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Morality of a Carbon Tax: Transition to a Sustainable Economy

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Abstract

A carbon tax is needed to address the negative externalities caused by carbon emissions. Increased carbon dioxide concentrations in the atmosphere have a direct and negative impact on net social benefit to current and future generations. Our current human population has a moral obligation to future generations and, therefore, is responsible for excess burning of fossil fuels. This essential carbon tax is needed to help wean humans off their fossil fuel reliance. One should not be concerned with the economic losses this could cause because an economy based off unlimited growth is unsustainable and must be altered. A new, sustainable economic system must be developed in order to ensure continued human prosperity. This sustainable economic system will utilize a carbon tax and also includes features proposed by Jackson (2009) in Prosperity without Growth such as a reduced work week, a transition into a service economy, and increased public investment. This paper will include a defense of the morality of a mandatory carbon tax, a discussion of its potential socio-economic benefits, and the argument that a sustainable economy is possible if swift actions are taken.

A Pigovian tax is often used to address negative externalities causing harm that is not seen in the market price of an object or activity. These taxes aim to correct the ineffective market outcome and result in the reduction of negative externalities. Cigarettes (tobacco), alcohol, and soft drinks are products with an applied Pigovian tax. The goal of a Pigovian tax is clear; by taxing products like cigarettes, alcohol, and soft drinks, prices are more expensive, thereby reducing the likelihood that they will be purchased. The government is actively interfering with the free market by attempting to reduce the consumption of these products. Consumption of cigarettes, alcohol, and soft drinks all cause negative externalities and taxes on them create highly elastic results. This means that the higher the tax is on the product, the less likely people will purchase these items.

The importance and legitimacy of Pigovian taxes is most evident in the case of cigarettes. Tobacco products cause a very large negative externality by severely reducing a person's health. According to the CDC (Centers for Disease Control Prevention, 2014), cigarettes often cause a number of health issues, including lung cancer, emphysema, and chronic bronchitis. Cigarettes result in the deaths of 480,000 people each year. Not only does smoking have consequences to one's health, it also incurs negative externalities to non-smokers. External costs of tobacco include: increased litter, second hand smoke, and increased taxes due to smoking related medical

conditions. Children of smokers receive the blunt of the external cost because they themselves do not have the ability choose if their parents are smokers (Zohrabian, 2010). In a study done by Chaloupka, Cummings, Morley & Horan (2002), a ten percent increase in tobacco prices results in a five percent decrease in tobacco sales. Chaloupka et al.'s (2002) study illustrates the fact that Pigovian taxes are effective; tobacco products were harmful to the public, therefore the government intervened to reduce the negative externalities by implementing a tax.

By smoking cigarettes, one is putting his or herself at risk for a number of negative health effects. But, is it immoral for humans to do so anyways? The ideally moral situation might be a person who chooses to smoke by themselves, not have kids, and never seek medical aid. However, we cannot expect all smokers to behave in such a manner. It may alternatively seem intuitive to say that people have the freedom to choose to smoke or not to smoke. If this is true, then it is permissible to smoke tobacco products even if it is an unwise decision. Does the sense of morality change when one thinks of Pigovian taxes on objects and activities that negatively affect the world in far bigger ways than cigarettes do?

Carbon emission and pollution taxes introduce the idea of discouraging overconsumption of nonrenewable resources and the moral implications of burning carbon fuels in excess. In this paper, I will argue for the immorality of the excess burning of carbon fuels. The thought process is very straightforward; if it is immoral to burn unnecessary amounts of carbon fuels and to produce exorbitant quantities of pollution, then it is immoral to not have a strict Pigovian tax on these activities. The large quantities of fossil fuels that we are continuing to burn in the name of economic growth are not making our lives any better. In many cases, it is actually taking away from our lives and the lives of future generations. If emissions of carbon dioxide is decreasing net social benefit and there are alternative courses of action, such as implementation of a carbon tax,

then it should be viewed as immoral. Carbon taxes are a necessity and an essential step at creating a more sustainable economy. The line of reasoning will begin with the effects of carbon emissions on human health and the natural environment. Next, an argument for environmental protection over economic growth will be made. Following that, I will discuss the benefits of a carbon tax. Lastly, I will defend my position on the morality of a carbon tax.

