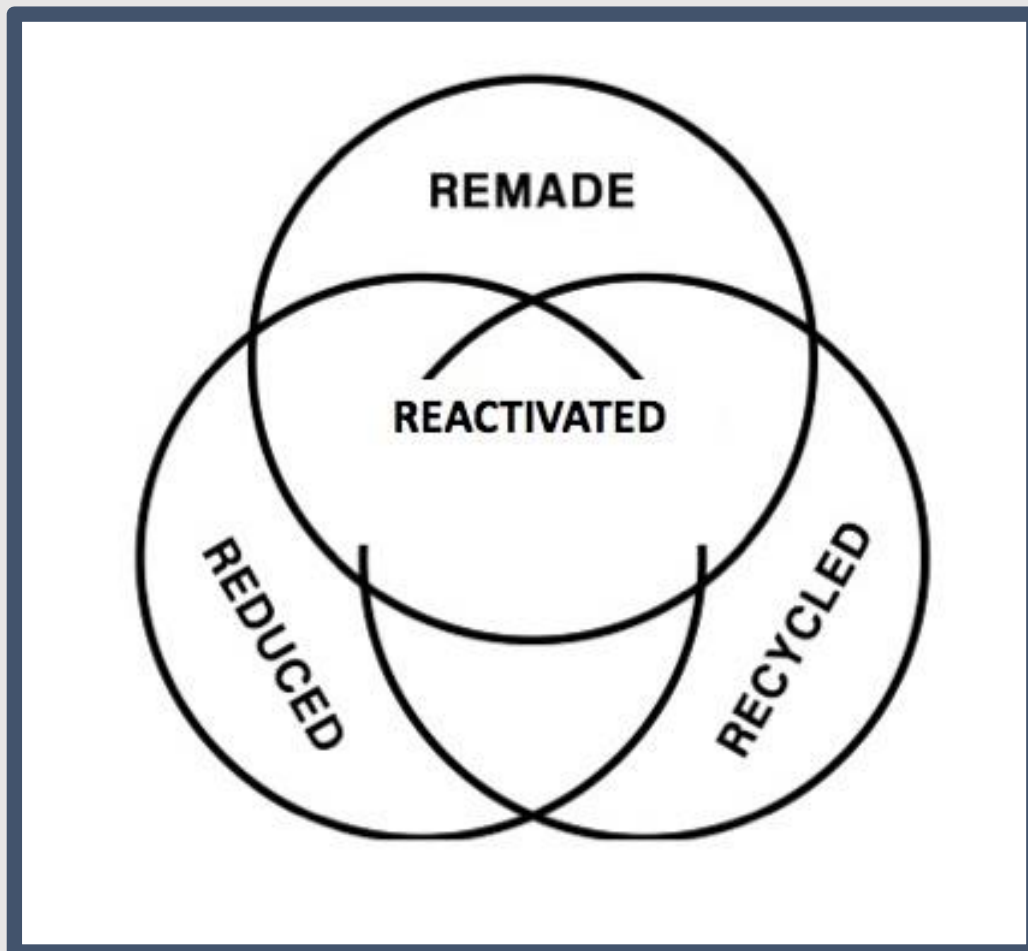


Research Proposal

THE REACTIVATION OF FASHION WASTE THROUGH
EXISTING STRATEGIES AIMING TO SLOW FAST
FASHION WHILST FULFILLING HUMAN NEED FOR
“ENCLOTHED COGNITION”



Natasha Rose Dodds

UWTSD Year 2

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1.0 Introduction

The impacts of climate change are being felt worldwide and are having very real consequences to national economies, human life, biodiversity, and terrestrial/marine environments (Kappelle, Van Vuuren and Baas, 1999; Meehl *et al.*, 2007; Solomon, 2007; Moss *et al.*, 2010; Le Quéré *et al.*, 2015; Smale *et al.*, 2019). There are a number of industries in the forefront of debate and political policy around this issue, but there is a serious lack of attention to fashion waste and the multi-billion-pound fashion and textiles industry (Ellen MacArthur Foundation, 2017; Environmental Audit Committee, 2019) currently ranking second worst for pollution next to oil and gas, just above the meat and dairy industry (Moorhouse and Moorhouse, 2017; Uk Parliament Environmental Audit Committee, 2019).

In 2015, the adopted Paris agreement highlighted the need to keep global average temperature rise to well below two degrees Celsius this century, and as close to one point five degrees Celsius as possible (Allen *et al.*, 2018; Masson-Delmotte *et al.*, 2018; UNFCCC, 2018a; Uk Parliament Environmental Audit Committee, 2019). The UN fashion Charter was born at COP24 in December of 2018, an industry led initiative backed by 43 companies, which aligns the fashion industry with the Paris Agreement, setting a course towards Carbon neutrality by 2050 (UNFCCC, 2018).

