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Wasting Away...

Consumerism and its Effect on Landfills and the World's Environment

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Preface

The purpose of this report is to identify and explore the environmental effect that the act of consumerism has. It is to discuss how the growing want of items and goods that humans do not actually need in their day-to-day lives can destroy the atmosphere, habitats, and fill up space with overcrowding landfills. Consumerism is defined as the belief that “describes the inclinations and tendencies of consumers towards various products and brands” (Canadian Money Advisor, n.d.) People are attracted to purchasing products that are advertised to make their life easier or more interesting. There are millions of different products like that around the world, and with over 6.9 billion people living on this planet, there are many of us that can afford those products. With income comes purchasing, with purchasing comes consumption, and with consumption comes throwing away. The average person throws away 1000 kilograms of waste each year (Green Sweep, 2008) and although we take up only 8% of the population, North Americans account for 50% of the garbage all around the world (Brummet, 2004).

But where does all that garbage go? Landfills. They are never ending mountains of waste and garbage, filled with items such as children’s toys, mattresses, and electronics like old televisions and computers. Items like these can be either given to charity, or recycled properly in specific locations rather than slowly decomposing and taking up large amounts of space in the landfills (Green Sweep, 2008). There are also people who still throw away things that should be put into their proper recycling bins. Only 25% of our waste can be recycled, or used as organic waste (Green Sweep 2008), so 75% of what we throw away goes to the landfills. Drink containers such as cans and bottles account for around 5% of the waste found in landfills, even though they are fully recyclable (Brummet, 2004). There are many ways we can reduce the

mountains of garbage that we create. Our population is growing at a steady rate, along with technology, which means the want for unnecessary products will also grow. This report will inform consumers about the environmental ramifications of purchasing products that they do not need, and how it will effect future generations by harming the atmosphere with poisonous gases and taking up much-needed space in landfills.

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Summary

This report contains information about how consumerism is a problem to our environment. It examines the way that landfills are diminishing our land, oceans, and the atmosphere due to the amount of garbage being produced. The background and history of how it is becoming more and more of a larger issue because of the rise of technology will be reviewed. Included will also be an identification of an expert on the issue. The expert reviewed in the report is Dianna Cohen, who is a visual artist and a part of an organization called Plastic Pollution Coalition. The report will also include facts about who is in charge of this issue, who controls it. Then the influence and role of religious or spiritual views will be discussed, following mostly the religious beliefs of Buddhism and Christians. The report will include three case studies from China, India, and Egypt that show how this issue occurs in various countries around the world. The role of international organizations involved with this issue will be discussed. How this issue effects Canada and Canadians will be included. In conclusion, multiple solutions will be presented and considered.

The information and research for this report was extracted from news articles, books, web pages, videos and TED conferences.

Background

Consumerism is not something that has been around forever; but garbage is. As long as there have been people, there has always been something to throw away, whether it was

human waste, or parts of an animal they did not use for food or warmth. The act of consumerism did not start until the last part of the 18th century, which is commonly known as the Industrial Revolution. During this time, technology was growing at a fast pace, which meant big factories were on the rise. Workers were using new machinery that produced goods much quicker than 10 workers combined (Hackett, 1992). This meant more goods at lower costs. Consumerism began because there were so many new products and they were coming so fast that people got excited. People started to get paid a higher salary, so they felt less guilty when purchasing items they really did not need.

Another growth in production technology occurred in the late 19th century through to the early 20th century. At this point, the consuming class had expanded from beyond the middle and upper class, and incorporated the working class as well (Beder, 2000). In fact, the growth in production was so high that it created a surplus of product that exceeded the demand of the consumers. There were two solutions to this problem: one was to cut workers from employment in order for the demand to catch up to the production. Another, held mostly by businessmen, was to just increase consumption in order for growth in the economy to occur as well (Beder, 2000).

