



University of HUDDERSFIELD

University of Huddersfield Repository

Shah, Karen

From Skip to Catwalk: An Investigation into Viable Pattern Cutting Techniques for Recycled Clothing.

Original Citation

Shah, Karen (2015) From Skip to Catwalk: An Investigation into Viable Pattern Cutting Techniques for Recycled Clothing. In: The Second International Conference for Creative Pattern Cutting, 24th - 25th February 2016, University of Huddersfield. (Unpublished)

This version is available at <http://eprints.hud.ac.uk/id/eprint/27875/>

The University Repository is a digital collection of the research output of the University, available on Open Access. Copyright and Moral Rights for the items on this site are retained by the individual author and/or other copyright owners. Users may access full items free of charge; copies of full text items generally can be reproduced, displayed or performed and given to third parties in any format or medium for personal research or study, educational or not-for-profit purposes without prior permission or charge, provided:

- The authors, title and full bibliographic details is credited in any copy;
- A hyperlink and/or URL is included for the original metadata page; and
- The content is not changed in any way.

For more information, including our policy and submission procedure, please contact the Repository Team at: E.mailbox@hud.ac.uk.

<http://eprints.hud.ac.uk/>

From Skip to Catwalk: An Investigation into Viable Pattern Cutting Techniques for Recycled Clothing.

The utilisation of discarded and so-called 'waste' textiles in the construction of garments is nothing new. Typically it has done, amongst other reasons, out of necessity, preference and a sense of caring for the environment. Methods for extracting these textiles and transforming them into new garments in the name of reconstruction, recycling, up-cycling etc vary but at their core is often a deviation from traditional block pattern cutting to something that resembles a bricolage of techniques ranging from moulage, fabric manipulation and a repositioning of the garments around the body often using key design details of the original garments. This paper, drawing on some 20 years of recycling clothes, proposes a number of reconstruction techniques of both clothing and textiles that have the potential to be up-scaled for relevance to mass production techniques. It is hoped that this investigation will generate debate into both the aesthetic of recycled clothes and also the potential for techniques of reconstruction to become more mainstream and accessible to a wider demographic.

Dr Karen Shah
BA, MSc, PhD, FHEA
Senior Lecturer Fashion Art, Design and Architecture

: 01484 473743

 k.i.shah@hud.ac.uk

: www.hud.ac.uk

Art, Design and Architecture
Huddersfield | HD1 3DH

University of H

Introduction

Waste, garbage, rubbish, trash exists as both material manifestation and metaphysical construct fostering our connection between nature and culture, between things and value (Foote & Mazzolini, 2012). When something is thrown away, discarded and seen as no longer valuable it has been argued how this has said a lot about both society and the individual (Oldenziel & Weber, 2013). Scanlan (2005) argued how the *'core of all we value results from garbage* and that the *'spectres of garbage serve as a stark reminder of what we really are'* (Scanlan, 2005, p.5). Recycling as a practice can thus be viewed as both philosophical and activist endeavour. This paper draws on two decades of work dedicated to the conversion of 'waste' cloth and clothing into useable/valuable items of wear¹ and charts the beginnings of a research project looking at discarded objects found on the streets of Leeds 6, UK (Fig. 1). Setting the context for this, reflection on studies such as Scanlan's have been used as a way of analysing both philosophical and activist approaches to the study of rubbish and methods for the appropriation of this waste into meaningful manufacturing systems.

In the process this paper will explore the murky depths of the skip, the rubbish bin and assess the extent to which the refashioning and remaking of items found therein, can become new, relevant and valued again. At its root is the hypothesis that current rates of consumption within the fashion industry are unsustainable and more needs to be done to address the issue of not only waste but also the almost schizophrenic desire for a constant new look. It recognises that in many ways recycling is just papering over the cracks, in an ideal world it shouldn't really be necessary. Braungart and McDonough (2008) argued how we needed to design as if waste did not exist but it would appear that we are still a very long way from this ideal. The acts of design, manufacture, use and consumption all bring with them varying amounts of

¹ The author has been involved in numerous recycling initiatives including NoLoGo (Oxfam) and Ketchupclothes. In conjunction with this she has conducted over a hundred 'recycling workshops' under the guise of development projects looking at environmental issues, financial inclusion and skills transfer.

