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Research Project Proposal

Convenience at nature's expense: The emergence of the "throwaway" culture in 20th century Australia and its impact on the Victorian marine ecosystem

Abstract

The birth of the "throwaway" culture in the mid 20th century is partly responsible for various detrimental environmental changes taking place within the world's oceans. Growth in consumer desire for convenient, disposable products has seen a large increase in waste, in particular, plastic waste. Inevitably, a lot of this finds its way to the marine environment with often severe consequences for aquatic life. Examining the impact of this phenomenon at a local scale, this project aims to establish a link between the increased use of disposable consumer goods in Victoria, Australia since the 1950s and degradation of aquatic species along the Victorian coast.

Key Words

"Throwaway"culture, Marine ecosystem, Great Pacific Garbage Patch, Consumerism

Description of the Project and Scientific Background

The mid 20th Century (following the end of the Second World War) brought about a large increase in consumerism, and saw the birth of what is now commonly described as the "throwaway" culture. In essence, this culture is defined by its penchant for the use of disposable goods with very short active life-spans (often even single use). A handful of examples include plastic bags, plastic bottles, plastic cups, cigarette lighters, disposable razors, take-away containers and the list goes on. According to Charles Moore of the Agalita Marine Research Foundation[1], approximately two-million plastic bottles are purchased every five minutes in the USA. Obviously, being so cheap and so easily replaceable, these disposable items get thrown out en masse. This is not just a western phenomenon. It happens all over the globe; including in poorer countries where access to safe drinking water is often limited and the need for bottled water is a necessity.

A large majority of the waste generated by the "throwaway" culture is comprised of plastic. Plastic, being made from petroleum, is a man-made material that cannot be disposed of by natural means. Furthermore, plastic is photo-degradable but not bio-degradable which means that over time it will break down into smaller pieces, but will never disappear on its own accord. Only when plastic is incinerated, releasing poisonous toxins to the atmosphere, can it be completely destroyed. As a consequence, there are significant environmental problems when this modern-age garbage finds its way into our rivers and subsequently our oceans. Charles Moore points out that it is now a common occurrence to find bottle caps and other small pieces of plastic inside the corpses of fish and birds

[1] http://coastalcleanup.wordpress.com/2010/10/02/charles-moore-on-the-legacy-of-the-throwaway-culture-ted-feb-2009/ [accessed 25/10/10]

who have mistaken the small plastic morsels for food[2]. Some observers have even pointed to the fact that this also has implications on human health, with some fish perhaps being too toxic to eat.

Ever since humankind has been sea-bound there has been an awareness of an area of the Pacific Ocean known as "The Great Pacific Garbage Patch". The NOAA Marine Debris Program[3] describes this as an area of the Pacific Ocean where warm currents from the South Pacific crash into cool currents from the North Pacific creating a convergence of the debris carried by these currents. Traditionally this area consisted predominantly of organic flotsam and jetsam such as wood which had been washed into the ocean from land. It is understood that navigators avoided sailing through this area because of the potential damage inflicted by this waste upon their vessels. It wasn't until the chance discovery of a sailing expedition, sailing off its usual course in the mid 1990s, that it was discovered that this "patch" was now mostly comprised of small, buoyant pieces of plastic. Plastic of all sorts, but worst of all, much of it had been photo-degraded to plankton-sized dimensions. To get here the waste must start at the coast. It is therefore not only a remote problem known as the "The Great Pacific Garbage Patch"[4] but also a local problem common to nearly all of the world's coastlines, seas and oceans.

Whilst the environmental ramifications of the "throwaway" culture are global, the focus of this project will be to examine the impact that our fondness for the convenience of disposable products has on a local scale. In this case, the project will focus on the Victorian coastline in the south-east of Australia and will seek to link how the change towards "throwaway" consumerism in this region has impacted upon the local environment; aquatic life in particular.

Objectives of the Project

Focusing on consumer behaviour patterns over the 20th century, this project aims to establish a link between the increased use of disposable consumer goods in Victoria (a Southern State of Australia) and degradation to the local marine environment. A key objective is to develop an argument towards the need to influence consumers to return to the concept of purchasing longer-life products as well as influencing designers to think about alternative, more-degradable materials for their products.