Expert

Many people over the years have increased awareness of various environmental issues; deforestation, CO₂ emissions, and energy consumption are just a few. Dianna Cohen raises awareness of plastic pollution found mainly in oceans, mostly focusing on plastic bags. She is a visual artist and her

work always involves recycled plastic items, but again created mostly from plastic shopping bags. Cohen is the Creative Director and co-founder of a group called Plastic Pollution Coalition. “Plastic Pollution Coalition is a global alliance of individuals, organizations and businesses working together to stop plastic pollution and its toxic impacts on humans, animals and the environment” (PPC, 2010).

After 8 years of creating her art, Cohen realized that her work was fissuring and starting to break down into smaller pieces, thinking that its ephemeralness was a good thing. (TED, 2010). She believes that no matter how small, plastic is still plastic, and it is still dangerous to oceans and habitats. Cohen developed a proposal to take some of the plastics that are floating around in our oceans, pick them up, break them down into small pieces and cold-mould them into bricks that could possibly be used to build communities in developing areas (TED, 2010). Later, she realized that doing something like that would not do much, seeing as we would be putting more and more plastic into the oceans in the future anyways. In every square kilometre of ocean, there are over 18,000 pieces of plastic litter floating around (Forever Plastic). Now Cohen’s current goal is to stop the flow of plastic waste into our oceans (TED, 2010). Plastic Pollution Coalition took the phrase “Reduce, Reuse, Recycle” and added one more “R” to it: “Refuse”. They want us to refuse disposable plastics in our lives, objects such as plastic utensils, bottles, straws, lids, and many others that are good for one use, but they last forever (PPC, 2010). If we do not use them at all, then we will not have to worry about them finding their way into our oceans.

Cohen says “Having worked with the plastic bag as my primary material for the past fifteen years, all of the obvious references to recycling, first-world culture, class, high and low art give way to an almost formal process which reflects the unique flexibility of the medium” (TED, 2010). She is trying to get through to the world using her art, and hopefully get some of us to listen and understand why we should care about this issue.

Role of Control

In many world issues, governments and leaders are the ones who have control over what happens and sometimes the solution to them. They can take charge of it, can overlook it, but usually do not do much about it. For the issue of waste management, it really is in the control of the citizens. It is us who throw out 600 times our body weight in our lifetime (Green Sweep, 2008), not the government or any high corporations. We are the ones who go out and purchase things made of non-decomposable materials and only use it once. It is our responsibility to realize how much we are wasting and how we are harming eco-systems and environments halfway around the globe. We *believe*, however, that one little plastic spoon or one bottle of water is not going to harm the planet. We do not realize that it all adds up over time.

Although we are the ones who make the decision to purchase these non-essential items, we get help from television and media advertisements. Humanity is always looking for something that can make our lives easier; which is how businesses sell their products and make their money. Where would the business world be without society's constant desire for unneeded products? Advertisers brain-wash people into believing they need all these useless items that in reality are just going to be thrown out in the coming year. Companies go to the extreme by creating products that will just stop working or malfunction after a very short amount of time, just so the consumer will go and purchase a new one. Products such as i-Pods, Blackberries and certain laptops are just a few examples from a very long list. Electronics are the most complex, mass-produced products ever manufactured for consumers (Grossman,

2006). This becomes a concern for landfills and the environment because of the many toxins found in these high-tech devices and the fact that people are not aware that there are other preferred ways to dispose of them. Not a lot of people know that they need to properly recycle their electronics.

With the role of control, governments could be more involved. If there were by-laws initiated even in the smaller communities, that stated consumers must recycle their electronics properly, through a set government program, the amount of chemicals found in those landfills will automatically be reduced substantially. It is strange how people do not really care about what or how much they throw away, until there is a law or some sort of government involvement around it; then people start to listen and realize what it is *they* are responsible for. They start to take notice and interest in the issue. Are there any cons to creating these by-laws? Even if there is, the pros would overpower them.

