

Environmental Impact of Personal Lifestyle: Behavior # 1

The first personal lifestyle behavior I feel is most detrimental to the environment is meat consumption. Not all food is created equally! While most people may not be informed about how their food is made, in recent years I've discovered how much pollution comes from certain food sources. Some of the most significant sources of pollution come from the meat and poultry industry. As someone who grew up having meat as a staple in every meal, it was such a surprise. My father is Armenian and I can remember having a huge barbecue feast almost every weekend during my childhood. Not once did anyone highlight where or how all our meat was being sourced. The environmental impact of meat consumption occurs in the production of meat where "the most significant pollutants our industry faces include, but are not limited to, odors, particulate matter, sulfur oxides from fuel combustion, hydrogen sulfide in biogas and nitrous oxides from boilers" (Peterson, 2010).

Meat and poultry have been on everyone's plate for centuries and every year the pollution steadily increases as we make efforts to feed more and more people while being limited to the same amounts of farmland. At this point eating meat has only continued to be part of my life because it is a habit. As I further analyze this habit, I see all the faults in the pro-meat argument. I used to foolishly believe that we needed meat in order to satisfy our daily protein requirements, but this hardly the case. The first step for me was becoming aware of the issue and exposing the meat industry for what it really is. Beef production mainly, requires an immense amount of energy because they produce methane

(ex: feces and flatulence) and their food requires large volumes of water to grow. I find it hard to believe that meat is so readily available in stores near me because the environmental costs are outrageously expensive.

Einhorn (1999) explains an interesting trend where meat actually was on the decline for two decades before a spiking increase began again. “Now that trend is changing. For the first time in two decades, beef demand is up -- and sharply. The average American today eats 64.6 pounds of beef annually, up from 62.5 lbs in 1993” (Einhorn, 1999). Farmers are taking full advantage of this; “cattle feeders are sparing no expense to keep their feedlots full. This week, when the USDA releases its cattle-feed report, it is expected to show 8.9 million cattle are being fed in the seven major cattle-raising states. It is 6% above 1998's figure and comes despite four years of industry liquidation” (Einhorn. 1999). The exorbitant amount of waste produced in the production of meat can pollute our air and water, which is discussed in the long-term effects of meat consumption.

Environmental Impact of Personal Lifestyle: Behavior # 2

Another personal lifestyle behavior I participate in is use of non-renewable waste, more specifically plastic waste. Recently I have adopted some methods to reduce my plastic use but not yet eliminated completely. Within an hour of waking up I had been creating plastic waste (ex. packing my sandwich in a Ziploc bag), because in today's world it has become so convenient for consumers to purchase things that come in plastic. At some point, I realized I was creating waste at almost every point of my daily routine. I broke down processes like making my lunch to figure out how myself could make a small impact on how much plastic waste I create. So as I learned what I could easily cut out and

what could at least be reduced, I adopted techniques in which a noticeable decrease of waste could be seen.

I started to seek out reusable items like water bottles and avoid brands that I feel use an excess of packaging. “The fact that we are part of a country that mass produces goods of every nature, it only makes sense as to why we produce such high levels of waste. In the United States alone, the amount of municipal waste tripled between 1960 and 2002. It reached a peak of 369 million tons (335 million metric tons) in 2002. Experts say the increase was due partly to population growth, but mostly to the consumption and disposal practices of average American residents. According to a 2003 report by the Earth Engineering Center of Columbia University, each and every American generates approximately 1.21 tons (1.1 metric tons) of garbage each year” (Miller, 2010). It is silly to believe that we are too busy to do our part, because if we don’t then who will!

Environmental Impact of Personal Lifestyle: Behavior # 3

The last lifestyle behavior I’d like to discuss is pollution from driving. On average, I drive about 200 miles per week. Between work, school, and weekend adventures so every week I use a considerable amount of gas. With this in mind the first car I ever purchased is the Toyota Prius I own today. While many argue the difference is minimal between driving a gas combustion car and hybrid due to the battery waste that comes after the hybrid’s battery system dies, I think it’s a huge step in the right direction. Like any technology, the only way to advance it is to fund it. While battery powered cars aren’t exactly new technology, they have been underutilized mainly because gas companies have so much power in the market of transportation. The lack of money going

towards green transportation technology is the reason we haven't already replaced oil driven transportation.