waste. This paper takes waste – textiles and clothing thrown out as considered no longer valuable to the original owner – and shows their conversion into viable mainstream designs. Methods for the manufacture of these items vary due to the differences in material composition and design and thus approaches to pattern cutting and construction are considered. The question this research hopes to answer is the extent to which clothing and textiles discarded from this mass produced system can be re-appropriated and made new. Since the mass production system present within the fashion industry has contributed to this ‘waste’ it seems only fair that it should shoulder more responsibility to alleviate the vast environmental problems it causes. Design solutions, based around recycling techniques, are thus needed to address potential blockages and opportunities.

Contextualising Rubbish



Figure 1: Rubbish on the streets of Leeds 6 (Image: Authors Own)

Recycling is nothing new. We can imagine civilisations gone by that would have been based upon making use of what was at hand, of utilizing any available resource whatever its state. It would have seemed logical and natural. In a predominantly pre industrial state much of what we may have construed as waste would have derived from a natural source. We don't necessarily consider the falling of leaves as recycling but that is what the tree

is doing. Discarding spent leaves at its roots to provide valuable nutrients for its life to come. Thus the earth becomes the grand recycler converting leaves into fertiliser. However, we have long lost our natural selves and now live in a very changed world. Industrial waste is a different beast. It contains toxins and a vast amount of 'unnatural' waste that the earth just cannot absorb. In this state it becomes a problem and an environmental time bomb.

Recycling has come to mean both a sense of using and viewing old items as they were and also of transforming them beyond their former self into something significantly different. This shift/necessity has been attributed to the predominance of western attitudes particularly as they relate to the growth of a consumer society and the nature of inbuilt obsolescence. As argued by Oldenziel & Weber (2013) the growth of recycling has come about due to an increase in the amount of consumables that are being discarded:

The Western world's post-war shift to a society based on discarding things after their first use is – in the history of humankind – the exception rather than the rule... recycling is neither an invention of the affluent post-modern environmental era nor driven exclusively by ecological concerns. (Oldenziel & Weber, 2013, p.2)

In this context recycling becomes a reaction to overconsumption and our relationship to waste. In a modern industrial and capitalist context, recycling is intrinsically linked to rubbish and seen as an exchange between *material incarnations* and *symbolic iterations* (Foote & Mazzolini, 2012). To fully understand its place within society reflection on how rubbish comes about is thus necessary. Scanlan (2015) in his study on garbage defined it as *things, people or activities that are separated, removed and devalued* (p.5). Thus in analysing rubbish we are looking for connection in the *'hidden, forgotten, thrown away and residual phenonma'* (Scanlan, 2005). Foote & Mazzolini (2012) argued how *'garbage is ...quite ordinary...a by-product of merely being alive'* and that *'garbage and waste bring into sharp focus the complicated relationship between nature and culture* (Foot & Mazzolini, 2012, p. 3)

This relationship to both our natural and cultural self is of particular relevance to clothes and the nature of fashion. As argued by Bauman (2004) fashion, as a result of postmodern states, produces conflicting notions of self and identity.

Identities becoming hostage to change as new versions of self, appearance and behaviours come into being. Citing inbuilt obsolescence and a craving for the new as reasons behind this wasteful approach to consumption, Bauman also introduced interesting new contexts and analysis for the critiquing of waste in a modern, consumer and consumption driven society. Posing questions such as *'are things thrown away because of their ugliness, or are they ugly because they have been earmarked for the tip ?* (Bauman, 2004, p3). Bauman (2004) extended the context for waste to include human beings and the effects of modernity on the production of a transient and disposable work force separated from the benefits of development.

This link between fashion and waste becomes all the more relevant when we consider the role concepts such as fast fashion and being 'in fashion' play in a modern world (Fig. 2). The ability to purchase cheap clothing has contributed to a devaluing of clothes to the point that single use wear and an abundance of unused clothes languishing in wardrobes is common place.



