

Textiles
Environment
Design

'The New Designers: Working Towards our Eco Fashion Future'

Rebecca Earley, Reader, TED

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'The world will not evolve past its current state of crisis by using the same thinking that created the situation.' Albert Einsteinⁱ

1.INTRODUCTION

The fashion and textile designers of the future will have to think and create clothing differently if they are to make a positive contribution to our changing culture and circumstances. As educators we need to teach young designers about good design practices and to introduce them to eco design principles. As designers we need to inspire, and lead the way. We need to think beyond the product, and work as facilitators, curators, organisers and activists.

'In view of the complex nature of human beings, we must move in a direction where our design energies and our technological potential are focused on rendering individuals and communities better able to work together and find a way of living better.' Manzini (2005)ⁱⁱ

The environmental impact of the textile and fashion industry is becoming a mainstream issue. Society is becoming ever more aware of the environmental predicament our planet is in. In the 21st Century we can buy organic food more easily, we recycle and compost our waste more often, and we buy more second hand and vintage clothes than ever before. Yet still an estimated 1 million tons of textiles in the UK go in our bins and into landfill every year.ⁱⁱⁱ Fashions that are designed to last one season take many years to decompose, emitting harmful gases into the atmosphere as they go.

1.1 TEXTILES, ENVIRONMENT, DESIGN

The innovative research work of a group of textile practitioners at the Textiles Environment Design (TED) Project at Chelsea College of Art & Design, is leading the way in creating designer-centred solutions. The project was set up in 1996 to look at the role that the designer can play in creating textiles that have a reduced impact on the environment. Since 2003 this research has centred around the TED Resource which is an open access facility that houses a collection of fabric and clothing samples, press cuttings, academic papers, research projects and case studies.

The TED Project is also part of the new research cluster Textiles Futures Research Group (TFRG)^{iv}, which includes textile research from Central St Martins and London College of Fashion. With Dr Jane Harris as Director and myself, Sandy Black, and Carole Collet as Associate Directors, TFRG aims to forge/explore cross-college research in issues such as new technologies, science and design and sustainability. The issue of textiles and sustainability is a key area and all the colleges are active in the field. At Chelsea, the TED Project is focusing specifically on the role of the designer.

Research shows that between 80-90% of the total life cycle cost of any product (environmental and economic) are determined by the product design before production even begins.^v This places a huge amount of responsibility into the hands of the designer. TED's position is unique in research terms. Whereas other research projects look to the manufacturer or producer to 'clean up their act', the TED Project wants to challenge the designer to create textiles that have a reduced impact on the environment.

1.2 WHAT ARE THE KEY ENVIRONMENTAL PROBLEMS FACING THE TEXTILE INDUSTRY?

Firstly, let's consider chemical pollution. All the production processes utilised in textile production involve the use of harmful chemicals - the growing and harvesting, the extraction and extrusion, the spinning, weaving and knitting and the finishing, dyeing and printing of textiles. The textile industry continues to be one of the most damaging industries in the world, second only to the chemical industry.^{vi} For example, one million cases of poisoning and possibly 20,000 deaths each year are attributable to the use of pesticides in cotton production.^{vii} Cotton grows on less than 3% of the world's farmland, but accounts for over 22% of all pesticides used in agriculture.^{viii}

Secondly, the demand for faster and cheaper fashion and trends means that clothes are made in extremely competitive conditions, and controlling and regulating situations for workers is proving almost impossible. 90% of these workers are women either working in factories or as home workers and they typically work 10-12 hours with no breaks, with a seven-day week typical in peak season.^{ix}

Thirdly, the problem of transportation. Like the now famous 'food miles' in the food industry, the carbon emissions involved in the transportation of textiles and fashion products is a pressing issue, especially when you consider the complexity of the supply chain in the textile/garment industry. More than in any other industry, a fashion or textile product will be made from component parts from all over the world. The fibre/yarn is produced in one country, then shipped to be spun in another country, then shipped again to separate production and finishing processes, before finally being made up into garments somewhere else. By the time the garment is on our backs it is very well travelled.

