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Editor's Note: Towards an Information Ecology

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Editor's Note for the First Edition: Towards an Information Ecology

The following papers by Tarnowski and Flora grew out of an attempt to model human ecosystems by taking information flows into serious account, a much neglected aspect in previous models that were based primarily on energetics. This understanding of human ecosystems as information systems is part of a synthetic approach under development at the University of Georgia called information ecology. An advanced seminar taught by Charles Peters met in the Spring of 1997 to further develop a systems vocabulary capable of modeling complex information ecosystems and to refine some of the concepts in this emerging field. By drawing on fields such as systems ecology and cognitive science and using an evolutionary epistemological perspective, a theoretical framework is forming in an attempt to explain a wide range of socio-cultural environmental phenomena. Future issues of the Georgia Journal of Ecological Anthropology will include papers from this field of inquiry as it develops.

Editor's Note for the Second Edition: Towards an Information Ecology[1]

There is a reason why past "ecological approaches" have failed, and it lies not in ecology but it the self-styled "cultural ecologists." Modern ecologists, who not only analyze but even simulate dynamic ecosystems, take into consideration that all populations exchange *matter*, *energy* and *information* with their environments. Up until now, it has mainly been the humanists who have studied the informational aspects of complex societies-art, religion, ritual, writing systems, and so on. The "ecologists" have largely contented themselves with studying exchanges of matter and energy-the "techno-environmental" factors as Harris calls them. To read what the "ecologists" write, one would often think that civilized peoples only ate, excreted, and reproduced; to read what the humanists write, one would think civilizations were above all three, and devoted all their energy to the arts. ...humanists must cease thinking that ecology "dehumanizes" history, and ecologists must cease to regard art, religion, and ideology as mere "epiphenomena" without causal significance. **In an ecosystem approach to the analysis of human societies, everything which transmits information is within the province of ecology.** (emphasis added).
Kent V. Flannery. "The Cultural Evolution of Civilizations" in *Annual Review of Ecology and Systematics* 1972.

With the resurgence of interest in ecological anthropology the field is fast approaching a critical mass to potentially achieve substantial progress in understanding human ecosystems. What is needed is a theoretical framework in which to operate that can draw from previous work in ecological anthropology while learning from past oversights and mistakes. Information is a long neglected domain of study in human ecosystems, yet it is a crucial one. The call for a deeper study of the role of information in human ecosystems is not a new one. In fact there is abundant literature within ecological anthropology (Adams 1973; Alland 1975; Bennett 1976; Bohannon 1973; Butzer 1990; Flannery 1972; Moran 1982 to list a few) stating either the need to include information when studying human ecosystems or actual conceptualizations of such models. Furthermore there is historical literature going back thousands of years attesting to intellectual pursuit of the relationship between information and the environment (Stepp 1997). Previous focus on energy and matter flows in the old ecological anthropology is certainly understandable. Well developed approaches

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[1] Adapted from a paper presented at the Paper Presented at the 96th Annual Meeting of the American Anthropological Association, Washington, D.C. November 19-23. 1997 entitled INFORMATION ECOLOGY: AN INTEGRATIVE THEORETICAL APPROACH TO UNDERSTANDING HUMAN ECOSYSTEMS

already existed in biological ecology for these types of studies and some considerable progress was made when they were applied to human ecosystems. In retrospect, one can also see how functionalism (or perhaps more accurately hyperfunctionalism) came into favor through this route (see Vayda and McKay 1975 for a review). With plenty of work required to simply understand the energetics of human ecosystems—and little to build from in biological ecology—a productive theoretical framework that includes information has yet to be established.

Models (or more accurately graphical conceptualizations) as you will see in the papers by Tarnowski and Flora are one tool used in information ecology. These models provide a way to quickly express the complexity of human ecosystems, which are information-rich. However, complex systems can not be conceptualized without simplification, a matter of not seeing the forest for the trees. A common criticism, though, is that the models are too complex (usually from someone unfamiliar with the information ecosystems symbols vocabulary). This phenomena, known as symbol shock, soon wears off to be replaced by complaints of oversimplification. It is important to understand that these models are meant to be viewed not as ends, but rather, means to efficiently convey ideas. As such, they are amenable to modification and oftentimes are reworked. Thus, their greatest value lies in the heuristic processes they initiate. The foundation for our models come from a variety of sources, but the largest contribution by far is from conventions established by H.T. Odum (1983). This symbolic language provides the iconography necessary for an efficiently conveying relationships within human ecosystems for energy and matter transfers. The absence of conventions for information flow in Odum's models is not so much an oversight as it is a reflection of the fact that in most non-human ecosystems, information is simply not that important to understand their dynamics. When information is shown Odum relies on the convention for energy flows, information being just another form of energy to most biological ecologists. However, by adding separate symbols for information flows of different types a new level of sophistication is achieved. Development of an enlarged graphical language requires a careful walk between being comprehensive while maintaining efficiency within the depictions.

For information ecology to succeed it needs not only spatial (both physical and mental) depth but temporal as well. While information is a fleeting phenomena it does influence human behaviors that are subsequently reflected in the material record (see Headland 1997 for a renewed call for a diachronic perspective in ecological anthropology). Additionally, an evolutionary epistemology has been, and continues to be an important part of information ecology, and several insights have arisen by working out conceptualizations of organisms that do not have the degree of informational complexity as humans. We are fortunate to have a diverse range of interests reflected in the information ecology working group, ranging from primatology and paleoanthropology to cognitive anthropology and systems ecology. The approach taken is a transgenerational one, not just so we do not reinvent the wheel with each new generation, but so we can continue to refine our understanding of human ecosystems as our theoretical positions mature. Therefore, I would like to extend an invitation to the readers of this journal for practitioners of all subfields and theoretical leanings to participate in creative and synthetic thought in developing a encompassing, comprehensive and inclusive framework that can provide a foundation for the new ecological anthropology of the next century.

John R. Stepp, Editor
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