Figure 2: Cheap fashion, 2015 (Image: Author's Own)

Recycling has thus provided a basis on which more and more artists and designers are focusing their practice upon (Whiteley, 2011, Brown, 2010; 2014). In the main this has been attributed to the fact that practitioners are keen to explore more sustainable and environmentally sensitive approaches

to the manufacture and consumption of artefacts and in the process comment upon the wastefulness of our current societal attitudes and action (Brown, 2014). They also share an intimate relationship with waste, garbage, rubbish and trash. Viewing the world around them they have responded with both artistic and designerly tendencies and produced a number of very interesting prototypes. Providing a comprehensive study of 'Junk Art' Whiteley (2011) highlighted a context for the production of this work when she stated that:

Sustainability and thinking green are increasingly fashionable in the economically rich West but working with trash, creatively or in any other way, has historical, cultural and social connotations which relate to hierarchies of materials at particular times and particular places. Detritus has ideological, social, political contexts and associations. Anyone forced to work with other people's garbage – from office cleaners to sewage workers – recognises this. Everyone contributes to the domestic rubbish tip and landfill sites but the processing of waste is generally left to those on the social and economic margins. (Whiteley, 2011, p.5)

It is interesting to note that within the context of waste within contemporary innovative fashion design many of the practices of recycling have been applied to the couture/high end of the market. In her comprehensive book of Refashioned clothing Brown (2014) outlined the practices of a number of fashion designers and showed how textile and clothing waste had been used in the development of clothing ranges. Citing companies such as the Mayer Peace Collection, Denham, Schmidt Takahashi, Reet Aus, Paulina Plizga as innovators it is difficult to imagine how they may be considered to be on the social and economic margins.

The purchase and use of second hand clothes has long been seen as a lifestyle choice in the western world and a signifier of beliefs centred upon thrift, make do and mend and a desire not to waste (Reily & de Long, 2011). The sense of projecting a retro look is also of importance. Thus second hand clothes have provided the focus for a number of research projects and analysis has been made concerning their environmental benefits (Farrant, Olsen & Wangel, 2010), their appropriation amongst younger consumers (Reiley, & De Long, M., 2011) and the impact of their export on economies such as Africa (Sinha, Beverley, Day & Tipi, 2012). As stated by Song and van Dyke (2013):

It was estimated that the purchase of 100 second-hand clothes would save between 60 and 85 new garments dependent of the place of reuse, The LCA showed that the collection, processing and transport of second hand clothing have significant impacts on the environment in comparison to the savings that are achieved by replacing virgin clothing. The reduction of impacts resulting from the collection of 100 used garments ranges from 14% decrease in global warming for the cotton T-shirt to 45% reduction of human toxicity for the polyester/cotton trousers. The results of the study thus show that clothes reuse can significantly contribute to reducing the environmental burden of clothing. (Song & van Dyke, 2013)

Studies similarly concerned with the environmental impact of using second hand clothes in turn have highlighted ways in which they have been used, in the process proposing models for the incorporation of second hand clothes into existing global fashion systems (Sinha et. al., 2012; Song & van Dyke, 2013). In the main these have led to the conclusion that current rates of overconsumption are unsustainable and to seriously reincorporate waste materials back into the fashion system requires a restructuring of present manufacture and consumption practices. A lacuna does exist within the literature, however, and this relates to knowledge concerning design processes and methods for making second hand clothes assessable within the mainstream and making them fashionable again. This involves investigation into pattern cutting techniques and methods of production and consumption. The following section highlights research and design work, done to date, relating to the manufacture of garments made from found, discarded and reclaimed clothing and textiles. It involves reflection on the process of collection and ultimate transformation of discarded and found textile and clothing waste. It begins by highlighting work carried out under the auspices of a social enterprise, Ketchup Clothes, and in particular the different styles of pattern cutting employed.

Recycling Research

Set up as a reaction to environmental concerns, and what is seen as an ever-increasing wasteful approach to clothing, Ketchup Clothes sought to explore approaches to sustainable design through the remanufacture of existing products – products that were recut to eliminate signs of wear and tear and that, for what ever reason, have been discarded by their previous owners (Fig

3). As a social enterprise, research under the auspices of Ketchup Clothes also sought to explore alternative business models, particularly where they related to participatory design, ethical production and community/social involvement.

