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Contribution to

Global Labour University Master Course: Labour Policies + Globalisation

Climate change + trade union responses

Berlin School of Economics and Law, April 12-14, 2013

Session 1- thematic intro

Required themes:

Industrialization
and its effect on the environment
studied in a North-South Perspective

- Stages of industrialization
- industrial revolutions
- impact on the environment

Disposition

0) What are the intended learning goals?

I) North-South perspective

II) Historical perspective: industrialisation

III) Socio-ecological approach: why + how?

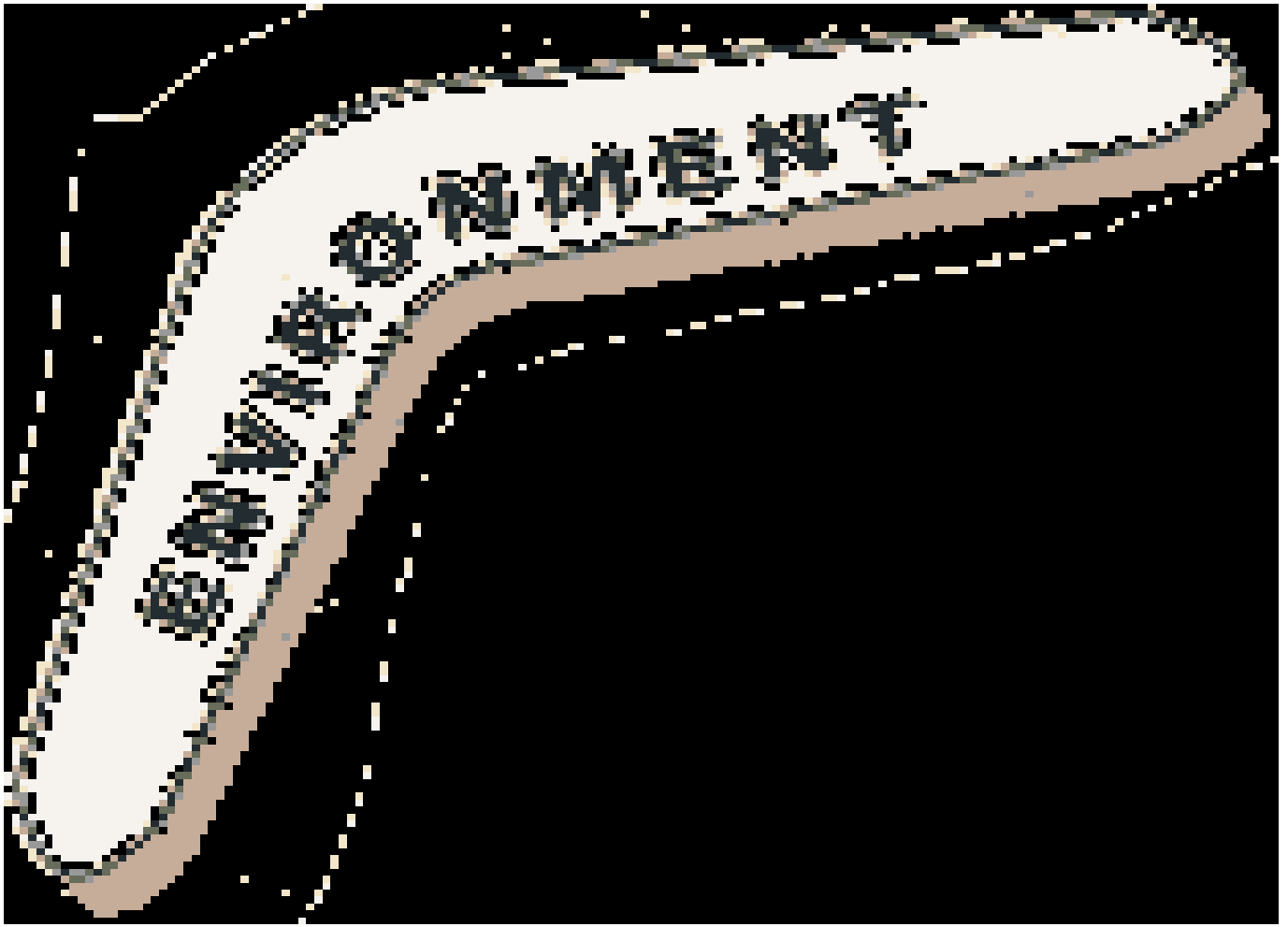
IV) Back to basics on climate change

Learning goal (1 of 4)

Based upon
TEXT 1 Cavanaugh and George:

=> understand in a ***North/South perspective***,
how and why
monetary and environmental debt are connected +
create a global
environmental boomerang.

$$DEBT_{mo,env} \quad <====> \quad ENVIRON_{glo}$$



Learning goal (2 of 4)

Based upon
TEXT 2 Schandl and Kraussmann:

Understand features of the
long process of ***industrialisation***
of the United Kingdom

as a unique transition
in social and ecological terms.

Historically unique ***versus*** reversible processes

Re: Requirements

The U.K. text presents
”***Stages of industrialization***” as unique,
irreversible transitions;

It ***does not support*** the
modernisation
story of
”industrial revolutions”
to be repeated in reversible time.

Rather: Dependency theory applied to European history

The book "***Socioecological transitions and global change.***
Trajectories of social metabolism and land use"
is rather inspired by
dependency theory:
placing more and less developed countries
in the same social + ecological space.
They ask at the end of the volume,
how the fate of Austria as a late-comer differs
from that of the U.K.