Waste and Resources Action Programme (WRAP) estimates that as small as a ten percent increase in second hand sales could cut carbon emissions per tonne of clothing by three percent and water use by four percent if it extends the garments life by fifty percent, delivering clear environmental benefits (WRAP, 2017). Point 11 of the UN Fashion Charter, which was formed at the Conference of the Parties, edition 24 (COP24) in Poland stated to achieve carbon neutrality there was a need to

“Establish a closer dialogue with consumers to increase awareness about the GHG emissions caused in the use and end-of-life phases of products, building towards changed consumer behaviours that reduce environmental impacts and extend the useful life of products” (UNFCCC, 2018)

This research aims to collect quantitative data, through an intervention workshop, to understand whether educating the public on strategies such as upcycling, DIY repair and clothes sharing or exchange can help to reactivate fashion waste, whilst still satisfying consumers psychogenic needs.

Furthermore, the research aims to support existing literature that recommends the upscaling of upcycling to commercial level and contribute insight towards ambitions for a circular fashion economy, and decreased carbon footprint for the industry.

1.1 Fashion Pollution

The fashion and textile industry to date uses 98 million tonnes of non-renewables annually and contributes to around 10% of annual global GHG emissions (Ellen MacArthur Foundation, 2017). More than that of all international flights and maritime shipping combined. It's been implied that if the industry does not find new solutions, these figures are set to triple, with demand for clothing rapidly growing, in turn contributing catastrophically to global temperature rise.

A recent study by the United Nations Framework Convention on Climate Change found that by 2050 the fashion and textiles industry could use more than 26% of the carbon budget associated with a two-degree pathway (UNFCCC, 2018a), indicating there is a drastic need for change and awareness to be brought about rapidly by industries with heavy carbon footprints.

1.2 A Circular Fashion Economy

The Ellen MacArthur foundation, in a recent report, suggested that a new model for the industry to work as a circular economy should be based on four ambitions, shown below in figure 1, providing opportunities for new economic models and technologies to emerge within the industry.

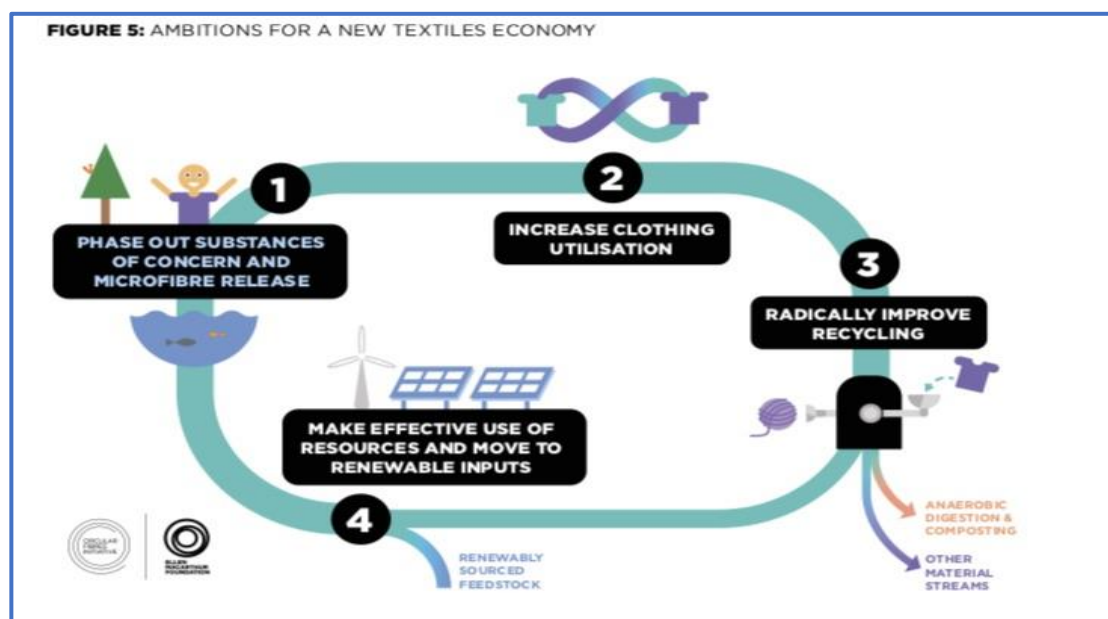


Figure 1 A diagram showing ambitions for a new textile economy, from the report by Ellen MacArthur foundation, 2018

The second ambition suggests steps towards increasing the utilisation of clothing, as part of the process in achieving a sustainable industry going forward and there appear to be a number of innovative recycling models emerging in the general population around the concepts of sharing, but little comparative analysis of which methods might prove useful on a retailer/industry level.

