The Peak Oil Complex, Commodity Fetishism, and Class Struggle*

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The pump don't work
'Cause the vandals took the handles.
-Bob Dylan, *Subterranean Homesick Blues*

Introduction

"Peak Oil" is a nickname for a remarkable intellectual and political phenomenon that has transformed the energy debate in the US since the late 1990s.[1] Along with "Global Warming," it is often seen as setting the stage for a new kind of apocalyptic discourse that is reminiscent of the "exterminism" rhetoric so popular during the anti-nuclear war movement's ascendancy in the 1980s. Peak Oil gives us the tools to tell still another story of how capitalism "as we know it" cannot sustain contemporary world society and is leading humanity to "the long emergency," as Peak Oil advocate James Howard Kunstler phrased it (Kunstler 2005).

At first glance then, it would appear that Peak Oil would give great power to the adherents of the anti-capitalist movement. For if capitalism leads to the disasters that the Peak Oil prophets envision (like, for example, a planetary "resource war" fought with nuclear weapons), then they would provide an important argument for the struggle against the system. Peak Oil-based anti-capitalism would transform the modality of the movement's slogan, "Another World is Possible," to "Another World is Necessary for there to be a World"! Is it, as some have seriously jested, the Left's response to the fundamentalists' apocalyptic *Left Behind*?

Peak Oil, then, must be investigated to determine if the political opportunities that appeared at first glance are real. Indeed, it would not be possible to have a comprehensive overview of contemporary thought about capitalism and anti-capitalism (which the Left Forum claims to provide) without a discussion of it. In this paper I describe the main elements of what I call the "Peak Oil complex" and then I assess its usefulness for the anti-capitalism movement.

In general, I find it to be more problematic for a critique of capitalism than it first appears. This is due to the Peak Oil adherents' understanding of how energy resources like petroleum and natural gas function in capitalism. They approach energy resources from the point of view of their "use value," whereas capitalism is a system aimed at imposing work in order to accumulate monetary values on an ever-expanding basis. Energy resources will only be used if they can assist in the process of making money

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[1] I include in my discussion of "the Peak Oil Complex" the following books: (Roberts 2004), (Leggett 2005), (Kunstler 2005), and (Deffeyes 2001).

through the exploitation of labor (*that* is their use value for capitalists and not their ability to power internal combustion engines and be transmuted into plastics). In other words, Peak Oil adherents by and large do not analyze capitalism as a class system and their conception of struggle is one of nation states fighting over resources (reminiscent of early mercantilist struggles over who will "get" the gold of the Americas) and not of classes struggling over exploitation of labor and life.

I argue that Peak Oil arguments cut both ways. Though they can be used to criticize capitalists' stewardship of important natural resources, they can also be used to justify attacks on working class wages, working conditions and social guarantees in the name of "escaping the energy apocalypse." For the key issues in the coming years will be: What classes will pay for "the energy transition"? What classes will benefit from potentially a century of "expensive oil"? What classes will lose wages, profits and/or rents? And finally, will class society be transcended in the course of this transition?

Consequently, I write on the side of the "Peak Oil Complex" package: "HANDLE WITH CARE."

The Peak Oil Complex

Peak Oil is a "complex" because it is complex. At the very least, the Peak Oil complex includes (a) an empirical prediction of planetary oil production projected into the next century and a "retrodiction" of planetary oil production since 1859, (b) an explanation of this curve that traces out approximately 300 years of oil production, and (c) an emotional "aura," ideology and politics reacting to this prediction and explanation. One can confuse the prediction with the explanation, and with the emotions, ideology and politics, but they should be distinguished in order to best understand their implications for class struggle. I will comment on each part of the complex below, but it should be pointed out we are in an area where Nature and Society, the objective and the subjective, energy and labor are interwoven so profoundly that to even call it "biopolitics" is a bit reductive.

a) Peak Oil first and foremost is an exercise in "curve fitting" and an empirical projection of future planetary oil production. It is an answer to the following problem: given the amount of oil produced since 1859 throughout the world yearly, find the curve that best fits the past data and also gives the best projection of future data. This has been a question that petroleum geologists and economists had been studying for decades. M. King Hubbert, a card-carrying member of the Technocratic movement, made a breakthrough in answering this question by first dealing successfully with a more limited region, "the lower 48 in the US," in a classic 1956 paper, "Nuclear Energy and Fossil Fuels." He proposed two "bell-shaped" logistic curves that fit the oil production data for the region up until that date and predicted, respective, a peaking at either at about 1965 or about 1970 (based on two estimates of "ultimate recoverable reserves"). This was a controversial bit of curve fitting at the time when geologists were accenting the positive and predicting the peaking of US oil production to be in the 1990s. Hubbert's employers at Shell tried to convince him to shelve the paper while his professional colleagues at the US Geological Survey publicly rejected such an early peaking in US oil production (they estimated that the US peak would be in the 1990s at the earliest).[2] But by 1970 (very

[2] For the story see (Deffeyes 2001: 1-5).

close to the peak date of Hubbert's second curve) US "lower 48" oil production hit its peak and has since declined on the "downward slope" of the projected bell-curve.