Religious/Spiritual Views

Some people see nature as a resource more than anything. We need trees for paper, desks, boxes, and we also need animals for food, nutrition, warmth. But in the eyes of a Buddhist, every thing in this world is interconnected (Payne, 2010). When we accumulate materialism, things seem separate or fixed. The more we see materials as permanent, the more

we think of ourselves, human beings, as “fixed objects”. “Since nothing is real, then nothing matters, so why not indulge in whatever offers some momentary pleasure?” (Kaza, 2010). With this thought in mind, how do we connect ourselves with the natural world? Consumerism depends on loss of animal and plant life. And in Buddhism, there are five prohibitory precepts and the first one is stated as “do not kill or harm” (Kaza, 2010). It is obvious that the act of consumerism is breaking this precept in many ways, shapes and forms. For example, not only are they harming animals and plants, but harming the air quality, and people from the uncommon act of slavery for cheap production of items. Buddhists believe that everything is interconnected and that there should be no boundaries between human and nature. Yet we are destroying habitats and eco-systems because of over-consumption and having to throw away items that the act of consumerism forced us to purchase.

There are many religious holidays where purchasing gifts around these times is the norm. Christmas is one of the big ones. Over one third of the world’s population is Christian (Religions of the World, 2009). When added up, if most of these people celebrate Christmas, with around (on average) 15-16 family members and friends to buy gifts for, that is almost 35 billion products purchased just for the one holiday. And how long do those gifts last? If it is a baby toy, the child is obviously going to grow up and gain different interests. So after about a year, that once brand-new, exciting gift is probably going in the garbage. Now with technology changing so quickly, more and more people want to upgrade their cell phones, laptops, televisions, game consoles, even though there is nothing wrong with the ones they have. So an increase of electronic waste will occur around this time of the year. Also, there is the packaging. Not only are the products we purchase extremely harmful to the environment, but so is the

packaging they come in. Most people then wrap that product in wrapping paper. (Babauta, 2010). The amount of packaging used around the holidays is unbelievable, not to mention the bags used to take the purchased gifts home in. Christmas is not the only religious holiday or occasion in which one receives gifts. Do not forget about Hanukah, Easter, Ramadan, Kwanza, Diwali, a baby's christening/baptism, Bar Mitzvahs, and so many others.

Not only are there certain religions that look down on consumerism, but many religions do not even realize that they are pushing consumerism onto their believers. Even in the Bible it states that God put resources on our Earth for humans to use as their main purpose.

Case Studies

Guiyu, China

The society we live in today loves new technology. And since technology is one of the fastest growing networks in the modern world, we are always upgrading our products and electronics. High-tech electronic devices are found to be the most complex and mass-produced products ever manufactured (Grossman, 2008). So a person gets a new Blackberry for Christmas, but what happens to their old phone? Most people think that they are helping out the environment by taking their old phones, computers, televisions, and other electronics to proper recycling organizations. There are materials found in computers that are very toxic and can cause brain damage, kidney failures, and all kinds of cancers (60 Minutes, 2008). They are very hazardous and should never be in landfills. But what people do not know is that those

recycling companies are lying about the safe disposal of your old electronics. Most of them are participating in illegal shipping of this e-waste (term for electronic waste) to other countries, mostly located in southern Asia, as a “not-in-our-backyard” approach to the problem (60 Minutes, 2008). In the last two decades, around 50% to 80% of all electronics that were supposedly “recycled” were being exported for cheap dismantling. There is one city in China where a lot of the “recycling” occurs: Guiyu. It is its own island found in the Pacific, right off the eastern coast of China. This importing of e-waste is illegal, both in America and China. So, why do these companies take part in illegal shipping? Proper disposal and/or recycling of some obsolete electronics is very difficult, and labour intensive, which also means it is expensive (Grossman, 2008). In developing countries, labour is very cheap and their environmental laws are not as effective as some in the western world (Grossman, 2008). And why would we want it here anyways? We have enough garbage and trash as it is!

