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Outline a current environmental issue that needs 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 why.



Fig 1- Humans caught red handed, By Rhys Black,2021

Issue

This piece was created to highlight the struggle that the world faces as the human population grows, consequently leading to damage of the earth with waste and pollution. Industrialisation has created a common dilemma globally for designers when pursuing the ideation phases of product creation. However, there are ways that designers can improve the impact on the environment by using various design principles. For instance, more sustainable materials with more eco-friendly manufacturing processes. Companies need to be more cautious of multiple factors of designing and need to keep an open mind of the implications if these factors are not abided by. As consumers of products, we need to be mindful of the origins of products we invest in by researching the ethics of a company's products and materials used in them, e.g., recyclability. Additionally, as designers we need to actively ensure practises contribute to sustainability and ethical productions. Pollution is a colossal global issue which needs redesigning and will be the focus. As product designers, we play a large role in environmental wellbeing as every product or service needs designers. For example, a large company like Coca Cola would have a team of product designers to create the bottle which contains the drink to be sold. In fact, according to a

British marine conservation charity, Surfers for sewage, claim that Coca Cola is one of the main companies responsible for 65 per cent of branded beach pollution (EcoWatch, 2021).

Solution

Dieter Rams, a German designer, devised a design manifesto which all designers should consider during the ideation process of design. The manifesto specifies the importance of a product being long lasting and being environmentally friendly. He mentions how “Design makes an important contribution to the preservation of the environment.” (Jong, Klemp, Mattie and Rams). The interpreted underlying theory is that design should maximise the conservation of resources, decreasing the physical pollution created from a product. This also validates his view on how products should have a long lifespan, minimising the use of single use materials. “Unlike fashionable design, it lasts many years- even in today’s throwaway society.” The key section of this quote using the term ‘throwaway society’ iterates societal issues within our generation of consumerism. This could imply that Rams is suggesting that as a society of producers and consumers; we need to value the products we invest in while designers should be creating valuable products worth keeping and passing down to other younger generations, e.g., parents gifting accessories to their children for further use.

If all companies considered the factors of Ram’s Ten principles of design, this could help our environment by slowing down global warming by making products with sustainable qualities which are intended to be used for life. As consumers, we need to be increasingly mindful about where our products end up at the end of their lifecycle and to not be known as being a throwaway society. Possessing more knowledge on eco-friendly products is the way forward as a society and may make a notable difference to our planet.

However, Companies that produce food and beverages like Coca Cola, supply needs that are not intended for longevity. It is imperative for their designers to innovatively create packaging that is suitable for the environment. According to their website, “All our plastic bottles of 500ml or less appearing on store shelves in Great Britain are now made with 100 per cent recycled plastic” (Coca-cola.co.uk, 2017). This evidence shows that most large companies are reforming in order to promote recycling. However, this only applies for Great Britain, a minority in the global population. Additionally, the intentions may backfire as it further normalises the use of single use plastic which isn’t guaranteed to be recycled properly by the public or government. There are also questions with regards to still promoting a “throwaway” nature, discussed by Dieter Rams. Food corporations could use more alternative techniques by supplying reusable containers and packaging to prevent single use containers. Designers could also create more ergonomic packaging/containers with materials that do not include plastic; as there is difficulty in governance of plastic waste as consumption rises with accelerating production, which is supported by evidence that plastic flowing into the oceans is on track to double from 2010 to 2025 (Dauvergne, 2018).

This issue needs to be interpreted carefully by designers by using design thinking. Victor Papanek, an Austrian designer, was one of the first designers to tackle ecological and sustainable design (Scarzella, 2020). He was also an educator and author that wrote “Design for the real world: Human ecology and social change”. The book discusses the concept of

design being a tool to cater for the needs of consumers “Design must become an innovative, highly creative, cross-disciplinary tool responsive to the true needs of men. It must be more research oriented, and we must stop defiling the earth itself with poorly designed objects and structures” (Papanek, 1971). This ideology relates to Ram’s theory of valuing the products we design by investigating alternative ways to make a product which has less detrimental impact to the environment. This can be achieved by using eco-friendly materials which require more appropriate manufacturing processes for sustainable design. Papanek also mentions how designers have become a ‘Dangerous breed’. Papanek’s ideology refers to the impact created by automobiles, believing that designers have created a “new species of permanent garbage to clutter up the landscape, and by choosing materials and processes that pollute the air we breathe” (Papanek, 1971). Interestingly, Papanek chose to iterate the fact that the impact humans have not only affects our environment but also our own health. The noun ‘we’ communicates the consequences that is now faced by all people, which should be eye opening to all upcoming designers.

With regards to the theory of design thinking, car companies such as Tesla, have introduced electric cars. This has shown to be a highly more efficient substitute to normal petrol cars. Although the electric cars are not completely zero emission vehicles, the electric car is consistently superior to normal petrol dependant cars, in terms of CO2 emissions (Meier, 2021). We can infer those designers of electric cars still have a duty to provide a product that will eventually be completely pollution free as this is a step forward from the classic car. Moreover, as this technology popularises, there needs to be drastic changes towards petrol fuelled cars in order to achieve the desired results in pollution improvements. Currently, the general disadvantage to this product is accessibility. Due to the products youth in comparison to normal automobiles, not all petrol stations provide charging ports. Availability to charge the vehicles in public are more common within urban areas (Ayers, 2021). This is where designers would employ design empathy in order to understand the needs of a consumer. In this case, we can presume that many consumers would prefer the more common option as electric cars, although environmentally preferable, they are less accessible and more expensive than normal cars for consumers. Therefore, in pursuance of globalising this superior form of transport, cost and accessibility needs to be analysed. By investigating ways to use cheaper materials will decrease the cost, potentially leading to rises in production for rural locations and less wealthy areas.

