

1. Please translate the following paragraph into Chinese. (50%)

The ecologist's concept of niche is an invention of the science itself. It has, as far as we know, no deeper origin. It is concerned with a fundamental problem in ecology: how to integrate the two parts of the ecological system: the biotic element and the environmental element. The puzzle has three parts: the biotic, the environment, and the links between biota and environment. Each element in the triad is highly dynamic and changes over space/time. For example, the biota, through sexual reproduction and genetic processes, produce phenotypes that vary in fitness. The environment, through variation in the energy dynamic of the planet, changes over space/time. As a consequence, the links between the biota and the environment vary as well. There are few satisfactory models that allow the ecologist to relate the individual parts of the triad to the whole ecological system.

(from *The Philosophy of Ecology: From Science to Synthesis*, eds. D. R. Keller & F. B. Golley, p. 104.)

2. Please read the following paragraphs and answer the questions below. (50%)

Nature is the milieu of culture. Using a metaphor, nature is the womb of culture, but a womb that humans never entirely leave. Nature can do much without culture—the several billion years of evolutionary history are proof of that. Culture, appearing late in natural history, can do nothing without nature as its ground. In this sense, culture will always have to be constructed out of, superposed on nature.

No matter what kind of exodus humans make from nature, they are going to remain male or female, with hearts and livers, and blood in their veins, walking on two feet, and eating energies that were originally captured in photosynthesis by chlorophyll. Culture remains tethered to the biosystem and the options within built environments, however expanded, provide no release from nature. Humans depend on air flow, water cycles, sunshine, nitrogen-fixation, decomposition bacteria, fungi, the ozone layer, food chains, insect pollination, soils, earthworms, climates, oceans, and genetic materials. An ecology always lies in the background of culture, natural givens that underlie everything else.

Plants and animals modify the landscapes on which they live. Despite the changes they introduce, however, plants and animals are largely adapted to the environment in which they find themselves. These adaptations are genetic, behavioral, morphological, physiological—fur or horns or teeth, or thorns or deciduous leaves or camouflage. Culture makes possible the deliberate and cumulative, and therefore the extensive, rebuilding of nature. Humans reshape their environments, including new ones into which they expand, rather than being themselves morphologically and genetically reshaped to fit their changing environments.

(from Holmes Rolston, III, "Nature and Culture in Environmental Ethics.")

- (1) Please summarize the main thesis of these paragraphs.
- (2) What is the relationship between nature and culture?
- (3) From the point of view of Rolston, what is the task of ecology?