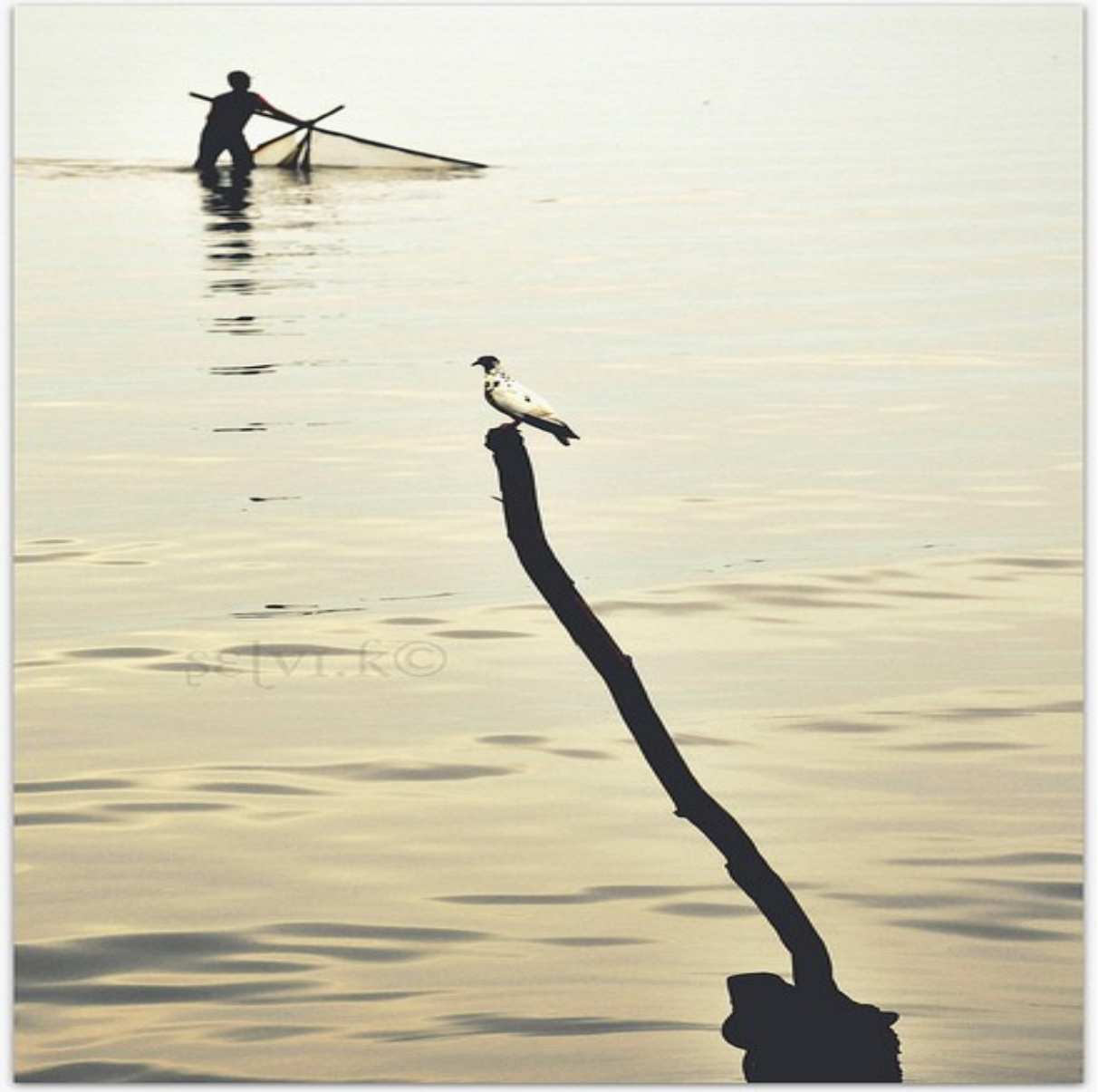
Learning goal (3 of 4)

Based upon
TEXT 3 Fischer-Kowalsky + Haberl:

• Understand the
co-evolution of society and nature
where human populations ***work***
with(in) their environments;

• be informed about a ***method*** of studying
historical transitions
in both ***social and ecological*** terms.

Extractive work, man and nature



Learning goal (4 of 4)

Based upon all three texts + this presentation:

Become and/or remain

motivated to explain,

why and how ***global warming (GW)***

is man-made.

Part I Susan George (text 1)

The first boomerang – the environment

From: The debt boomerang.
How Third World debt harms us all,
pp.1-33

Research + documentation (a)

John Cavanagh:
International economist
United Nations Conference on Trade and Development (UNCTAD,1978-1981)
World Health Organisation (WHO,1981-1982)

Inst. f. Policy Studies (IPS,Washington,D.C.)
Global Economy Project (1983-97);
director IPS since 1998;
founding fellow of
Transnational Institute (TNI, Amsterdam 1974-).

Research, documentation+final draft Susan George, here at Cologne 2007

Susan George

Franco-American
political and social scientist,
activist and writer on
global social justice,
Third World poverty,
underdevelopment and debt.

Previous books:
1976: *How the other half dies*;
1988: *A fate worse than debt*
Fellow and president of the board of the Transnational Institute (TNI) Amsterdam.
Active in ATTAC.

The debt boomerang ***project***

The 1992 book was part of a larger project.
Readers were ***invited to participate*** in it:

”...if You, or Your organisation, wish
to endorse (our) principles;
if You wish to
devote time to stopping the boomerang,
and to building coalitions
among the 'natural opposition' to debt.”