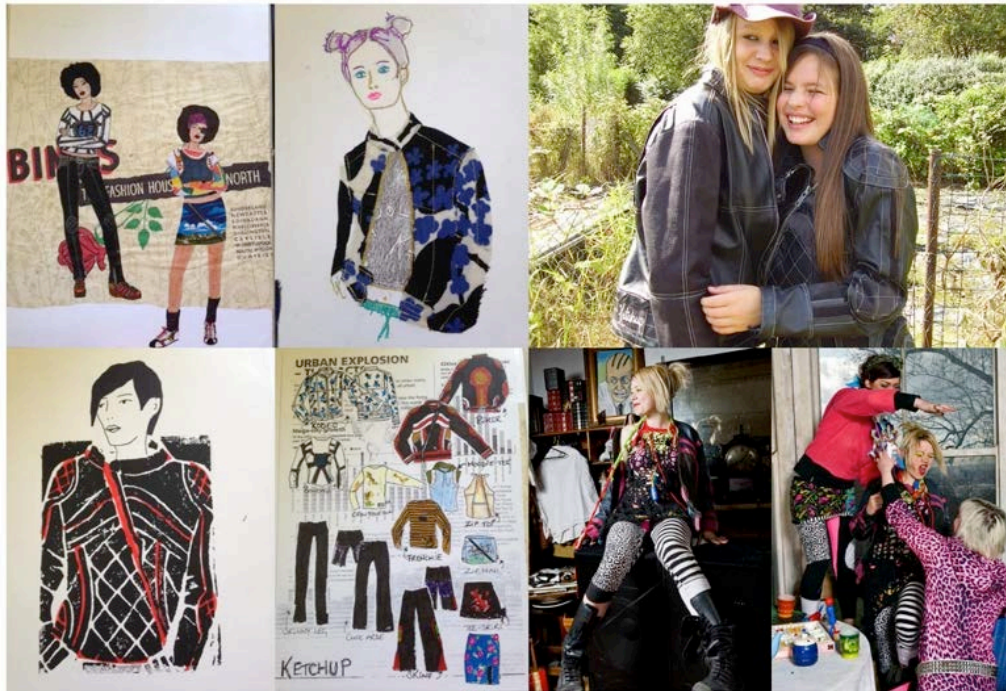


Figure 3: Examples of work made from found and discarded items, Ketchupclothes. (Images: Authors Own)

Key methods employed included:

- Defining and sourcing waste clothes and textiles in order to reflect upon how they had come to be disposed of and to source materials for use within recycled items.
- Engagement in all stages of design, manufacture, marketing and consumption of recycling clothes.
- Exploration of design and pattern cutting processes in order to propose modes of production for various scales of manufacture.
- Engagement in outreach work in order to collate and disseminate information pertaining to the practice of clothes recycling and the fulfillment of development aims such as poverty alleviation, income generation and empowerment.

In the context of the project waste in relation to textiles and clothes was defined as items either discarded as rubbish, items that were seen as second-hand, i.e. they had had a previous owner or were not longer wanted by

someone for what ever reason. Thus methods for sourcing appropriate materials centred upon the following contexts:

- Discarded – this included items left out with the rubbish bins and on the streets.
- Charity shops/Second hand markets/Car Boot sales – main distributors of second hand clothes to the general public.
- Donated – old stock, remnants, unwanted items
- Consumers own items
- My own wardrobe.
- Sourced – where a specialist fabric was required such as fair trade cotton, organic cloth for a specific commission

Thus an important source of materials was from waste bins, second hand shops and consumers own waste. The following figure illustrates the contribution these different sources made to garments made and sold during the space of a year (2008) (Fig 4). This demonstrates the predominance of discarded and second-hand materials and the variety of waste materials that can be incorporated into a fashion collection.

