

Co-development and Co-evolution: Economic Explorations of the Anthropocene

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Main Points

- **Limitations** of standard economic theory
 - Including extension to take account of natural capital, or markets for environmental services
- Concept of **Anthropocene** makes clear humans' geological role in **making**, not just **using** natural resources
- Does this need refashioning economic analysis – bringing in **reflexivity, co-development, co-evolution?**

Anthropomorphic environmental interventions

- Burning trees for grasslands
- Forests to agriculture
- No pristine forests – not even in Amazon
- Mainly local effects
- But some global – disputed extinction of mega fauna during migrations
- Virtual extinction of indigenous Americans - re-forestation, cooling of earth's atmosphere

Anthropocene

- (Capitalist) **Humanity as global** (geological force) **not just** [local] **environmental actor** - Dalby
 - Global warming (carbon cycle)
 - Capture of atmospheric nitrogen (nitrogen cycle)
 - More fresh water in reservoirs than rest outside the Poles
 - We move more earth than all the erosion, sediment movement
 - Weight of domestic animals more than wild animals
 - Acidification of oceans
 - Sixth mass extinction of species
 - Ozone layer

History of Anthropocene

- 2000: Cruzen, Nobel Prize Chemist
- 2016 report of International Stratigraphic Society
 - Changes will show in the sediment layer
- Begins with Industrial Revolution – fossil fuel
- Great Acceleration – after 1950
- “Fossil fuel democracy” (Dipesh Chakravarty)

Why Anthropocene?

- It is not a new fact
- But a way of organizing facts to stress the **role of humans in fashioning the world** (Purdy, 2015)

Economic Theory

- What does this mean for economic theory?
- Relationship between ends and scarce means which have competing uses (Robbins); i.e. the **allocation of resources**
- What happens when human do not just use but also make resources?
- What about the human / nature or culture/nature divide?

Explorations

Base my explorations on different projects:

- Indigenous peoples in forests in India and China
- Payment for environmental services in Nepal, Indonesia and the Philippines
- Local development and carbon market in India
- Common property regimes for lakes in Bangladesh
- Environmental cleaning up in value chains

Forests and Labour

Ban on logging in India and China

- Forests are nature and indigenous peoples have no rights over them
- But forests, as we know them, are not just natural, they are the result of human interactions with them
- Even in the Amazon “forested landscapes are not pristine” (Heckenberger and Neves, 2009)
- Different levels of interaction – controlled utilization, purposeful regeneration and domestication

Forests and Labour: Co-evolution

- Interaction of forests and forest dwellers led to concept of “co-evolution” (Tim Ingold)
- Not just humans but even forests evolve
- Not just one causing the other, not simple directional but **bi-directional**, or reflexive – both cause and effect

Commons and value

Common property management in lakes in Bangladesh:

- Resistance to setting up sanctuaries
- Alienable products – value only of that which can be marketed
- Rest defined as waste or weeds
- But inextricable link between different species
- Unvalued fish part of overall fish chain
- But valuation of only marketable products leads to abandonment of space and shift of capital

Commons and value

More generally commodity production is an island within the commons

- Unpaid work of women – domestic work
- Also of nature and colonies?
- “the appropriation of women, nature and colonies,” Maria Mies
- Regeneration cannot take place without the relation between paid and unpaid labour, or value and the commons

Invisible and Under-produced

- Economic analysis has not theorized the relation between extraction of value and unpaid work
- What is unpaid becomes invisible (women's work in GDP) and under-produced (nature in production)
- Attempts to bring nature into value system

Commodification of Nature

Payments for environmental services in Nepal, Indonesia and the Philippines

- Environmental economics – missing markets for nature
- Payment for environmental services
- Internalizing externalities
- Positive effect of incentives on private production of public good

Commodification of nature

- Commodification also means privatization
- Some limits to commodification:
- Critical natural capital (stream banks) – as public
- And of *peoplehood* as tied to some location/s
- [The Niyamgiri / Ayers Rock argument]

Inter-species Relations

Biological out-sourcing of some functions (Anna Tsing)

- E.g. of pollination to bees
- Humans require bacteria to digest food
- Thus, **co-development** of species that are *inextricably inter-linked*?

Linkages in GVCs

Cleaning up leather value chain in Chennai
(Tewari and Pillai)

- Out-sourcing in value chains
- Sustainable cleaning-up required coordinated action all along the value chain
- Are value chain segments ***inextricably inter-linked?***
- Leading to ***co-development*** for sustainable value chains?

Alternative Explorations

- Not simple directional relationship, but **bi-directional** or reflexive relationship
- Not the human- forests (natural resources) dichotomy, but **co-evolution** of humans and forests (nature)
- When species are **inextricably inter-twined** then regeneration not of a species but of an **assemblage** of species
- **Economics as evolutionary theory?**

Albert Einstein

- *“We cannot solve problems by using the same kind of thinking we used when we created them.”*