Some of the operations include; clothing libraries, upcycling and repair cafés, vintage shops, online auction sites such as eBay and peer to peer vintage/used clothing sales on sites such as “depop” and the various second-hand clothing stores and rentals/exchange’s (Tyler *et al.*, 2017; HOC Environmental Audit Committee, 2019). Suggestions are implied of the benefits to retailers possibly implementing these methodologies, in turn boosting the second hand/ fashion waste market (HOC Environmental Audit Committee, 2019).

1.3 Secondary Clothing Market

Fast fashion has aided the growth of a second-hand fashion industry through its disposability, recycling and marketing and the second hand garment industry has become a great addition to sustainability, with charity shops and the textile recycling industry providing essential ecosystem services and currently displacing about 8m tonnes CO₂ per year globally (HOC Environmental Audit Committee, 2019). Charity donations rates to shops such as Oxfam, Salvation Army etc remain high, but 300 thousand tonnes still end up in household bins with around 80% incinerated and 20% sent to landfill where they release methane (Sajn, 2019).

A report for DEFRA by Oakdene Hollins and Salvation Army identified that 1812 k tonnes of domestic textile products and 53k tonnes of used products entered the secondary UK textiles market annually. Of this quantity 1165kt were disposed of by consumers and industry, leaving 397KT or 6kg per head of population per year, unaccounted for (Morley *et al.*, 2006) which indicates a large proportion of clothing and textiles are being stockpiled or left in consumers wardrobes inactive.

The average amount of times that a garment is worn, before being discarded or relegated to the back of wardrobe has decreased by 36% when compared to data from 15 years previous, and it is estimated that certain garments are discarded after just 7–10 wears, with 70% of lifespan still remaining (Han, Tyler and Apeagyei, 2015). A huge 60% of German and Chinese citizens profess to owning more clothes than they feel necessary (Ellen MacArthur Foundation, 2017).

It is therefore presumable that these hoarded items could be utilized given correct incentive and potentially upscaled through implementation of such services by retailers.

1.4 Fashion Psychology

When regarding the idea of transforming the way, clothes are used, to break free from an increasingly disposable nature, an often-overlooked area of perspectives is the pleasure factor/dopamine release associated with fast fashion, which may need addressing further when regarding consumer attitudes. Figure 2 shows the different motives for purchasing clothes.

An article found on fashion psychology introduced the term “enclothed cognition” which describes the systematic influence that clothing can have upon the wearers psychological processes and defined that this entailed the co-occurrence of two individual factors; the symbolic meaning of the clothes and the physical experience of wearing them (Adam and Galinsky, 2012)

The researcher herself is aware of this effect and so is evincing to find a solution that allows the wearer to instead feel the benefits of “enclothed cognition” through the reactivation of clothing waste.

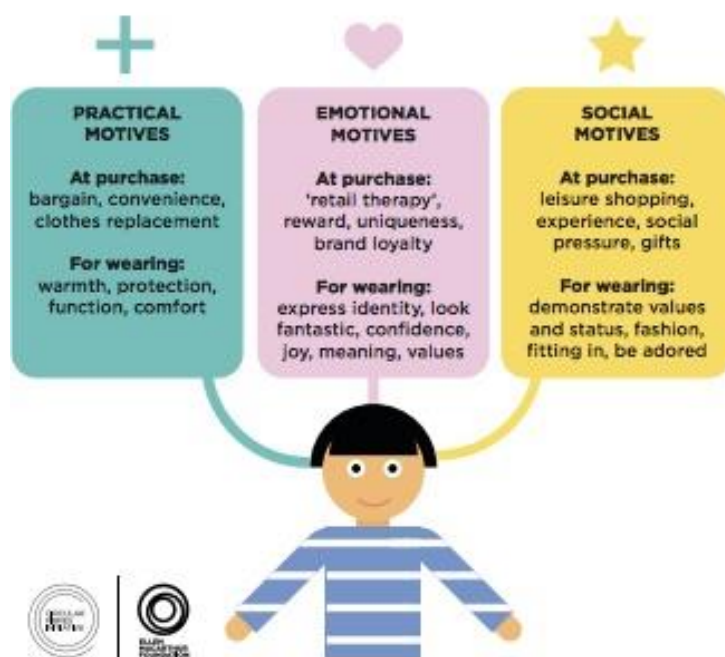


Figure 2 A diagram showing that the relationship between people and clothing is complex - highlighting motives - by Ellen MacArthur Foundation 2018.

