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Litter on Wheels: An Ocean Garbage Art Car

William J. LeConey
Gettysburg College

William H. Gibson
Gettysburg College

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Abstract

In the Fall term of 2018, Gettysburg College seniors Bill LeConey and Will Gibson created the world's first Ocean Garbage Art Car, by covering an old Ford truck with plastic bottles (and other trash commonly found in our oceans), to raise awareness about anthropogenic pollution in our seas. Since the 1950's, plastics have been an essential and ubiquitous commodity in nearly every society on the planet. Plastics find their way into just about every aspect of our lives - from water bottles and cell phone cases, to even advanced medical equipment and space shuttles - it's no secret how prevalent plastic is. Unfortunately, an overwhelming majority of the ≈ 450 million tons of plastic produced annually ends up in our oceans, posing a substantial threat to our aquatic life and the ecosystems they reside in. Much of this waste coalesces into gyres called garbage patches - some as large as countries - floating within the water column, and harming the tranquility of the environment they are intruding on. Several environmental art forms similar to our Ocean Garbage Art Car were studied and compared to give a more in depth background on our issue. Many other artists have utilized ocean trash, but ours is a one of a kind. An urgent call to action must take place to cleanup our oceans and to stop the excessive waste of plastic before irreversible repercussions occur. It is our hope that the Ocean Garbage Art Car created in the ES 400 seminar will help raise awareness about this dire issue threatening our planet as we know it.

Keywords

Plastics, Art Car, Ocean pollution

Disciplines

Art Practice | Environmental Studies

Comments

Student capstone paper written for ES 400: Senior Seminar.

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Bill LeConey & Will Gibson

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Abstract

In the Fall term of 2018, Gettysburg College seniors Bill LeConey and Will Gibson created the world's first Ocean Garbage Art Car, by covering an old Ford truck with plastic bottles (and other trash commonly found in our oceans), to raise awareness about anthropogenic pollution in our seas. Since the 1950's, plastics have been an essential and ubiquitous commodity in nearly every society on the planet. Plastics find their way into just about every aspect of our lives - from water bottles and cell phone cases, to even advanced medical equipment and space shuttles - it's no secret how prevalent plastic is. Unfortunately, an overwhelming majority of the ≈450 million tons of plastic produced annually ends up in our oceans, posing a substantial threat to our aquatic life and the ecosystems they reside in. Much of this waste coalesces into gyres called garbage patches - some as large as countries - floating within the water column, and harming the tranquility of the environment they are intruding on. Several environmental art forms similar to our Ocean Garbage Art Car were studied and compared to give a more in depth background on our issue. Many other artists have utilized ocean trash, but ours is a one of a kind. An urgent call to action must take place to cleanup our oceans and to stop the excessive waste of plastic before irreversible repercussions occur. It is our hope that the Ocean Garbage Art Car created in the ES 400 seminar will help raise awareness about this dire issue threatening our planet as we know it.

Introduction

The invention of plastic has vastly transformed human society. We frequently use plastic for a variety of purposes, just a few of which include packaging, transportation, and manufacturing. Plastic is so ingrained that most people consume or use plastic in one way or another pretty much hourly, if not even more often. This hasn't always been the case, as plastic production only began in the 1950s, but despite this fact it is hard to imagine a world without plastic. Once we started using plastics they spread quickly, and their usage continues to be on the incline. Of the estimated 9.6 billion tons of plastic created, over 40% is disposable, and almost half was produced in the last 15 years. (Treat and Williams 2018). While plastic is a valuable commodity in many ways, this unprecedented usage is unsustainable due to the fact that plastics harm or kill millions of marine animals each year. Humans around the globe produce 448 million tons of plastic annually. It is impossible to say exactly how much of said plastic reaches the oceans, but only a small portion is recycled. This means that the rest either will be placed in landfills or discarded as waste, which will most likely ultimately reach the oceans (Lebreton 2018).

One of the biggest reasons why plastic runoff into the oceans is a serious issue is that plastics are not biodegradable. No one is entirely certain how quickly it breaks up, and estimates range between 450 years and never (Treat and Williams 2018). For that reason, this problem has been worsening, and has the potential to do so continuously for as long as we continue to allow plastics to be introduced into our oceans.

