

Research in Context: Outline a current environmental, political, or social 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.

BA 1 Surface Pattern

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Deadline :10th December 2020

Word Count: 2,431 (excluding bibliography)

An important environmental issue that needs addressing is sustainability. As Brundtland reports, "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (Cabezas, 2012). Waste is a major problem within the fashion industry "It is reported that fashion and textile industry is the second most polluting industry in the world after the oil industry" (Muthu, Gardetti, 2016). In addition to this, "Clothing consumptions produces 1.5tonnes of CO2, x household x year. The equivalent of driving 6000 cars" (WRAP, 2012,pg 10). This essay will discuss sustainability within the fashion industry and the impact the industry has on affecting the environment. The design stages of a garment and what designers are doing to reduce textile waste will be analysed. Moreover, how this discussion will help me review my design methods in working sustainably with my approach to surface pattern for fashion.

Throughout a career in design, consideration is needed to apply sustainable practices, especially in the fashion industry. As a designer, I want to learn about present approaches and any current scientific evidence to help reduce textile waste and always put sustainability at the forefront of my design practice. In examining the current life span of garments this can help us understand each part of the processing stage and the element that has the most negative impact. Therefore, highlighting the areas needing alternative design methodologies to be applied to the industry as a whole.



(Figure 1: Life stages of a garment)

Figure 1 illustrates the direction of a typical garment from fibre production to end of use. The first section applies to suppliers who produce the materials and carry out the distribution of merchandise to the retail market. Such materials like, 'Synthetic fibre are made from plastic such as polyester are a non-efficient material as in its generic form is not

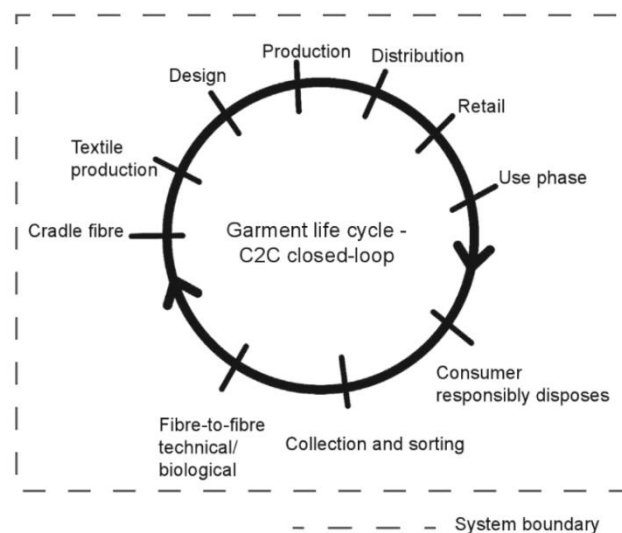
biodegradable' (Deopura, Alagirusamy, Joshi and Gupta, 2008). The second stage is where the consumer has purchased the item and is utilizing it. Lastly, the garment is disposed due to new trends so it encourages the customers to buy new clothes, when they could still be in good use. A report published by WRAP found that "the average UK household owns around £4,000 worth of clothes – but around 30% of clothing in the average wardrobe has not been worn for at least a year, most commonly because it no longer fits" (WRAP, 2012). Unfortunately, high fashion garments out date the trends quickly due to colour, patterns, and style constantly changing. "Consumers and manufacturers are driven by the fast-paced cycle of seasonal products" (Gwilt and Rissanen, 2011).

The life stages of garments is finite, there is a beginning and end within the chain when a garment often ends up being disposed in landfill. The common approach to being more sustainable is called 'cradle-to-grave,' which decreases waste but does not fully get rid of it altogether. Albert Einstein states that 'The world will not evolve past its current state of crisis by using the same thinking that created the situation' (Braungart, McDonough and Stenfert Kroese, 2009). An improved sustainable approach that has been developed, is cradle-to-cradle.

The cradle-to-cradle closed system is what, architect, William McDonough and chemist Michael Braungart, present for an environmentally friendly safe cycle to reduce waste. Walter R. Stahel is also credited for using the term in his research paper *The Potential for Submitting Manpower for Energy*. He conducted investigations into "utilization-related technologies such as the re-use, repair, recondition" (Tobla, 2001). Stahel states that "the product-life of existing goods save energy and prevent waste as compared to manufacturing new replacement goods" (Tobla, 2001). This relates back to what the word sustainability means in popular terms- "has come to mean long-term survival and wellbeing in general, both for human civilisation and the rest of nature" (AtKisson, 2010). The report brings forward a system that can be a full cycle. It demonstrates that companies/designers can see the cycle of a products life and have a key role to act responsibly to manage sustainable goods, based on social, ecological, and economic terms.