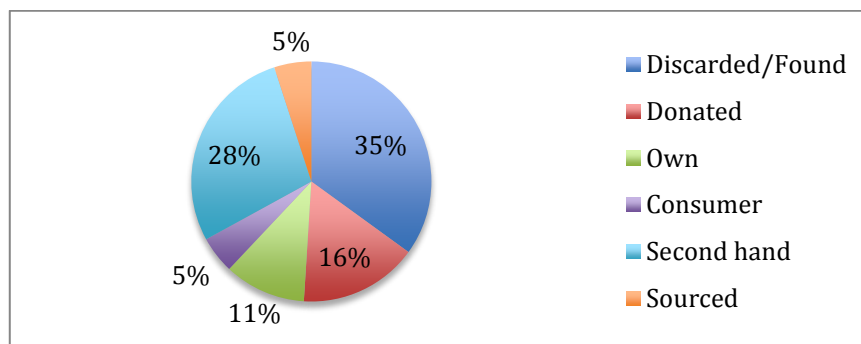


Figure 4: Breakdown of Material Composition of Garments

In addition to the sale of items made from recycled materials, elements of skills transfer were also deemed important in the dissemination of information relating to recycling techniques and thus workshops were undertaken as part of the social enterprise. Within these participants brought in their own clothes of restyling and also sourced from local fabric suppliers and charity shops.

The Design and Manufacture of Clothes made from Recycled Materials.

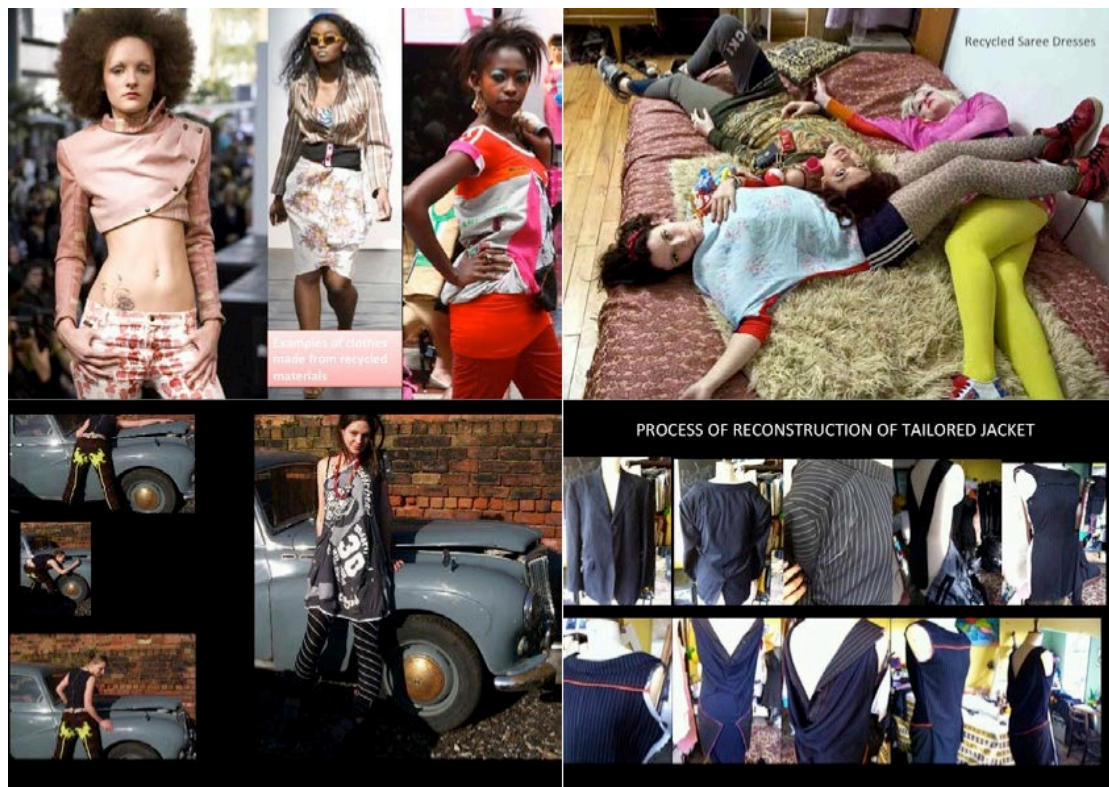


Figure 5: Examples of work made from found and discarded items, Ketchupclothes. (Images: Authors Own)

It soon became apparent that when dealing with recycled materials, and attempting to develop styles that can be replicated in a variety of manufacture scenarios, several problems present themselves. These include the following:

- There is a often a lack of consistency in the materials sourced from waste streams and fabric will often vary in quality, surface design, weight, size and availability
- Garments are already made up and to get at the fabric that needs recycling necessitates the deconstruction of pieces. This is a skilled job that takes time and expertise.