Guiyu has become the largest and most concentrated site of dumped e-waste in China (Grossman, 2008). By the mid 1990’s, over one million tons of electronic waste every year was arriving in Chinese ports like Shenzhen, Guangzhou, and Nanhai, that would travel further to Guiyu to be processed (Grossman, 2008). Out of that one million, over 150,000 tonnes of it was plastic, and over 200,000 tonnes of it was metal. Some piles of the e-waste are as high as second-story windows (Grossman, 2008). In some parts of Guiyu, over 80% of the population of this former farming region is now involved in the processing of the e-waste. Farming has been abandoned; being replaced with this new “business” of dismantling old and used electronics (Grossman, 2008). Guiyu is a very poverty-struck area in China, and the citizens basically have a choice between poverty and poison (60 Minutes, 2008). Not only does the

dismantling and burning of e-waste cause environmental problems, it is also a huge health problem for the workers and people who live there.

Of the 150,000 people working with the e-waste, none of them wear protective clothing, and only some wear gloves (EWIG). They dig through circuit boards, ink cartridges, cables, metal frames, cathode ray tubes, and many other parts that are in big, unsorted piles (Grossman, 2008). Here are a few examples of what one would find when arriving at Guiyu, that is if one makes it past government officials: smoke emitting from burning plastics and wires, toxic ooze, that contains numerous hazardous materials being melted from computers, getting into rivers and poisoning Guiyu's water supply (Grossman, 2008). In 2000, a water sample was taken from the Lianjiang River (located in Guiyu) and the sample showed lead levels 2400 times higher than levels deemed safe by the World Health Organization (Grossman, 2008). In the same river, one year later, there was 1338 times the safe amount of chromium according to the US Environmental Protection Agency (Grossman, 2008). So many scrap plastics, metals, and liquids from the burning, smashing, and melting of this e-waste are put into this river or have fallen into it from riverside dumps (Grossman, 2008). These pollution issues have contributed to the fact that 7 out of 10 children in the Guiyu area have too much lead in their bloodstream (60 Minutes, 2008). If this e-waste is causing so many health problems, why do people not protest against these harsh conditions? If Guiyu were to end all of this illegal e-waste dumping altogether, their economy would go down the drain. The only jobs available to the people of Guiyu is sorting this e-waste. If it was taken away from them, the city's economy (or lack there of) would hardly exist. Even though it is illegal, it is practically the only thing they have.

So the next time someone buys or receives a new electronic device, they better know what they are doing with their old one, or it could end up in the hands of a child in Guiyu, getting dismantled, melted, and finally ending up in the local river. In conclusion, there really is not a lot we can do to stop the illegal flow of e-waste into Guiyu. Both the US and Chinese governments know what is going on, but think they have more important things to worry about (60 Minutes, 2008). But maybe when an increase in deaths of citizens in Guiyu arises, it will catch the eyes of the governments. Is that what we have come to? It only matters when casualties happen?

Delhi, India

Out of all the cities in the world, New Delhi is considered to be one of the most polluted (Popham, 2001). It is the capital city of India, and is located in the metropolis of Delhi. Delhi is the second-most populated city located in India (Indian Cities Population, 2011), making it very crowded and busy, and not surprisingly, extremely polluted. With high population comes high amounts of waste.

There is one landfill located in Mayapuri, a town found in West Delhi, where masses of metal scrap (whether imported from other countries or elsewhere in India) are scattered and unsorted (Overdorf, 2010). Compared to the 6 to 7 million tonnes of hazardous materials generated by Indian companies, 3 million tonnes of metal scrap is imported from other countries each year (Overdorf, 2010). The various hazardous materials found in this landfill include radioactive waste, ammunition, e-waste, and toxic waste (Overdorf, 2010). Even medical waste is found there. About half of the amount of hospital waste thrown away is

treated before its disposal (Vaid, 2010), and there are many men, women, and children labouring in the area. Like in Guiyu, none of the workers wear protective clothing, gloves, or helmets (Vaid, 2010); they use their bare hands when handling metal scraps, and some of it can be radioactive (Overdorf, 2010). Labour is very cheap in India, and the workers of this landfill do a lot of hard work for next to nothing:

Loaders in Mayapuri earn between \$2 and \$5 a day heaving clapped out drive shafts, truck tires, axles, steel pipe and all manner of scrap onto trucks and wagons. It's brutally hard work in one of the hottest Aprils on record — the mercury already nearing 110 degrees Fahrenheit. Even in the lee of the dilapidated warehouse, a hairdryer wind sandblasts the ragged workers with grit. The air smells of ozone and sweat and scorched metal. The danger is as bald-faced as the filth. (Overdorf, 2010)

Some of the hazardous materials that harm the air quality and workers include asbestos, lead, mercury, cadmium, beryllium, and something called Cobalt 60 (Overdorf, 2010).

On April 7th, 2010, five workers were sent to the hospital for radiation poisoning. Investigations by India's atomic energy regulators said the radiation came from a shiny, metal object, which held the radioactive material of Cobalt 60 (Overdorf, 2010). Ironically, Cobalt 60 is a metal that is used in the sterilizing of medical equipment and for radiotherapy (Overdorf, 2010). This was not the first sign of radioactivity in Mayapuri, and it will not be the last, either (Overdorf, 2010). Radiation is definitely not the only health problem associated with this landfill; exposure to other hazardous materials is very common to the people who work there every day (Overdorf, 2010).

Landfills like these are not only very harmful to people who are involved in it, but they also cause even more harm to Delhi's atmosphere. India's population is growing more and more, and with this in mind, will Delhi need more hazardous waste landfills to accommodate this growth? This could endanger even more of their citizens by being exposed to radiation.

Cairo, Egypt

Not only is Egypt deep in political issues, but its capital city is also deep in garbage and hazardous waste. Their drinking water, their air, and their streets are being polluted by waste (Egypt News, 2009). Industrial facilities and the sewage from towns and villages are polluting waterways such as the Nile River and the canals that branch off of it (Egypt News, 2009). There is a large lack of investment from governments and organizations to eliminate the causes of this water pollution; yet for India's air pollution problems, these organizations have come up with a solution (Egypt News, 2009). Cairo has established eleven air pollutant-monitoring stations to keep track of the air quality (Egypt News, 2009). A government report made by the Egyptian Ministry of Environment stated that solid waste is Egypt's largest environmental problem in terms of its effect on health (Egypt News, 2009). There has been an ongoing increase of hazardous waste that is being generated by all enterprises, which has led to become a danger towards public health (Egypt News, 2009).

Just on the outskirts of Cairo, there is actually a place known as Garbage City (Beitiks, 2009). The community is populated with workers that sort, collect, sell, reuse, and re-purpose the waste of Cairo. These people are known as the Zabbaleen (Beitiks, 2009). Although the

name of this place seems quite literal, it actually holds a very efficient waste management system (Beitiks, 2009). Organic scrap is fed to livestock, things that can be repaired are repaired, and items are recycled, sold, or burned for fuel. The Zabbaleen are particularly good scavengers, although they live in poverty (Beitiks, 2009). According to Moe Beitiks, writer of the article "Incredible Garbage City Rises Outside of Cairo", "Garbage City feels like what the world would look like if someone grabbed it by the corner and shook it" (Beitiks 2009).

In early 2009, during the outbreak of H1N1, or the Swine Flu, Egypt's government ordered a large slaughtering of pigs as an attempt to lower the spread of the disease (Beitiks, 2009). This was hard news for the Zabbaleen and Cairo residents, as some of the pigs that were slaughtered were the same pigs that ate the compost in Garbage City (Beitiks, 2009). This resulted in a trash-filled Cairo, because there was no more room to throw their waste in order to be recycled by the Zabbaleen people (Beitiks, 2009). Cairo even tried replacing the pigs with goats to consume the organic waste, but they did not do as well as a job (Slackman, 2009). As rotting food began to pile up in Cairo and many other Egyptian cities, the piles were twice the size for the Zabbaleen (Slackman, 2009). After medical officials declared that Swine Flu was not actually passed through pigs, the Egyptian government stated that the killing of pigs was now about helping clean the Zabbaleen neighbourhood (Slackman, 2009). But what government officials did not know is that the pigs helped sustain the garbage problem. International companies have tried to keep up with the trash, and the Zabbaleen have no choice but to dump their organic waste wherever possible, even scattered by trash bins that were brought by the companies (Slackman, 2009). "The garbage is only the latest example of Egypt's struggle to