Researchers first discovered accumulating plastic waste in Sargasso Sea, which is located in the North Atlantic, in 1972. By 2001, plastics in areas of the Pacific Ocean

had reached such a concentration that they outweighed zooplankton by 6 times (Kaiser 2010). A plastic surveying study conducted in the Pacific and published earlier this year found that at least 79,000 tons of plastic were floating in the area known as 'The Great Pacific Garbage Patch,' a number which exceeds prior estimates significantly (Lebreton 2018).

When plastic is introduced into the ocean a number of factors impact it. Winds and currents can move plastics in certain directions, and sun and temperature fluctuations can cause plastics to break down into smaller pieces, and ultimately down to microplastics. Some pieces may settle on coastlines, and some may eventually sink (Lebreton 2018). Currents play an instrumental role in the dispersion of ocean plastics, particularly in the case of gyres. Gyres are circular oceanic currents that are driven by wind, and usually have quiet centers (Kaiser 2010). These gyres have the ability to attract and retain massive amounts of plastic. The most famous instance is easily the Great Pacific Garbage Patch, but experts believe other patches exist or are developing in the North Atlantic, South Atlantic, Indian Ocean, and South Pacific (Kaiser 2010). In these areas, plastics are present at the surface, within the water column, and often inside the digestive systems of the animals that reside there.

Once plastic debris is introduced, it can cause harm to ocean ecosystems and animals in a myriad of ways. Many types of animals that rely on the ocean can be harmed or even killed by plastics. Ingestion and entanglement are the two most common causes of animal deaths to plastic. Additionally, since it does not decompose, plastics will simply persist in the ecosystem for a very long time. These plastics can accumulate and wash up on beaches or simply float in the water column. This has led to

many different types of marine animals being harmed. Both mammals and seabirds have been known to ingest microplastics polluting the ocean, which can cause perforation, ulceration, reduced appetite, and in many cases can lead to the death of these animals (Monteiro et al 2018). In islands in the Atlantic Ocean, evidence of plastics have been discovered amongst seabirds' gastrointestinal contents (Monteiro et al 2018).

These plastics are flowing in from a variety of sources, 80% of which are land-based, and 20% are water based (2015 Ocean Conservancy). Some land-based sources include uncollected plastic blown into rivers and streams by wind, beach litter, sewage effluent, and plastics that escape waste management systems around the globe. The water-based plastics are comprised of litter from oil rigs, piers, passenger and freight vessels, and the fishing industry (2015 Ocean Conservancy). The variety of sources indicates just how difficult this issue will be to manage, since plastics so easily and relentlessly can enter the system from just about anywhere. There is no known short term solution to the issue of plastics in the oceans, and mitigation efforts can only go so far. In order for real improvement to occur, the only fully effective solution is for plastics to be steadily phased out of use in society.

In order to mitigate the ocean plastics issue, we will need to make significant changes to the ways we produce and consume plastic materials. For instance, more than 40 percent of plastic produced in the world will only be used once. It is estimated that 8.8 billion tons of plastic runoff into oceans each year, an amount that is almost impossible to fathom (Treat and Williams 2018). The necessary changes in this case should not be as extensive as the changes necessary to vastly reduce carbon

emissions. This is because world's entire energy system is not predicated upon plastic as is the case with carbon, and furthermore there aren't any plastic-deniers who willfully ignore the existence or causes of oceanic plastic pollution (Treat and Williams 2018). Despite this fact, the issues laid out here have not yet been mitigated, and excessive amounts of plastic wastes flow into the world's oceans every hour.

There are more than a few reasons why plastic pollution is extremely detrimental to the ocean ecosystem. First and foremost is the fact that the presence of plastics, particularly in higher densities, can lead to the mortality of a variety of aquatic wildlife. It's estimated that millions of marine animals are killed each year as a direct result of plastic pollution, and more than 700 species are known to be affected (Treat and Williams 2018). The two most common ways that plastics kill animals are through entanglement and ingestion. In the case of entanglement, types of plastic netting relating to fisheries are generally the most common culprits. These can entangle pinnipeds, turtles, seabirds, and more (Monteiro et al 2018). These entanglement events can lead to reduced movement ability, restricted blood flow, scarring, strangulation, and/or death for these animals. This is a serious enough issue that discarded fishing equipment was ranked as the single most dangerous type of plastic in our oceans (Platt 2016). Once waste is broken up into very small microplastics, they are ingested by many animals, most frequently mammals and seabirds. Plastic ingestion can cause a variety of issues such as perforation, ulceration, and loss of appetite (Monteiro et al 2018).

