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Outline a current environmental issue that requires redesign. Explain how you will solve this issue over the duration of your future design career. Underline the tools and approaches you will use and discuss how and why

Word count: 2313

Plastic in the textile industry

Definition of:

Sustainable- causing little or no damage to the environment and therefore able to continue for a long time. (Dictionary. Cambridge, 2019)

Ethical- being in accordance with the rules or standards for right conduct or practice, especially the standards of a profession. (Dictionary.com, 2019)

Introduction

“Today our understanding of nature has dramatically changed. New studies show that the oceans, the air, the mountains and the plants and animals that inhabit them are more vulnerable than early innovators ever imagined”

(McDonough and Braungart, 2002, P. 26)

Plastic waste is a major problem worldwide. The oceans are becoming more of a threat due to the plastic waste issue. How can one small thing cause such an impact on our home, what we call planet earth.

“Today over 300 million tonnes of brand-new virgin plastic are manufactured annually worldwide. There’s now more than a tonne of plastic littering our planet for every person on earth, which means plastic isn’t just a billion-dollar industry, it’s a billion-tonne polluter.”

(Adidas.co.uk, 2019)

Due to the masses of plastic being made worldwide, a staggering ‘300 million tonnes’ (Adidas.co.uk), 2019) is being produced annually and for every person on earth Adidas states that there is over a tonne worth of plastic being littered individually. It is not only causing a problem for the environment but also nature. How can we use plastic that is already there and make our textile

industry more sustainable while working with these materials? Both plastic and contaminated water from plastic and chemicals/ dyes used are getting into our oceans and polluting them. Within this essay, problems and causes will be highlighted to find a solution for these issues and redesigning them to have less of a negative impact on the environment.

"In September 2015, the General Assembly adopted the 2030 Agenda for Sustainable Development that includes 17 Sustainable Development Goals (SDGs)". The 17 goals are in place to *"leave nobody behind"* according to (un.org, 2019). Under the 17 goals, I have decided that goal '11', '12' and '14' are applicable to the plastic waste problem that the world is facing. Below are titles and goals for a more sustainable world by 2030.

Goals:

-Goal 11: Sustainable Cities and Communities

Make cities and human settlements inclusive, safe, resilient and sustainable

-Goal 12: Responsible Consumption and Production

Ensure sustainable consumption and production patterns

-Goal 14: Life Below Water

Conserve and sustainably use the oceans, seas and marine resources for sustainable development.

(un.org, 2019)

ADIDAS

Adidas have launched a new range of clothing and footwear to 'help' tackle plastic waste, especially in the oceans. *"They are also designed to save the oceans, with a woven upper made from upcycled plastic trash."* (Adidas.co.uk, 2019). By designing clothing and footwear with plastic trash from the sea, the plastic that is already in the world is not being added to, but minimised. They state on their

website that *"if the oceans die, we die"*. Which is most likely to happen if the plastic production carries on. There is a lot of speculation of plastic waste and the ocean. So, what is the impact of textiles having on this? Where does plastic waste come in with textiles?

"Plastic is everywhere you look. It's in food packaging, electronics, cars, toys, credit cards and clothes" (Adidas.co.uk, 2019). Not only the textile and fashion industry products are playing a part in this problem but also the packaging that the products from this industry are in. Most packaging could possibly be biodegradable if redesigned in a functional way. *"Most packaging can be designed as biological nutrients, what we call products of consumption"* (McDonough and Braungart, 2002, p. 105). If the packaging can be designed so that they biodegrade, then why cannot different materials in the textile industry?

Clothing brands such as 'BOOHOO', 'PrettyLittleThing' and 'InTheStyle' use single use plastic for their clothing deliveries. That single use plastic is then thrown away and left to fill up in our seas. One way to tackle this reoccurring issue is to redesign this. Deliveries from such companies should only allow a minimum of orders each calendar year. This will reduce the amount of plastic waste. Also, the packaging that these orders in should be redesigned so that they are environmentally friendly and sustainable. One example of this is using fish scales to create an environmentally friendly packaging which can then be recycled and reused again without causing any harm to the planet.

A 23-year-old student, Lucy Hughes studying product design at the university of Sussex had created *'a bioplastic that breaks down in just 6 weeks'*. Made entirely from fishing waste according to (World Economic Forum, 2019). The fishing waste includes scales, algae and crustaceans. The bioplastic is called "MarinaTex". *"It requires little energy to make"*.