meet the needs of its citizens, needs as basic as providing water, housing, health care and education” (Slackman, 2009).

Are these Zabbaleen people getting paid? The only money they are making is what they get from selling whatever they can find in the hundreds of piles of trash. Why do they do it? Is it because that is the only thing they can do? Or because there is so much garbage and waste that it is stopping them from doing anything else? The consumerism found in Cairo and other large cities in Egypt, after a long journey, ends up in a totally different place: Garbage City.

International Organizations

It is not difficult to find many environmental activist groups and organizations. They each cover certain sub-topics of environmental issues such as ice caps melting, deforestation, and ocean pollution. Not many people are too concerned with our garbage issue, because they are unaware of how large of an issue it really is. Garbage is part of our everyday lives, so we do not think about it all that much. “Out of sight, out of mind” is how we see things. Once we throw it out, who cares where it goes? The following organizations are some of the ones who do care.

Basel Action Network

The Basel Action Network (or BAN) solely concentrates on the problem of illegal shipping of e-waste from the US to other countries, “preventing disproportionate and unsustainable dumping of the world's toxic waste and pollution on our global village's poorest

residents” (BAN, 2011). In 1994, a multilateral environmental agreement called the Ban Amendment was passed to make a decision to ban the exporting of hazardous e-waste from developed to developing countries. The agreement was created to help the environment and protect human rights. BAN’s mission is to protect this agreement from industry attacks that believe exporting of e-waste is just natural globalization (BAN, 2011).

Currently, BAN has four main campaigns that they are focusing on to help prevent this illegal flow from occurring. First, there is the E-Waste Stewardship Project, ensuring that the exporting of hazardous waste to developing countries, once exposed by BAN, are replaced with proper production responsibility (BAN, 2011). BAN also has a program that inspects US government ship vessels, ensuring that all hazardous e-waste is removed before exporting, called Green Shipbreaking (BAN, 2011). The Zero Mercury Campaign stops the trading, use, extraction, and recycling of mercury and promotes it being forever stored. But the campaign’s main focus is eliminating surplus trading of mercury in the developing world (BAN, 2011). And of course BAN is always campaigning the maintaining of their Ban Amendment. “We insist on dual ratification of the Ban simultaneous with the treaty and work to prevent their efforts at undermining this landmark agreement” (BAN, 2011).

In February of 2008, BAN found a ship called the ‘SS Oceanic’ after it left San Francisco Bay, which was likely exporting e-waste to another country. BAN contacted EPA (the United States Environmental Protection Agency), issued press releases and contacted Hawaiian authorities (BAN, 2011). A month later, EPA files a lawsuit against the cash buyer of this and similar ships that illegally export e-waste (BAN, 2011). This is just one example of BAN’s many

successes, and they plan to put a stop to the exporting of e-waste from developed to developing countries for good.

Plastic Pollution Coalition

Landfills are not the only garbage problem that is affecting our atmosphere and environment. Everywhere you look, there is litter on the ground, and it has become such a problem that it has blended in with our world. It is not unusual to see various wrappings, fast-food packaging, and other littered materials on the ground as you walk down the street. The material that we consumers tend to throw out the most is plastic; mainly plastic bags. The Plastic Pollution Coalition (PPC) wants to put an end to this particular type of pollution created from plastic and plastic bags that can harm humans, animals, and the environment (PPC, 2010), as mentioned earlier in the “Expert” part of this report.