Within each company in the fashion industry, the methodology will differ. For example, the high street brand H&M are becoming more consciously aware by using "14% of H&M's raw materials from environmentally sustainable materials like cotton" (Amatulli, De Angelis,

Costabile and Guido, 2017). Furthermore, in H&M's annual report published in 2018, they will transition to 100% sustainable cotton by 2020. Whereas the competitor brand Zara, have a section on their website dedicated to aiming to source and create more sustainable items, for example, producing a collection made from raw materials. "We are developing programmes that recycling at all stages of the garments life cycle"(https://www.zara.com/uk/en/z-join-life-mkt1399.html?v1=1464710,2019). Unfortunately, the eco-edit they made from sustainable materials was a limited-edition collection, which does not solve the issue of sustainability if it is not continued and implemented into all clothes. All stages in manufacturing fashion has an impact on the environment, for instance, using natural fabrics like cotton are more environmentally friendly than synthetics, but are "grown using fertilizers and pesticides" (Russell,2012, pg38). The complexities of manufacturing and sourcing of materials affects the budget, selling, shipping, and supplying for a clothing product (Gwilt and Rissanen, 2011, pg27). Therefore, profit driven companies usually use less eco-friendly methods of manufacturing to save cost.



(Figure 2. Cradle- to-cradle loop system)

The cradle-to-cradle strategy, shown in figure 2, is a diagram of a sustainable business strategy that mimics the regenerative cycle of nature, in which waste is used to eliminate waste altogether. The process is that:

Waste is reclaimed and used again in the production of products of the same or higher value. They have made two streams, the first being the biological cycle which is nature that can be composed and the technical cycle that can be 'reused' within industry to create the same products again (Muthu,2015,pg 111).

This can make a framework to create a system to relate to the fashion industry, such as using it for fibres and materials to make it efficient and waste free. The method is sustainable and considerate for life in future generations. This refers to Derriad's writings in *Archive Fever: A Freudian Impression* that argues that Freuds hypothesis of the unconscious essentially changes the past. Also, about how we think of the future. This could inspire designers to implement this framework within their own practice. Derrida suggest in that the value of archives are a way of imaging the future (Derrida, 1996). This helps address in how designers look, think and redesign. For example, taking inspiration from different decades and looking into the historic past, for example, the 1970's era can help us build new contemporary fashion applying reference to the past and in the present.



(Figure 3. Mushroom outcomes for 'Mylo' leather)

Making fashion more sustainable is to think about how raw materials can be used with organic, recycled or substitute materials. Manufacturing biomaterials that can be put into place instead of animal and plant resources can have positive environmental effects. With an awareness of cradle-to-cradle, this approach has been applied by iconic fashion brands to engage in establishing high quality materials. The biotech company Bolt Threads have discovered the prospect of growing leather from the source of mushroom mycelium (Muthu, 2020, pg77). The Stella McCartney brand is now utilizing this design principle to make a fibre that efficiently and economically resolves the issue of textile waste. This material is called 'Mylo', a naturally formed material made from mushroom skin that feels and appears like animal leather. The bio-leather alternative is viewed as leather substitutes, and commercially possible to be mass manufactured (Muthu, 2020, pg78).

Many people associate leather with luxury but since the beginning I always wanted to approach things in a different way because killing animals for the sake of fashion is quite simply not acceptable. Working so closely with Bolt Threads since 2017 has been a career changing experience and I cannot wait to launch Mylo products to market in 2021- said Stella McCartney, Founder and Creative Director (Buisnesswire,2020)



(Figure 4. Stella McCartney Falabella tote bag made from 'Mylo' Leather)

Mylo is a breakthrough material that 'forms vast networks of threads that help recycle organic matter on the forest floor while providing nutrients to plants and trees'. (Stella McCartney, 2018). Stella McCartney is introducing artificial leather to her 'Falabella' tote bags, which are which are usually rendered from polyester. In 2018, Stella McCartney showed a selection of garments for the *Fashion from Nature* exhibition in the Victoria and Albert Museum, London, in the video following "The fashion industry can actually be in the future, be modern, be game changers." (Mccartney,2018). Similar to Mylo leather there are numerous biomaterials on the for front that are pushing the progress for biobased products. Producing these technologies will support a legitimate alternative to synthetic materials. A module that I have been undertaking called 'changemakers' introduces us to making our own biomaterial. Helping us understand impact with the work that we produce. This has given me hands on approach further down my career to practice creativity for aspiring progressive solutions to help the environmental issue of sustainability. Additionally, question what drives someone to repair something or to throw it away? And if they do throw it away where does it go?