Carbon Emissions and Pollution: Effects on Humans and the Environment

First, we must determine what effects carbon emissions and pollution have on the environment. Additionally, if there are any negative impacts on the environment, it is important to address how they would affect humanity. The ideals and concerns of politicians are highly juxtaposed against a much more unified scientific community. On the side of the scientists, the majority of the research and data point to the same conclusion: human generated carbon emissions produced by burning fossil fuels has affected the environment in a number of negative ways. The negative effect most often associated with carbon emissions is climate change, spurred by ever increasing levels of greenhouse gasses in the atmosphere.

As of October 2014, atmospheric carbon dioxide concentrations have reached 395.93 parts per million. Atmospheric carbon dioxide concentrations are 30% higher than they have been for the last 800,000 years (McGee, 2008). Each year as humans continue to pump ever greater quantities of greenhouse gasses in the atmosphere, the problem surrounding global climate change becomes increasingly grim. The most notable problem with rectifying global climate change is that atmospheric carbon dioxide concentrations are already above the “safe” level of 350 parts per million, a threshold set by James Hansen, head of the NASA Goddard Institute for Space Studies, and his team of researchers (McGee, 2008). In order to ameliorate this global environmental issue,

not only do humans have to stop increasing carbon dioxide emissions, but they also have to reduce existing CO₂ in the atmosphere. Since the capitalistic consumption driven economy is intimately connected with the burning of fossil fuels, it is difficult to convince many Americans that conservation is our best course of action. In fact, the refusal to reduce carbon emissions is the stance Americans have taken on the issue; most notably when the Senate during the Clinton presidency rejected the Kyoto Protocol, an international treaty aimed at reducing global carbon emissions (White, 2005). His refusal to sign the treaty was due in part to the negative impacts it could have on the American economy.

Human impact has put the environment at risk. Global warming can cause a number of adverse effects, all of which seem to cause a chain reaction of destruction. For example, global warming causes a rise in the average temperature of the Earth. The rise in temperature leads to the melting of the polar ice caps, which then leads to increased ocean levels. Vast quantities of land would in turn be lost to the rising sea level, including Florida and its everglades, a unique biome that is home to a vast diversity of flora and fauna (Intergovernmental Panel on Climate Change, 2007). Additionally, the loss of polar ice caps effects oceanic and atmospheric circulation, which can cause an increase in the number of extreme weather events. This is known as a positive feedback loop. The damage done to the environment is self-perpetuating (Cvijanovic et al., 2015).

There are several environmental consequences of our misuse of fossil fuels, most of which are consequences of climate change. There are far too many for them to all be mentioned in this paper therefore, it will not be a subject that is delved into in this paper. It should be noted, however, that climate change is a serious problem that the World faces and should be addressed before more harm is caused. What is not clear is whether or not the loss of the consumption driven economy and subsequent way of living is more disastrous than the destruction done to the environment.

Economic Growth vs. Environment Protection

Similar to how the economy is intimately connected to fossil fuels, so too are humans intimately connected to the environment. However, both of these connections cannot exist simultaneously, indefinitely. Our economy cannot continue to grow exponentially without causing catastrophic damage to the environment. Therefore, it is imperative for humans to preserve and strengthen their connection with nature. To do this properly, people must sever the link between the economy and fossil fuels.

One of the greatest advocates for human's connection to nature and the environment was Henry David Thoreau (1854). In his classic book *Walden*, Thoreau writes about the ties between people and the Earth. He explains; "Our village life would stagnate if it were not for the unexplored forests and meadows which surround it... We need the tonic of wildness." Thoreau reflects on humanity's basic need to value and appreciate nature. Thoreau thought that responding appropriately to something intrinsically valuable such as nature was what made a life good (Morgan-Knapp, 2014). An appropriate way to respond to the environment would involve being moved by its beauty and becoming emotionally attuned to nature.

There are numerous other examples of objects with intrinsic value, which require an appropriate response. Children hold intrinsic and instrumental value just as our environment does. They can be loved and nurtured, but it seems wrong to view them as just a means of passing along our genes, just as it might seem wrong to abuse our environment for selfish, monetary gains. The exact line between appropriate use and abuse when it comes to the environment is difficult to precisely draw and is not a subject that will be addressed in this paper. However, what is clear is that the United States current actions fall under the category of abuse.