The remarkable predictive success of one of Hubbert's curves in describing US oil production inevitably led other geologists to apply this method to planetary oil production. Indeed, the rough recent consensus period for the time of "peak oil" production is the first decade of the 21st century, i.e., *now* [e.g., (Deffeyes 2001: 148)]. These estimates agree with Hubbert's 1956 estimate that placed "the date of the peak [of world oil production] at about the year 2000" (Hubbert 1956: 22).

This inductive move from the US to the world is indeed that: inductive. Simply because countries and sub-regions of the planet have annual oil production distributions that are fitted to bell-curves does not mean that their sum is bell-curved as well. After all, the sum of two arbitrary bell-curves is, in most cases, not a bell-curve. There is no logical necessity for world oil production to be bell-curved.

Why then did Hubbert induce with such confidence from part to whole, from a regularity in the past to a regularity in the future or, more accurately, an inverse symmetry between past (cheap and expanding oil supply) and future (expensive and decreasing oil supply)? As any student in the philosophy of science will respond, there are no purely empirical hypotheses; they are always "theory-laden." Hubbert had a theory to support his projections. What was it?

(b) The key theoretic postulates explaining the bell-curve character of oil production are not based on cost considerations or other typical features of the capitalist economy, but on two axioms, one based on geology and the other on epistemology, respectively: (i) there is a finite "ultimate recoverable reserve" of oil in any given area; (ii) the discovery of oil takes place asymmetrically in time, since the larger, easier to access fields are more likely to be found first and the smaller fields are more likely to be found later on. This asymmetry of knowledge through time determines the asymmetry of production, since one cannot extract oil without having first "discovered" it. The first phase of oil discovery is grand, with huge underground lakes found year after year, the second phase has average finds and the third phase has results that are scattered and quite costly, even with (indeed, because of) new technology. This periodization applies for states like Texas, countries like the US as well as the world. Anomalies occur, of course, due to the "accidents" of history, but the bell-curve is the "essence" of all forms of production of non-renewable resources like oil (indeed, Hubbert applied his method to natural gas as well as coal deposits).

The typical bell-curve for world oil production will result "inevitably" in profoundly disturbing economic consequences. As Deffeyes put it:

> no initiative put in place starting today can have a substantial effect on the peak production year. No Caspian Sea exploration, no drilling in the South China Sea, no SUV replacements, no renewable energy projects can be brought on at a sufficient rate to avoid a bidding war for the remaining oil. At least, let's hope that the war is waged with cash instead of with nuclear war heads (Deffeyes 2001: 149).

This sense of scientific inevitability is what gives Peak Oil its emotional power over the mind. It calls for a sober assessment of the energy situation not some time in the distant future when the non-renewable resource is totally exhausted, *but right now*. Since, according to the Peak Oil advocates, the effects of this future exhaustion are felt in the present through the inevitable "bidding war" being unleashed by the awareness of the theory behind the curve fitting. This constitutes the third part of the Peak Oil Complex.

c) The apocalyptic aura of Peak Oil is reflected in the movement adherents' book titles: "The Party's Over," "The Long Emergency," "The Empty Tank," "The End of Oil." They often express the attitude of an austere schoolteacher telling foolish, prodigal, hedonistic students the hard "facts of life." The joy of strictness is palpable in these texts. The working class is blamed for its profligate consumption while the capitalists are chided for their shortsighted greed. This lecture is delivered in a variety of styles: somber headshaking, sibylline warnings, gloomy comments on human foibles, visions of post-modern apocalypse and/or hopes for a narrow escape from the turmoil that the dawning of the downside of Hubbert's curve will reveal. The teacher's ruling metaphor in describing US society is addiction.

