

J . D a n i e l D a h m

C U L T U R A L B I O N I C S

D i v e r s i t y ,
I n t e r a c t i o n s , S u s t a i n a b i l i t y o f
L i v e l i n e s s

A. CONTENTS

Cultural bionics have the ambition to widen the analysis of biologic variety / diversity and ecologic interaction patterns within the geo- / biosystem earth into the anthroposphere. This approach turns its attention to the parallels and common laws and regularities, which form the base of biophysical and human ecological systems. What matters is the transfer of strategies and elements of bioecological regulation and organisation patterns, metabolisms, and exchange processes to the human ecological sphere. Cultural bionics deal with the characteristics and correlations between bio- / geocological and socioeconomic-humanecological systems. It starts from the assumption that cultural systems have the characteristic to tend by principle towards following the possibilities and limits which are determined by the environmental conditions of there biome. In this connection, the organisation and dynamics of biological and cultural variety / diversity in living systems is of fundamental importance. Liveliness and cultural variety are understood as qualities of complex systems, which as a matter of principle do support and foster sustainability. As well, not variety is the direct indicator for sustainability, but the closeness to liveliness in natural systems.

The anthropogenous (cultural) systems, such as the spheres of economy and their affiliated streams of goods and capital, the social organisation and its political steering mechanisms and hierarchies are facing increasing losses in the ability to control and regulate their networks of relations and connections, of interactions. The diversity and complexity of bundles of factors, all of them interacting with each other, are launching and forcing a high amount of consequential processes and dynamics. Their management and control are overstraining the present human organisation and interaction patterns and strategies. Centralisation of economic and monetary power and a dangerous imbalance of wealth and access (to goods, resources, informations and education, cultural and political participation, ...) are coupled together with instabilities of politics and civil society and rising conflict potentials. The ridge between the demands for utilisation and exploitation, technical access opportunities to natural resources and the understanding of geocologic-economic interrelations is too narrow and steep to step along. These are just a few cues which are emphasising the need to build new transdisciplinary coalitions in order to achieve new management strategies for complex bio- and humanecologic systems.

The lack of knowledge of the development of optimized synergetic strategies for human life is leading to rising crisis- and error-prones. The main reason for this is the increasing complexity of global cause and effect correlations, which we are not yet able to handle. The order principles of liveliness are always of dynamic nature. The interplay between competition and cooperation, between polarity, increase and damping, between interconnectedness and permeability, is in this context highly relevant.

The topic and aim of cultural bionics is (similar as bionic is transferring biologic mechanisms into technical solutions) to transfer bio- / geocological solutions to anthropogenous – cultural – relation systems and –strategies. This requires and also assumes the existence

of new problem definitions. Learning from bioecologic systems does also mean optimizing the organisation of variety and difference within the human ecological system in its organismic / organic entirety. ‚Natural‘ living systems supply important and worthy hints and concepts to improve and optimize the coordination of cultural, economic and ecologic metabolisms. They teach us, what strategies for complex systems are valuable, successful and applicable and what are not.

B. MAIN SET OF QUESTIONS / THESES – DEFINED FIELDS OF ACTION

Cultural bionics set the objective to develop dynamic, optimized and future-oriented solutions for human systems and to make them manageable. This is especially of particular importance for the current scientific, political and economic main issues and projects of international relevance. This includes in particular the wide range of debates around sustainability and other topics such as global governance, knowledge and information society, crisis and conflict prevention, global economy and trade as well as the international allocation of wealth and poverty. Cultural bionics offer especially for the creation of strategies for a sustainable global, regional, and local development important impulses and instruments, because it is able to integrate the social, economic and ecologic dimensions of sustainable development.

Following this, it is possible to formulate a set of first theses:

- * *Sustainability is in principle supported by a highly varied pool of bioecological and cultural diversity. The higher the variety of the pool, the higher its adaptability. The higher the range of cultural phenomena, the higher the variety of opportunities and strategies to adapt to changing conditions and requirements. Cultural variety and diversity opens the view and the awareness to the multioptionality of common agreement capabilities and to the variability and wideness of human lifestyles, habits and value concepts. By that, cultural variety offers a pool of strategies adapted to the local / regional situations (relating economy, society, governance) and to heterogenous systems of values (relating public goods, responsibility, solidarity).*
- * *Cultural diversity works as stabilizer and interactive exchange system of complex interrelation patterns. Thus cultural diversity increases the flexibility of the global system ‚culture‘, which does not function in a linear way, but in a chaotic one. Monocultural systems and structures are more rigid and inflexible, less adaptable and therefore more inclined to crises and they put higher one-sided strains on resource bases. They have higher difficulties to absorb swayings and changes of the bio- / geocological system. The higher the cultural variety, the higher the variability of the demands human communities are making to their habitats.*
- * *To achieve and establish globalizable solutions (economic, social, political), they have to get measured by their ability to reflect and understand themselves in local and regional contexts. The plurality and diversity of cultural and socioeconomic structural models re-*