The education system within design strategy can also be responsible for the concurrent issues with sustainability. According to the European commission ‘As much as 80% of a product’s negative impact on the environment is finalised at the design stage’ (Fractory, 2022). Design stages are responsible for these high figures, and it is of high importance that the environmental damage is minimised during this early process; in order to ethically work to design for sustainability. Nigel Cross also discusses the desire for design subjects to be implemented in school curriculum to establish the benefit of sustainability. “Design is a third area of knowledge and should be taught alongside science and the humanities. Design is a language and system of codes formed through designers’ ability to locate the relationships between the artificial environment and human needs” (Cross, 1982). Similarly, Cross’s theory can closely relate to Papanek’s as he also believed that it is essential to present the ethos of good design. The bad habits of designers are practiced and set as examples for the

younger generation. He claimed 'Designers have become a dangerous breed. And the skills needed in these activities are taught carefully to young people'. As the generation of designers positively reform, we should raise awareness to the younger groups.

However, design for sustainability is no trivial task. The issue that forms around pollution also stem from economic systems. For example, linear economy follows a straight-line pattern where resources are extracted from natural sources. These materials would then be transformed into products which are processed for shipment to consumers worldwide. After these products have reached the end of their lifecycle, the products are taken to disposal sites for extraction. Unfortunately, the majority of materials are not extracted correctly, apart from precious metals (Fractory, 2022). To tackle this, we must work towards a different system that allows waste products to be reused to be redesigned into new products from the recycled material. This is called a circular economy. The image below is an infographic to illustrate the concept.

The Shift Towards a Circular Economy



Fig 2- Circular economy, <https://fractory.com/design-for-sustainability/2022>

Conclusion

Over the duration of my future design career, there are numerous ways I can pursue success while tackling solutions of pollution. The various approaches that have been mentioned are critical for achieving a sustainable ethos. As a designer, a common principle that is followed is 'Reduce, Reuse, Repair, and Recycle'. Thankfully, as technology advances we can recycle many more materials in an efficient manner, making the four 'R's' easier to accomplish when designing. A wider range of materials such as, wood, plastic, glass, cardboard, and rubber can now be processed to make an abundance of new products. For example, scrap wood which has reached the end of its life cycle has a processing sequence where the material can be cut down using a shredder which is used to make other products, depending on its future use. Companies such as Ikea have many furniture products which use chipboard wood. Chipboard is made from small granulated recycled wood which is bonded with saw dust and resin to create a completely new recycled material. An advantage to this solution is that the recycled material is very cheap to buy and use for a future product. This

alternative has been highly accessible for many years for its efficiency. Although this material is suitable for many products, not all furniture companies introduce materials such as chipboard into their interior products. The reason being that chipboard is cheap and is not seen as appropriate for bespoke furniture. Furniture designers that choose to use expensive woods such as timber would have to make more careful decisions. Inspiration from established designers such as Rams, can help us designers make decisions on materials that are suitable for a certain purpose. Creating a product that would require high quality materials should be generated with the intention that will be used for many years, being passed down generations and not wasted. Morals of design is of paramount importance to my design career, implementing the principles of sustainability to whatever design discipline I choose.

The issue of pollution has ultimately worsened due to the lack of research into what can be used instead of harmful pollutants such as plastic. Plastic has an easier manufacturing method than most other materials which is how the issue began. Don Norman, a psychologist of business and design; aids designers by creating seven principles of design that illustrate the steps to allow difficult ideation tasks to become more straight forward.

1. Use both knowledge in the world and knowledge in the head
2. Simplify the structure of tasks
3. Make things visible: bridge the gulfs of Execution and Evaluation
4. Get the Mappings right.
5. Exploit the power of constraints, both natural and artificial
6. Design for error
7. When all else fails, standardize.

(Norman, 1990). Normans' principles can show that taking pride in working towards improvement is an etiquette designers should possess, rather than using simplified processes that ultimately cause damage.

The steps that Norman includes such as 'design for error' are common practices for most designers to obtain the best results. However, this technique may not be used correctly in every aspect of design. For example, designs for public interaction such as public recycling bin systems could be improved by using design for error. The UK have public bins which are not all intended for recycling and cannot always store as much litter as it receives. Due to human error, from designers, bins become overfilled where litter falls on the street. If I were a designer for public bins, I would investigate the problem by analysing the number of bins in proximity. Judge how many more bins to locate nearby to prevent this. In more populated areas like city centres, I would increase the capacity. As a designer, I would also have to take inspiration from other designers in different areas of the world. For Instance, the image below displays the public bins in Amsterdam, Netherlands.



Fig 3- <https://www.expatica.com/nl/living/household/recycling-in-the-netherlands-133948/>

As you can see, the bin system seems to be slightly more effective as there are separate bins for the required waste. The bins are far apart yet in close enough proximity to prevent laziness of the public. The bins have a large appearance while having underground space to deposit greater amounts of waste which also prevents litter from escaping.

Overall, taking inspiration from great designer philosophies is imperative for me to improve as a designer. They allow me to analytically make decisions based on the impact they could have on our environment in the future. Exploring other current designers and policies can give us all a better insight into what to change about our current ideas. Whether our ideas work well in comparison. Minimising the raw materials, we use for unnecessary items will decrease production which hopefully can result in a decrease in deforestation. This can only be achieved through education to the public and to the new generation of designers. If valuable materials need to be sourced for products, they should be ideated with the intentions of longevity, ending our wasteful nature as a population is a must.

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