Methodologies and Sources

Being a contemporary issue, the available options for both primary and secondary research sources are expected to be abundant and valuable. There will essentially be two key aspects to this research. The first will examine the making of the "throwaway" culture and its reasons for existence in the local area of focus, whilst the second will discuss scientifically the impact of this culture on the local coastal ecosystem as well as a small discussion on global implications. The proposed methodologies for each are discussed below:

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[2] http://www.algalita.org/AlgalitaFAQs.htm [accessed 1/11/10]
[3] http://marinedebris.noaa.gov/info/patch.html [accessed 1/11/10]
[4] This is not the only "Garbage Patch" in the world's oceans but it is certainly the largest. It is one of five oceanic gyres where currents meet and effectively act as litter traps. These include the North Pacific Gyre ("The Great Pacific Garbage Patch"), The South Pacific Gyre, The North Atlantic Gyre, The South Atlantic Gyre and the Indian Ocean Gyre.

The making of the "throwaway" culture

To gain an understanding of how the culture developed in Victoria, the project will look to both primary and secondary sources. As the major paradigm shift occurred during the 1950s and 1960s it is envisaged that there will be opportunities to interview former supermarket operators to gauge their opinions on what was the drive behind the push for disposability of consumer items. In Victoria, and Australia in general, this approach is simplified by the fact that the supermarket industry has been mostly dominated by two-large supermarket chains (Coles and Woolworths) over many years and the people who would have had the responsibilities for sourcing products for these supermarkets would have been doing so, knowing they were appealing to the desires of Australian consumers at the time.

Another fundamental piece of research will to be to delve through old catalogues and perhaps the advertising sections of local newspapers to observe how products were advertised. Papers from inventors will also be examined to determine purpose behind design. In undertaking this exercise, the project will look for evidence that inventors and retailers were urging consumers to purchase products that they would then have to throw-out and re-buy. This was a mentality that was shared by many inventors of the time and was based upon the philosophies of William Painter, the inventor of the metal bottle top in 1892, who believed that a "successful product was one that created the need to buy it repeatedly"[5]. It will be interesting to see how inventors and retailers sought to exploit the public in this way, and how advertisers of the time sought to promote such inventions as essential for the common good.

A less important but no doubt interesting side-task may also be to interview septuagenarians (or others of similar demographic) to gauge an opinion on the degree to which the influx of disposable products in the mid-20th Century either enriched or impoverished their existence. This is simply a method for understanding whether this culture of convenience was valued by people who had grown up with the older methods of consumerism.

Environmental impacts

A number of approaches will be taken to research the environmental impacts of the "throwaway" culture upon aquatic life in Victoria. These will include:

- Reviewing scientific journal articles and other publications from marine research institutes or universities to obtain a scientific understanding of the impacts from plastic waste and other contaminants found in anthropogenic waste streams on the coastal marine environment.
- Analysis of select product consumption data for Victoria with an aim to provide evidence of temporal increases in the use of disposable plastic products locally.
- To gain a local perspective, interviews will be conducted with:
  - **storm water treatment operators** to discuss quantities of plastic washed into storm water system during rain events and how the systems have had to be updated over the last 60 years to handle new forms and growing quantities of waste entering the system;
  - **residents of coastal areas** most affected by plastic waste to understand their attitudes towards disposable products;

[5] This is a quote from a booklet that was produced for an exhibition at Roca Gallery Barcelona in 2010 entitled "Articles that have changed the world". This quote is found under item number 35 (the disposable Gillete razor) in the booklet.

  - **councils** of coastal Victorian towns that have introduced measures to reduce the impact of the "throwaway" culture by using measures such as "plastic bag free towns" (this is becoming more common amongst Victorian coastal towns) to minimise the amount of waste entering the marine environment;
  - **fishermen** and **fishmongers** to establish whether they have noticed the ingestion of waste by local fish species; and
  - on more of a global perspective, experienced **Ship captains** who may be able to explain the extent to which "The Great Pacific Garbage Patch" and other oceanic collections of waste have changed from organic to inorganic waste.
- Remote sensing images of the coastal areas to determine whether there has been a visible build-up of plastic and other inorganic wastes historically (depending on what types of images are available as well as the temporal range of available images).
- Perhaps a little far from the scope, but a product life-cycle analysis could be conducted for a number of disposable products and the products they have replaced (e.g. plastic coffee cups versus ceramic mugs) to determine whether the disposable alternative may in fact have some other environmental benefit in the form of, for example, reduced embodied energy, or whether it is just an environmental nuisance in general.

Expected Results

Assuming that the sources prove fruitful, it is expected that this project will be able to provide a clear and logical link towards modern "throwaway" consumerism and increased environmental degradation to the marine ecosystem in Victoria, Australia. The conclusion may well be a grim one, however it is possible that this research could have some use in inspiring improved standards of recycling and even investigations into whether another paradigm shift in product development can be forced in which we return to the use of longer-life products, constructed from robust and degradable materials.