Sustainable Design Strategies : Eco Chic the Fashion Paradox

Professor Sandy Black
Professor of Fashion and Textile Design and Technology
London College of Fashion, University of the Arts London

The Fashion Paradox

The business of fashion is full of contradictions: the craftsmanship of couture and bespoke set against fast and cheap fashion; the luxury of Bond Street or Fifth Avenue and the poverty of many producer communities; the transience of fashion styles and the revival of past styles as new incarnations; inherently wasteful cycles of seasonal change which sustain livelihoods and economic prosperity; an obsession with the new and the valorisation of vintage. I developed the concept of the "fashion paradox" to encapsulate this complex web of contradictory perceptions and attitudes, economics and employment, trade, manufacturing and cultural identity (and much more) that collectively make up the global fashion industry today.[i] Whether involved in the creation, production, communication or representation of fashion or simply as its consumers, everyone is implicated in the thorny issues inherent in this endemically unsustainable system, where obsolescence is inbuilt. As public awareness of issues and demand for product transparency have grown, there is now an urgent imperative for change, but can fashion ever be sustainable? Is sustainable fashion an oxymoron, the ultimate paradox?

The Power of Fashion

Nevertheless, it is important to remember the power of fashion and adornment and its significance in cultures throughout the world, from the earliest peoples. We seem to be hard-wired to seek novelty and new experiences. Today, fashion can perform many roles: it becomes a social catalyst, a communication medium, functioning in both personal and public realms, simultaneously inward and outward looking. It enables us to enhance self-esteem and express our identity, displaying and performing in various contexts our status and sexuality, in coded messages both subtle and overt. Through our clothing we can show we belong, or proclaim our difference; make radical statements, or join the crowd. In many professional or medical contexts, appropriate clothing can make a real difference to success, recovery or wellbeing, whereas the "wrong" clothing can stigmatise. Of course, we may simply want to be seen to be "cool" in the latest fashions. Fashion provides livelihoods, and sustainable fashion must continue to meet our personal and symbolic needs, whilst addressing the problems associated with the fashion system. It needs to be chic, not worthy.

The Fashion Industry Context and Fashion Life Cycles

The fashion industry (including designer and basic clothing, footwear and accessories) is highly complex and characterised by short production runs, fast turnover and a hugely diverse range of products channelled through a fragmented and frequently changing supply chain, distributed over many global locations. Clothes are now well-travelled commodities with very brief lives. Since the mid 1990s and the abolition of the Multi Fibre Arrangement and import/export quotas, increasing globalisation of manufacturing has taken place. Faster fashion cycles have pushed the price of fashion products down, while simultaneously increasing production volumes and the consequent environmental impact. The clothing, footwear and textile sector is a significant global economic force, the fifth largest sector, employing up to 40 million worldwide, of which up to 19 million are employed in China, 2.7million in the EU and 400,000 in the UK, (excluding retail) – around the same as the aerospace and automotive sectors combined.[ii] Fashion consumption in the UK has grown significantly in recent years: there was a 37% increase in the amount of clothes purchased per capita

between 2001 and 2005.[iii] At the same time, due to globalisation, the cost of clothing in real terms has fallen dramatically compared with housing or transportation for example. Similar patterns are seen in the US and Europe. Many purchases are made on impulse and a great deal of clothing is never worn before being thrown away, where it enters another end-of-life cycle. In the UK around one million tonnes of clothing are discarded annually, ending in incineration or landfill, or exported to developing countries. A small proportion, no more than 10%, might be resold as second hand or vintage, and far more could be reclaimed.

Studies have revealed, contrary to commonly held expectations, that for many everyday garments, their greatest environmental impact comes from the personal use phase: laundering and cleaning, according to individual habits.[iv] Frequency of laundering has increased over time with increasing affluence, labour-saving machines and changing social norms. By changing the behaviour of both customers and producers, environmental impacts will be reduced, however achieving this is fraught with difficulty, entailing considerable social and cultural shifts.

The role of the designer

Within the development of clothing (and other products), designers have a pivotal roIe. They have primary responsibility for the overall product, having influence, or taking the decisions, on sourcing materials, specifying colours and overall concept and styling. These aesthetic decisions in turn impact on the nature and complexity of manufacturing processes. Designers in different contexts can problem solve incrementally or innovate radically. Designers are at the centre of the product development cycle, communicating with production teams and manufacturers, buyers, and sales personnel. Once armed with the appropriate knowledge, they have the potential for initiating a sustainability agenda through dialogue within their company or team.

