

Bifurcation

By analogy with the physico-chemical theory of dissipative structures, or with synergetics: in a dynamic system, qualitative change of structure which may be generated by an amplification of a small internal fluctuation or by an external perturbation, when the system is in an unstable state. Bifurcations are theoretically unpredictable, they drive the system toward a configuration whose path may be perfectly determined but which is not the only possible one. This concept allows reconciling with problematics of social sciences the approaches of "hard sciences", which in this way reintroduce notions of irreversibility and unpredictability, in short historicity, which was neglected by classical mechanics for example. Bifurcations are characteristic of complex or evolutionary systems. They constitute frequent events at the scales of the individual or of the local entity, but rather rare at meso- or macro-scale in geography; e.g. bifurcation produced in the evolution of a territory by a political revolution, a technical change, the discovery of a new resource or its exhaustion...

See also: catastrophe, Spatial system

Bibliographie

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