The politics of the Peak Oil complex runs the spectrum from Right to Left, from Solar Energy to Nuclear Power, from technocratic to green. After all, the original source of the Peak Oil complex, Hubbert's 1956 paper, "Nuclear Energy and Fossil Fuels," was an argument for the large-scale introduction of nuclear power plants in order to respond to the imminent "culmination" or peaking of oil production within the US. Indeed, he confidently wrote that due to the prospects of nuclear energy "the world appears to be on the threshold of an era which in terms of energy consumption will be at least an order of magnitude greater than that made possible by the fossil fuels" (Hubbert 1956: 35). These sentiments would hardly be shared by many Peak Oil adherents of today, but these adherents do share with Hubbert a sort of "accounting politics"; in all Peak Oilers' books there is invariably a section that looks at the alternatives to oil (from wind turbines to genetically engineered hydrogen-producing bacteria) with different ratios of hope or despair, often combined with a Cassandra-like glee/gloom of those who are in the know about a pending collective catastrophe.[3] But for the most part, it is a politics of alternative energy without an alternative society.

Critique of Peak Oil Politics

Does the Peak Oil complex provide a critique of capitalism that is useful for an anti-capitalist movement? My response to this question is complex as well.

I will not dwell on the empirical adequacy of Hubbert-style curve fitting to the data of fossil fuel production. Although I should point out that Hubbert was as wrong about the fate of the nuclear energy industry in the US as he was right about the peaking of oil production in the US. He predicted a dramatic increase of nuclear power generation of about 10 per cent a year in the late 20th century. This estimate clearly was off "by an order of magnitude," since there has been almost no new plant construction in the US for decades. This might seem like an unfair observation, after all how could Hubbert know about Three Mile Island, Chernobyl and the rise of the anti-nuclear power movement? But that is exactly my point. History (in the form of class and indigenous peoples'

[3] For a sympathetic, though detached description of the "culture" of Peak Oil see (Urstadt 2006).

struggle) intervened in the story of nuclear power in the US between 1956 and today. Can History not intervene to "distort" the bell-curves of the production of fossil fuels, including oil, as well?

Nor will I dwell upon the geological and epistemological assumptions that underpin Hubbert's bell-curve projection of oil production. However, I should note that as far as the geological assumption is concerned, let us not forget that petroleum is a molecule that can be created by geological processes over tens or hundreds of millions of years. These processes, if correctly coordinated, are a sufficient condition for the creation of subterranean oil fields; but they are not necessary conditions for the creation of petroleum molecules. They can be created by other methods besides these processes. Some of these methods are known; others are not. The future applications of these methods cannot be adequately understood under the rubric of the Hubbert's curve, since one of its basic assumptions is that the amount of oil in the earth's crust is fixed. Once one rejects this postulate of fixity, the validity of the "other side" of the curve is open to question.

The epistemological assumption is also worth considering in passing. In effect, Hubbert's curve is justified on the basis of a theory of oil field discovery. It is a reasonable theory, and it is certainly superior to the one that simply assumed that present levels of discovery would be sustained indefinitely. Big fields are discovered first, small ones (by and large) are discovered last, according to Hubbert's epistemology. But this theory of knowledge is about future knowledge as well as past knowledge. Isn't it a bit paradoxical to claim to know what cannot be known, i.e., future knowledge? But then can we be confident about a theory that rests on this paradox? How can we know now that there will not be a new form of oil field discovery based on radically different geological understanding? We might be confident that Hubbert's is the best epistemological assumption available, but the best in this realm is far from definitive.

My major criticism of the Peak Oil complex, however, is that it does not deal with what is the whole point of oil production within a capitalist society. *Most Peak Oil adherents suffer from a version of commodity fetishism.* In many Peak Oil texts, oil is presented as vitally important to contemporary society for its "use value" (e.g., it is a good source of energy for internal combustion engines, it is a good base stock for production of fertilizers and plastics and so on) and its "disuse value" (e.g., its burning intensifies the "green house effect"). For oil, like all other commodities has both use value *and* disuse value. The question the Peak Oil complex poses for us is: what would we do without cars, Mid-West wheat and plastic water bottles (or without urban smog and global warming)? But that is not the question that is primary in a capitalist society where *value* is what is valued and not what has use (or disuse) value. Members of the Technocratic movement like M. King Hubbert or adherents of the Peak Oil movement like Richard Heinberg might not agree with this principle of capitalist reality, but disagreement won't reduce it by a cubit.

This is a simple, but basic observation. Once it is recognized, the Peak Oil complex's limit as a critique of capitalism becomes evident. The whole point for the production of oil is that it makes a profit for the oil companies (whether they be owned by the state or not) that sell it. It is in the nature of this industry, that these profits come from the functionality of oil in exploiting labor throughout the system. Once a particular oil company stops making a profit for a period of time, it will stop being an *oil* company (i.e., one producing and selling oil) or it will stop being a *company*. Oil companies are

companies, essentially, and sellers of oil, accidentally. Indeed, the surest way to have an asymmetric (non-Hubbert) oil production curve is for there to be a long period when the companies in the oil industry all have substantial net losses. Indeed, British Petroleum and Chevron in their advertising make this point incessantly; they claim they are "beyond petroleum" and have to do with "human energy" not oil. And for once, I believe them.