By its very nature, fashion can mean that we buy what we don't need, wear it rarely and dispose of it quickly. A vast proportion of the clothes bought in the UK every year are now bought in supermarkets, and new collections arrive in high street stores every 6-8 weeks. There is a demand for cheaper clothing and as a result a shorter expected life cycle. In the UK, over one million tonnes of textiles are discarded annually and 500,000 tonnes of this is unwanted clothing which ends up in landfill.^x

Finally, and most surprisingly, recent research shows that all of the impacts mentioned above add up to only 5 – 10% of a garments environmental impact, in terms of energy use. The other 90 - 95% comes from the consumer's laundering habits.^{xi} Simply washing too hot, too often and using a tumble dryer creates the most carbon emissions in the lifecycle of the garment.

1.3 TED DESIGN STRATEGIES

Bearing in mind the complexity and scale of the above environmental issues, the TED Project has come up with several design strategies to assist designers in exploring these issues. Some are material and process based, and some consider more conceptual approaches. For example, to reduce the chemical impacts of textile production we have been exploring lessening impacts by using new technology innovations such as digital printing, sonic welding and laser cutting. We have also been exploring dyeing and printing techniques such as exhaustion and natural dyeing, non-chemical applications such as

needle punching, and re-use and recycling. We have also been starting to consider some eco-design concepts such as short/long life textile design, emotionally durable design, multi-function, local design, ethical production, systems and services design, and design for low launder.^{xii}

2. DESIGNING MY DESIGN PRACTICE

As my practice as a fashion designer has extended over recent years into the realms of academic research, my approach has evolved into producing more conceptual and eco conscious designs. The following projects reflect this thinking, and also illustrate the new territory that I have tried to inhabit with my work. These projects are both unfunded self initiated ideas, and also publicly and privately commissioned works.^{xiii} All these projects have challenged me to work in new ways, to be creative in ways that are not solely product based.

2.1 DESIGN PROJECTS KEY IN DEVELOPING APPROACH

Between 1994 and 1997 I designed and produced hand-printed fashion and accessory collections for 25 outlets worldwide. It was exhausting and repetitive, and I began to look for funding and opportunities to work on very different kinds of projects to extend my range.

- ***In Focus*** (1997) was a one-day exhibit at the ICA, London, and was an opportunity to exhibit collaborative works created with artists Simon Periton, Dave Beech and Mark Jackson. These pieces were made by conducting consultancy / interview sessions with the individual artists in order to develop clothing that was a response to personal concerns about identity and expression.
- ***Masquerade*** (1997) was an exhibition that asked six artists to make clothing for an audience participation exhibition that took place in empty shops all over the country, inviting the visitors to try on the clothing and experiment with creating new identities. The resulting Polaroids of the audience ultimately formed the final exhibition back in London. To research the work I underwent training by the world welterweight kick box champion, John Lawler. I then collaborated with filmmaker Trudy Hanbury-Murphy to make a split screen short film entitled *Fighting Talk*.
- ***Exhaust Printing*** (1998). At Central St Martin's in 1994 I had developed a *heat photogram* printing process, and I subsequently developed an *exhaust printing* technique that produces hand printed textiles with no water pollution and minimal chemical usage. The resulting collection of PET recycled scarves won an award at the first Peugeot Design Awards in 1999.
- ***HyperHall*** (1998) was a catwalk show and installation event, involving six British fashion designers and six Danish fashion designers. The curator was concerned with exploring the current art/fashion debate, and asked these 12 designers to create both a catwalk collection and an art installation in the same venue. I also wrote an essay for the catalogue, and devised heat photogram printing workshops and demonstrations for the event.