1.5 Research Aims

This work will look into reactivating fashion waste through existing strategies including Upcycling, DIY repair and Clothing Exchange. The investigation will test ways of extending the life of fast fashion items, whilst keeping the psychogenic pleasure obtained by consumers from new garments, contributing research towards a circular fashion economy and decreased carbon footprint for the industry. The research will be complete by 2020 and aims to look into methods to;

- Understand whether educating the general population on methods of extending the life and style of the items could help lengthen the lifespan of short-lived fashion items
- Look into research to understand how the population could break free from the disposable nature of fast fashion clothing
- Identify which of the aforementioned routes, such as the Upcycling of clothing, Styling advice or DIY repair, could produce the longest lasting results, in turn reactivating fashion waste
- Understand whether this fulfils the societal “Enclothed cognition” psychogenic need for expression through clothing.
- Bring about Awareness of the harmful effects of fast fashion and the inherent need for change.

1.6 Hypotheses

H.1

The implementation of local fashion events, teaching skillsets in upcycling, DIY repair and styling will help to encourage consumers to re-use fast fashion and slow down impulse buying, extending the current usage duration of items?

H.2

Upcycling will prove the most successful method to encourage consumers to re-use fast fashion and slow down impulse buying, when compared to their current usage duration of items?

H.3

These strategies applied to fashion waste can provide the same positive psychogenic effect to consumers as purchasing a new garment.

2.0 Literature Review

2.1 The Rise of Fast Fashion and Linearity

The term Fast fashion is a contemporary term, used to describe a new accelerated business model, involving increased demand for varying fashion collections seasonally with fast turnaround and lower prices, that has been evolving since the 1980's (HOC Environmental Audit Committee, 2019).

Historically, since the 1800's and the invention of the sewing machine, fast fashion has been gaining momentum (Breward, 2003). Initially, runway shows inspired fashion and these shows were primarily restricted to the likes of designers and buyers, but in the late 1990's, with the rise of internet, these shows became more of a public phenomenon with photographers and press eagerly in attendance. The availability of imagery published incited retail stores such as Topshop and H&M to produce restricted designs frequently, imitating high fashion (McKinsey and Company, 2017). The demystification of the fashion process and the insurgence of fast fashion was born.

A report by Bhardwaj and Fairhurst 2010 reviewed the literature available around the changing dynamics of the fashion industry since the 1990's, drawing attention to the dramatic changes, coupled with rising environmental concerns and found the nature of fast fashion increases disposability and upscales the need for small batches, with more frequent transfers of stock, and larger variance in style required for "floor ready" merchandising. This new model only enhanced the wholly linear direction of the industry. Figure 3 highlights the dramatic rise since 2000.

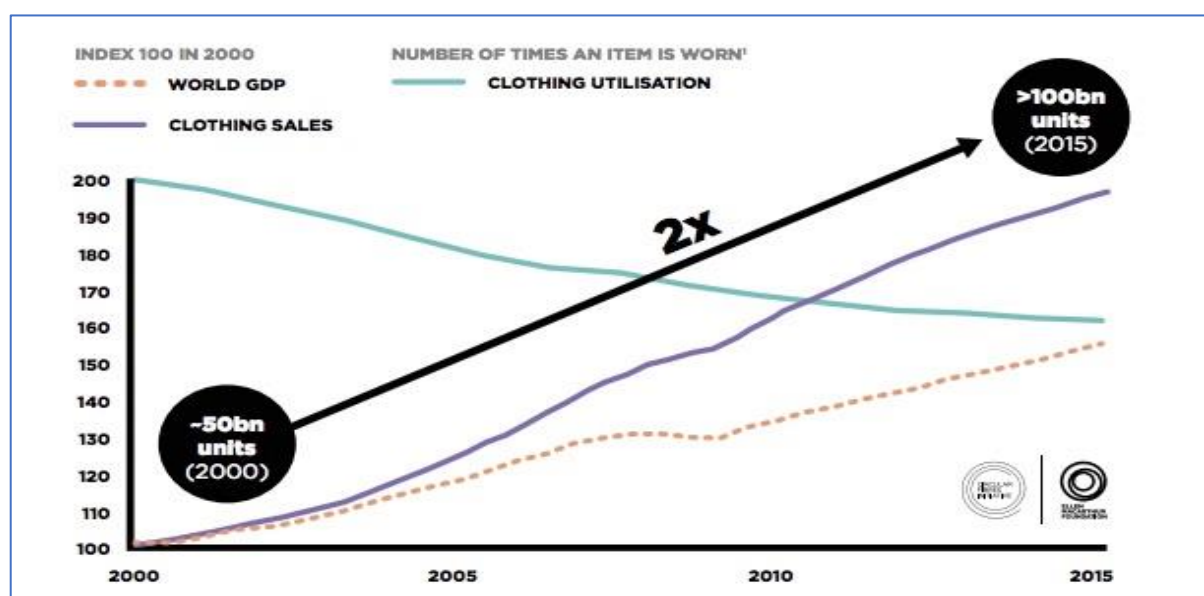


Figure 3 Graph showing growth of clothing sales and decline of utilisation since 2000 – Ellen MacArthur Foundation, 2018

2.2 Fashion Pollution and the Current Textile system

The sustainable clothing action plan (SCAP) 2020 was launched after The Waste and Resources Action Plan (WRAP) 2012, a pioneering report, looking at the environmental impact of clothing which in turn provided a collaborative framework for fashion companies to reduce their water, carbon and waste impacts (WRAP, 2017). Some targets agreed upon by SCAP are outlined in figure 4. To achieve these goals and the move to a more circular economy a number of aspects of the industry needs realignment.



