Conceptualizing the Human (H) - Nonhuman (NH) Relationship

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Comments invited.

In the late 19th century, the emerging discipline of economics established marginal utility as a core theoretical insight and went on from there. Other disciplines and interdisciplinary bodies of knowledge in the same way are based upon a set of assumptions, methods and means of understanding their subject matter; eg, history (chronology, narrative); physics (energy, work); women's studies (gender and power). Today, the emerging body of interdisciplinary knowledge environmental studies or sciences (the terms are treated here as being synonymous) is beginning to establish core theoretical insight. These thoughts are intended to contribute to that process.

We start with the subject matter of environmental studies as it is currently defined by those teaching it. Vincent and Foch (2011, 19) based on survey responses of 260 (out of 840 surveyed) US undergraduate and graduate interdisciplinary environmental studies and sciences programs, define the subject matter as follows:

“IE [interdisciplinary environmental] programs identify the human-nature interfaces (coupled human and natural systems) as their focus.”¹

How can that interface, or coupled systems, be usefully conceptualized in terms of the core insight? What follows is one possibility.

Summary

1) At the core of “coupled systems” is a “relationship” (a system with only two parts). That relationship is two-way and reciprocal – each affects the other.
2) The central element of that relationship is the physical capacity (power) to influence the other.
3) The physical power of human to influence the nonhuman is directly related to social power; the capacity of human to influence human.
4) Increased understanding of that relationship is provided by viewing it’s evolution over the full span of human history.

Definitions

H = Homo sapiens since anatomically modern humans emerged some 200,000 year ago (YA), plus: 1) their artefacts; and, 2) their ideas.

NH = everything else, biotic and abiotic, on earth and in the universe.

More than a one-way relationship

The starting point for environmental studies is human impact upon nature. However, the H-NH relationship can be thought to take three forms:

1. NH impact upon H, eg climatic conditions which influence food supply;
2. H impact upon NH, eg habitat destruction, species extinction;
3. H impact upon NH which also rebounds with adverse impact on H, eg toxic contamination, climate change.

Both hold agency

In this perspective, both H and NH have the ability to act in ways which affect the other. NH agency is augmented by H.

Start with physical power

Analysis can usefully begin with the physical impact each has upon the other, based upon available energy to generate power (work over time). NH has sufficient power to dramatically change life on earth (ice ages; asteroid impact and associated extinctions 65 million years ago). H potentially has comparable power (detonation of all existing atomic bombs). H physical power is provided by technology which gives access to non-animate energy sources.

Add social power

H physical power from technology is augmented by the social power which allows the elite to co-ordinate activity of the masses. As discussed below, this social power only emerged 10,000 years ago. Today, this co-ordinative social power is most significantly expressed in the organizational form of the modern state and firm.

Technology and organization

Accordingly, the two main interconnected variables are technology (the artefact and the skill, including organization, needed to use it) and organization (the ability to focus a variety of specialized activities on achieving one shared objective).

Consider evolution of the H-NH relationships over time

<table>
<thead>
<tr>
<th>Time (YA)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>500,000</td>
<td>only NH, since H did not exist</td>
</tr>
<tr>
<td>200,000</td>
<td>H emerges; less than 50,000 individuals; stone tools; egalitarian hunter-gather bands; minimal impact on NH; adapts to significant NH impacts on H, eg ice age</td>
</tr>
<tr>
<td>40,000</td>
<td>H has acquired symbolic language, ability to imagine that which does not exist</td>
</tr>
<tr>
<td>10,000</td>
<td>H transition to fixed dwellings, agriculture; first emergence of social power</td>
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</tbody>
</table>
2,000 YA  **H** transition to civilization, empire, coercive social power to tax and enslave

500 YA  European Revolution: modern science, capitalism, modern state; beginnings of industrialization based upon fossil fuel energy sources, consumerism, population growth, significant **H** impact upon **NH**

200 YA  today the Anthropocene; some degree of parity in the **H-NH** physical power relationship

The **H-NH** balance of physical power has gone from zero; to insignificant; to very significant. For 95% of its existence **H** did not hold social power; now that social power is very significant.

**Consider current H-NH relationships across space**
All three sets of relationships vary geographically and exist in different forms from global to local. This means different humans have different interests respecting the **H-NH** relationship, impeding **H** ability to manage that relationship.

**Coupled systems**
Systems to be considered might include:

**H**
- material and energy flows through the global economy
- global governance systems, forms of social power
- ideas - assumptions, norms, understandings of causality

**NH**
- earth systems: interacting physical, chemical and biological processes
- systems within that dynamic, eg atmosphere, biosphere

Coupled systems suggests one dynamic (eg, Gaia). Within that, the three forms of **H-NH** relationships, based upon physical and social power, evolving through time and varying across space, might provide a useful conceptual starting point for environmental studies analysis.

As noted above, at the core of coupled systems is a two-part system.

**Degree of separation in the relationship**
A theme in environmental studies is human separation from nature and in particular human perception of separation as a cause of the environmental problem – also referred to as “alienation” from nature. The historical time-line above also helps conceptualization that:

500,000YA  no separation, because all **NH**

200,000YA  early humans saw no separation (perhaps)

20,000 YA  cave paintings suggest **H** seeing itself as somewhat separate from images made

10,000YA  agriculture, control over isolated parts of **NH**, implies separation

current  jet travel, electric light etc obliterate space, time, natural rhythm – separation environmentalism, ecocentrism attempts to bridge the perceived separation