Similar forms of environmental art

While we embarked on our own project to raise awareness about an environmental issue, we also conducted research on this art category and found some other examples of art created using discarded plastics.

Alvaro Soler Arpa's *Vida Toxicica* (Toxic Life) is an example of a piece that uses similar themes to raise awareness about this issue. Arpa created a series of sculptures using the actual skeletons of marine creatures and filled the empty cavities with various types of plastic waste (plasticpollutioncoalition.org 2017). While one of the goals of Arpa's work, like our art car, was to raise awareness about the issues surrounding excessive plastic usage, he also went a bit further. Evolution and renewal are also prominent themes, as Arpa tried to imagine and create some creatures that had evolved to cope with the presence of plastics.

Richard and Judith Lang are a married pair of artists that have dedicated their careers to curving plastic-based pollution. They have turned their attention to a section of Kehoe Beach on the Point Reyes National Seashore. They collect discarded plastics from a small area of said beach and use them in art sculptures. They have stated that one of their goals is for these works to be worth enough that everyone is motivated to collect discarded plastics.

Another instance of a piece that employs the use of lots of plastic is *Bristol Whales* by Sue Lipscombe. This sculpture was created using willow and about 70,000 plastic bottles (Chilton 2016). The piece, like ours, highlights the threat oceans and their creatures face from excessive usage of plastics in human society. The massive sculpture features a whale formed from willow, which originally was meant to be life-

sized but ultimately reduced for practicality purposes. The whale rests in an ocean of wave formations, which are formed from thousands of plastic bottles. (Chilton 2016).

Methods and Materials

Finding an Art Car

An Art Car is defined by Berkeley, California native and Artist Harold Blank as 'A theme-based totem, a shrine on wheels' (Kannapell 1999). In addition to coining that definition, Blank also credits himself with creating the first art car, which was a 1965 Volkswagen Bug which he adorned with coins and various fake money as a hoist against American consumerism (Grimes 1992). There is truly a vast variety of types of art cars that vary in both theme and type of car used. In 2016 for instance, American contemporary artist John Baldessari created an art car out of a BMW race car that was subsequently entered in a race at Daytona (BMW Group 2016).

After an in depth search for a suitable and affordable car around the borough of Gettysburg, the Head of Facilities, Jim Biesecker reached out to us about two trucks the facilities department happened to have in their fleet of work cars. Among the two vehicles was a 1998 burgundy Ford F-250 XL, which caught our eye. Mr. Biesecker stated to us that the college no longer had a need for the vehicles, and offered use of one of them to us for our project. Eagerly and thankfully, we accepted his kind offer to us, and we took the F-250. For legal reasons brought on by the College, we were not permitted to drive the truck or even possess the keys... so the truck was to be placed out in the back of the Stone Lot for decoration.

Materials Used

Approximately 434 plastic water bottles were accumulated over the course of the semester for decoration from our respective fraternity houses. Among the water bottles were additional plastic items such as plastic bags, chip bags, candy wrappers, straws, 6-ring can holders, cups, and more. Dozens of tubes of the super industrial strength adhesive “E6000” was used to adhere every single plastic item to the car (Figure 1). The pattern of gluing the water bottles went as follows: Since the glue took a few minutes to hold, the bottom row of bottles had to first be secured and lined up properly before doing any other gluing. This allowed for the glue to set in and secure every row above it (Figure 2). The bottom row of bottles was the most time consuming and tedious part of the gluing process, but once in place, made the rest of the gluing far easier (Figure 3).