- The 100 **Radiotherapy Gowns** (1999) were created for the Queen Elizabeth Centre for the Treatment of Cancer, and commissioned by the Public Art Commissions Agency. This was twelve-month involvement with the development of artworks for a new wing of the Queen Elizabeth Hospital, Birmingham. I changed the existing gown design, reshaping it and adding new functional details. The gowns were originally sized by colour (blue for small, pink for large, etc.) and recognizing this as problematic for self-conscious patients, I changed this to a discrete numbered system. Research into complimentary medicine lead to sourcing seeds for herbs, creating an organic garden, and subsequently using the plants to create heat photogram prints onto each individual gown.
- **Indigo at the Eden Project** (2000 – 2002). Here I acted as project leader for TED and worked with scientists and other designers and educators at the Eden Project in Cornwall, developing garden designs, educational programmes and workshops. The project was concerned with UK natural indigo dyes and the woad plant, and we conducted research workshops both at Eden and at Chelsea. The resulting installation at Eden received 16,000 visitors per day during Summer 2001.
- The **Material** (2001) project brought together design thinking, positive environmental change and fashion textiles to form the first research alliance between Dr. Kate Fletcher and myself. The collaboration was about applying new eco design theory from disciplines such as product design and architecture, to my technical approach to textiles and fashion design. This research concentrated on the design or redesign of a product chiefly over one lifecycle stage, resulting in three outputs, each prioritizing different environmental concerns. Workshop situations were created to allow Kate and I to engage with a team of undergraduate and graduate designers in my east end studio. The project was funded by the Means of Production programme.^{xiv}
- **5ways** (2002). The partnership with Kate and the workshop methodologies were further developed within this project. The over-arching aim here was to begin to explore the relationship between fashion textile design and design for sustainability concepts. The methodology involved a research team made up of five individuals, all graduate designers, working both independently and in workshop situations. The project produced an exceptional number of revealing ideas and product concepts for sustainable fashion textile design, five of which were developed into garments. Artist Tom Gidley collaborated with us to create a short film about the final pieces, and along with the project website, it is a key outcome for the project. The project was funded by a small grant from the Arts and Humanities Research Board.^{xv}
- **Top 100** (2000 – ongoing). This project explores fashion textile recycling using new textile technologies to create innovative exhibition and production pieces, for the high fashion/art audience. The systematic collection and creation of sets according to stories and eco design principles makes this ongoing research project a constant vehicle to explore new concepts and is an ever-changing outlet for new ideas. The second hand polyester blouses are recut and styled, then overprinted using different design themes, intending to increase consumer attachment through a series of original narratives. They are made to be washed less often and never ironed, and finally at the end of their second life they are 100% recyclable.

For the *Well Fashioned* exhibition I created the *Christine Risley* collection^{xvi}. The original blouses belonged to the late textile designer whose entire wardrobe was donated in 2003 to the *Constance Howard Resource and Research Centre in Textiles*, Goldsmiths College, University of London. I remade the blouses using digitally manipulated images of the archive collection of objects from her studio, also held at the Research Centre. As 'the biggest gains in our clothing's environmental performance can be made by tackling the impact arising from their washing and drying'^{xvii} the shirts have also be reshaped and overprinted in key areas to reduce the need to launder.

The blouse collections have been exhibited in France, China and London, and were seen on the catwalk in Paris in November 2004, and at London Fashion Week in March 2007.^{xviii}

2.2 CREATING A CONTEXT

The outcomes of these projects needed a place and a space in which to be shown. I took my work to trade shows; I installed it in group exhibitions; I put it online; I got it featured in books and magazines. I was active and 'out there', but I always felt that somehow I wasn't reaching my target audience. I realised that I needed to create a context for my work. I needed to curate an exhibition that meant that I could surround myself with like-minded people!

3. *WELL FASHIONED: ECO STYLE IN THE UK AND THE NEW DESIGNERS*

It was shortly after I had this realisation that the Crafts Council approached me about curating an exhibition about eco fashion. I had been watching what had been going on and decided that it was time to act. In recent years the general interest in eco fashion had experienced significant growth. This was also reflected in the reported increase in sales of all kinds of fairly traded goods, and the number of regular green columns and articles in the press.

This growth had been marked by a rise in the number of exciting public events and activities at home and abroad. In November 2004, a new event sought to bring ethical fashion designers to the Paris catwalks.^{xix} In 2005, during February's London Fashion Week, there was AntiApathy's *REFashion* event that focused on organic cotton issues.^{xx} In New York, the following month, there was *FutureFashion* at *Verdopolis: The Future Green City*. This catwalk show highlighted the work of leading US fashion designers who had experimented with a wide range of new eco fabrics.^{xxi}

In 2005 Labour Behind the Label's *Fashioning an Ethical Industry* initiative began. The FEI project 'aims to provide fashion college students and tutors with a global overview of the garment industry, to raise awareness of current practices and initiatives, and to equip students to play an active role in raising standards throughout the supply chains of the companies they will be working for. The ultimate objective of the project is to embed social responsibility issues in the teaching of all fashion related further and higher education courses'.^{xxii}