Plastic Pollution Coalition mainly raises awareness about the dangers of plastic. Some of the members, like Dianna Cohen, create art out of recycled plastic, and sell it to raise money for their fiscal sponsor Earth Island Institute, which is a public, non-profit benefit corporation (PPC, 2010). PPC also sells t-shirts, stainless steel water bottles, and necklaces created from glass bottles that were found in garbage dumps in Los Angeles. They are then cleaned, blown into different shapes and put on a string. Not only does PPC raise awareness, but it can help someone ban the use of plastic bags in their city or town. On November 16, 2010, the Los Angeles County banned plastic bags in their area (Boyle, 2010). An act like this can make a big

impact on how much litter we find in that area, and can influence other cities, possibly even states, provinces, or countries, to do the same.

Consumerism Effects on Canadian Environment

Canada is a developed country, which means we are free, safe, technologically-driven, and most of all, wealthy. Our country is home to many large corporations that sell products, and in order to get that product to sell, they need to attract consumers. They use advertisements on television, billboards, radio, and even the Internet; anything that can get people to purchase their products. Once purchased, it will not be long until that product is thrown in the garbage. With a population of around 30 million consumers, is it a surprise that in 2004 we produced 13.4 million tonnes of waste, according to the Waste Management Survey done in that year? Out of that dozen million tonnes, we recycle 27% of it (EnviroStats, 2008). In 2004, each person in Canada threw out 418 kg of waste, while recycling 112 kg (EnviroStats, 2008). To foreigners, Canada is considered clean, and full of forests, mountains, lakes, and wildlife. If our want for items and products that we do not actually need continues to increase, and our growing economy continues to be more important than saving our environment, Canada will become overflowing with trash and waste, destroying our natural landmarks.

The following will describe a few ways of how landfills in Canada can harm our natural environment. Groundwater and surface water can be contaminated by landfill leachate, which is the liquid that drains from a landfill. This liquid can either already exist in the landfill, or be created from a mixture of rainwater and chemical waste (Sunshine, 2011). Landfills also emit a

gas, created by the anaerobic decomposition of the waste (LGIA, 2001). This gas can start being produced about one year after the landfill is put up, and continue to be produced for another 50 years (LGIA, 2001). Its usual components include methane and carbon dioxide, with traces of sulphur and volatile organic compounds (LGIA, 2001). Wind gusts can carry landfill gas towards residential areas, contaminating the air that people breathe. Cities usually decide to build their landfills as far away from residents as possible, which may interfere with natural areas or ecosystems, forcing certain wildlife out of their habitats. Or a landfill could be located near a forest or ecosystem, which would harm animals with leachate liquids and hazardous waste. This poisoning of one species could make its way up the food chain, harming predators as well.

Canada is the 5th cleanest country in the world, having a 64.4 on the Environmental Sustainability Index (Rankings and Records, 2010). Not only are we one of the cleanest, but we have the least amount of CO₂ emissions in the world; only 4.13 tonnes of it per capita (Rankings and Records, 2010). So we do not have that much to worry about. But there is always room for improvement, and it will not hurt for everyone to try and be cleaner. Because we are one of the cleanest countries in the world, this could help encourage other countries to try and become more environmentally aware. Instead of spending money on upgrading Toronto's recycling program, for example, Canada could use that money on helping a third-world country get a recycling program started. If Canada is already very environmentally friendly, can we not help other countries to become more like us?

Solutions

One commonality to all of the following solutions is the need for mass participation. One person alone cannot put a stop to over-crowding landfills. A government could initiate a solution, but most of the population would need to participate in order to make a difference.

There are a lot of cities and areas around the world that recycle on a daily basis. People enjoy recycling because they feel like they are doing something that helps the environment. It is proven that if an item has the recycling logo somewhere on it, more people will purchase it (Forever Plastic, 2010). But many of the recycling citizens still do not know exactly what to recycle and what not to recycle. If there was a more informative newsletter that was sent out to each citizen of a city or town, created by the municipal government, it could help stop the daily question: is this recyclable? That way, the proper materials get recycled, and there will be less recyclable materials stuck in landfills, taking decades to decompose and harming our atmosphere.