Figure 4 A diagram showing targets agreed upon by SCAP for 2020 against a 2012 baseline

The current textile system functions in an almost completely linear way, with large quantities of non-renewable resources extracted to produce fast fashion items which are often disregarded after a short period of use and then sent to landfill or incinerated (HOC Environmental Audit Committee, 2019). Currently only 1% of material used to produce clothing is recycled into new clothing, representing a massive loss of materials yearly and incurring high costs associated with disposal, estimated to deduct 82 million GDP per annum from the UK economy (Ellen MacArthur Foundation, 2017).

This “take make and dispose” model has various negative environmental and societal impacts and the statistics really put this into perspective, with production of plastic based textiles using 342 million tonnes of oil per annum and textile farming including cotton production requiring some 93 billion cubic meters of water annually (Ellen MacArthur Foundation, 2017). The production of 1kg of cotton requires 2700 litres of water per single t-shirt or 10,000 litres for a pair of jeans (UNFCC, 2018b) and additionally, 200,000 tonnes of

pesticides and 8 million tonnes of fertilisers are needed in the agricultural process annually to produce the cotton (Ellen MacArthur Foundation, 2017).

Twenty percent of global industrial waste water is attributed to the dyeing and treatment of textiles which in turn causes negative health impacts upon workers suffering poor work conditions with low level protection from chemical substances (Ellen MacArthur Foundation, 2017). Poor disposal facilities leave pollutants and chemicals thrown into local rivers and oceans untreated. Additionally, it has been estimated that around half a million tonnes of plastic microfibres are shed during the washing of plastic-based textile, from fabrics such as polyesters, nylons and acrylic. A single 6kg domestic wash has the potential to release as many as 700,000 fibres, having serious health implications upon both the environment and the global population (HOC Environmental Audit Committee, 2019).

The previous 20 years has seen a colossal rise in fashion waste, with changing dynamics forcing retailers to desire low costs in design, quality and speed to market, in turn inciting a rapid turnover of garments. Currently 85 % of textiles end up in landfills, where most could be reused given the appropriate transition to a textile system that provides better outcomes for the environment, economy and society (UNFCC, 2018b). The UK fashion industry has been widely acknowledged to have initiated this unique fast fashion strategy into the global fashion industry (Barnes and Lea-Greenwood, 2006), which could imply that the possibility exists of reforming the industry's working strategies from "home", setting a revised sustainable trend globally.

2.3 The Circular Fashion Model

A recent collaborative study by the Ellen MacArthur Foundation, 2017 identified many gaps in the current linear system and proposed a model with ambitions towards circular change. The second ambition mentioned “the reutilisation of fashion waste” focusing mainly on the scaling up of clothing rental, rather than the reactivation of fashion waste, but implied that there needs to be an upscaling of education and skills to maintain clothing and prevent waste (Ellen MacArthur Foundation, 2017).

Several studies have examined varying aspects of the buyer supplier structure, such as analysis of the garment design process in relation to fast response by Forze and Vinelli 1996 or buyer behaviour Bruce and Daly, 2006, and Barnes and Lea greenwood 2006 looked into what drives the industry from a consumer perspective (Bhardwaj and Fairhurst, 2010) providing the field with interesting insights into consumer attitudes towards fast fashion and evoking an understanding of ways the fashion industry could attain circularity.

*“the circular economy model (CE) is defined as
“an industrial system that is restorative or regenerative by intention and design, uses and reuses natural capital as efficiently as possible, and finds value throughout products’ life cycles” (Lewis, 2015).*

This statement signifies that improving recycling and reducing disposal is of key importance to the circular fashion economy. Laitla et al 2015 discussed the extent it is possible to delay clothing disposal through improved design and though the paper was largely focused on design processes, it highlighted that consumer behaviour is a crucial factor. Numerous studies have documented the experiences of the wearer in garment use and care, demonstrating how wearers engage with clothes, which unearthed common issues such as neglect and disengagement (Gwilt 2013), bringing the researcher to consider ways of reactivating these neglected items and re engaging consumers through different creative strategies, ie adding value to existing garments by means of adornment, which may help increase longevity and double the lifespan, in turn reducing the quantity ending up in landfill or incinerated. In support, literature found by the House of Commons Audit Committee, 2019 stated