The book: 2 boomerangs hitting 'nature'

1) The environment (***external*** nature)

Ecosphere, atmosphere, hydrosphere changes

=> global feed-back

- not the least: global warming

2) Drugs (***internal*** nature)

Cash-cropping

for export-led growth means land use changes;

criminal economy + state repression

feed hopeless consumption

The book: 2 boomerangs hitting the global economy

3) *Northern taxpayers bailing out the banks:*
Early model for states' financial aid to failed banks

4) *Lost jobs + markets:*
Reduced demand for goods + services in developing countries' markets
=> less jobs in Northern firms

The book: 2 boomerangs of destabilisation

5) *Immigration*
Taking flight from '***A fate*** worse than debt'
- caused by post-colonial power relations

6) *Conflict + war*
Low-intensity conflicts as well as direct war more frequent under ***conditions*** of scarcity + famine

Structural conditions in question

From:
Last boomerang 'conflict and war', ***Conclusion***:

”***To do nothing to <u>remove the conditions</u> which create war + brutality in the third world is, very simply, to risk waking up to find that war + brutality have, like all boomerangs, come home***”(p.167).

Looking back on the ***Third World*** Debt Crisis

Today, it's no more clear,
whom You talk about
when saying '***debt crisis'***.

Earlier this was only seen in the Third World.

=> the Euro-'center' is becoming
'Third-Worldised' – at least in its periphery.

<u>Or:</u> The debt boomerangs
analysed by Susan George
have come home to Europe, too.

Innocent u.s.-Americans see the debt crisis as a result of Euro-socialism

Origins of Third World debt

1) Since the 1970's
break-down of the Bretton Woods system:
private financialisation
of the world-economy.

2) Third World countries hit by
oil-price increases of 1973+79.
=> Would have been better off,
if Islamic OPEC-countries had followed
their religious norm
of **not** taking ***compound interest*** on loans
of their 'petro-dollars'.
(Pointed out recently by Susan George)

Outbreak of Third World debt crisis

Taking compund interest on loans
- only sustainable, if investments go into ***'healthy' projects enhancing overall productivity***.
This was most often NOT the case
– so the ***debt accumulated***...

...critically,
when ***U.S. increased interest rates***
up to 20% in late 1970's
(debt ***doubles*** then every 3 ½ years!).
=> National debt crisis:
Mexico 1982.

Decoding text 1

Focus upon the

accumulation of
monetary and environmental debt

and its international distribution

The environment (external nature)

Changes in
Land-ecosystems (as deforestation)
give rise to global feed-back
- not the least: ***global warming***.

<= effect of man-made changes

<= *emissions* of ***greenhouse gases*** (GHG)
from fossil fuel use + land use change
(LULUCF in Kyoto protocol)

<= *air + water pollution* from
deregulated industrial production
(e.g. Maquiladores in Mexico)

The ***debt-deforestation*** connection

Supported with quantified evidence
('Let the figures speak for themselves')
Cavanaugh + George make a
rank correlation between:

(a) the most heavily indebted nations +
(b) the intensity + speed of deforestation.

Because of tropical soil + weather conditions
the latter is ***a lasting damage***
(no 'pay-back' in kind)!

Additional feed-back: global warming threatens forest growth (note)

Premise: If / When global mean ***temperature*** rises more than 2,5 - 4 degree Celsius

=> not only the Amazon rain forest,
but also
big Northern forests ('boreal')
will become ***'sources' of carbon dioxide***
(instead of 'sinks' with net uptake)

=> This undermines the universal assumption of CO2-neutrality for burning forest tree.

The debt-outsourcing connection

Text 1 unfolds the case of the
tax-free industrial zones at the U.S./Mexican border
=> ***Maquiladores***.

- a lasting part of Mexicos debt crisis:
Attractive by
• deregulated wages (< 1 $ per hour);
=> AFL/CIO complaints
• deregulated pollution
(outsourcing corporations save investments)

Long-term question:
Are there limits for outsourcing ?

Since 1992, foreign direct investments have gone to many countries in Asia,
e.g. China + Vietnam.
This proces cannot, however, continue without end.

Conditions in outsourcing areas can be improved,
=> social + ecological damages can be reduced / eliminated!

Part I Questions for discussion – talk with Your neighbor (5 minutes)

What are the ***chances today***
of <u>stopping the environmental boomerangs</u>
of the debt crises
in connection with:

a. deforestation?

b. other cases of resource extraction?

c. deregulated foreign direct investments (outsourcing)?

Part II Heinz Schandl and Fridolin Krausmann 2007 (text 2)

The great transformation:
*a **socio-metabolic** reading of the **industrialization** of the United Kingdom*;

from:

Marina Fischer-Kowalski and Helmut Haberl, eds.,
Socioecological transitions and global change.
Trajectories of social metabolism and land use,
pp. 93-115 (chapter 4, part)

Required: "**Industrialisation** and its effect on the **environment**"

'Industrialisation' and 'environment'

- here not seen as two distinct black boxes (human system + non-human environment);

BUT:

as an ecological ***system of material flows + stocks operated by social actors***

(with historical constraints + options)

Required: ”**Stages** of **industrialization**”

Industrialisation:
a continuous ***socio-ecological transition***
from agrarian mode of production
to urban-industrial centers

Stages: a sequence of 3 normal
”periods with specific metabolic characteristics”
(p.108)
[metabolism =
turnover of matter and energy: 'throughput']

Stage 1: U.K. roughly 1600 – 1800:

Proto-industrialisation + urbanisation

• rising ***agricultural*** productivity
totally within the 'ancien regime' (solar-based)

