Energy as Abstract Social Nature: Climate Change as Labor Issue

Binghamton
July 2015
Defending commons/territorios/buen vivir, seeking post-petroleum civilization

Putting thermodynamic energy into perspective as “abstract social nature”

Connecting the oil/energy issue more closely with the politics of wage labor
CAUTIONS

To problematize thermodynamic energy politically is more than to question its distribution, its “greenness”, etc. It is to question the practices that define energy.

This is not to doubt the truths of thermodynamics … nor to deny its intellectual achievement.

Nor is it to say that the concept of thermodynamic energy cannot be used by progressive forces in a discussion …

... but only to indicate that thermodynamics, like most legal codes, has certain capitalist, anti-commons, at times racist biases.
“How to build and impose on expropriated men and women the discipline of the wage labour system (with the unwaged labour it presupposes) was the problem posed five centuries ago in initiating the process of capitalist accumulation. It is still the problem today for the continuation of this mode of production and its combined strategies of development and underdevelopment.”

Mariarosa Dalla Costa
But this is possible only by creating and continually recreating new kinds of human being … … and overcoming contradictions in and resistance to the process.

E.g., dealing with ...
LABOR STRUGGLES

Refusal of capitalist work

Negotiations and resistance regarding wages, conditions, health ...
Precarious, continuous processes: human activity → productive wage labor

1500: waged labor still seen more or less as slavery
1600: waged labor becomes part of the meaning of the English word “work”
1700: uncoerced wage labor market emerges
1750: “work” becomes an abstract noun rather than one referring to specific jobs
งาน

“ceremony/party”

“work”

“energy”

งานศพ

งานจ้าง

พลังงาน

งานแต่งงาน

แรงงาน

งานฉลองปิยม์

สุขภาพแรงงาน
Ability to refuse ← → Ability to defend commons/territorios relationships

Fundamental form of labor struggle: struggle to defend commons/territorios/etc.

Capital's fundamental obstacle and challenge (but also wellspring of value): commoning/sumak kawsay/etc.
Human beings and animals can be “reformatted” only if extrahuman “natures” are also “reformatted”.
There is a lot more to this than just “blood and fire.”
Land $\rightarrow$ surveyed private property
Perspective
Commons/territorios  $\rightarrow$  resources

Commons time  $\rightarrow$  Newtonian time
Imperial botanical collections
The drive to extract more and more from labor is also a moving nature frontier.
... which is made possible by still more techniques from science, law, art and so forth ...
Energy is one of the most important (and one of the newer) aspects of “abstract”, capitalist nature.
Before 1800, no one talked about energy. Energy was not a part of nature. But by 1870, that had changed.
“The equivalence of [heat and mechanical energy] was not suspected by people in the eighteenth century; the notion that a horse pulling a treadmill and a coal fire heating a lime kiln were in some sense doing the same thing would have appeared absurd to them.”

Joel Mokyr
Today ...

- mobilizable
- external
- scarce
- Terawatt-hour units of Big-E (thermodynamic) Energy
- scattered in Newtonian space
This **“Big-E Energy”** of the thermodynamicists ...
... was above all the **theory of fossil-fuelled steam engines** and how to make them work better.
“An economic point of view formed the root of thermodynamics … Economic and physical ideas grew up together, sharing a common context.”

Theodore Porter
I sell here, Sir, what all the world desires to have - POWER.

I can think of nothing else but this machine.
Thermodynamics articulated a new set of socionatural relationships (sometimes briefly notatable as “equivalences” like $\Delta U = Q - W$) that were also being embodied in the engines and technological networks of the fossil-fuelled age.
1830s

Electricity $\rightarrow$ mechanical force
“The mechanical *equivalent* of heat.”
1867-1882

Mechanical force → electricity
Longer and longer chains of equivalences became embodied in industrial practice and theorized as “energy” ...

Thermal → mechanical → electric → magnetic → mechanical
thermonuclear → electromagnetic →
→ biochemical → thermal →
→ mechanical → electric →
→ electromagnetic → kinetic →
“The infinite multiplicity of energetic forms inspired a tremendous optimism in capital's search for new workforces.”

George Caffentzis
The “historical emergence of the social relation of wage labor” is “part and parcel of the ‘energy shift’ in the productive forces from biological to inanimate (fossil) sources of energy”.

Matthew Huber
One function of fossil fuels is to increase productivity and discipline in zones where work has been commodified.
“From the very beginning, there was an intimate relation between the rise of the fossil economy and the quest for cheap and disciplined labor power.”

Andreas Malm
Lund University
Top Fossil Fuel Emitters (Absolute)

Top four emitters in 2011 covered 62% of global emissions:
- China (28%),
- United States (16%),
- EU27 (11%),
- India (7%)

Growth rates 2010–2011:
- China: 9.9%
- USA: -1.8%
- EU27: -2.8%
- India: 7.5%
Cheap labor

Coal

Foreign investment

Exports
The new human-nonhuman webs of relationships embodied in thermodynamic energy are often summarized not only as new equivalences and commensurabilities but also as

- New “homogeneities”
- New (exchangeable) “units”
- A new “externality” to “nature” and to the experts defining it
- A new “abstraction” to nature
- New “scarcities”
- New “reductions”
- New “simplifications”
- New “disentanglements”

However, all these expressions are crude synechdoches for complex and far-reaching shifts in concrete relationships and as such risk obscuring the incompletenesses, contradictions, resistance and political conflicts present at every level.
The quantifiable “unit” so critical to capital accumulation is in fact “neither unit nor thing as such, but a highly volatile set of social relations and processes” … indeed, in some sense the “source of the political.”

George Henderson
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Terawatt-hours</td>
<td>CO₂-equivalent molecules (e.g., 0.003 CO₂ / 0.114 CH₄ / 1.000 NO₂ / 17.953 CFC-11 in a hybrid actual/counterfactual colonial space)</td>
</tr>
<tr>
<td>Barrels of oil-equivalent</td>
<td>Species-equivalents</td>
</tr>
</tbody>
</table>
To gain an understanding of this political complexity of the “unit”, it's helpful in the energy case to look carefully at the “little-e energies” of the commons that have always opposed themselves to thermodynamic or “Big-E Energy”.
For a cook using wood, the idea is to use as little energy as is needed to get the job done. These “little-energies” are not tied to the indefinite expansion of the productivity of labor. They depend not on the privatization of commons and territories, but on their defense.
But for the planner of a national economy, a world economy or a “green economy”, the idea is to supply an ever-increasing amount of Big-E thermodynamic Energy. For him, there can never be enough energy, because economic growth and “human needs” are infinite … and the Second Law of Thermodynamics limits the “useful work” it can do and the “order” it can produce. Commons and territorios must continually be taken over to provide it.
Neither can offer an “alternative” to the other, but they are in a constant dialectical relationship. vs.
“Energy” is thus a problematic concept for popular democratic movements to use.

It is also problematic for “post petroleum” movements to use, because it assumes the “normality” of using something similar to fossil fuels in energy converters boosting the exploitation of labor.

... Really?
Struggles against oil extraction ...
Struggles in defense of commons or indigenous “territories” ...
Struggles against climate change …
Struggles for alternative energy …

… all, in a sense, labor struggles.