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A General Systems View of Agriculture, Climate and Glaciation.

General Systems Philosophy (a,b) points to a more general overview to make sure our analysis is as complete as possible. Traditional science looks at the narrowest possible sub-system of the pheomena being studied. The following diagram illustrates how modes of operation, levels of phenomena, evolutionary sub-systems, and cyclic sub-systems enter into the general systems study of a problem.

(1)MODES OF OPERATION	(2) LEVELS OF PHENOMENA(c) (Universe)	(3) LEVELS OF PHENOMENA(d) (Planet)	(4) EVOLUTIONARY SUB-SYSTEMS(d)	(5) CYCLICAL SUB-SYSTEMS
Intuitive (b) (right brain)	Black Holes White Holes	Supranational Society(j) Organization	Cultural Evolution Technological Evolution	Sociological Planetary
	Gas Nebulae	Group	Communication Era	CO/2(e) Ice(e)
Empirical Science	Galaxy Clusters	Organism(j)		Weather Temperature
	Galaxies	Organ	Power Era	Food Supply
Abstract (left brain)	Star Clusters	Cell(j)	Force Era	Astronomical
	Stars Sun, energy Normal Sun-spots Neutrinos Nova?		Biological Evolution	GAIA HYPOTHESIS (h,i,k)
	Comets Gravitation	Geoids		
	Gases	Possible Catastrophes(g)		
	Planets ---->	Atmosphere		
	Molecules	Oceans		
	Atoms	Land areas	Physical-Chemical Evolution	
	Sub Atomic Particles	Crust		
	Electromgntic Fields	Tectonic System Hydraulic Pressure		
	Quantum Energy	Mantle, energy Radioactive decay Natural Nuclear Reactors		
		Core	Cosmological Evolution	Cosmological Cycles

Scientists working in separate parts of the agriculture-climate-soil- glaciation-atmospheric system say that separate parts such as the influence of carbon dioxide on

glaciation have not been proved. Our approach in general systems theory is to try to find or develop a thesis or thematic-hypothesis that encompasses the total phenomena and then search for what experimental facts agree or disagree with the thesis.

In physics none of the basic theories have been proved. For example, Einstein's special theory of relativity relating electromagnetic theory to mechanics is accepted, because all competing theses (theories) have inconsistencies with known experiments.

In the table above, we have established five columns of categories to help us develop an overview of the problems of planet earth, in a way that helps us do as complete as possible coverage of all the phenomena involved.

In (1) MODES OF OPERATION we list three modes that must be coordinated in the analysis of a complex problem: Use of the intuitive -artistic -poetic functions of the right hemisphere of the brain in a relatively unconscious mode to develop thematic hypotheses; the observation and measurement of physical phenomena in Empirical Science to test both intuitive concepts from the right brain and abstract -logical hypotheses from the left brain; use of the abstract -logical features of the left hemisphere of brain to develop more conscious mathematically computable hypotheses. For a brief discussion of the functioning of right and left hemispheres of the brain see Bowler (ref b, pp. 97-99).

In (2) LEVELS OF PHENOMENA (Universe) we have listed a hierarchy of levels of mass/energy in the universe. The lower part of the column lists the hierarchy of energy/particles of chemistry and physics. In the upper part the different levels of objects in the universe ranging from planets to galaxies to black holes. Indented under sun are three levels of energy from the sun that may occur.

In (3) LEVELS OF PHENOMENA (Planet) the upper hierarchy is the levels of living systems on our planet, and the lower hierarchy repesents the layers of systems of the planet from the core out to the atmosphere. Under geoids are listed possible castrophes described by Asimov (ref g). Under tectonic systems the hydraulic pressure of the fluids in the mantle are noted. In addition to the hydraulic pressure there is energy from radioactive decay of atoms and also the possibility of natural nuclear reactors where a critical mass of U-235 accumulates. Naturally occuring nuclear fission reactors of 1.8 billion years ago are identified by the Sourcebook Project (ref. f).

In (4) EVOLUTIONARY SUB-SYSTEMS we start from the bottom with Cosmological Evolution and move up through Physical-Chemical, Biological, Technological, and Cultural Evolution. Technological Evolution is divided into three stages: force era, power era, and communication era. The Communication Era brought us the electronic computer-communications tools just in time for use in diverting the coming transition from an interglacial period to a glacial period.

In (5) CYCLICAL SUB-SYSTEMS we find sociological cycles in the philosophy of Hindus in India and the Hopi Indians in North America. The Hindu yugas have cycle period times that bear some resemblance to the time cycles of the glaical periods. The GAIA HYPOTHESIS states that the conditons of the earth's surface, oceans, and atmosphere will adjust to conditons for the maintenance of life on our planet. Hamaker's thesis is consistent with this in that over each 100,000 year cycle the amount of carbon dioxide in the atmosphere and the amount of ice in the glaciers adjust to replenish the soil so that plants can again grow on this planet after the topsoil is demineralized and otherwise dissipated. In order for the glaciers to grind and distribute gravel to make the new topsoil, a large part of the plants, animals, and humans may die as the glaciers advance, leaving a smaller population of living matter

in the tropics. By Hamaker's thesis the increasing carbon doxide from our industrial society is accelerating the coming of the next glacial period.

In our review of the literature on agriculture-weather-carbon dioxide, none show explicit use of general systems theory. However the thesis of John Hamaker on carbon dioxide and glaciation shows the most complete coverage of the sub-systems that would be considered from a general systems point of view. John Hamaker's thesis comes close to satisfying the General Systems Approach of relating to the known facts in all the related fields of phenomena.

This general systems approach does have an element of incompleteness by reason of the analysis starting from the more general (or top-down) and going down into the more specific details. To make this analysis more complete, the next step is to get the experts in the approximately twenty fields of science involved to cooperate with each other to fill in the missing gaps in the research on carbon dioxide, weather, soil demineralization, and glaciation.

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