In February 2007 *Esthetica*, a new space dedicated to sustainable fashion was launched within the Designers' Exhibition at London Fashion Week. Curated by fashion designer Orsola de Castro, whose own label *From Somewhere* has been recycling textiles since 1997, this event provides a good example of what taking on a designer/curator role can achieve in promoting eco fashion for other designers, industry, and the public. Within its 'well-designed, environmentally friendly and independent space, *Esthetica* aimed to position ethical fashion at the forefront of the industry, proving its creative and commercial commitment in addition to its ethical approach'. Perhaps the biggest name on show at the *Esthetica* area was Katherine Hamnett, who has been a staunch campaigner for ethical fashion throughout her career. She chose London Fashion Week to launch her first 100 per cent ethical clothing range. Commenting on the significance of the ethical fashion stands at London Fashion Week she said, 'It shows London is moving with the times. There is a huge revolution in buying - you just have to look at the statistics: Marks and Spencers did a survey on consumer demands and 95% of their 15 million customers expressed concern over ethical production, compared with 75% two years ago. It shows consumers are more compassionate and that they are putting their money where their mouth is. They're demanding that workers are fairly treated. People are realising that they have more power as consumers than as voters.'^{xxiii}

3.1 EXHIBITION THEMES AND CONTENT

The current state of eco fashion in the UK was reviewed in the recent Crafts Council Touring exhibition that I curated – *Well Fashioned: Eco Style in the UK* – where the work of 21 designers was show cased, each of whom has a different approach to eco fashion design.^{xxiv} These approaches included: the careful selection of materials and production processes; the decision to use organic fabrics and manufacture in ethically managed factories; reusing old, unwanted textiles, in an inventive and creative way; creating a fundamental label ethos and structure and using websites to convey information and create an inclusive retail experience; designing multi-size and multifunctional clothing, thus extending the potential life and usage of one piece of clothing, and reducing our need to acquire more items for our wardrobes; and adding value and emotional attachment to design work instead of responding to trends. The washing and drying of our clothes has the largest environmental impact, so included in the exhibition are also designs which attempt to be low-laundry, which involve the use of merino wool and synthetic fibres not traditionally considered as eco-friendly.

The decision to use organic fabrics and manufacture in ethically managed factories is a fundamental and immediate approach that designers can take. Likewise, reusing old, unwanted textiles, in an inventive and creative way has almost become second nature to a growing group of designers. But there are other approaches that are less well documented in fashion. These include creating a fundamental label ethos and structure - often using the website as an important communication tool - like that of howies^{xxv}, Worn Again^{xxvi} or Keep and Share^{xxvii}.

Designers in the exhibition like Benjamin Shine^{xxviii} were selected because they work with garments that have multisize and multifunctional qualities, thus extending the potential life and usage of one piece of clothing, and reducing our need to acquire more items for our wardrobes. Many designers in the exhibition had also tried to focus on adding value and emotional attachment to their work instead of responding to trends, as in the work of Amy Twigger, perhaps encouraging people to look after them more carefully. At the top end of

the fashion market – couture and designer ready-to-wear labels – garments actually have the potential for very long lives. Usually beautifully made, from good quality fabrics, these garments may be resold time and time again, and collected by fashion enthusiasts all over the world. In many ways it is the high street and casual clothing market that is more problematic. Many of the designers in *Well Fashioned* focused on this market level, attempting to create new alternatives to everyday items. The designers that were included in *Well Fashioned* seek to make their design and production methods transparent, a selling point even, inviting the consumer to find out more, and in the case of red Mutha^{xxix} and Junky Styling's^{xxx} *Wardrobe Surgery*, to even join in the process.

The *Collaborative Sketchbook* area of the exhibition intended to give the audience an insight into the minds of the designers, their thinking and approach, and perhaps even their methodologies. I brought the designers together for a one-day workshop in January 2006, asking them to bring with them objects and texts from their studios that have been significant in developing their individual design approach. I wanted to show that what can often be depressing, i.e. the realities of our environmental situation, can be turned into inspiration rather than obstacle. Collaboration and communication are the corner stones of eco thinking and we wanted to give the exhibitors a rare opportunity to openly voice their opinions about eco fashion, and to meet each other in an informal way in order to create this collaborative exhibit.

3.2 DRESS TO ART

Finding creative challenges within the curatorial role had been a main objective of mine. I wanted to take the lessons from my previous practice based projects and create new and challenging aspects to a static exhibition. Working through ideas about exhibits with some of the designers and devising the *Collaborative Sketchbook* concept had gone some way to meet this aim. However, when I realised I wanted a finale piece for the exhibition - a wedding dress - I found the opportunity I was looking for.