In the parallel field of product design, strategies for “green”, “eco” or “sustainable” design have gained impetus in the latter decades of the 20th century, following the first major wave of awareness of ecological resource depletion in the 1960s and 1970s, spurred by Rachel Carson’s seminal book *Silent Spring*. This was followed by texts such as Victor Papanek’s *Design for the Real World*, *The Green Imperative* and many others.[v] Since the 1990s, much new work has been undertaken in the product design and architecture fields, focussing on materials choices, energy usage and methods for reducing environmental impact. In contrast, the fashion industry has been slow to acknowledge the need for sustainability considerations, with major impetus only developing in the last decade, spurred by media exposés, publications such as Naomi Klein’s *No Logo*[vi], and high profile campaigns such as Al Gore’s Nobel prize-winning film *An Inconvenient Truth*. Jonathan Chapman writes of the need for “emotionally durable” product design in which the emotional bond between object and owner is reinforced by design. He discusses how in this era of technological gadgets, desirability is wedded to perfection and the appearance of newness.[vii] In contrast to products made from hard materials that may scratch, chip, crack or suffer other visible damage, objects made from wood or leather, or clothing made from denim for example, gain a patina of usage and ageing which is paradoxically found desirable, increasing the emotional relationship over time and enhancing longevity of use.

Indeed, the wearing of vintage fashions has gained increasing currency in recent years, for both red carpet appearances and everyday dressing. Unlike many newly-designed products, vintage clothing already embodies its own heritage, a temporal and material narrative creating emotional and personal bonds across generations. Dressing in vintage clothing creates individuality and idiosyncrasy - being different from the crowd. Vintage also represents older values, when clothes were cared for, kept and repaired, unlike the disposable commodity fashions of today, and are

appreciated for their quality and enduring design. In this way, the life of fashionable clothes has been extended. By cherishing and re-using existing clothing, wearing vintage (as opposed to the stigmatised "second-hand") garments can form one of a multiplicity of strategies which can be employed towards sustainable fashion, either individually or in combination.

Sustainable design strategies for fashion

A new generation of small-scale eco-fashion design-led companies are utilising a number of conscious design strategies, several of which are profiled in *Eco Chic the Fashion Paradox*. Design strategies that have become popular include:

- reuse and repurposing of existing clothes by repairing, remodelling or customising;
- upcycling by redesigning to make new from old, or using materials previously destined for waste, often with an assembled patchwork aesthetic;
- using recycled and reclaimed materials such as polyester fleece made from recycled plastic bottles;
- choosing materials made from renewable resources with minimal environmental impact such as organic cotton and hemp
- using a single fibre recyclable material for an entire garment including trims, to facilitate recycling at end of use
- design for minimal or zero waste in pattern cutting and manufacture.

Figures 1-8 show examples of some of these strategies in use.

Eco fashion is an emergent area, currently only accounting for of 4% [viii] of the $ 350 billion global textile and fashion market. [ix] However this is set to increase, as some methodologies, such as upcycling using pre- or post-consumer waste, are moving into more mainstream manufacturing and retail. Several high street shops including Top Shop previously developed their own vintage section, and enabling Levis jeans to be customised on site by the public. UK supermarket giants Tesco, whose clothing line Florence & Fred was launched in 2001, developed a capsule organic clothing range in 2007 in collaboration with Katharine Hamnett, and has since gone on to work with From Somewhere, pioneers of pre-consumer upcycled pieced-together clothing, a trend which is set to continue. These collaborations represent an extraordinary influence by small sustainable fashion businesses on multinational corporations. H&M, having already used organic cotton in a small proportion of their ranges, have increased their use of sustainable materials, and produced for spring 2011 a small upcycled line of clothes fashioned from the waste material of their winter 2010 Lanvin designer collaboration, although only available in one store per country.

Further strategies increasingly being used are designed to change the relationship consumers might have with their clothes, seeking to imbue fashions with greater longevity and emotional bonds. Others look to new technologies to completely change the way clothes and accessories are made:

- Personalised fashion
- Reduce the impact of aftercare through design; encouraging new behaviours
- Design for longer life and re-use – eg design with mono materials, design for disassembly into component parts
- New design thinking : new ways of making things and new service business models

Given the information from the life cycle analyses discussed earlier, education of customers with regard to laundry is essential. An initiative by Marks and Spencer formed part of its overall sustainability strategy, Plan A, a major stance first announced in 2007, with 100 commitments to sustainability throughout their operations on waste, energy reduction and carbon footprint.

Significant commitments have been to promote low-temperature washing at 30°, eliminate overstock clothes going to landfill, and increase use of recycled polyester and Fairtrade cotton.