There are so many ways to reduce how much we throw away each day. Instead of purchasing 30 bottles of water each month and wasting money, one can get a plastic or stainless steel water bottle and just refill it from a larger bottle or the tap every day. The same implies to coffee cups. Making your own coffee at home and using a reusable coffee mug is much more environmentally friendly than going to the local coffee shop every morning and having to throw away all those paper cups. There is also the choice of purchasing items that are made from various recycled materials. Some examples of products that are made from recycled materials are water bottles, boxes, plastic packaging, and even toilet paper. By buying products

like these, it assures people that what they put in their recycling bin is actually being recycled, and encourages them to recycle more.

As mentioned before, here in western society we are always updating our electronics, but we are unsure of what to do with our old versions. Like the recycling informative newsletter, there could be a similar one about what to do with old electronics. This newsletter could inform the reader of the illegal shipping of e-waste to developing countries and could include a list of near-by facilities that properly recycle e-waste. Governments could have a system where they visit different electronic recycling companies once a year to make sure the company is abiding by the rules and not part of the illegal shipping trade. This would be similar to how the BAN organization works. Another option for old electronics is to donate them either to thrift stores or friends and family. Canadians throw out about 3 million computers every year (Green Sweep, 2008), but those numbers can be reduced substantially if one gave away or sold their old electronics, either on E-bay, or giving them to family, friends and thrift stores. There are many families out there who cannot afford items like i-Pods, cell phones, and laptops. Not only would they be helping the environment, but they would also be helping their fellow neighbour. Another option is to research certain electronic recycling companies, and possibly take a visit there, to make sure their recycling practices are safe and they do all their work in that one area. Most of these companies would take separate parts from different products to rebuild new electronics and donate or sell them (Green Sweep, 2008).

Not only can you donate electronics, but almost any kind of product is donate-able, and hence reusable. Furniture, clothing, children's toys, mattresses, movies, video games, CD's, and

books all can be reused. Before you take that big table or mattress to a landfill, taking it to a thrift store is always a better option. Plus, it does not cost you anything to donate, unlike taking products to certain dumps. Items like these, especially mattresses, take decades to decompose, which means they will be taking up space in that landfill for a very long time. Donating old items would be considered doing the right thing, because not only are you saving the environment, you are also being a good person.

As human beings, we need food to live. But in many instances we usually cook more than we can eat. Sure, there can be leftovers, but they only last a certain amount of time in the refrigerator. A solution that already exists is the use of the compost bin. Many people who live in rural areas use the large outdoor bins, and put their compost in their own gardens and lawns. But not too long ago, multiple cities across Canada started a compost bin program, where citizens put all their leftover food and decomposing materials not in the garbage, but in a separate bin to be composted. This is a helpful program, seeing as we are reducing how much we throw in the garbage bins. Another thing to consider here is how the Zabbaleen people in Egypt got rid of some of their organic material: livestock. With garbage (including compost) everywhere in the streets of Garbage City, the Zabbaleen people have created a solution in which they use animals such as pigs and goats to clean up some of the organic material. Farmers in Canada can do the same, but they mostly feed their compost to pigs.

For places around the world like Guiyu and Mayapuri, where toxic landfills are harming the people and the environment, a solution could be that the western countries such as Canada, United States, Britain and France would lend some aid. Aid like medical care (vaccines

against certain diseases), clean water to drink (well building) and fresh food would all be very helpful. Western countries could clean them up a little, and help them at least get back on their feet.

These are just a few helpful steps that can lead to the slowing-down of the growth of our landfills, and the improvement of our air and water quality. Although, there is not much we can do about how much we consume, consumerism is something that really cannot be stopped. What we can do is become a more eco-friendly consumer, buying environmentally friendly products, and making sure that we recycle regularly and properly.

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