“Sixty percent of atmospheric pollution in the United States results from transport of people and goods. Substantially all of this 60 percent is from gasoline powered motor vehicles. Minor but highly visible and annoying contributions are made by trucks, buses and jet aircraft. Hence the passenger automobile is a prime target for attempts at alleviation of air pollution” (Starkman, 1969). It's clear when looking back at articles even in the 1960's, that the problem is not secret.

Long-Term Environmental Consequences: Behavior # 1

You don't have to dig too deep to figure out the burdens that come from producing an environmentally expensive product like meat. As our global population grows, “the predicted increases in livestock production will put a potentially unsustainable burden on global resources, including land for production of crops required for animal feed and fresh water. Furthermore, animal production itself is associated with greenhouse gas production, which may speed up global warming and thereby impact on our ability to produce food. There is, therefore, an urgent need to find methods to improve the sustainability of livestock production” (Salter, 2017).

By using an exorbitant amount of our land to produce crops that make up the animal feed given to the cows, we are essentially exploiting our lands to feed the animals. Aside from water consumption directly by the cows, the crops that they feed on require water as well. Continuing this behavior will not eliminate world hunger, but it will actually create a new problem in which we will have trouble sustaining the water and

land available for future food production. As I write this paper, the fresh water on this planet is already on a quick route to depletion.

Long-Term Environmental Consequences: Behavior # 2

Similarly, non-renewable waste such as plastic puts a strain on sustainability of our land. Landfills are hardly a solution because the areas they occupy become unusable. “In 2007, the last year for which there are data, the EPA calculated that Americans produced 254.1 million tons (230.5 million metric tons) of municipal solid waste (MSW). Between 55 and 65 percent of this MSW came from residential sources. The rest—between 35 and 45 percent—was produced by commercial and institutional locations such as schools, hospitals, and businesses. According to the EPA, containers and packaging made up the largest portion of MSW (31 percent), followed by nondurable goods (products that are consumed or used quickly, such as toilet paper—24.5 percent), durable goods (products that are made to last more than three years, such as refrigerators—17.9 percent), yard trimmings (12.8 percent), and food scraps (12.5 percent). Paper and plastics led the list of materials discarded, at 32.7 percent and 12.7 percent respectively” (Miller, 2010).

Although this waste as a whole could be considered an issue, it’s really about being able to utilize renewable sources. “Of the 254.1 million tons (230.5 million metric tons) of waste, about 24.7 percent was recycled, about 8.6 percent was composted, and about another 12.6 percent was incinerated. A little more than half of the waste generated by Americans in 2007— about 53.9 percent (137 million tons or 124 million metric tons)— was buried in landfills. The EPA boasts that this percentage has decreased since 1980, when 89 percent of MSW was placed into landfills. Yet because the total quantity

of garbage has increased over this period, the amount of waste landfilled in 2007 was still more than the amount buried in 1980” (Miller, 2010).

While the consequences on land may be more visible to us, plastic waste also affects our oceans. Pollution of the ocean hurts wildlife like: “abandoned fishing nets that trap turtles and seals; plastic bags that block the digestive tracts of turtles; and the toothbrushes and bottle caps that seabirds mistake for food, sometimes starving as a result or dying from a blockage” (Kaiser, 2010). It is unsustainable for human life as well animal life on this planet.

