Complexity

In contemporary sciences, attention paid to complexity comes from the lacks of the classical analytical approach in explaining reality. Complexity postulates that it is impossible to describe, without reductionism, some phenomena that cannot be broken down and that the Whole cannot be reduced to elementary units.

The notion of complexity is used at two different levels: complexity in constitution of things: from the cell to the organism, and complexity in interpretation which refers to relationships between the components of a system.

In Geography there is a tension between the need, in order to produce new knowledge, to put some order among phenomena, with the risk of elaborating simplified material, and, on the other hand, the dilution of explanatory outlines when integrating them into imprecise wholes. The disjunctive analytical approach is frequent in Geography due to methodological attitudes that tend to favour the "plan Ã tiroirs" [efn_note]Metaphorical expression meaning that the different parts of a structure are not inter-linked (by analogy with a chest of drawers ("tiroir" = drawer))[/efn_note] , classification and territorial fragmentation rather than explanation, and to confuse spatial delimitation of the study object with definition of this object.

Adoption of the complexity paradigm implies a questioning of the linear causality used in traditional explanatory schemes. To a chaining generated by a primary cause, and relying for each component of reasoning on a mono-causality, is substituted both multi-causality and an approach in loops where effect retroacts on cause. In a reasoning in loops, each component is an indispensable part of the chain, a moment in the production of a knowledge which generates itself while generating the general explanation.

Thinking about complexity requires to give as much importance to arrangement of objects with regard to one another, to interactions and to types of links between these objects, as to the objects themselves. It supposes that, in a system, there exists an organisational autonomy that allows reproduction and transformation of its constituting parts, i.e. self-organisation. The complexity principle makes it possible to interpret in Geography the working of dynamic systems such as cities, regions or geo-systems. Intelligibility of complexity is gained through modelling.

Consequently, the objective of social sciences does not consist in reducing complexity to simplicity anymore, but in translating complexity into theory.

Bibliographie

References :

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