“We recognise that fast fashion has made it affordable for everyone to experience the pleasure of style, design and the latest trends. We were told however that the most sustainable garment is the one we already own and that repairing, re-wearing, reusing, and renting are preferable to recycling or discarding clothes. (HOC Environmental Audit Committee, 2019)

There is a growing movement of sustainable fashion groups using innovative strategies on small scale, in particular upcycling which remodels clothes producing upgraded clothes from fashion waste. It was noted however, that though these circles existed, the general population were somewhat removed from such practices and that benefits could be found from the upscaling of this niche market. Its suggested by a report to DEFRA by Fisher et al, 2008 that there is a clear lack of understanding of the sustainability impacts amongst consumers of production use and disposal, confirmed by the participants lack of knowledge prior to the study completed. The report also proposed work with local councils and retailers could help to enhance peoples understanding of clothing re use and recycling in order to reactivate fashion waste (Fisher, T, Cooper, T, Woodward, S, 2008).

2.4 Upcycling

Upcycling is a strategy to increase the longevity of clothing by transforming textile waste into raw materials for new fashion items. In the UK there are a number of emerging upcycling enterprises that could be upscaled to an industry level, providing environmental, economic and social advantages. Tyler et al, 2017 looked into the key differences between methods of standard fashion design and the production processes compared to Upcycling design and production processes, with the aim to contribute data towards the development of larger scale upcycling in the UK. In comparison Han, Tyler and Apeagyei analysed the innovative ways in which UK based upcycling designers recreated items from discarded materials, adding style and value benefits from this process. They strived towards the development of an innovative, UK based sustainable design and production approach that focused rather on the reconstitution of fashion textile waste. Figure 5 depicts a model for the scaling up of upcycling.

Scaling up of upcycling

- Niche practices becoming mainstream (regimes)
- Interventions across a range of scales involving various actors
- Systems approach required

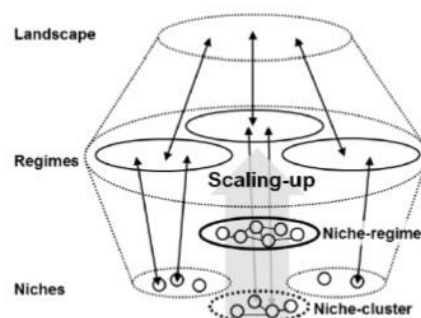


Figure 5 A model depicting the potential scaling up of fashion upcycling industry – De Montfort University, 2018

2.5 Clothing Exchange

The recent review by Ellen Mac Arthur foundation suggested the upscaling of clothing rental and exchange as a step towards a circular fashion economy (Ellen MacArthur Foundation, 2017) . A thesis paper by Pearson, K. 2006, entitled “Fashion Re-consumption; developing a sustainable fashion consumption practice influenced by sustainability and consumption theory” provided a case study analysis on the benefits of a fashion exchange system method and found positive benefits to clothing exchange events, but the data was limited in that it focused on a small network of the researcher’s acquaintances as opposed to varying target groups and Pears suggested further research be undertaken on a more public basis (Pears, 2006). Another strategy considered was a social experiment conducted by Dublin university around the idea and benefits of an online clothing library app, for fashion sharing, which currently functions as a start-up, in the form of an online app to share clothing. This was eventually considered out of the researcher’s capabilities, due to the need for app building capacity and knowledge, thus the former method described, an exchange event, was decided upon as a strategy to include. The diagram below, figure 6, depicts the potential circularity of clothing exchange.