The Art Car Exhibit and Afterwords

Our Ocean Garbage Art Car is to be on display starting Friday, December 7th, at 8am, and is to be removed and repossessed by facilities Monday, December 10th, at 12pm. It will be mainly featured during the senior capstone presentations on the evening of Friday, December 7th. It is our distinct hope that the school authorizes us to continue to use our Art Car for other environmental related events around campus for the remainder of the academic school year. Student run organizations such as GECO have already reached out to us about collaborations in the spring semester!

Artistic Vision

On the first day of class for ES 400 with Professor Platt, we watched a short movie called *Wild Wheels*. The movie digs into a very little known about car culture in popular society, but nevertheless contains interesting and unique artistic imagery and

individual stories from the “cartists”. This movie intrigued us, and struck an interesting note in our heads when applying the idea of an Art Car to an environmental studies seminar at Gettysburg.

The vision of an ocean plastic themed art car arose after thinking about our worlds biggest environmental issues - the issue of plastic litter combined with a fully operating car became very concrete in our heads. As a partnership, we collaborated on what we envisioned our art car to look like, and the concept of covering an entire car primarily in plastic bottles (among other ocean trash debris) took the lead vision in our minds. We agreed that a certain level of awareness must be raised to encourage both knowledge and action on this planet threatening issue, and creating an Ocean Garbage Art Car would be the perfect instrument to do so.

Research

After we decided that we wanted the goal of our project to be the creation of an art car, we next had to consider a theme. We began by brainstorming serious environmental issues that we shared an interest in. We came to an agreement that plastic pollution in the world’s oceans is one of the most serious issues, and that we could put this on display using our selected medium of an art car.

Our next step was to begin background research on the issues surrounding plastic production, pollution, and introduction into the planet’s oceans. We began gathering scholarly articles to be used as sources for our research paper. We focused on a variety of angles, including but not limited to plastic runoff, the impact of plastic pollution on marine ecosystems and organisms, and the processes that lead to the breakdown of plastics and the formation of vast garbage gyres. The ultimate goal of this

research was to become educated on the causes and impacts of plastics in oceans, and to be able to articulate these effectively. We believe that our ability to inform people about the facts regarding plastics in marine environments will accompany our art car effectively, allowing us to be better able to raise awareness about the issue.

While we embarked upon our own environmental art car endeavour, we also did research about other similar projects. We want to be able to draw connections to other art cars along with other environmentally conscious forms of art in general. We also hoped to draw some inspiration for our own creation from these works. Ultimately, once we complete the decorating process we hope to compare and contrast our completed art car with other art cars, and possibly with other forms of art that have themes concerning oceanic plastic pollution.

Logistical Hurdles

Along the way of carrying out this Art Car project, we experienced a litany of hurdles, ones that were unique to the theme and goals of our project. Early on, we knew that time was a major finite factor in conducting the project. In order to be approved for the project, we reached out to the Head of Facilities at Gettysburg College, Jim Biesecker, and scheduled a logistics meeting. During the meeting, we discussed with Jim (in addition to Professor Platt who was overseeing the conversation) “Do’s and Don’ts” with our Art Car project, as well as valuable insight obtained from the last Art Car project completed by seniors 6 years ago. Jim advised us to reach out to Head of Space Scheduling, Cathy Zarrella, to begin the process of locking down a campus space for our Art Car on presentation day.

We both knew that obtaining the car before the artistic process began would be one of the biggest hurdles of all to clear. We each applied, and got approved for a \$500.00 grant from the College. \$1,000.00 in total was at our disposal for the purchase, registration, insurance, and potential towing of a vehicle, as well as materials and other smaller expenses we might encounter along the way. Selection of the car in the beginning was highly difficult and proved to be slightly problematic, as getting the right vehicle for this project could take form in one of two ways:

- 1) Finding and purchasing a driveable / running car that either of us could drive and have ownership of (the title would be in one of our names). If this route were to be selected, we would have to temporarily add the car to a family insurance plan, in addition to any other processing fees.
- 2) Finding and purchasing non-drivable / non-running car. This option posed a different set of pros and cons as compared to the above option. Towing the car would be required anytime we needed it transported around, creating an added fee. However, the lack of driveability in this vehicle would mean the sale price of the car would generally be less than a driveable one, and it wouldn't need to be added to a family insurance plan.