• ***Manufacturing*** with animate + water power

• Home heating with ***coal*** in ***dense settlements***

=> *industrious people concentrating the world's wealth in this nation (inspiration for ADAM SMITH)*

Stage 2: U.K. ca. 1800-1940

- ***Agricultural*** productivity still rising, but levelling off per capita = ***'bottleneck'*** for further growth

- Concentrated ***industrial*** production with ***scale economies*** in both energy provision by ***coal-driven steam engines*** and in material works

- ***Rail transport*** with limited outreach into the landscape:
animal traction + human labour needed to fill the gaps

Stage 3: U.K. ca.1945 - 75

All-encompassing fossilism (based upon coal, oil + gas)

- ***Agriculture*** = a department of petrochemical industry; an energy ***SINK***

- Resource-***industrial*** complex:
Oil, internal combustion machines, electricity

- Physical human labour, natural materials + animal traction power less important:
networks are filling the gaps

+ U.K. since 1973/79:
Unstable socio-ecological regime

• former solution
to oil (price) crisis:
=> ***North Sea resources*** exploited;

• ***BUT: regional peak oil***
+ environmental loads becoming critical

"Energy growth at low pace"
• saturation of demand
• de-industrialisation
• outsourcing of energy-intensive, heavy polluting industries to low-income countries (112)

Part II Questions for discussion – talk with Your neighbor (5 min.)

1) In the 3-4 periods of socio-ecological transition: Are there ***generalisable patterns (cycles or trends)*** ?
If yes, what?

2) Have newly industrialising countries chances of ***'leap-frogging'*** stages of development?

3) How important is it to contrast ***ecosocial development with growth***?

Part III Fischer-Kowalsky + Haberl (text 3)

Conceptualizing, observing and comparing socioecological transitions;

from: Socioecological transitions and global change.
Trajectories of social metabolism and land use, pp.12-19 (part of chapter 1)

Conceptualizing socio-ecological transitions (1)

TRANSITION: moving from one state of a system (status quo)
to another stable state – maybe, of another system.

Phases:

- TAKE-OFF from anywhere

- ACCELERATION on a chosen trajectory

- STABILIZATION: slow down/new equilibrium

Conceptualizing socio-ecological transitions (2)

NEITHER industrial systems;
NOR socio-technical systems.

Why 'socio-ecological' in combination?

SOCIAL = ***cultural/symbolic*** causation (reasons)
ECOLOGICAL = ***natural/biophysical*** causation

