

The Problem of a Purely Technological Approach to the Current Ecological Crisis

Technology is only as good as we are. That is, we can develop more fuel efficient cars or create a digital substitute for paper but these technologies are only as beneficial as we let them be. History has shown us that new efficiencies in a capitalist economy tend to increase consumption of materials such as oil and fuel efficient cars. I think we, the general population, look at technology and think it a “silver bullet” for solving environmental problems. When at the heart of the problem is our relationship with Earth. This essay will attempt to illustrate the ways in which technology can make environmental problems worse, how it might make it better, and the limits of technology with this respect.

Jevons Paradox can help us understand how technology can make environmental problems worse. Jevons Paradox is often thought of as an “*extreme version of the rebound effect*” (Foster et. al., p177). Simply stated, the “rebound effect” is where any efficiencies gained don’t necessarily led to a decrease in consumption of equal extent and instead leads to an increase (Foster et. al.). Jevons Paradox is similar except that technological efficiencies are said to led to an increase in consumption by more than a 100% (Foster et. al.). Efficiencies drive commodity cost down, thereby increasing affordability, demand and thus consumption. Another factor at play here are “profit-seeking behaviors” found in a capitalistic economy that drive both the desire to increase efficiencies and consumption. By increasing efficiency, a commodity becomes cheaper to produce which makes it more “affordable” to consumers and drives up consumption which help capitalist increase their “bottom line”. If the goal of technology is to help reduce over consumption of Earth resources and help conserve them, we must exercise some restraint on our

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part as a society in order for it to effectively address the environmental issue. It is our social relation to the Earth that makes technological solutions effective or ineffective. To help illustrate Jevons Paradox and what I mean by “social relationship to the Earth” we look to the automobile.

Automobiles in the U.S. run primarily on fossil fuels which are known to generate a significant portion of carbon emissions that exacerbate climate change. Decreasing carbon emissions is important to solving the environmental issue of climate change. Technological advances in automobile manufacturing processes have made it cheaper to produce automobiles and has made them more fuel efficient over the years. Between 1984 and 2001, there were substantial improvements in the fuel efficiency of automobiles and in spite of these gains, “...*total and average fuel consumption... increased*” (Foster et.al., p.187). Several things happened during this period that drove up fuel consumption: size of the automobile increased, number of drivers increased, and distance driven on average increased. Efficiencies allowed for the manufacturing of a heavier vehicle, light trucks. Light trucks consumed more fuel than passenger cars and by 2001, the amount of light trucks on the road about doubled to 46.6% (Foster et. al., p188). A significant increase since 1984 where light trucks only accounted for 24.4% of the light-duty fleet. During this period the amount of people who drove also increased. From 189 million drivers in 1990 to 217 million drivers in 1999 (Foster et.al., p188). In addition to the increase of larger vehicles and number of drivers, was an increase in distance traveled. The average distance traveled per year during this period increased by 2,500 miles (Foster et. al.,

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188). Even with technological advances that made the automobile more fuel efficient there was an increase in fuel consumption.

In each factor that played a role in increasing fuel consumption is a social component. The shift from passenger cars to more light trucks. The increase in distance traveled. The increase in drivers. The “profit-seeking behavior” associated with an economy based on capitalism. Automobiles in the U.S. have been “romanticized” where as public transportation is often associated with people who are “too poor” to afford a car of their own. Some say that getting a drivers licence is a “right of passage” or a symbol of “independence” and view riding public transportation as what “poor” people do. Most see the “convenience” of driving somewhere instead of depending on busses or trains. Convenience here refers to the individual but not for Earth. It would be better to alter our relationship with the Earth by improving mass transit but that would be a social decision. A societal shift from “individualism”, where individual needs are prioritize over the needs of others, to a more communal way of life. Mass transit is communal, it is shared by multiple individuals at the same time for the common benefit and use. Where the needs of the individual are replaced by the need to conserve and protect the Earth. Mass transit owners could improve services to make riding public transportation more practical for people. Studies show that service running 15 minutes or less help increase ridership (English). By improving services, mass transit or public transportation can help decrease the number of drivers on the road and thus have the potential to mitigate carbon emissions from

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automobiles. Decreased number of individual drivers combined with fuel efficiencies could have some potential to mitigate carbon emissions emanating from the transportation sector.

Our relationship with Earth is what places limits on technology. A beneficial relationship, most would agree, is one in which both parties seek to understand and respect each other. When big oil companies discovered the connection between burning fossil fuels and climate change they should have seriously reconsidered what expanding oil markets would mean to the Earth and all life on the planet. Perhaps they did but were won over by the false belief that technological advances alone would prevent any adverse effects associated from fossil fuel consumption. However, after gaining an understanding of the adverse environmental impact that comes from burning fossil fuels they choose to move forward and expand. As one might expect in an economy geared towards endless consumption without respect to the environment and Earth as a whole. With each efficiency gained our “need” for more grew. Instead of consuming less gas due to a more fuel efficient car, people began driving more and manufacturers increased car sizes (Foster et. al.). Fuel efficient cars would have likely decreased oil consumption if humans didn’t instead take the gains in efficiency as an excuse to drive more and increase car size.

The problem of a purely technological approach to the current ecological crisis and the limiting factor of its use is the human component. Applying Jevons Paradox, we see how efficiencies gained in a capitalist economy promoted expansion of the automobile industry. Where can society restrain itself? Since the need to drive or generate profit is a societal issue and

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not an environmental issue, yet the former influences the latter. For technological advances to make significant differences in the current ecological crisis it must be paired with a change in our social relationship with the Earth and each other. Society's relationship to the Earth needs to change from a destructive, toxic over consuming human-centered one to a more communal one where it is more constructive and beneficial for both Earth and the human race.

References:

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