Up-cycling is one method that can be used to re-fashion garments to create an item that is more sustainable and unique. Gwilt and Rissanen's book on sustainable fashion Amy Rosser reveals how to "source, make, use and last" and should be explored and shared by designers, researchers and consumers alike to make a more sustainable and ethical fashion industry' (as cited by Gwilt, Rissanen, 2011). Whilst learning and becoming aware of the problems in fast fashion it can make me as a designer work to find solutions on waste avoidance. Evidentially making effect choices to help the environment. There are programmes being broadcasted that show how items can be transformed whether they are household or fashion items.



(Figure 5. Image of Sarah Moore collecting items to re-use)

The BBC's Money for Nothing presented by Sarah Moore, features a variety of designers, from all over the UK, who love nothing more than turning old furniture or products into something new. 'Giving a new lease of life to homeware that might otherwise have been heading for the bonfire or landfill is good for the planet as well as pocket' (Moore and Treloar, 2018,pg2). Allwood Et All stated in 2006 'The trend for fast fashion has generated an exponential rise in the sale of fashion garments that are often worn too little, washed too often and quickly become discarded, with an estimated 30kg textile waste per person reaching landfill each year '(Gwilt and Rissanen, 2011, pg20) The figures of textile waste were taken again in 2012 with 40kg per person per year in the UK. (Fletcher, 2008) This shows us that the statistics are rising. The Surface Pattern Design degree makes me think

about sustainability and how we can help the environment but doing small things. Some students would be vegan for example only like to use natural materials the university offers alternative fabrics for us. This makes us question the advantages of natural fibres with 'the application of natural-fibre based composites is increasing rapidly' (Pickering, 2008). People are becoming more socially aware of the effects of textile waste and want to use more environmentally friendly fabrics. During the digitally printing process we try to use all the fabric, so none is worthless. But an alternative that the university has come up with is around the studio there are textile waste bins. This is so the leftover materials can be re-used or up cycled. Companies such as 'Freitag' have taken up this alternative approach to working in using local waste from silk weaving companies to re-purpose the materials for bags.

To conclude, the research and understanding on the literature sourced on the environmental issue of sustainability within the fashion industry, has highlighted methods and approaches that I could utilize in my future career. My ontology will change over the course of my practice and I will be continuing to update knowledge on ways to deal with the issue of textile waste. There is no definitive answer or way to solve textile waste, or the environmental challenges the world faces within the fashion industry, however, alternative options are now available in using plant fibres in place of animal fibres, as previously mentioned. The life stages of a garment is an approach to look at within my own design process when thinking about what fabrics to use. Consideration will be given to use ones that are environmentally friendly, or collect materials from charity, thrift and junk shops suggested by Sarah Moore, as she states they have more unique offerings (Moore,2018 pg17). Unlike like fast fashion, the garments will hold a 'story.' The narrative will be a part of the garments' design process and the reason why they are made in a specific way. Followed by, how the story benefits the customer "first framing the situation as it is, and then reframing it back to make things better...two types of stories- those that inform and those that inspire"(Beckham,Barry,2010,pg 151).

Additionally, think about how durable the fabric is so when it becomes 'in-use,' the life expectancy is longer. Much like when William Morris started designing, he wanted to focus on quality rather than quantity (Adams,2004 pg348). Finally, the end-of-life section is where

I can implement the up-cycling method to re-use materials to save them going to landfill. For my design career I intend follow In the footsteps of designers much like Neill Wragg, who creates "Luxurious bespoke luggage and bags up cycled from amazing fabrics with emotional stories"(Rasto,2018), and uses recycled materials. I intend to begin by having a 'depop' site that sells clothes that I have bought from second-hand shops and re-worked. My target market will be customers who want to up-cycle their old clothes (answering a client brief) to have a new lease of life. The clothes I will use will be pre-loved clothes, rejuvenated into something new. As a designer, I am influenced by the designers discussed, and will change the methods I will apply within the manufacturing process, which can make it more sustainable. Education and research will be a vital tool to understanding current environmental issues when producing my biomaterial in the changemaker module. This can be used and further developed as a solution to having a material that can follow the cradle-cradle strategy, assuming role of Stella McCartney with her use of mushroom leather.

Bibliography

Adams, J., Pendergast, T. and Pendergast, S., 2004. Encyclopedia Of The Victorian Era.

