

THE EVOLUTION OF HUMAN ENERGETIC SYSTEMS

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ABSTRACT

Inspired by the work [1] of one of my Professors, Leslie A. White, who brought the thermodynamic concepts of Ostwald, Soddy, and Lotka into Anthropology, I developed my own distinctive approach in a series of articles [2, 3]. This work applied biological and energetic concepts to the analysis of human social and cultural systems to illuminate important anthropological questions as human origins, and the origin of the state and civilizations. These articles received some favorable attention, but I moved on to other issues relating to my field work in Japan and my work in applied anthropology in Los Angeles. More recently, responding to developments in ecological economics and Marxian ecology, I began to reformulate my earlier work, resulting in two articles which incorporated my earlier concept of energetics into a more general concept of metabolism [4, 5].

I want to turn now to an examination of how these concepts might be used to better understand the present condition of our species. After providing an overview of the thermodynamic development of our species from earliest times to the present, I will examine how the energetics of our global ecosystem is being distorted, first by irrational and wasteful use of fossil fuels, nuclear, and other forms of auxiliary energy, and second by the misapplication of human energy (in the form of physical and mental labor) into sustaining war, exploitation, and inequality rather than serving the well-being of our species.

Keywords: evolution, culture, energetics, ecosystem, social metabolism

References:

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- [4] Ruyle, Eugene Edward. "Labor and human social metabolism (part 1) An anthropological perspective." *Monthly Review Online*, posted Sept 19, 2018
- [5] Ruyle, Eugene Edward. "Exploitation and the social metabolism of class societies (part 2)." *Monthly Review Online*, posted Sept 19, 2018