Of course the trick with recycling is to embrace these inherent 'problems' and turn them into a positive (Fig. 5). Thus lack of consistency can translate in design terms as uniqueness and originality. Similarly the mix of different materials can provide a strong aesthetic and also allow elements of what the garment may have been to come through. With recycled fabrics and clothes much of the knowledge about what to make comes from the material itself and

thus the design process undertaken can vary from conventional processes. Methods of manufacturing process often directly define and influence the final design and can be used as a source of inspiration within the pattern cutting process.

Pattern cutting in clothing is the process undertaken prior to manufacture in which patterns are generated for specific styles and these patterns/templates are then cut out in cloth before being presented to the sewing machine. In the mass-produced global fashion system standards have been set for the particulars of these patterns, i.e. sizing, and in the high street there is often consistency in fit and aesthetic. We are able to see vast rails of identical garments made in different sizes due to our knowledge of sizing systems and the pieces that go together to make an item of clothing. To generate patterns and designs for this system necessitates a high degree of skill and knowledge in pattern drafting together with knowledge of production systems at various levels of scale. Generally within this system flat pattern cutting is employed and here patterns are developed from block/standard flat patterns and elements such as seam allowance and design features added. Labelling and communication is vital to ensure that pieces are constructed in the correct manner and represent the original design accurately. An alternative to flat pattern cutting is a method known as moulage and here cloth is modelled around a mannequin (standard or modified) and the pattern generated from a 3D form. This technique is often employed for one off pieces or in the generation of a sample (initial realisation of design in cloth) usually at the more designer end of the market. Within the context of research undertaken both approaches to pattern cutting have been adopted (Fig 6). This was done in order to provide insight into how discarded garments and textiles could be subsumed back into the mass production system and the challenges that may be faced in trying to do this. Other methods of generating new designs included restyling/ modification to existing pieces and fabric manipulation.



Figure 6: Recycled Jeans: Items made for the Global Denim Project utilising flat pattern cutting (left) and moulage (right) (Dennis, 2008; Woodward, 2008) (Image: Authors Own)

The intention was that items would be understood by consumers familiar with the aesthetic of mass produced clothes, and more readily accepted. The aesthetic was also influenced by the urban landscape. Attempts at mass producing items have been undertaken but on the whole items are characterised by a distinctiveness and 'one-of' nature. In particular items such as t-shirts and those made from cotton jersey appeared to have the greatest capacity for recycling (Fig. 7).

Cotton jersey has a strong affinity to the fashion conscious consumer. A comfortable, easy to wear fabric it moves with the body and can be printed, dyed and manipulated to give a modern aesthetic. It is a fabric that is recognised globally and understood by the consumer. As a choice for recycling it also has great potential and as such was used extensively within the collection. Mainly the jersey came from old t-shirts which were deconstructed, cut to lay flat and then remodelled into alternative styles such as dresses, trousers etc. T-shirts were sorted according to quality, colour and weight/handle of material. Stains and rips were then cut out and the resultant material was incorporated into a variety of styles. It utilised both flat pattern cutting and moulage (modelling onto a mannequin).



Figure 7: Process of cutting cotton jersey (T-Shirts) and refashioning into 'new' garments (Image: Authors Own)

Other techniques included the deconstruction and reconstruction of existing garments into 'new' garments. Often this entailed a rethinking of how and where the garment could be placed onto the body and thus engendered an alternative aesthetic. The design intent for the items of clothing made from the sourced materials was to produce items of clothing that were democratic in nature, i.e. not couture pieces to be consumed by an economic elite but those that were affordable and understandable to the masses (Fig 6).