Danbury [Connecticut]: Grolier Academic Reference.

Amatulli, C., De Angelis, M., Costabile, M. and Guido, G., 2017. Sustainable Luxury Brands.

1st ed. Springer, p.157.

AtKisson, A., 2010. The Sustainability Transformation: How To Accelerate Positive Change In Challenging Times. 1st ed. Routledge, p.304.

Braungart, M., McDonough, W. and Stenfert Kroese, H., 2009. Cradle To Cradle. Random House, p.8.

Cabezas, H., 2012. Sustainability: Multi-Disciplinary Perspectives. Bentham Science Pub

Derrida, Jacques. Archive Fever: A Freudian Impression. Trans. Eric Prenowitz.

Chicago: Chicago, 1996. Print.

Deopura, B., Alagirusamy, R., Joshi, M. and Gupta, B., 2008. Polyesters And Polyamides. 1st ed. Woodhead Publishing, p.212.

Fletcher, K., 2008. Sustainable Fashion And Textiles: Design Journeys. 1st ed. London: Earthscan, p.96.ishers, p.pg 3.

Gardetti, M. and Muthu, S., 2016. Handbook Of Sustainable Luxury Textiles And Fashion. Singapore: Springer Singapore, Imprint: Springer, p.148.

Gwilt, A. and Rissanen, T., 2011. Shaping Sustainable Fashion. 1st ed. Routledge,pg20

Ikenobō, S., 1989. Ikebana. Osaka, Japan: Hoikusha.

Moore, S. and Treloar, D., 2018. Vintage Home. 1st ed. Kyle Books, p.2.

Muthu, S., 2015. Handbook Of Life Cycle Assessment (LCA) Of Textiles And Clothing. 1st ed. Woodhead Publishing,p.33 p.111.

Muthu, S., 2020. Leather And Footwear Sustainability: Manufacturing, Supply Chain, And Product Level Issues. 1st ed. Springer, p.78.

Pickering, K., 2008. Properties And Performance Of Natural-Fibre Composites. 1st ed. Woodhead Publishing, p.68.

Russell, A., 2011. The Fundamentals Of Printed Textile Design. 1st ed. AVA Publishing, p.38.

Tolba, M., 2001. Our Fragile World. 2nd ed. Eolss, p.1568.

Website

Figure 1 -Valuing our clothes report, WRAP, 2012 Pg 5

<https://wrap.org.uk/sites/files/wrap/VoC%20FINAL%20online%202012%2007%2011.pdf>

Figure 2- <https://www.dezeen.com/2020/10/08/mylo-consortium-adidas-stella-mccartney-lululemon-kering-mycelium/>

Figure 3. <https://www.dezeen.com/2020/10/08/mylo-consortium-adidas-stella-mccartney-lululemon-kering-mycelium/>

Figure 4.

https://www.farfetch.com/uk/shopping/women/stella-mccartney-falabella-tote-item-13233019.aspx?size=17&storeid=13344&pup_e=3337&pup_cid=206008&pup_id=13233019-791101013283105122101&utm_source=bing&utm_medium=cpc&utm_keywordid=120471866&utm_shoppingproductid=13233019-791101013283105122101&pid=google_search&af_channel=Search&c=287590127&af_c_id=287590127&af_siteid=&af_keywords=pla-4588399461693298&af_adset_id=1356797507042712&af_ad_id=&af_sub1=120471866&af_sub5=13233019-791101013283105122101&is_retargeting=true&shopping=yes&msclkid=9cfeefe09d6c1596023fb02e2f290d2e&utm_campaign=Target%20ROAS%20experiment%20-%20Shopping%3ABing%3AUK%3AEN%3ARegular%3A%3A%3AWomen&utm_term=4588399461693298&utm_content=Shopping%3ATote%20Bags%3AWomen

Figure 5. <https://www.bbc.co.uk/programmes/m000pyxn>

<https://www.zara.com/uk/en/z-join-life-mkt1399.html?v1=1464710>

<https://www.businesswire.com/news/home/20201002005326/en/Bolt-Threads-Partners-With-adidas-Kering-lululemon-and-Stella-McCartney-to-Introduce-Mylo%E2%84%A2->
October 02, 2020

<https://www.stellamccartney.com/experience/en/the-next-chapter-with-bolt-threads-mylo-material-rooted-in-nature/>

Secondary source - report Valuing our clothes report , WRAP, 2012 Pg 9)

Valuing our clothes: the evidence base', WRAP, 2012