I created a collaborative mini research project that would bring together three experts from different specialisms to explore theoretical ideas about eco fashion. The team consisted of Dr Kate Fletcher, an ecodesigner working in textiles and fashion since the early 1990s; Helen Amy Murray, a designer known for her innovatively stitched and sculpted interior textiles; and myself.

'A wedding dress is the high profile centrepiece of marriage, the catwalk show and design collections; but in many ways its beauty is tainted by accusations of over-consumption, poor use of resources and wastefulness. This unique project brought together ecodesign concepts, research and prize winning making skills to tackle all of these issues and more. In this tiny project we designed four eco wedding dress scenarios and developed one to prototype.

'The *Dress to Art* gown transformed the memorable, gorgeous piece we wear on our wedding day into other equally memorable, gorgeous things. It 'borrows' from the dress in its first incarnation and gives back in new forms: the bodice becomes an artwork; the skirt is recut to become something to wear regularly. And so *Dress to Art* designs-in from the outset an answer to the question of resource wastefulness (the garment is used again) and also helps us attend to the problem of under-using the gown as a way to trigger our memories.

'The bodice is the high value, long-lasting element of the dress and is transformed into a framed art piece that becomes like an exquisite, textured wedding photograph. The *Dress to Art* gown uses a highly skilled designer who embroiders the bodice as an intentional artwork that is then crafted into the top portion of the dress for the wedding day and afterwards is carefully unpicked and mounted. Meanwhile the skirt is transformed into something to wear again. Perhaps we choose to have it remade in a contemporary style: say a tulip skirt or city shorts. And a bit like the wedding ring we wear as a highly visible symbol of marriage; the recut skirt shouts out that we love and are loved in return.'^{xxxix}

3.3 SIGNPOSTING THE FUTURE

The designers who exhibited in *Well Fashioned* are usually very small businesses, often sole traders, whose production volume makes very little impact in contrast to the large high street and designer companies. But perhaps they mark the beginning of a new direction, perhaps they are signposting the future for us, and perhaps their impact could potentially be very great indeed.

4: CONCLUSIONS - NEW STRATEGIES FOR THE NEW DESIGNERS

I have presented my work here as a designer, researcher, and a curator. I am also a facilitator and an educator. I believe designers of the future new to work in many different ways - thinking beyond the material, and designing collaborative, social and educational scenarios - enabling people to learn how to consume and need fewer products.

4.1 EVER AND AGAIN PROJECT

The TED research interests and my design methodologies have recently come together in the *Ever and Again: Rethinking Recycled Textiles* project, which is an AHRC funded venture (2005 – 2009). This three-year project involves 12 members of the TED team as well as supporting full time PhD student Kate Goldsworthy^{xxxix}. This project aims to investigate textiles recycling, looking to the textile design practitioner to propose significant change through the creation of high quality artefacts. To achieve this aim a group of TED practitioners will examine and consider contemporary ecodesign theory, exploring ideas about long life / short life textiles, ethical production, new technologies, and systems and services. These concepts will be explored via an adapted action research methodology with cycles of team workshops and periods of personal reflection. Textiles will be created and a process of analysis and redesign will lead to a visual and written outcome. The project also intends to formalise the TED team's collaborative practice-based approach and create a sense of a learning community.

4.2 TED RESOURCE

This resource was set up in 2003 to act as a bank for knowledge and learning, where documentation can be deposited and withdrawn throughout TED's research activities. This format was devised to encourage the practitioners to be rigorous and systematic, and provides a system whereby their work can be accessed for future action and practice. Issues of textiles and the environment are central to the work of many of the staff and student practitioners at Chelsea, yet there are few opportunities for them to handle or

source materials and products. Questions of environmental design are critical issues in the contemporary world, and this resource provides access for designers to a unique toolbox comprised of over 3,000 points of reference to help them design more environmentally aware textiles. So far the resource has produced text and fabric based resource guides for the *Well Fashioned* exhibition, and an Eco Textiles guide for a web-based project at LCF, *Materials Collection Online*, (2005).^{xxxiii} The resource has employed administrative assistants and consultants to build the structure and contents with myself, and it has operated an 'open door' policy to Chelsea students since 2004. In 2006 large numbers of students and young designers from other UK institutions and organizations visited, hopefully proving that the resource is a unique and valuable facility.

At TED we feel we are at the beginning of a great journey of discovery, and believe that it is an important journey for textile designers to make. We hope that our research projects and ecodesign strategies will help designers to find the way.

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