may appear from the above. The management of the space—considered as a set of natural material objects—has its specific requirements of normative type. This regards the lower executive levels of the territorial administra-

tion, namely those which issue construction permits or more broadly permissions to use the land for different purposes. These permissions are legal acts and this must be based on legal documents of normative type issued by a competent authority, e.g. a territorial legislative body. For obvious practical reasons, such a legal act includes, *inter alia*, a cartographic-cum-geodetic design which may be rightly called "spatial plan". Certainly, such a spatial plan should be based on information supplied by development planning relevant for the given administrative area. This is where the circle closes and it should be pointed out that it closes in the place where the pre-planning study begins by drawing a visionary picture. However, this beginning gives a picture which is by far different from the one of its end-products, i.e. the normative act. The former is based on wishful thinking, the latter on concrete facts which have its backing in resources that have been allocated.

Whatever may be said about all this, one thing is quite certain, namely that we have much to learn to make the badly needed progress toward better satisfaction of the society's needs. It seems that today our most important task is to work out an integrated method of social system's development planning and implement it disregarding whether the bureaucracy will like it or not.