quests to integrate and activate a high variability and diversity of sociocultural links (cultural receptors and acceptors) into globalized strategies and decisions. The fact of a high cultural diversity forces globalized systems to achieve maximal adaptability. This includes multivariable strategies, the decentralisation of decision-making and retardation (to have enough time to react on complex cause and effect correlations) and flat and movable hierarchical structures. As a result, the stability and sustainability of the global system earth would rise by the increased flexibility of its interaction patterns.

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It is an important aim to get to new answers and solutions for local, regional and global development strategies via the analysis of bio- / geoecologic organisation and development patterns, for example:

- Which organisation models from nature are transferable and usable for the management of anthropogen structures to develop and establish innovative and sustainable local, regional and global cycles?*
- In which way and in what relations should centralisation and decentralisation get organized to strengthen by using governance strategies local, regional and global development potentials and exchange processes and the satisfaction of (at least fundamental) demands? And on which levels is the establishment, the remodelling and a reorientation of institutional structures indispensable?*
- How could metabolism processes in the fields of economic and consume goods get improved and optimized – beginning from the resource base via production, consumption up to the tracing back, the decomposition, the recycling? In which way could production and regeneration in complex systems get improved? And what kind of parameters do we need to measure this kind of ,improvement'?*
- How could international flows of goods, services and capital streams get organized to optimize the linking up between the places of rich resource stocks / reserves and high production potentials with the places of (urgent) needs and demands?*
- Of what kind is the organisation and usage of plurality and diversity in bio- / geoecologic systems for the generation of gains in supply, development and stability / flexibility?*
- What ways could be taken to utilize cultural variety as motor and supporting impulse for new immaterial, communicative and cooperative models of wealth and consumption (innovation, creativity, inter- and crossculturality)?*
- In which way could settlement structures (logistics, traffic, emissions, high variety of functions, and every day needs) particularly with regard to high-density urban spaces, get organized in an adaptable and vital manner, without overstraining the effort of steering control?*

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C. METHODOLOGICAL / PROCESS APPROACH – ESTABLISHMENT

Cultural bionics affiliate to several questions and subjects of sciences and researches which were up to now treated side-by-side, partially even held isolated of each other from various, separated perspectives. These band together in the cultural bionic as a transdisciplinary field of research. Cultural bionics as a transdisciplinary scientific field shall broaden and fructify integrative future research and management of complex political and economical systems. To bring forward and to stimulate innovative impulses for political and economical organisation and management solutions, the dialogue and the interexchange between the scientific disciplines need to be intensified and stimulated via a non reductionistic scientific perspective.

First steps to establish the field of study of cultural bionics are the

- * *...collection and analysis of existing concepts of science, intercultural comparison, traditional knowledge. For this, it would be needed to conduct the scientific functional dialogue and discourse in varied scientific organisations and and research institutions on European and international levels. As well, representatives from different cultural areas and key persons of different cultural / traditional knowledge should be incorporated in the analysis and discourse around that topic. With the objective to integrate the varying pool of intercultural knowledge about coactions, complementarities, interdependences inbetween bio- / geosphere and anthroposphere it would be valuable to investigate cultural anthropological studies and also to carry them out as and when required, dependent to the existing researches.*
- * *...opening of the discourse about cultural bionics in science, politics and economy. To this purpose the subject matter should be communicated in european and international institutions of science and politics and also to actors and multipliers of business, economy, and media. The aim is here to stimulate new multidisciplinary alliances and to plant innovative impulses for the quest and design of new management strategies for politics (including environmental policies), economy, and for the civil society.*
- * *...design, development and evaluation of management strategies and organisation systems for politics, economy, civil society. For this purpose on one hand new inputs of content should be introduced in varying institutions. On the other hand inputs of ideas for the formation, analysis, the design and development of the subject area of cultural bionics should be gained and integrated. Through this, potentialities and limits of cultural bionics for the purpose of modelling and establishing innovative management systems and strategies should be fed back and evaluated.*