Both combined in
BIOPHYSICAL STRUCTURES OF SOCIETY
=> next slide

Natural + cultural causation: biophysical structures of society

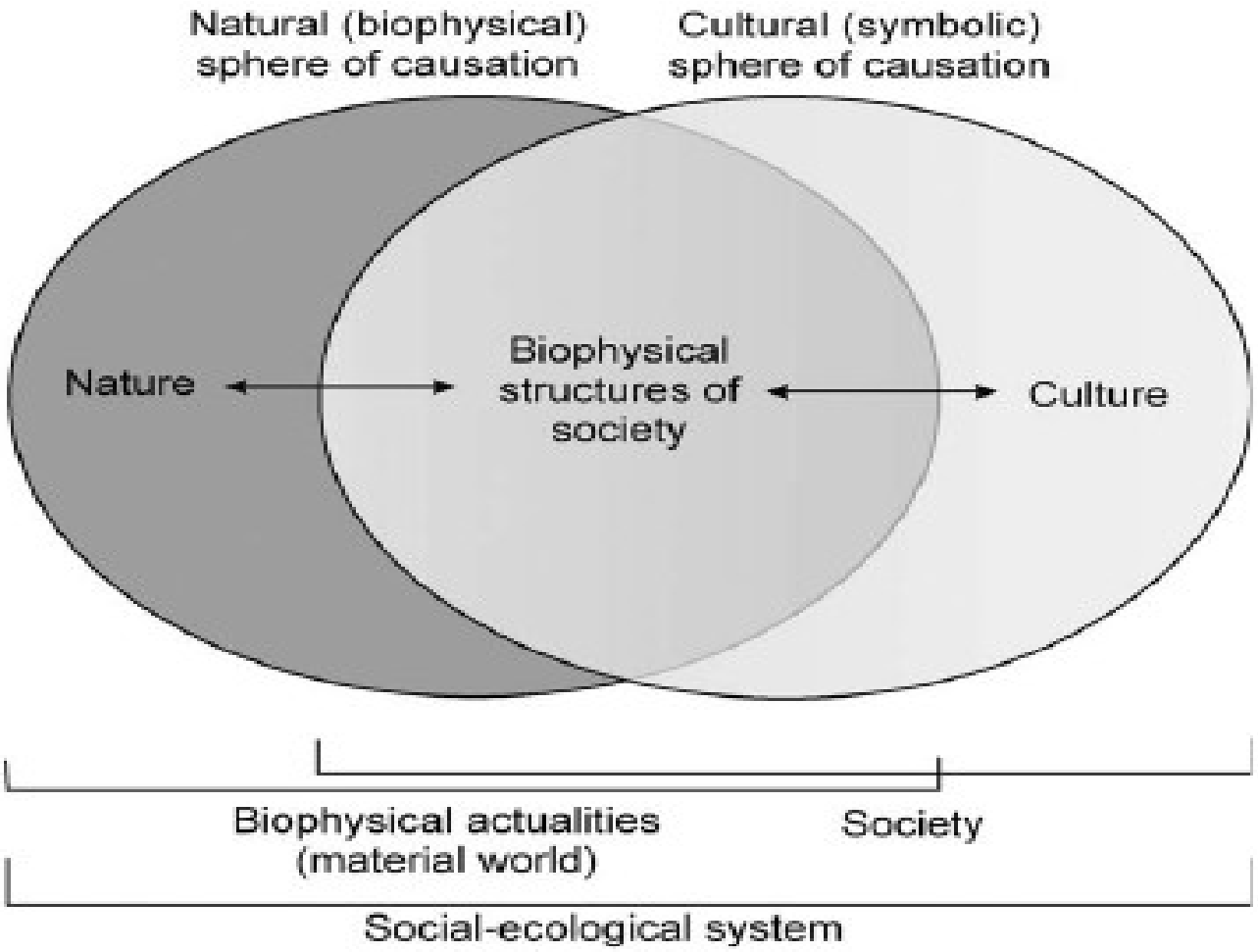


Fig. 1. Social-ecological systems as overlap of a natural and a cultural sphere of causation.

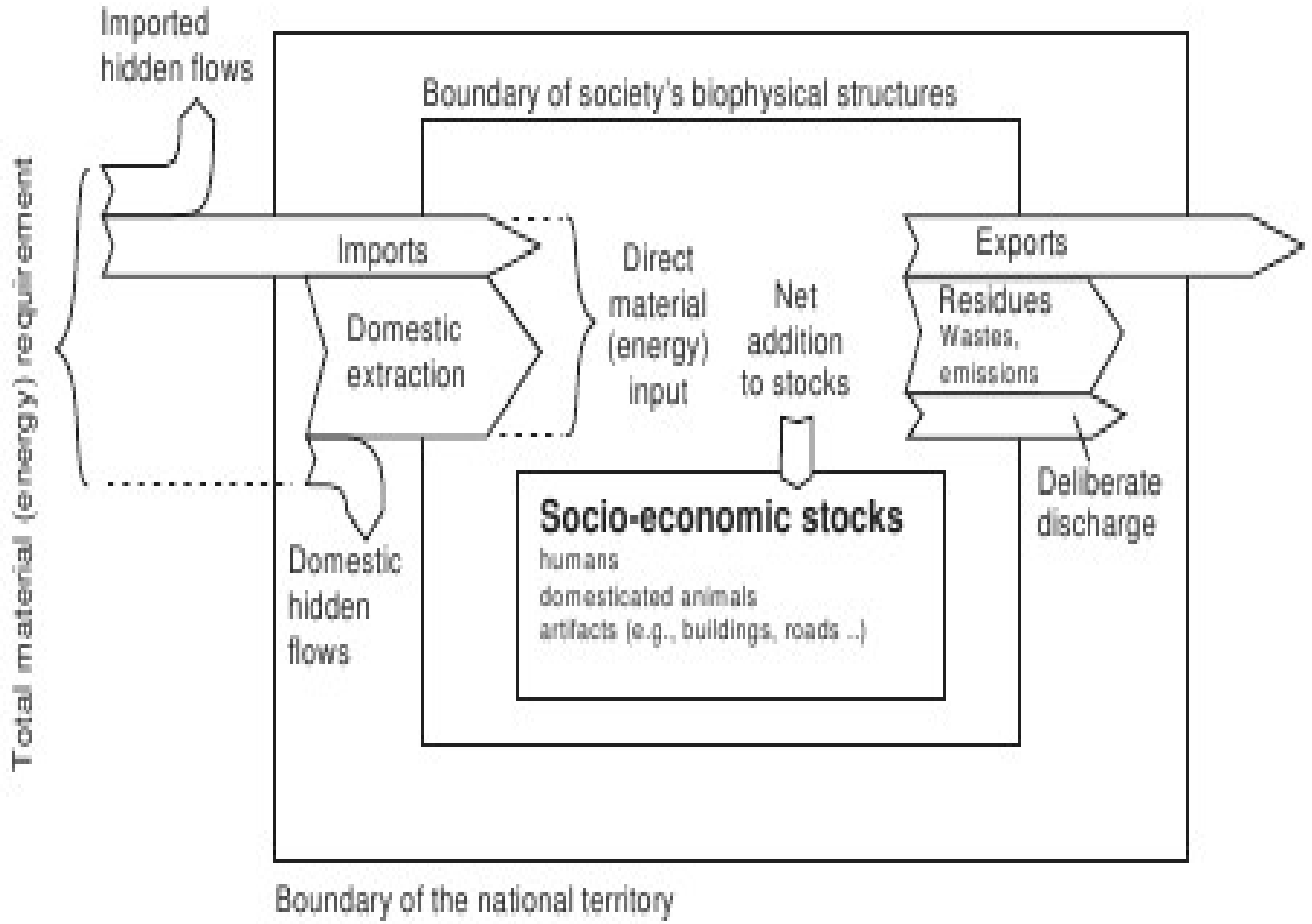
3 'big' ***SOCIO-ECOLOGICAL REGIMES***

1) ***Gatherers + hunters***: APPROPRIATE products of solar radiation/photosynthesis PASSIVELY

2) ***Agrarian societies***: USE agricultural lands ACTIVELY as solar collector by intervening into ecosystems (rejuvenating them)

3) ***Industrial societies:*** ORGANISE WORK in big industry, based upon fossil energy (coal, oil + gas) and with minerals from the Earth's crust

MEFA framework for analysing society's energy and material flows



MATERIAL+ ENERGY ***FLOW*** ACCOUNTING (MEFA)

'FLOW' ACCOUNTING:

known from national accounts
(with firms, states, households as 'stocks');

here: ***socio-ecologic metabolism***
= flows between 3 kinds of 'stocks':

- human populations
- territories (areas, water + air; minerals)
- biophysical stocks, except human (infrastructure, durables, livestock)

COMPONENTS of FLOW / THROUGHPUT

through human population stock:

- regeneration + life time
- immigration/emigration
- total active labour

through territorial stock:

- water use
- use of other ecosystem services

through other biophysical stocks:

- Input/output of energy
- Input/output of materials

TERRITORY + LAND USE

LAND USE: ”ONE OF THE MOST IMPORTANT SOCIOECONOMIC PRESSURES UPON THE ENVIRONMENT + DRIVING FORCES OF GLOBAL CHANGE”

USE-ORIENTED INTERVENTIONS into natural systems: COLONIZATION OF LAND-ECOSYSTEMS (p.18).