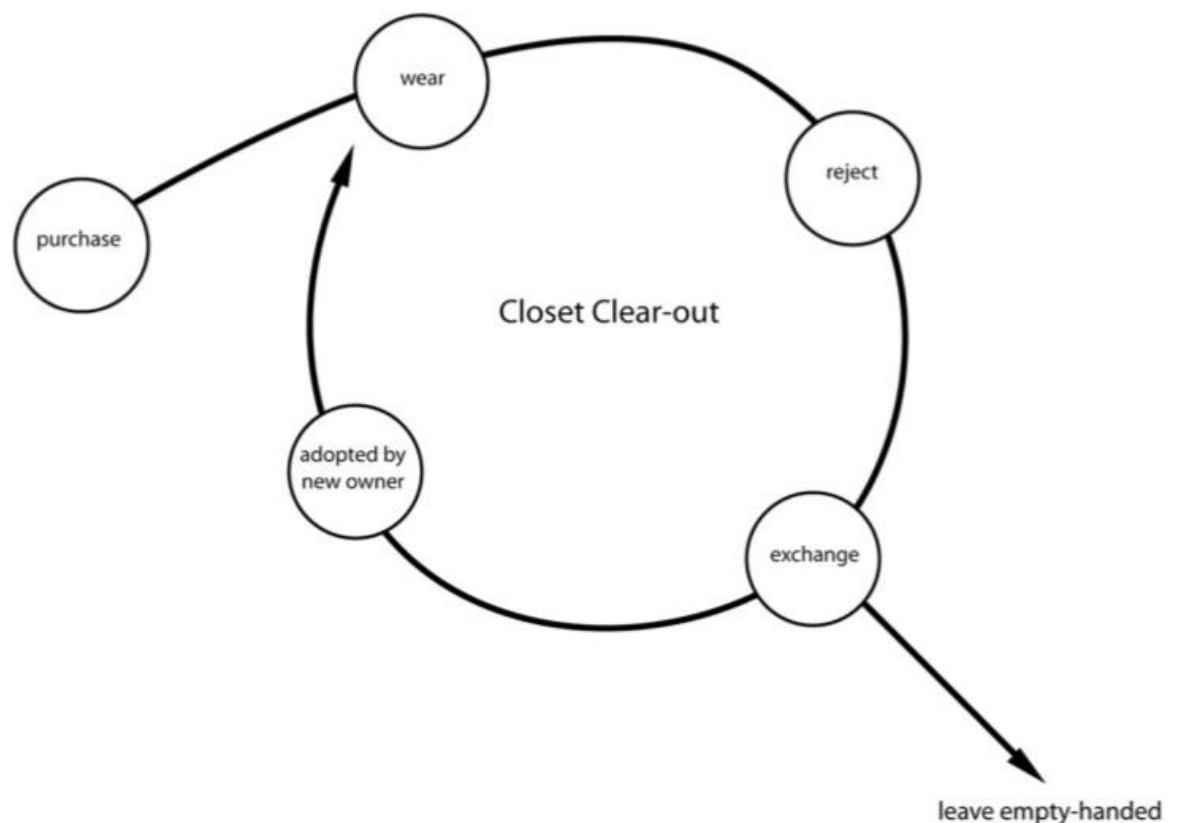


Figure 6 Model depicting the potential circularity of clothing exchange - De Montfort University, 2018

2.6 DIY Repair

Fisher et al 2008 in a report for DEFRA implied that in western society, consumers do not typically engage in the practice of repairing damaged clothing, other than the sewing of buttons or repairing of hems and found that this lack of engagement can be attributed to a few factors, such as a shortage in knowledge of household skills, the price of repair , when compared to new garments and the availability of such services. They also implied that the fashion designer or retailer would be ideally located to encourage these types of practice (Fisher, T, Cooper, T, Woodward, S, 2008), substantiating and reinforcing the importance of evaluating these strategies for fashion waste reactivation when aiming for a more circular economy, which appears largely based on achieving a better system of recycling. Figure 7 shows the % of people that felt confident to perform repairs and alterations in the UK in 2016.