Figure 1: Lucy Hughes, MarinaTex holding the biodegradable plastic. (MARINATEX, 2019)

In the video clip, it states that the bioplastic:

- Doesn't leach toxins into the environment
- it is stronger than a plastic bag
- can be used in a variety of packaging
- Can even be eaten.

The clip also states that the figures of bags that can be produced from one Atlantic cods waste is a massive 1,400. *"From the 50 million tonnes of fish by products each year from the fish industry"* (World Economic Forum, 2019). This shows that by reusing and recycling from the fish remains, instead of bringing more useless, waste in to the world we are getting rid of fish waste but also by doing that we are eliminating both the need and urge to bring more plastic into the world. It shows in the clip how little energy it takes to produce mass amounts of the biodegradable plastic which is a sustainable solution in the right step for making the world a more green, healthy environment.

"From bags to single-use packaging, MarinaTex has a variety of different applications. The

transparent film is well suited for packaging and will biodegrade in a soil environment” (MarinaTex, 2019). This shows that it had many uses and could replace many products that still rely on plastic that is unsustainable.

‘Cradle to Cradle’ states that ‘A biological nutrient is a material or product that is designed to return to the biological cycle- it is literally consumed by microorganisms in the soil and by other animals’ (McDonough and Braungart, 2002, p. 105) This suggests that biodegradable packaging such as the ‘MarinaTex’ that is shown above has benefits not only to the consumer whom uses it but also the environment that it will be decayed into and later on composed into.

A lot of these clothing brands use a wide range of materials such as PVC on their websites.

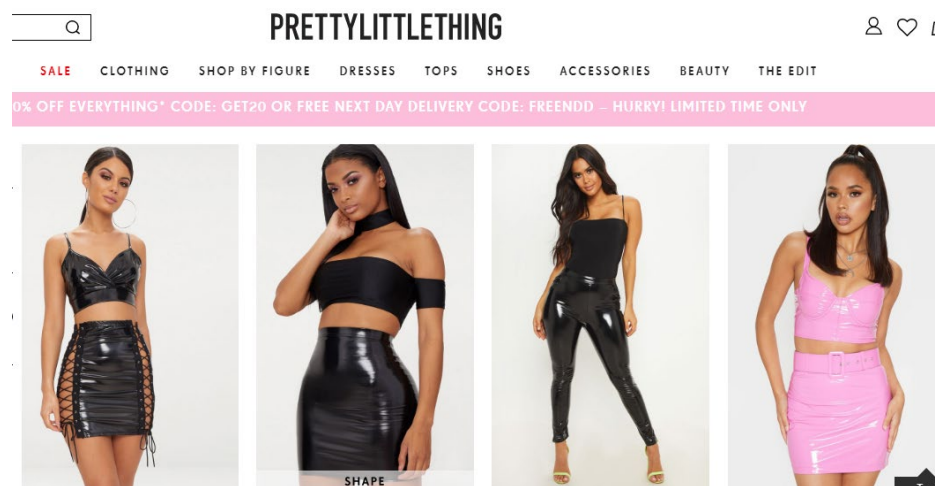


Figure 2: Prettylittlething PVC (PRETTYLITTLETHING, 2019)

Instead of bringing more plastic into this world and damaging our planet, clothing especially should be redesigned. One idea of this to take into the future of my design career would be to bring plastic that is already on our earth into the textile and clothing industry and reusing it that way. The designs of the clothing with the plastic in it would be a very rare design and a limited edition so that would reduce the chance of it being a ‘fast fashion’ item and when the trend of this clothing piece is over, the amount getting wasted would not be as significant as if it were a mass-produced product. The

clothing could last for ages and then it wouldn't be a waste of plastic if it is being worn and used, and if not, it can be passed down or given to charity shops to be reused and recycled in that sense.

According to Investopedia.com Fast fashion is a term describing clothing designs that move quick to meet new trends. It *"allows mainstream consumers to purchase trendy clothing at an affordable price"* (Fast fashion, n.d).

"In the 1920s and 30s plastic as a material really took off with industrial production of PVC (polyvinyl chloride) and polystyrene. As industry and the general public saw how light, cheap, strong and infinitely versatile plastic could be, it became the go-to material for pretty much anything you could think of".