Part III Questions for discussion – talk with Your neighbor (5 min.)

1) Does the concept of
3 phases of a socio-ecological transition
(take-off, acceleration, stabilisation)
fit
with the historical account for the U.K.?

2) Is the concept of
'colonization' of land ecosystems
useful for understanding
relations between classes of societies
in the world-system of today?

Part IV BACK TO BASICS
ON CLIMATE CHANGE / GLOBAL WARMING

Scientific background:

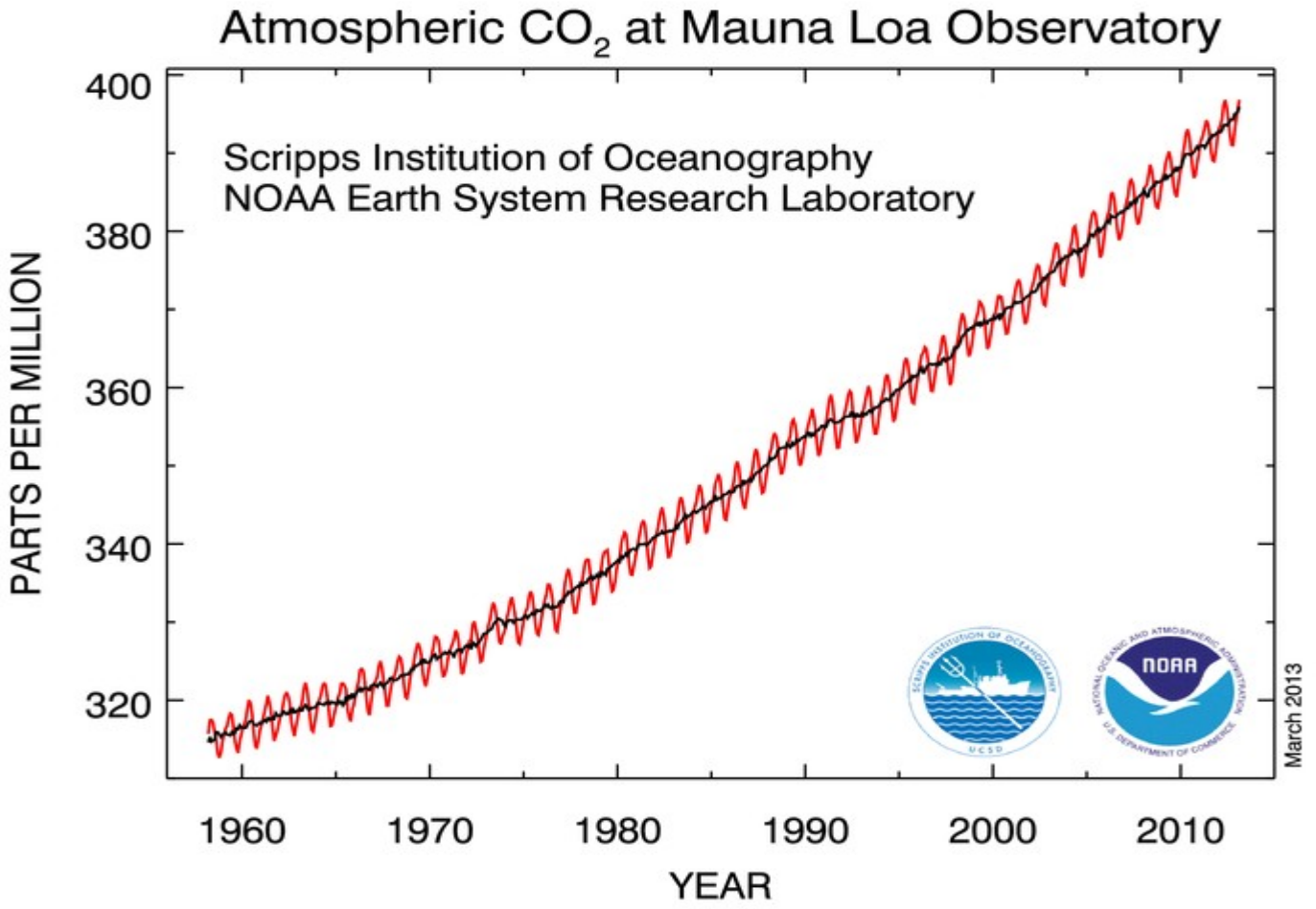
- ***Measuring*** CO_2 in the global atmosphere

