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From Natural Ecology to Cultural Ecology

“Cultural ecology” as a term was coined by Julian Steward and was first used in the context of anthropology and ethnology, designating the importance of the natural environment for the evolution of human culture. Cultural ecology in this sense investigated the concrete influence of environmental conditions such as climate, soil, terrain, water resources, animal populations, and plant species on the technologies and forms of production but also on the values and mythologies of cultures. In some of its versions, this kind of cultural ecology moved toward a strict functionalism and environmental determinism, in which social structures were mono-causally derived from local physical conditions of life (Carneiro 2003). This form of naturalistic reductionism was practiced in anthropology, archaeology, or geography and was subsequently criticized by an emergent political ecology for its lack of attention to human agency and a globalized political economy. The concept of adaption was transferred from evolutionary biology to the evolution of cultures. Typical fields of application were farming methods, the use of domestic animals, forms of labor, rituals, and festivals in response to environmental conditions such as aridity, temperature, or rainfall patterns, often in reference to relatively homoeostatic preindustrial rather than modern dynamic societies. However, the deterministic strain of cultural ecology had its counterpart in an “environmental possibilism” (J. W. Bennett 162), which goes back to anthropologists like Franz Boas and Alfred Kroeber and assumes that the “natural environment sets certain possibilities of options from which cultures, conditioned by their history and particular customs, may choose” (Marquette). This form of cultural ecology favors an “interactive and dialectical rather than a deterministic view of the relationships between cultures and their environment which has remained at the center of cultural ecological approaches” (Marquette). Steward himself, who was

a student of Kroeber at Columbia, emphasized the multilinear rather than unilinear process of culture change and pointed out the difference of culture and consciousness from primary organic life: "Man enters the ecological scene... not merely as another organism which is related to other organisms in terms of its physical characteristics. He introduces the super-organic factor of culture, which also affects and is affected by the total web of life" (Steward 31). This super-organic factor can be defined in naturalistic terms as the collective cooperation of individual organisms as in insect societies (Hölldobler and Wilson) or in ecocultural terms as indicating an emergent, qualitative difference between biology and human society, between natural and cultural ecology. It is in this double framework of both interrelatedness *and* difference between mind and life, nature and culture, that recent cultural ecology has developed its main concepts and theoretical perspectives.

A key figure in extending cultural ecology beyond its biological-anthropological origins and in establishing it as a transdisciplinary approach in the humanities has been Gregory Bateson. Bateson's work spans a broad range of disciplines ranging from anthropology to logic, from psychology to epistemology, from ethnology to language theory, from cybernetics to philosophy. It does not cohere into a unified scientific system but rather brings together heterogeneous fields of knowledge in a form of "consilience" (Wilson 1998), in which the deeply entrenched epistemological divide between the natural and the human sciences is bridged and common patterns of mind and life are explored beyond disciplinary boundaries. These patterns are shared across different epistemic and cultural fields, but they also vary according to specific contexts and do not designate fixed properties of given realities but rather emphasize nonlinear, emergent processes characterized by interacting networks and recursive feedback relations. Accordingly, in his project of an *Ecology of Mind* (1973), Bateson considers culture and the human mind not as closed entities but as open, dynamic systems based on living interrelationships between the mind and the world, between the mind and other minds, and within the mind itself. The mind of the individual ego is expanded toward an ecology of vital interrelations with other minds and with their natural as well as historical-cultural environments. Bateson thinks of the mind neither as an autonomous metaphysical force nor as a mere neurological function of the brain but as a "dehierarchized concept of a mutual dependency between the

(human) organism and its (natural) environment, subject and object, culture and nature,” and thus as “a synonym for a cybernetic system of information circuits that are relevant for the survival of the species” (Gersdorf and Mayer 2005: 9). Culture is seen as an evolutionary transformation and metamorphosis rather than a binary opposite of nature. The mind is placed “in the very heart of natural history, in the self-generating grammar of living processes and of their incessant, remarkable metamorphoses” (Manghi xi). But the mind is also placed in the heart of cultural history, as a fluid, open, dynamic field of complex feedback loops within and between individual minds, forming interpersonal circuits of communication which are continually driving, transmitting, and balancing processes of cultural evolution and survival. While causal deterministic laws are therefore not applicable in the sphere of culture, there are nevertheless productive analogies which can be drawn between ecological and cultural processes.

In Peter Finke’s integrative approach of an Evolutionary Cultural Ecology, Bateson’s ideas are developed further in ways that even more explicitly relate to crucial issues of the humanities and of cultural studies. Finke conceives of cultural ecology as a general theory that regards ecology as a paradigm not only for the natural and human sciences, but for cultural studies as well. His *Ökologie des Wissens (Ecology of Knowledge)* (2005) fuses ideas from Bateson’s ecology of mind with concepts from evolutionary biology on the one hand and from social systems theory and linguistics on the other. Finke’s aim is likewise to reconnect the various cultures of knowledge that have evolved in history, and that have been separated into more and more specialized disciplines and subdisciplines in the development of modern science (Finke 2005). In this view, the sphere of human culture is not considered as separate from but as interdependent with and transfused by ecological processes and natural energy cycles. At the same time, Finke’s evolutionary cultural ecology recognizes the relative independence and self-reflexive dynamics of cultural processes. Rather than genetic laws, information and communication have become major driving forces of cultural evolution (see Finke 2005, 2006).

Building on the biologist Jakob von Uexküll’s distinction between *Umwelten* and *Innenwelten*, that is, between external and internal environments, which Uexküll ascribes to nonhuman as well as to human life (Uexküll), Finke develops the notion of *cultural ecosystems*, which have emerged in

coevolution with natural ecosystems but have generated their own rules of selection and self-renewal, of production, consumption, and reduction of energy, along with their functionally differentiated tasks within society and culture. Language, economics, politics, law, religion, administration, science, as well as art and literature are such cultural ecosystems, which have been increasingly differentiated especially in the process of modernization since the eighteenth century and have produced their own forms of autopoiesis and self-reproduction. Language as a cultural ecosystem is especially important here as a shaping factor in the process of cultural evolution. Language represents a “missing link” between cultural and natural evolution (Finke 2006), because it relates back to concrete biophysical forms of information and communication in the pre-cultural world of nature but also transforms them into more abstract, symbolic, and generalizing systems of human interpretation and self-interpretation. Language thus decisively contributes to the emergence of internal worlds of consciousness and culture that are characteristic of the cultural evolution. Language and other cultural sign systems, in turn, are the material and the medium of art and literature, whose task is the constant critical examination, imaginative exploration, and creative self-renewal of these cultural sign systems. The characteristic environments of modern humans are not just external but internal environments—the inner worlds and landscapes of the mind, the psyche, and the cultural imagination—which make up the habitats of humans as much as their external natural and material environments. Literature and other forms of cultural imagination and cultural creativity are necessary in this view to continually restore the richness, diversity, and complexity of those inner landscapes of the mind, the imagination, the emotions, and interpersonal communication which make up the cultural ecosystems of modern humans but are threatened by impoverishment from an increasingly overeconomized, standardized, and depersonalized contemporary world.