(Adidas.co.uk, 2019). Due to the materials, especially PVC, being so cheap, they will be on high demand especially if it is trending. It states that in the 1920's PVC most importantly was on high demand meaning that the years to come, more and more plastic would be produced in the textile industry. As you can see above, *Figure 2* shows that in 2019 PVC is still popular and on demand especially in the clothing industry.

Green design states that both human and wildlife hormone systems are facing abnormalities caused by phthalates which is found in PVC which could lead to fertility problems. *"some supermarkets are discouraging the use of PVC because of the concern over the chemicals which arise during its manufacture and disposal"*. (Mackenzie, 1997, p.101-102). This shows the harm and how hazardous PVC is that if it is not safe for packaging then what are the consequences on human bodies, wildlife and the environment. It is crucial that fashion and textile industry get materials such as PVC redesigned for a more sustainable impact on the environment and planet. An example of this would be Pharrell Williams.

The use of designing clothes with plastic in them that isn't harmful to the body is one way to combat the issue of plastic in the ocean. Clothes are long lasting and can be handed down and reused in Charity shops. Pharrell Williams had created a clothing range in a collaboration with Parley for the Oceans and 'G- star 'to produce a clothing range called 'G-Star raw'. Just like Adidas to help combat the plastic waste in the ocean crisis. Parley are:

"THE SPACE WHERE CREATORS, THINKERS, AND LEADERS COME TOGETHER TO RAISE AWARENESS FOR THE BEAUTY AND FRAGILITY OF OUR OCEANS AND COLLABORATE ON PROJECTS THAT CAN END THEIR DESTRUCTION"

(Parley, 2019)



Figure 3: G-Star Raw, Jumper made with plastic waste

By doing designing clothing and shoes using ocean plastic waste it is reducing the amount of plastic that is in oceans and also creating jobs, clothes, opportunities etc. Adidas.co.uk states that *"less than*

10% of global plastic waste is recycled” but that can change. By doing projects with plastic clean up organizations such as (the ones that Pharrell and adidas worked with) within the textile and fashion industry, you are not only helping reduce the amount of plastic that is being dumped but also bringing something creative and meaningful back into the world. *“Finding markets to reuse wastes can also make industries and customers feel that something good is being done for the environment”* (McDonough. W, Braungart. M 2002). Pharrell had done this with his clothing line. He designed clothes that use plastic waste from the ocean to create a more sustainable solution to just making the clothes by themselves. By adding the plastic, the clothes have their own identity and story behind them. It is also helping the planet at the same time. They range from tops, jumpers and jackets to denim jeans and shorts. The clothing wear all have different marine and ocean designs on and to them. one jacket covers the face and has been designed to look like a submarine.

To conclude, the issue that I am focusing on that requires redesign for the duration of my design career is to work with more sustainable textiles that include plastic; but it is a biodegradable plastic. I have taken inspiration from my research conducted in this essay. In the future I would look for alternative materials which are not harmful to the environment and can be reused and recycled. The materials must not use much energy and require little chemicals, just natural fibres. Fruits such as pineapple are being used instead of leathers which could be a great substitute for PVC as in perfect world that would be discontinued. In the future I would want to work with partners that recycle goods and bring into the textile and fashion industry sustainably and organically. From my research, I have gathered thoughts on if I were to use plastic that it would only be to help the environment and recycle it in terms of it being used again for a good use. Plastic for future design would be banned. Only to use what plastic is already on this planet instead of new plastic being created. Clothing

especially, when packaged up would be using sustainable and biodegradable material, such as the example above of the “MarinaTex”.

“Air, water and soil do not safely absorb our wastes unless the wastes themselves are completely healthy and biodegradable” (McDonough and Braungart, 2002, P. 55). This along with other research in this essay backs up the point of a better environment simply by using ‘Biodegradable’ plastic for packaging uses, clothing and anything in the textile industry that relies on plastic. I think that it is a good step to a clean, green and sustainable planet with less plastics ending up in the oceans and landfills. If they do end up in these places due to them being biodegradable, they will not cause any harm to the environment and wildlife as the plastic would be edible and degrades within 6 weeks. Furthermore, I think harmful plastics with toxic and harsh chemicals should be demolished for my future design career and new, biodegradable plastic should be the new way forward. Not just for the planet but for our futures. I think more textile companies and clothing stores should get more involved in activities that help clear up their textile waste, especially from the ocean. As a practitioner in my future design career I would promote this and make sure everything from little to large is being done to decrease the amount of waste made and I am using sustainable, ethical, biodegradable materials within my work.

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