- An ***experiment***

- ***Modelling*** results

+ two debatable conclusions

Global warming (1)
CO2 measured in Hawaii observatory 1958 - 2012



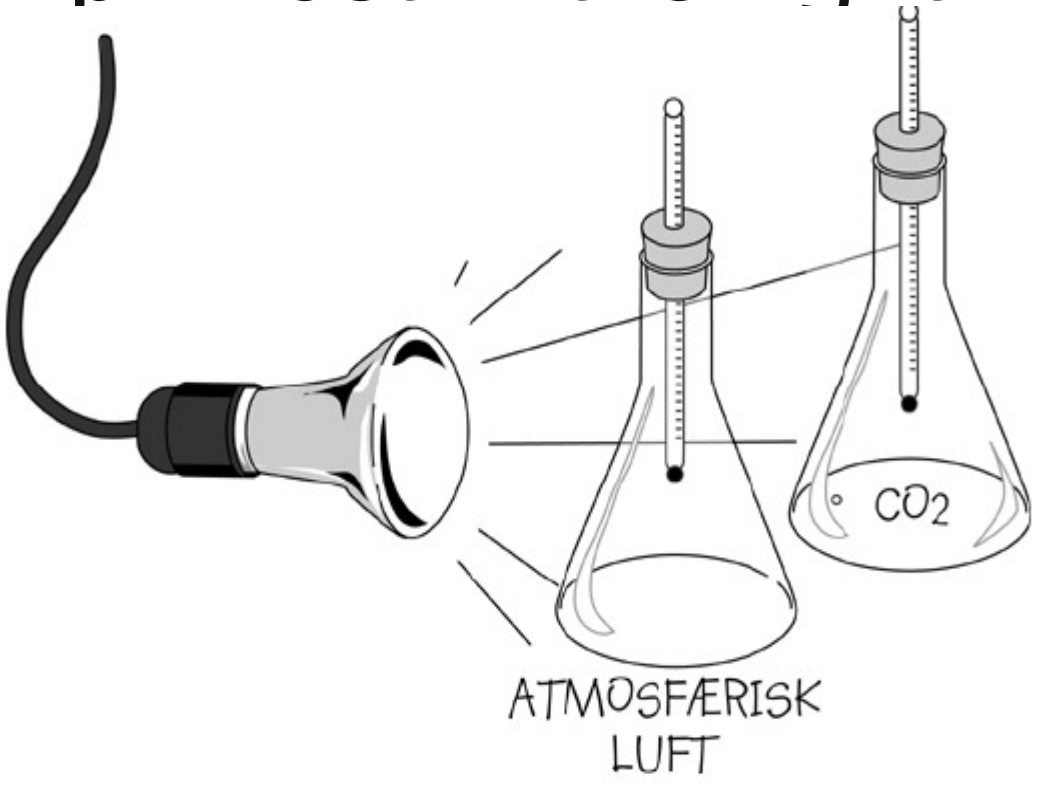
Physics experiment:

more CO2 in air retains more warmth:

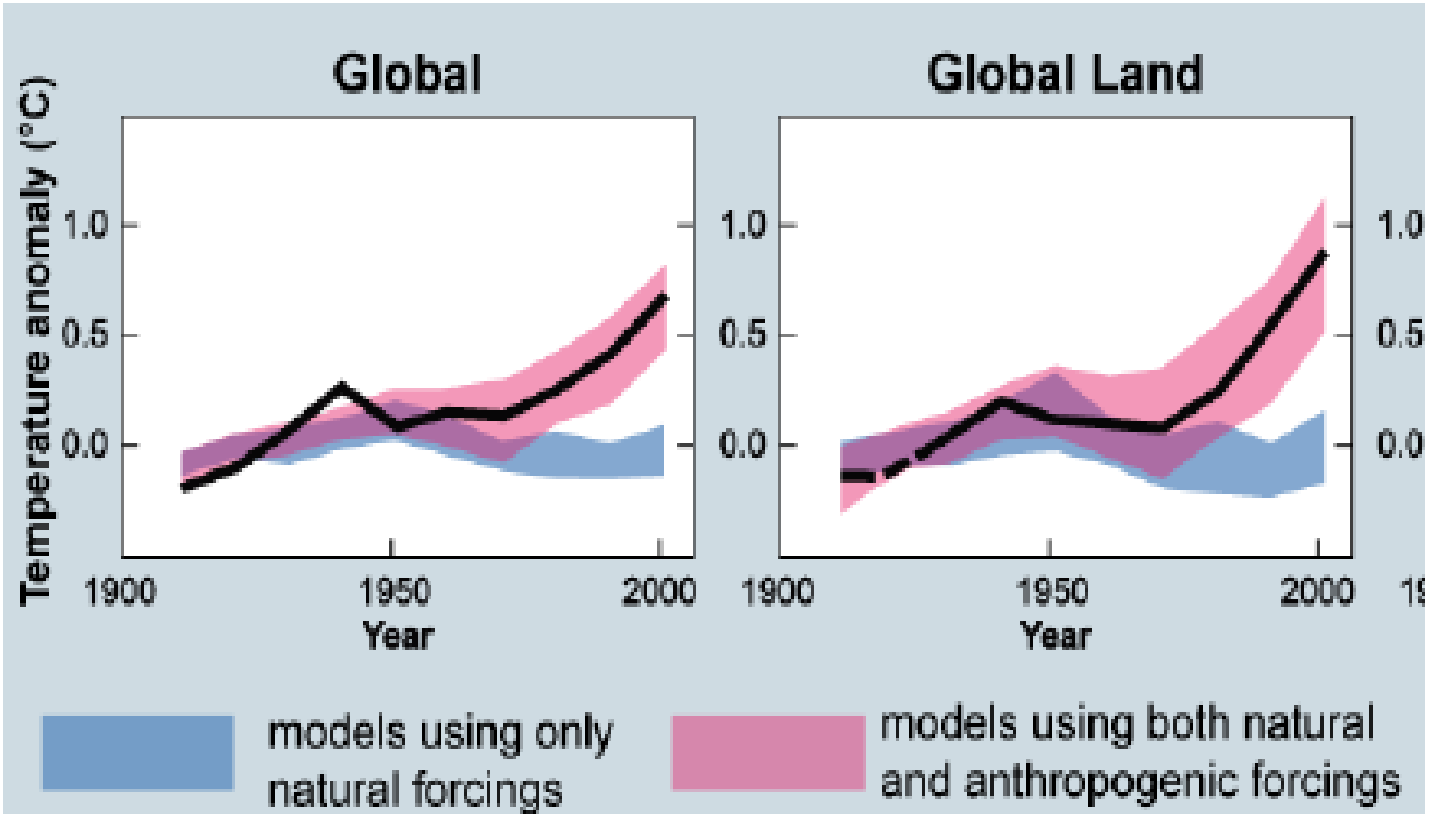
here NO difference (only light);