Figure 6: Examples of work made from found and discarded items, Ketchupclothes. (Images: Authors Own)

If we are to counter negative influences, seen to derive from the mass production and consumption sector, then this approach was necessary in order to test how the items manufacture and consumption may fit into this model. This approach was thus taken to analysis the acceptance of items made from recycled materials within a main stream, high street market and to look at viable production methods for getting the clothes to this market. From a designer point of view there was also greater affinity with this style of clothing and fitted into the authors previous work. Thus pieces were designed with a fashion conscious consumer in mind, one that was generally aged between 18-45 and one who had an empathy with the production methods used but didn't have masses of disposable income. There was thus a desire to engage with and mimic what was happening on the high street as a way of positioning the designs and proposing viable manufacturing methods.

Conclusions

The practice of 'tattooing', of raiding skips and bins has grown in popularity due to negatives forces such as austerity measures and an ever-wasteful society. There is growing descent over the amount of waste being generated and the ways in which this waste is imposed on the poorer fringes of society. Research to date has shown that a wide variety of clothing styles and techniques can be applied to the process of recycling and these are gaining greater popularity with consumers and retailers alike. A change in attitude has occurred relating to the acceptance of second-hand and recycled garments, moving from a horror to a joy in terms of the sourcing of materials and how they may be perceived. There is still a tendency, however, for the narrative of recycling particularly in relation to clothing, to be shrouded in notions of exclusivity and couture. Whilst important in terms of advancing the profile for garments made in this way, further investigation into viable manufacturing and consumption models are needed. Items made in this manner do take time, they require skill levels which may not exist within a mass production system, and knowledge of both market and manufacture is paramount if items are to have longevity and relevance after their make. Recycling within the current context seems to be more about transformation and of making things

extraordinary. Scope for expanding the 'reuse' of ordinary items, non-descript items that end up in binyards and rubbish tips, thus seems underexplored. Plans for further research include reflection on rubbish collected on the streets of Leeds 6 and exploration of their conversion into saleable items. To date several items, originating from a global, mass-produced setting have been collected and these are gradually being deconstructed and made new. Recycling changes the rules of consumption and opens up more democratic and equal states of consuming. It is hoped that in time these pieces will provide insight into not only the disposal of goods but also how they may be re-borne and relevant again.

Bibliography

- Bauman, Z, 2004 *Wasted Lives: Modernity and Its Outcasts*, Polity, Cambridge
- Braungart, M. & W. McDonough, 2008, *Cradle to Cradle: Re-Making The Way We Make Things*, Vintage Books, London
- Brown, S., 2011 *Eco Fashion*, Laurence King, London
- Brown, S., 2014, *Refashioned – Cutting Edge Clothes from Up-cycled Materials*, Laurence King, London
- Farrant L, Olsen SI, Wangel A (2010) Environmental benefits from reusing clothes. *Int J Life Cycle Assess* 15(7):726–736.
- Foote, S., & Mazzolini, E. (2012). *Histories of the dustheap: Waste, material cultures, social justice*. US: Mit Press.
- Luke, T. W. (2010). Ephemeralization as environmentalism: Rereading R. buckminster fuller's operating manual for spaceship earth. *Organization and Environment*, 23(3), 354-362. doi:10.1177/1086026610381582
- Oldenziel, R., & Weber, H. (2013). Introduction: Reconsidering recycling. *Contemporary European History*, 22(3), 347. doi:10.1017/S0960777313000192
- Reiley K, DeLong M (2011) A consumer vision for sustainable fashion practice. *Fashion Pract JDes Creative Proces Fashion Industr* 3(1):63–84
- Scanlan, J., (2005) *On Garbage*, Reaktion Books, London
- Sinha P, Beverley K, Day C, Tipi N (2012) Supply chains for the management of post consumer apparel waste: three scenarios addressing the UK-Tanzania

context. In: Proceedings of the 18th international sustainable development research conference, The University of Hull

Sinha P, Dissanayake D, Kanchana G, Mahwera D, Kahabi C (2010) Creating a global vision for sustainable fashion. In: 87th textile institute world conference 2010, textiles a global vision— textile institute centenary world conference, 1, Textiles Institute, Manchester, pp 247–275

Song HK, Van Dyke L, (2013) Development of a system for sustainable fashion from recycled clothes—based on U.S. fashion brands. *Res J Costume Cult* 21(1):139–150

Whiteley, G. (2011). *Junk: Art and the politics of trash*, London: I.B.Tauris.