What is true of BP and Chevron is true of capitalism as a whole. It is in no way bound to the use of fossil fuels and internal combustion engines. Its earliest energy/machine system in the period between the end of 15th to the early 19th century largely consisted of "renewable resources" powering simple machines: wind to sail slave and treasure ships and to pump water, rivers to run mills, animals for transport, etc. It can theoretically turn to a combination of its earlier form of energy/machine linkages along with the addition of Turing machines (computers) and rely on a marginal use of heat engines. Consequently, an anti-capitalist politics that is based on the Peak Oil complex would profoundly mistake capitalism as an energy/machine formation (a thing). It would be a politics based on a form of commodity fetishism, i.e., committing a basic category mistake, since capital is a social relation open to using all sorts of machines and sources of energy to exploit human labor.

The limits to a capitalist energy transition are not to be found in geology or epistemology itself, but in the refusal of workers to accept the consequences of this transition. The key ingredient here is class struggle. That is why an anti-capitalist critique of energy policy must start with the most vital, but inevitably the most displaced, marginalized and degraded thing: human labor. Human labor is not energy alone, but value-creating energy, which of necessity is in struggle. For two paradoxes meet in capitalism: that which is most valuable is degraded and that which is most reified is activated. The Peak Oil complex has a place neither for the oil producing proletariat nor for the strategy of capitalists nor for the desires of the rentiers. In the Peak Oil perspective, workers, rentiers and capitalists seem to be tied to a wheel of production outside of the issues of wages, rents and profits and the power struggles inscribed in them.

For we should remember that most energy derived from oil in capitalist society is involved in producing and transporting commodities and reproducing labor power. It is usually used to power machines that have replaced human labor in response to workers' struggles. Though these struggles have often occurred in the distant past so that their marks of origin have been literally worn away, they have been enormously powerful culturally and, at least according to some measures, physically. To give you an idea of the latter, consider the following. Some energeticists would say that one barrel of oil has the thermodynamic energy equal to that expended by 12 workers working for one year at some physical task. If that is the case, then the approximately 30 billion barrels of oil produced a year would be the equivalent of 360 billion human work years. Given a world population of 6 billion, even if every man, woman and child were to put their shoulders to the wheel for a year, it would constitute only a small fraction (less than 2%) of the energy produced by burning the oil. On the other side, burning oil does not create value while the labor of men, women and children creates all value there is. What does this example show? To attack the resistant power of workers, capital creates whole universes that, however, are valueless in themselves. 360 billion human work years of energy derived from oil are directed at exploiting substantially less than 6 billion work years of energy

embedded in resistant human labor! That is a snapshot of our world; or to put it in the words of Bob Dylan, "the pump don't work, 'cause the vandals took the handles", not 'cause there is nothing to pump.

Thus when workers struggle they create the conditions for the use of non-human energy and when these workers are producers of energy resources like oil, they become even more important in the equation. But Peak Oil theorists do not seem to be interested in the history of class struggle in and around the oil fields. The struggle they seem to be concerned with is the "bidding war" or the "resource war" that will be ignited once the peak of oil production has been reached and the demand for oil increases, especially with the entrance of China and India as major producers for the world market. It is from this perspective that the older Leninist and Luxemburgist versions of capitalist imperialism (in this case struggling over the last drop of oil) have been revived by Leftists like Michael Klare and Bill Tabb, but curiously without taking working class struggle into account [(Klare 2002) and (Tabb 2007)].[4]

From the Peak Oil perspective, then, both Left and Right agree: Hubbert's curve shows us that scarcity and apocalypse are nigh. Let us remember, however, that scarcity and apocalypse are capitalist business as usual (Caffentzis 1992). In capital's history thousands of scarcities have been created in order to impose work and make a profit. Capital is not worried about scarcities *per se* (though individual capitalists might be, of course); the only scarcity it worries about is the lack of profit throughout the system. Nor is it worried about apocalypses. Capital has totally destroyed ecologies and human populations time and again to preserve and extend its rule. Hurling curses at it will not stop the process.

What we should be concerned about is that a new turn in the class struggle that brings together working classes in Latin America, Africa and Asia with rentier governments (e.g., in Venezuela) and ethnic organizations in the oil producing regions (e.g., in the Niger Delta) will be attacked using "Peak Oil" as an ideological cover in the same way that "nuclear non-proliferation" has been used to invade Iraq and threaten an invasion of Iran.

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[4] Both Tabb and Klare are cautious about the claims of the Peak Oil adherents. But their "resource war" framework is shared by Peak Oil theorists.

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