NOT SHOWN: *warm plate underneath*

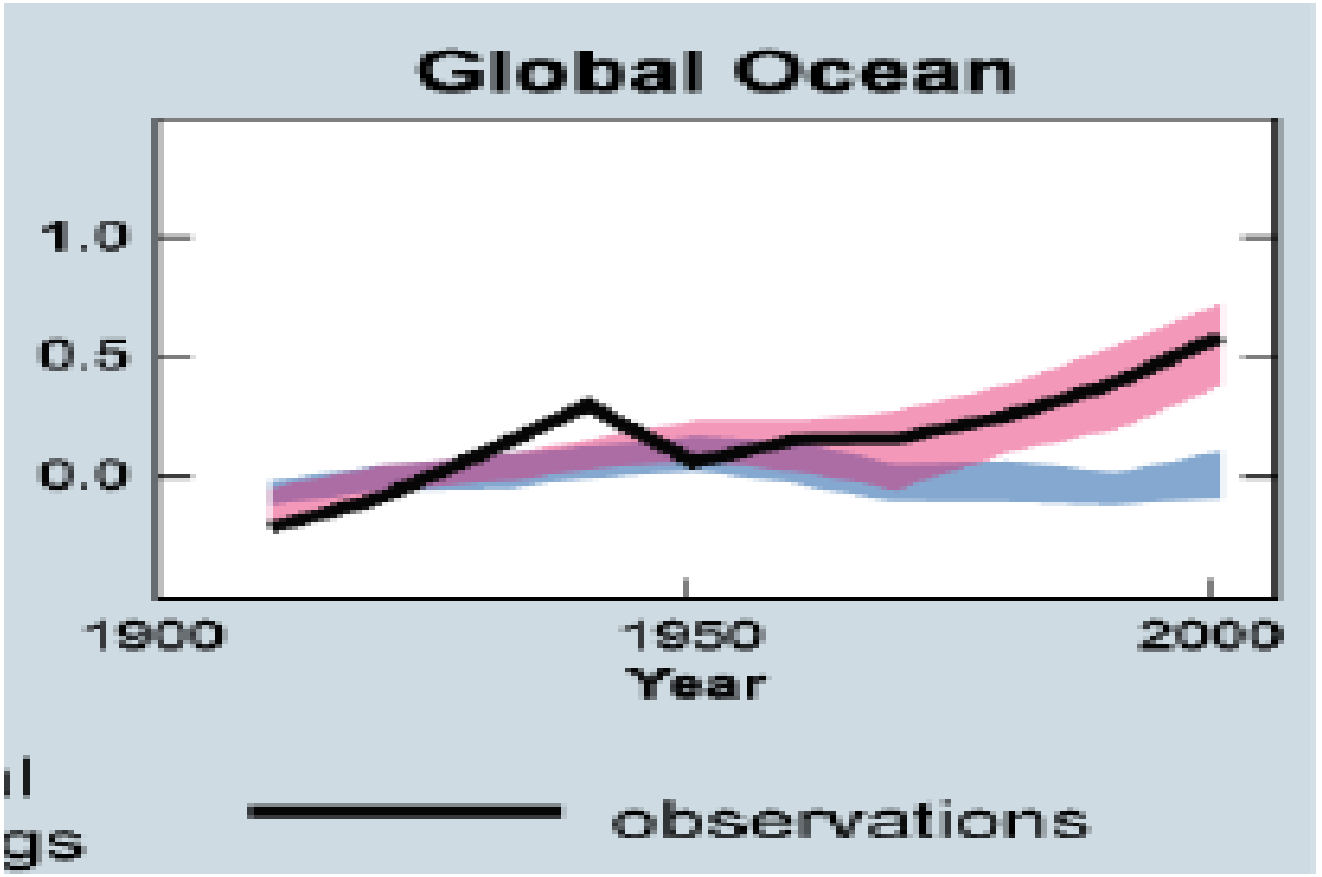
raises temp. most in the right-hand flask



Global warming (2): increasing more than natural warming, esp. onshore [IPCC 2007] (U.S. EPA 2009, note)



Global warming (3):***Oceans'*** SINK function for Greenhouse Gases (GHG) increasingly reduced



=> Global GHG boomerang between land + sea

Man-made CO2
from biomass manipulation
+ fossil fuel combustion
is adding to the natural content.
=> *The sea was absorbing most of it.*
BUT: This is ***stopping gradually throughout the 20th century*** and leads to GW.

Land areas don't compensate for it.
=> On large scale, there is ***no carbon neutral increase of combustion of biomass***!!!

'Slow turn up the heat': no way from evolution to revolution

Perhaps, ECO-SOCIALISM is becoming an attractive alternative?

Thank You
+ good afternoon sessions !