With a stroke of good luck, we didn't have to exploit either of these tedious avenues of obtaining our vehicle. Amazingly, Jim Biesecker connected our team with Eric Richardson in the facilities department, who had two early 2000's Ford trucks owned by the school. Since the College was planning on sending them to a scrap yard, Eric offered one of them to us for use for our project. We quickly accepted this benevolent offer of a fully running "free" car. Gettysburg College will remain the

proprietor of the burgundy F-250 during the entirety of the assembly process and presentation.

Artistic Process

The materials used for the artistic process consist primarily of plastic bottles that we have been collecting since day 1 of this assignment. Assembly will take place in the back section of the Stone Lot, an on campus parking lot next to the facilities building. There, we will hot glue our plastic items on the entire car, covering all the burgundy vehicle paint with our bottles. This will give the truck a “bubble effect”, giving it a much voluminous appearance as we cover it in garbage. Plastic bottles will not be the only items covering the outside of the vehicle, as we have selected other common ocean litter such as ghost fishing gear and styrofoam debris to be included on the car as well. All of these items together will give our truck a magnificent appearance, and we hope it’s message on ocean garbage will be visually compelling.

On presentation day, our fully completed Ocean Garbage Art Car will be on display in front of specialty dining on West Lincoln ave, on the sidewalk. An informational plaque will be available for curious onlookers to read before and after the presentation, containing facts about both the vehicle itself and human overconsumption of plastic.

Discussion / Impact of our art car

Prior to undertaking this project, we had heard quite a bit about plastics and the issues they posed for our oceans, but we had never fully considered their prominence in our day-to-day lives. It was only once we started hunting for plastic to use for our project that it’s ubiquitousness became fully clear, as it has been extremely easy to get plastic

from nearly any consumable packaging, food related or otherwise. In fact, it has been extremely difficult to find a single piece of packaging, food or otherwise, that did *not* use plastic. Aside from aluminum cans, we could not think of a single type of container or packaging that we have come across that did not use plastic in any way. As it turns out we were incorrect, even aluminum cans have plastic. Pretty much all cans today are colored and have brand logos on them. These cans are made with toxic dyes and a thin plastic film for a coating (Ocean Crusaders 2015). Overall this experience has better illustrated the scope of the problem.

For a variety of reasons, it's not very possible to entirely stop all litter and waste from reaching our oceans. When nearly every type of said litter contains some amount of plastic, as has become clear to us while collecting materials and researching during this project, it is going to be hard or even impossible to curb this issue. Since we can never fully stop the flow of litter and debris to our oceans, the only way to solve the problem is to change the debris. As long as plastic remains in use for nearly all products as we have found, this issue will continue and worsen. The only true remedy will come when society rethinks its use of plastic.

Plastic is extremely convenient, and we use it all the time. In these ways the issue compares nicely with the other portion of our project, the automobile. Cars, like plastics, are ubiquitous, convenient, and damage the environment. As previously mentioned, the only way to curb the plastic problem in our oceans is to phase it out of use. Climate change looms as a significant threat to the planet's ecosystem, and combustion engine cars are a direct contributor to carbon emissions. Like plastics, gasoline-powered vehicles need to be phased out of use in society in order to avoid ecological

catastrophe. Some of the themes we've learned in this course have illustrated the path to meaningful improvement in this category. Electric and autonomous vehicle technologies can be combined to potentially give us greener vehicles. Vehicles certainly pose a more tangible and direct threat to the environment, but we need to similarly reevaluate the way we use plastic as a society.

Conclusion

Now that it's all said and done, we can confidently say how happy we are with the outcome of our Ocean Garbage Art Car. We worked tirelessly for weeks doing research and gaining the authorization to have an Art Car on campus. We got very lucky in obtaining our truck, and the hardest part about the decoration process was keeping warm in the sub freezing temperatures. We were very happy with our presentation during the end of semester holiday party, and look forward to our future with this particular Art Car, and perhaps more. Carrying out this project was a highly unique experience that put an exclamation point on our senior year fall.

Figures

Figure 1 - E6000 Super Adhesive Glue



Figure 2 - Gluing the bottom row of bottles first



Figure 3 - Gluing the bottles



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