The second connection involves a link between the economy and fossil fuels. This relationship is more apparent in developed and developing nations, which have higher levels of carbon dioxide emission and fossil fuel use. According to studies done by the World Bank, The United States, a developed country, produces 17.56 metric tons of carbon dioxide per capita per year. Similarly, China, a developing country produces 6.19 metric tons of carbon dioxide per capita per year. However, the largest discrepancy is that China has roughly one billion more citizens than the United States does (World Bank, 2013). As developing countries, like China continue to grow, they will use even greater amounts of fossil fuels. These countries actively strive to be as affluent as developed countries.

It is important to address the fact that capitalistic economies might not be as beneficial to humans as they seem. Capitalism is based on increasing efficiency as firms compete for profits. However, increased efficiency leads to unemployment unless consumption is increased. This economic system is unsustainable because growth is never infinite and Earth contains a finite amount of resources. At some, point global economic growth will falter, which will then lead to a potentially cataclysmic recession. In the book *Deep Economy*, by Bill McKibben (2007), the author disputes continued economic growth. McKibben argues that economic growth increases wealth inequality, does not lead to increased happiness (after a certain point), requires too much energy, and produces more pollution than we can deal with. Simply put, an economy based on continuous growth is not creating a better human society. If it is ill advised to continue with the high level of growth the world is currently experiencing, then it is also impractical to continue increasing carbon emissions. Decreasing economic output, while still increasing the reliance on fossil fuels, is inefficacious because fossil fuels are used as a tool for increasing economic output.

The purpose of economic growth has always been to improve the lives of humans. The more wealth a country has, the happier, in theory, its people should be. However, this is not the case. In a series of lectures, Layard (2003) shows that after a certain point, increasing wealth does not make a person any happier. Creating a happier society seems like a more virtuous goal than increasing wealth, especially if this increase in wealth comes at the cost of environmental degradation. The drive to compete against one's peers and increase personal wealth might actually be harmful to human happiness. Layard (2003) draws a parallel between competition for increased rank and wealth, with pollution, both of which can cause unknown harm to others. Rank as a whole is at a fixed limit, one cannot gain rank without decreasing someone else's rank. Since humans compare themselves to their peers, working hard to get a raise has a negative impact on those around us. When one person rises in rank another must fall. Workers should be less worried about getting promotions and rising in rank rather than more concerned with what truly makes them happy. Spending time with one's family and friends is usually what makes people the most happy. But, it is also important to be able to provide for one's family. Exponential growth is not needed to achieve either of those; therefore, economic growth does not necessarily improve one's life.

Stevenson and Wolfers (2008), authors of *Economic Growth and Subjective Well-Being: Reassessing the Easterlin Paradox*, disagree with Layard and argue that economic growth can be associated with rising levels of happiness. The importance here is to distinguish relative wealth between absolute wealth. Rich countries are happier because they are relatively wealthier than poor countries. The capitalistic economy causes society to over value status. As described earlier, the competition to increase one's rank is a zero sum game and therefore, is harmful to society.

Altruism is something that humans have lost when we transitioned into an industrial society. I think there is something humans can learn from social insects such as ants and bees. They work

together for the benefit of the hive at the sacrifice of the individual. This might be an extreme case, but it still holds value. If cooperation could replace competition in some aspects of society, humanity might be able solve many of the communal problems it faces today, such as climate change.

One solution to corporate competition would be to incorporate salary caps and distribute wealth more evenly. People in rich countries would still be relatively wealthier and thus, happier, even with the absolute loss of wealth. However, the poor countries, even though they have increased in absolute wealth, are still relatively poor and thus, unhappy. An even better solution would be to change our societal value on status competition. To rectify this societal flaw, the economy must be refined to not be based on competition and continuous growth, since society is directly connected with the economy.

Economic growth certainly has its benefits when it comes to the most impoverished countries. Fossil fuel use drives such development. However, it would be interesting to see if sustainable technologies, integrated into undeveloped countries, would have similar effects.

Continued economic expansion is an improper course of action that reflects the flaws of the economy. Economic growth might be making humans wealthier, but it is not making humans any happier, and as mentioned earlier, it is causing serious environmental harm. Therefore, the choice between readdressing the economy and losing humanity's connection to the environment has a clear answer. The choice should be to transition the economy to be less dependent on fossil fuels. Lessening our economic growth will free us from our fossil fuel dependence. With a society that is less transfixed on economic expansion, society will have more time to discover what truly make humans happy and what gives life meaning.

Benefits of a Carbon Tax

The capitalistic approach currently established as the economic norm in the United States must be redeveloped. Halting economic growth today would not result in a positive outcome. The subsequent recession would be disastrous. How can the reliance on a fossil fuel based economy be reduced while preventing mass unemployment?