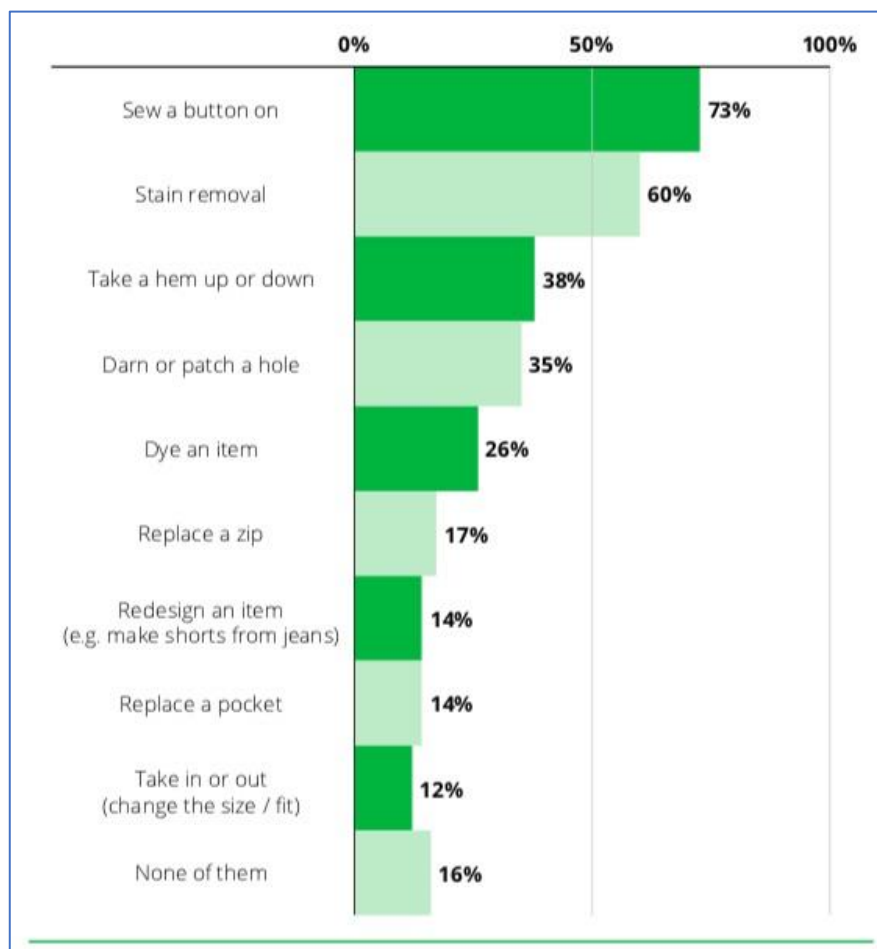


Figure 7 Bar chart showing the % of people that felt confident to perform repairs and alterations in the UK in 2016 - Wrap, 2016

3.0 Methodology

Using the deductive method to test the aforementioned hypotheses, the researcher will need to form an understanding of the participants current fast fashion use and personal psychological needs for fashion. To achieve this, the researcher will gather quantitative primary data from surveys, adapting the methodology from a study by Pears, 2006.

A survey will be provisioned to include a range of questions, such as “How often do you buy clothing? and How does having new items of clothing make you feel?”. Through the use of a Likert scale, a range of answers will be provided e.g. 1–2 times per weekly, once weekly, and so forth, and each given a rating. This is the format that responses are scored along a range, to enable statistical analysis at a later stage.

The researcher aims to understand which, from aforementioned methods, could help reactivate fashion waste and keep it in cycle longer. In order to collect this data, the researcher will host an intervention workshop, which 30 or more participants will attend and bring along unused items that could be reactivated. A series of stations (manned by skilled industry individuals) one upcycling, one exchange and one DIY repair will offer different advice/ learning facilities to educate the participants on ways to reuse their unwanted fast fashion garments and provide a platform for exchange. A second survey will be provided after the event, with questions to determine which they found most useful in lengthening the lifespan of the garment and whether they attained the same sense of “enclothed cognition” from the freshly exchanged or adapted garment.

The event will be organised and advertised online through the environment society and various other sectors on social media to include a broad range of participants and voluntary participation, targeting an 18–35 demographic. There was consideration of using a clothing swap event operating locally, but the decision was made that the research question could be better addressed and controlled through a self-organised event that was offered free of charge.

The event will need a number of volunteer staff provided by UWTSO environment society and friends of the researcher to run the exchange process and skilled individuals will be contacted on a voluntary basis through social media upcycling groups and local repair services to provide skills. The venue, an Art gallery/bar, will provide refreshments to offer a comfortable environment to complete questionnaires and learn new skills.

Ethical considerations are taken into account after guidance from literature by Bryman and Bell (2007). The event will be publicly advertised on social media, so participation will be voluntary, and participants will be provided with information on the nature of the survey and what it entails, they will also be pre-notified of survey involvement on event invites before event. Statements will be issued pre-event regarding privacy and the participants right to withdraw at any stage. Confidentiality will be highly regarded with participants information protected at all times, in conjunction with the data protection act (1998). The researcher strives to declare any conflicts of interest, communicate with respondents transparently and language used in surveys/questionnaires will be kept non-discriminatory and without bias. (Bryman and Bell, 2007).

4.0 Results

Results will be obtained through the use of a Likert scale survey and through the use of inferential statistics such as; Mann Whitney or Chi Square tests in order to form a scientific conclusion and a greater understanding of the successes or weaknesses of the experiment.

5.0 Discussion

Weaknesses and Limitations

- The researcher is at a developmental stage of research
- Could this mean a circular economy of fashion textiles could increase that quantity of microfibres into the ocean as the garments would be washed more times rather than stored in landfill, it is known that fabrics degrade the more frequently they are washed?
- Could this encourage a slow-down of fashion economy which would negatively affect developing nations? What affects could this have on an unstable market?

6.0 Conclusion

To conclude the researcher strives to contribute to a gap in knowledge around the circular fashion economy through testing different strategies that extend the life of fast fashion items, whilst still perpetuating psychogenic effect and reducing the amount of clothing that ends up as fashion waste in landfill.

Quantitative data will be obtained through a workshop intervention, providing the public with skills in strategies such as Upcycling, DIY repair, and the provision of a platform to exchange clothing. Analysis of results could help understand whether a greater knowledge of ways to implement these skills can help consumers to lengthen the use of clothing, in turn, contributing towards the long-term development of a 10% of reduction in fashion waste, in turn providing a 4% reduction in water usage and 3% in carbon emissions.

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