Long-Term Environmental Consequences: Behavior # 3

Lastly, the consequences of automobile pollution and our obsession with oil effect our environment in many ways. Particulate matter pollution is deemed as one of the most detrimental consequences. To truly understand them you must analyze them from a chemistry standpoint. But in simpler words, smog pollution kills our ozone and expedites the process of global warming because of the greenhouse gas emissions it brings. “Lead emissions are of concern, especially in the urban environment, because exposure can lead to increased blood lead levels that interferes with the mental development of young children. The oxides of carbon (CO and CO₂) are unavoidable if the energy conversion process is based on the combustion of carbonaceous fuels (such as gasoline). CO is known to have acute health effects, although it acts on a local scale. Last, but not least, CO₂, which has been traditionally recognized as a greenhouse gas, is of concern in the context of global warming” (Sagar, 1995).

In some places we destroy natural animal habitats in order to develop and produce the oil that is underground. Along with the animal life, the soils can also be destroyed

when “Oil infiltrating into the soil causes the gluing of spaces via which water and air are transported. That results in soil caking leading to changes in its physical, chemical and biological properties, and also to the worsening of soil productivity. In the soil, hydrocarbon components of oil cover the surface of soil particles with an insulation film and, forming chemical bonds, they combine with organic components of soil humus. Consequently, hydrocarbons are primarily deposited in upper soil horizon. Thus the more humus a soil contains, the stronger it absorbs the oil-derived pollutants” (Gawdzik, 2011).

Mitigation Measure(s): Behavior # 1

One of the main efforts used to mitigate the harmful effects of meat consumption is living a lifestyle in which meat isn't a main part of your diet. Many diet trends offer ways to compensate for elimination of meat from your diet. Examples are veganism and vegetarianism which have plant-based diets. I don't find it reasonable to completely ban meat production, but we must not waste so much land and food to produce meat. Instead of feeding the crops we grow to the cows, we should be turning that into food for human use.

Companies that are producing eat must find a way to replace conventional crops that are currently used as animal feed in order to reduce water waste and land use waste. “While dramatic improvements have been made in the efficiency of animal growth this has been achieved, particularly in monogastric animals, through the use of highly nutritious feed ingredients which often could be fed directly to human subjects. Inevitably, such animals will use energy derived from such feed for maintenance and exercise, leading to losses in human-edible energy. For ruminant animals the picture is

more complicated due to their ability to graze on plant material not suitable for direct human consumption, frequently grown on land that would not support the production of conventional crops” (Salter, 2017).

Mitigation Measure(s): Behavior # 2

It’s quite unrealistic to imagine a world with no waste, but important to realize that none of this waste has to come from plastic or any other nonrenewable source. Mitigation measures include the use of biodegradable materials as well as reusable materials. By using materials that will naturally decompose rather than stay in the land for a very long time, we can limit the land used for landfills.

Change is already currently taking place across the world as it develops at an unprecedented rate. Waste management studies and policies are shifting in response to new information and new challenges. “In waste governance, there is increased interest in public participation in decision making, as well as a growing understanding of waste management as more than a merely technical problem. Generally, waste management has been broadening to include nonengineering disciplines and the public, specifically focusing more on households and consumers as active participants. Conceptual approaches, such as industrial ecology (IE), encourage a new framing of the waste management system, suggesting that an improved balance with our surrounding environment can be found by imitating waste management systems found in nature. Stemming from this interest in closing the loop from production to consumption, the importance of the effective design of products has emerged as another way to improve the end-of-life management of materials. Many global waste management studies have concluded that waste management requires locally specific solutions. And finally, in less-

industrialized countries, cities are attempting to modernize their waste management, often through motorization, privatization, and a struggle to involve the informal sector”

(Vergara & Tchobanoglous, 2012).

Mitigation Measure(s): Behavior # 3

Really what seems to be at the core of mitigating all negative environmental consequences is the use of renewable resources. In order to maintain the methods of travel it's become crucial to look for sustainable sources of energy. I already have taken steps like driving a hybrid and riding my bike to school. An increase in fuel efficiency of cars flirts with the idea that we can sustain oil use. By no means should oil play any part in our daily lives!