In Jackson's (2009) book *Prosperity without Growth*, the author attempts to remediate this issue by suggesting three specific steps that will slow economic growth while not increasing unemployment. (1) Cutting the work week. Each individual is working less, which decreases productivity. As a result, firms must hire additional workers to produce the same amount of goods and services. (2) Increasing public investment. This allows governments to improve infrastructure and public transportation. This would also serve as a way to decrease wealth disparity as it would be beneficial to the poor. (3) Transition into a service based economy. Technology increases the efficiency of production of consumption based goods. Increased efficiency leads to unemployment. However, increasing efficiency of service based goods is not as straightforward and does not necessarily lead to unemployment. Service based goods are often less harmful to the environment when compared to consumption based goods.

Jackson (2009) argues that these three steps can produce a more sustainable economy, one that is not as reliant on economic growth. For the most part he is correct; if these three actions are taken then society could be vastly improved. Each action is important for his vision of a sustainable economy to work. However, Jackson is missing a crucial step. I advocate a fourth step that is essential to a sustainable economy: (4) Implementation of a carbon tax. Jackson's (2009) position is that renewable energy must take the place of fossil fuels. This is true; fossil fuels are a finite

resource which means they will not last indefinitely. A switch to renewable energy is a necessity for the future.

Jackson (2009) states that the economy must pass through a “sustainability window” if it is to succeed in transferring over to renewable energy. To pass through this window, society needs to invest a very specific amount of money into renewable energy. Too little and we will run out of natural resources, too much and it could negatively impact the economy to an extent where we no longer have the means to invest further into renewable energy. Either option would be disastrous and could undermine the efforts for a sustainable economy. Relying on precise investments to make it through a “sustainability window” of unknown size is far too risky. The consequences for missing this window are far too severe. The implementation of a carbon tax can significantly reduce this risk. Government intervention is needed to insure the appropriate level of investment. Relying on standard market practices is irresponsible because in Jackson’s vision of a sustainable economy, standard market practices would be changing. With lower economic growth, government intervention will be needed to ensure that renewable energy is properly implemented. By the time oil becomes scarce, it will be too late to begin investing in renewables. The time to invest is now while peak oil is still a manageable time away.

Jackson’s (2009) version of creating a sustainable economy is dependent on technological advancements in order to establish renewable energy. However, it is impossible to know how long it will take or how much money will be needed for investment. There is also the possibility that such technology is incapable of being created. This is where the carbon tax comes into play. An important caveat to the carbon tax is that it should exclude public transportation. This is because a tax on public transportation would unequally affect the poor, in that typically people of lower economic status utilize public transportation more than people of middle to upper class.

Additionally, increased use of public transportation is a goal that a society with a sustainable economy should strive for even after the switch to renewable energy, because public transportation decreases congestion in crowded cities and increases human connections.

Cities and areas of high concentrations of human population will benefit the most from new public transportation infrastructure and technology. Those living in rural areas could benefit from long distance public transits which could take them to the nearest major cities. Alternative methods of transportation could be adopted by those living in rural areas as well. Examples could include draft animals or canal systems both of which would require little to no fossil fuel use. People of both rural and urban demographics will have to learn to adjust to new systems of transportation.

As mentioned in the introduction, the goal of a Pigovian tax is to discourage a harmful action. The goal of the carbon tax would be to reduce fossil fuel consumption. The increase in price would reflect the negative effects of burning fossil fuels. This is not to say that a carbon tax should be a substitute for renewable energy. Investing in renewable energy is still imperative for a successful transition to a sustainable economy. A carbon tax would reduce the reliance on fossil fuels as society strives towards working to improve the technology for renewable energy. Public investment of renewables is necessary because the carbon tax would not be significant enough to make renewable energy competitive right away. The initial tax rate would only need to be high enough to reduce our consumption to a sustainable amount. This specific amount is unimportant to this paper and could be determined later. Increased public investment is needed to start renewables on the path to competitive prices. Once technology reaches that point, public investment is no longer necessary but would most likely continue because of the new sustainable public state of mind.

Another potential benefit of a carbon tax could be the creation of bioregional economies. Due to increased cost of transportation, money would stay within local communities as trade within the bioregion would be more economically advantageous. Bioregional trade could be beneficial to humans as it would promote communal bonds. This could coincide with the previously mentioned subject of altruism. The creation of alternative, local currencies could also promote bioregional economies but, again, this will not be a topic addressed in this paper.

