

# Anthroposystem

The anthroposystem can be defined as a structural and functional entity that addresses interactions between societies and environments, integrating within a given space one or several natural sub-systems and one or several social sub-systems, the whole evolving over the long term. Depending on the research theme chosen and the issues defined in interdisciplinary manner, the anthroposystem can be envisaged at different spatio-temporal, organisational levels, extending from the local to the regional and global and from the past (retrospective analysis) to the present (study and modelling of present functioning) and the future (prospective scenarios for possible evolutions).

It was Lévêque et al. (2003) who proposed this new concept. It is the continuation of work conducted since the end of the 1970s in the "environment" programme in the French research institute CNRS, and developed, under different names (PIREN [ *Programme Interdisciplinaire de Recherches sur l'Environnement*] to PEVS [ *Programme Environnement, Vie et Sociétés* ]). The approach is scientific and cross-sectional, and seeks to integrate researchers from different academic disciplines according to the nature of the issues raised or the environmental problems requiring solutions. The first attempt to theorise and formalise this cross-sectional approach was published by Jollivet and Pavé (1992). They underlined the need to approach interactions between societies and environments by way of closed loops.

The emphasis is mainly on interactions and the retroactive loops in intertwined natural and social dynamics, that is to say on the diachronic co-evolution of natural and social sub-systems forming the anthroposystem. In this new approach, the loop of interactions between societies and environments is evolutive over time. The co-evolution of natural and social systems corresponds to a trajectory combining circular temporalities (cycles with variable periodicity, sometimes with breaks) included within a linear passage of time (an overall itinerary from past to future, taking account of adaptive changes or any mutations in the anthroposystem). This conception entails considerable theoretical implications. Thus it puts an end to the myth of a reference state, said to be pristine, and to nostalgia for a lost paradise that is to be re-created; it also puts an end to the equally chimeric myth of a stationary dynamic balance, considered to be "perfect", that needs to be achieved, maintained or restored. This seriously complicates the work of the researcher, who has to concede that the transformations and variability of the states of the system analysed are the rule, while a stationary state is merely a temporary state. This means that there is a need to reason in the long term and develop a retro-active approach so as to understand what processes of the past are still in action today. However, while the course of past events cannot be altered, the course of future events is still open, and depends on the forces at work, such as the choices made by societies in the areas of development and living environments.

The notion of the anthroposystem, set in a systemic approach, is a descendant from notions defined previously, such as the ecosystem (Tansley, 1935), the geosystem (Bertrand & Beroutchachvilli, 1978) and the socio-system (e.g. Lapierre, 1992), to which it refers, while at the same time differentiating itself by the nature of its content. The anthroposystem includes the ecosystem, variously anthropised, and the socio-system which is an integral part rather than being external. It draws from the geosystem the idea of an occupied natural space, used and transformed by past and present societies. The anthroposystem is however different on several counts. Firstly, the prefix used unambiguously states from the outset the determining role of human societies in the evolution of this hybrid system, at least since the Neolithic. Second, its definition puts the evolution of the system in a temporal perspective from past to future. Finally, it stresses the co-evolution of the natural and social systems coming together in a territory, undergoing both transformations of internal origin (on that level or on lower organisational levels) and transformations of external origin (contiguous or higher organisational levels). The social systems in an anthroposystem, occupying a given space, exploit the natural resources and use the ecosystems that belong to the territory. They restructure these natural systems and convert them into social productions, the dynamics of which constantly comply with biological, physical and chemical laws. "Environmental" issues can no longer be reduced to mere naturalistic questionings on the function or dysfunction of systems that are "external" to humans, since they entail diachronic societal choices that involve them, in particular in the area of territorial development. As a result, the channels of understanding of the functioning of reality; knowledge, science, nature on the one hand and power, politics and society on the other; are not independent as posited by the Western academic culture, but interwoven. Environmental challenges are societal challenges, and the natural environment is encroaching on politics by becoming an integral part of its concerns (see for instance Latour, 1999).

Through history, the study of the anthroposystem can be conducted from increasingly numerous and complex angles, which are linked to the main stages in the socio-economic, cultural and technological development of societies in the space under consideration.

The figures illustrate the different ports of entry according to the period, although the choice can be restrictive, since it depends on the question posed. In this diagrammatic representation, we have deliberately put the emphasis on the viewpoint of researchers in the social and human sciences, while the viewpoint of researchers in the natural sciences is reduced to a single port of entry, which is of course also plural

see also: [anthropization](#), [anthropocene](#)

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