We must turn to the abundant renewable sources available to us. “Due to its connection with the sun then, Earth has both a continuous influx of energy, often referred to as an energy income, as well as a storehouse, or “stock” of energy, which similarly can be referred to as an energy savings account. The income portion represents a relatively sustainable total energy budget, which is composed of the constant bombardment of radiant energy entering our atmosphere from the sun, plus tidal gravitational energy due to our immediate relationship with the moon, plus geothermal energy being produced primarily by Earth's radioactive core, minus any energy that is reflected directly or reradiated out to space. Within the solar contribution that penetrates the atmosphere, there is direct conversion of radiation into heat, with the remainder becoming indirect energy that contributes to the hydrologic cycle, photosynthesis, and wind and waves. Meanwhile, the “savings account” of stored solar energy includes fossil fuels, and biomass stocks, especially in forests. Thus, continuous energy available on Earth can be

reduced to direct solar energy, indirect solar energy, geothermal energy, and tidal energy” (Ebenhack et al, 2013).

Summary: Adoption Decision and Justification

Even before taking this class and having to complete this assignment, I felt inclined to “do my part” in practicing sustainability. On the topic of meat consumption, I am working towards a diet that includes a fraction of the meat that I’m accustomed to. For so long this was a change that I didn’t see necessary, but after becoming informed on the reality behind the scenes, it’s become dire to me. While I myself will be adopting a more plant-based diet, I won’t be trying to persuade anyone to join me, but I will make sure that the people around me are at least aware of the issue as I once was not.

In regards to reducing plastic waste, I realized there were so many easy changes that could be made. For some time now I’ve adopted a hydro-flask for my water. I refuse to use plastic water bottles, so strictly that I have not drunk from one in over 2 years. This ban on plastic bottles includes every liquid that comes in it. Unfortunately for me it’s been impossible to follow the same guidelines with packaged food. I make an effort to make my own lunches in Tupperware or even foil, but almost every form of food comes with packaging that contains at least some plastic. So when I am stuck using plastic, I do my best to recycle all of it.

In conclusion, I feel as if driving is the hardest behavior to change. Although there are forms of alternative public transportation, living in Los Angeles creates insurmountable obstacles to utilizing it. Often as I am on a tight schedule it’s not an option to rely on a lagging bus or even carpooling. I ride my bicycle to school because

luckily I live close enough to where it's feasible to do so. But even riding my bicycle to the grocery store would create a huge challenge. My favorite solution to reducing my carbon footprint is turning to vehicles that use no gas at all, like the all electric Tesla. As the technology becomes more readily available, affordable, and visually appealing it becomes more and more relevant for me to make the switch soon.

Sample Paper

References

- Ebenhack, B., Martínez, D., Martínez, B., & Ebrary, Inc. (2013). *The path to more sustainable energy systems: How do we get there from here?* (Ebrary DDA purchase). New York, N.Y.] (222 East 46th Street, New York, NY 10017): Momentum Press.
- Einhorn, C. (1999, October 11). Demand for beef is sizzling - Barron's. *National Post*, p. C11.
- Gawdzik, Barbara, & Gawdzik, Jarosław. (2011). Impact of pollution with oil derivatives on the natural environment and methods of their removal. *Ecol Chem Eng S*, 18(3), 345-357.
- Miller, D. A. (2010). Garbage—Yesterday and Today. In *Hot Topics. Garbage and Recycling* (pp. 11-27). Detroit: Lucent Books.
- Peterson, Ashley B. (2010). Emission control: The meat and poultry industry continues to deploy technology to minimize its facilities' emission and increase efficiency.(TechProcessing). *The National Provisioner*, 224(12), 42.
- Sagar, A. (1995). Automobiles and global warming: Alternative fuels and other options for carbon dioxide emissions reduction. *Environmental Impact Assessment Review*, 15(3), 241-274.
- Salter, A. (2017). Improving the sustainability of global meat and milk production. 76(1), 22-27.
- Starkman, Ernest S. (1969). Chemical Pollution from Transportation Vehicles. *California Medicine*, 110(4), 309-14.

Vergara, S., & Tchobanoglous, G. (2012). Municipal Solid Waste and the Environment:
A Global Perspective. *Annual Review of Environment and Resources*, 37, 277-
309.

Sample Paper