The money created by the carbon tax could be reinvested into renewable energy research or it could be a source of step (2) in Jackson's (2009) plan. This would involve using the money to build up better public transportation, which now would be in higher demand due to the carbon tax. Step (3) in Jackson's plan could also reduce our carbon emissions as consumption based goods often use more fossil fuels to produce than service based goods. However, this only addresses fossil fuel consumption in the economy, but not in society. For example, it would not affect how much a person might travel in their leisure time. Step (1) might also increase carbon consumption because people now have more free time to travel in their leisure. But again, with the carbon tax, this is not a problem because of the added emphasis on public transportation.

Step (4) implementation of a carbon tax, should be added to Jackson's original three step process to a sustainable economy. This additional procedure is necessary to address the issue of our addiction to fossil fuels. Without it we must rely on our economy passing through the "sustainable window". The carbon tax will ease the transition from fossil fuels to renewable energy.

Defense of a Carbon Tax

It is important to note that a carbon tax is not the only action used to reduce fossil fuel use. Other options, such as cap-and-trade, could also be beneficial to society. However, this paper will not focus on the details of these alternative systems. In short, a carbon tax is superior in terms of societal benefit as it holds businesses and individuals immediately responsible for their carbon production. It also does not have the problem of initial appropriating of carbon permits like a cap-and-trade system would have.

A sceptic might argue that carbon taxes have been implemented before and have failed. The most recent example would be Australia where a carbon tax was recently repealed. This carbon tax was said to have failed for two main reasons. (A) It did little to combat global warming as climate change is a global issue and not a regional one. (B) It caused a greater deadweight than what it was meant to solve (Davidson 2014). This deadweight is a direct result of reduced productivity caused by an increase in taxes. Climate change is a global issue; therefore, a solution to such a problem must involve a collective action.

Johnson (2003), the author of *Economic Growth and Subjective Well-Being: Reassessing the Easterlin Paradox*, would say that all individual action (A) will fail to meet its goal and is therefore unnecessary for a single country to reduce its carbon emissions. Sandler would also agree that individual action (A) will never achieve its goal however; he believes individual actions still have benefits. Individuals can inspire others to act similarly. Even better is to get involved with a collective action. If Australia had signed their carbon tax into law with many other industrialized nations, climate change could be on its way to being resolved. Saying one's individual actions are not making a difference is a poor excuse to continue to cause catastrophic damage to the environment, especially if we see it as immoral to emit large quantities of greenhouse gases.

As for (B) many will argue that taxes should carry less deadweight than what they are meant to correct. Australia's deadweight from the tax in the short term would be high, but in the long run it would provide a much larger benefit if you take future generations into count. It's this shortsighted point of view that makes carbon taxes seem as though their cost is higher than their reward. The worst case scenario for climate change is far worse than any tax. The whole point of the carbon tax is to create a deadweight which creates an incentive for change, specifically a decrease use of fossil fuels and an increase in renewable energy technology.

In Australia, the carbon tax was implemented as a political tool during a major drought. Many votes were concerned about global warming because it was directly affecting them. The drought has now ended and thus, voters care more about the deadweight of the carbon tax. As global warming becomes more of a noticeable problem, more people will be directly affected by global warming and by then it might be too late to institute change. The time to act is now. Starting to reduce greenhouse gas emissions now will have a lower deadweight than if we wait and start them later.

Another argument a skeptic might make is that the first countries that reduce carbon emissions will take a large portion of the burden while those that reduce later or do not reduce at all will be free-riders. This is not true because those that reduce first and implement a carbon tax will have a greater advantage of creating efficient renewable energy. They will be the first to become independent from fossil fuels. In the long run, this will put them much better off than those that wait. They will also have control over the renewable technology and be able to sell it to those that remained reliant of fossil fuels. The fact that countries are not scrabbling to be the first to create efficient renewable energies is astonishing to me. With government intervention, the public and

private corporations will see the benefit of adopting renewable technology and will see to invest in a brighter future.

This is not to say that humans should abstain from any fossil fuel use. There are many cases where the use of fossil fuels is in fact a moral obligation. One might feel morally obligated to drive a family member or even a stranger to a hospital if they needed medical attention. Additionally, the creation of sustainable energy producing infrastructure will require fossil fuels and is considered an acceptable and necessary use. It is the abuse and overuse of cheap fossil fuels which makes it morally necessary for the existence of policies such as a carbon tax.

Conclusion

The importance of a carbon tax is what sets it aside from numerous other examples of Pigovian taxes such as cigarettes. One might understand the health benefits attributed to cigarette taxes, but humans still have the right to choose whether to smoke or not to smoke. Similarly, with the implication of a carbon tax, humans still have the choice to drive cars and to buy non-local food. The dangers of climate change and continuous economic growth are far more severe and extensive than the dangers of smoking cigarettes. Producing greenhouse gases is not in itself immoral. Virtually everyone in developed and developing nations is responsible for producing some form of greenhouse gas.

More important is the idea of limiting our impact on the environment. Climate change is not caused by one individual, but as a collective. In the long run, a capitalistic economy based on continued growth is unsustainable. Completely reinventing the world's most prominent economic system will take a significant amount of time. However, climate change is affecting the world now. A step that can be made in the short term is to reduce of carbon dioxide emissions. Humans ought

to be held responsible for the damage they cause to the environment and subsequent humans who are inadvertently harmed as well. Humanity is deeply connected to the environment; harm done to the environment affects every human on Earth. It would be immoral to not hold an individual who vandalized a national park responsible for their actions. In this case, the punishment would be much more severe than a carbon tax. If humans are meant to respond appropriately to value, and nature is intrinsically valuable, then destruction of nature should be considered disvalue. Humans should respond equally as appropriately to value as they do to devalue (Thoreau, 1854). An appropriate way to respond to disvalue would be to prevent it from happening. Ergo, it is society's moral obligation to lessen the affects humans have on the environment, and to do so, we must switch to a sustainable economy, an essential step of which is the implementation of a carbon tax.

References

- Center for Disease Control and Prevention. (2014). Health Effects of Cigarette Smoking. Smoking & Tobacco Use, CDC.Gov.
- Chaloupka, F. J., Cummings, K.M., Morley, C., & Horan, J. (2002). Tax, Price and Cigarette Smoking: Evidence from the Tobacco Documents and Implications for Tobacco Company Marketing Strategies. *Tobacco Control*, 11, 62-72.
- Cvijanovic, Ivana, & Caldeira, Ken. (2015). Atmospheric Impacts of Sea Ice Decline in CO2 Induced Global Warming. *Climate Dynamics*, 44(6), 1173-1186.
- Davidson, Sinclair. (2014). Goodbye to the All Pain, No Gain Carbon Tax. *ABC News*.
- Intergovernmental Panel on Climate Change. (2007). Summary for Policymakers, in Climate Change 2007: Impacts, Adaptation and Vulnerability. *Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge University Press, 17.
- Jackson, Tim. (2009). *Prosperity without Growth: Economics for a Finite Planet*. Earthscan: London.
- Johnson, Baylor L. (2003). Ethical Obligations in a Tragedy of the Commons. *Environmental Values*, 12, (3), 271-287.
- Layard, Richard. (2003). Income and Happiness: Rethinking Economic Policy. *Lecture*.
- McGee, Michael. (2008). How to Actually Solve Global Warming. *CO2 Now.com*.
- McKibben, Bill. (2007). *Deep Economy: The Wealth of Communities and the Durable Future*. Times Books: New York.
- Morgan-Knapp, Christopher. (2014). A Thoreauvian Account of Prudential Value. *The Journal of Value Inquiry*, 48, (2).
- Sandler, Ronald. (2010). Ethical Theory and the Problem of Inconsequentialism: Why Environmental Ethicists Should Be Virtue-Oriented Ethicists. *Journal of Agricultural and Environmental Ethics*, 23, (1-2), 167-183.
- Stevenson, Betsey, & Wolfers, Justin. (2008). Economic Growth and Subjective Well-Being: Reassessing the Easterlin Paradox. *Brookings Papers on Economic Activity*, 2008(1), 1-87.
- Thoreau, Henry David. (1854). *Walden; or, Life in the Woods*. Ticknor and Fields: Boston.
- White, Deborah. (2005). US Refuses to Sign Pact to Stem Global Warming. *Usliberals.about.com*.

Zohrabian, Armineh, and Tomas J. Philipson. (2010). External Costs of Risky Health Behaviors Associated with Leading Actual Causes of Death in the U.S.: A Review of the Evidence and Implications for Future Research. *International Journal of Environmental Research and Public Health*, 7.6, 2460-2472.