New thinking is evident from fashion innovators such as Comme des Garçons, Issey Miyake and Martin Margiela regularly question the premise and basic systems by which fashion is made and presented. Issey Miyake's 1998 *Making Things* exhibition worked with many new techniques for clothing including the groundbreaking A-POC concept, in which entire wardrobes were made in a one step manufacturing process, only requiring cutting out from the fabric roll. The Pleats Please collections are 100% polyester, quick drying, need no ironing and are fully recyclable.

Experimental design is increasingly being undertaken by fashion students in many countries to rethink the use and function of clothing, designing in subtle features, such as hidden elements revealed over time to create a bond between designer and wearer. Experiments with colours, patterns and fabrics might encourage less frequent washing; a garment may have more than one function or can transform into another item.

New systems and strategies for future operation of fashion have been proposed – such as the extension of clothes hire, which is used currently for formal occasion wear, or sharing of high fashion items through websites such as Bag, Borrow or Steal. Service models - hiring not buying - are already established in men's formal wear, but could easily be extended for example to designer and evening wear. Clothes swapping ("swishing") is another sociable and fun way to maintain novelty and recycle useful clothes, which has recently gained momentum.

However, ultimately, strategies for sustainability depend on a reduction in consumption- to create reductions in resource use and depletion, energy, water and transportation. New strategies encompassing the hand-made to the hi-tech will all be required:

- Fewer but smarter clothing – multi-functional textiles and technology-enabled fashions
- Slow fashion: local, artisanal production related to communities
- Enduring Design –luxury, heritage, craftsmanship, quality, invested with conceptual and emotional depth.

Couture and bespoke fashions, although representing elite luxury, sometimes to excess, but always with high aesthetic and creative values, may paradoxically embody concepts of sustainability – highest quality, longevity and increasing worth. (Fig 11). Enhanced design values are important to create a longer lasting relationship with fashionable clothes, and after they go out of fashion, well-designed and cherished items acquire a sense of timelessness and respect as vintage fashion – which after an appropriate number of years, becomes desirable again in fashion cycles.

New design and manufacturing processes are emerging: technologies which take a different approach to creating clothes seamlessly, including 3D knitting, and laser welding, eliminate the need for almost all of the garment sewing processes. Examples already available range from automatic glove and stocking knitting to Issey Miyake's revolutionary A-POC concept using 3D knitting and 3D weaving technologies. Digital and virtual technologies are well into development aiming to link body scan data to pattern making and manufacturing, which will enable design and visualisation of clothes in 3D before they are then constructed to personal size and preference – a new paradigm of fashion on demand, which could reduce the amount of clothing made overall to that which is actually needed.

Clothing is getting smarter**. (Fig 12)** We already have lingerie impregnated with perfumes or lotions, or with anti-UV or anti-microbial properties. In the not too distant future we may be able to create multifunctional fabrics and garments, which will do more for us for longer, like a true second skin, or make textiles which can change colour and pattern as we wish- just for fun, so we don't need

so many different clothes in our wardrobes to keep us satisfied. With nano-coatings and treatments, clothes can be made stain and dirt repellant, and reduce the need for such frequent washing.

Concluding thoughts

Ethical and sustainable principles are of such importance that they now unquestionably have to become a fundamental part of everyday living – necessitating massive changes in behaviour which will be very difficult to achieve in western consumer societies, as people naturally do not want to reduce their standard of living or become ascetics. Therefore strategies need to be adopted at a deep level of design and production, in order that consumers can, without necessarily conscious decisions, make a difference in their purchasing - because the innovative thinking for sustainability has already been built in, by design, to the majority of products, including fashion.

These strategies include not only the post-manufacture and post- purchase doctrines of reduce, reuse and recycle, but also pre-manufacture design and production for high quality longer lasting goods and lower replacement turnover of goods, getting rid of built-in obsolescence. Design for end of life and disposal or better still, for reuse, is part of this new process in a "cradle to cradle" paradigm, where waste is eliminated, and all by-products become a feedstock for another system.[x] As a consequence, higher prices in mainstream clothing are needed to reflect the true value of production, which will in turn encourage less consumption, whilst distributing the increased value through the supply chain to those at the bottom. Slowing down of consumption and eliminating waste, including fashion, is an imperative to beginning to mitigate and control negative environmental impacts. If this develops in tandem with restoring the true value of clothes, both craft-based production in developing countries and processes based on new technologies can maintain value and employment worldwide.

An updated edition of Eco Chic the Fashion Paradox was published in March 2011.

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Fig 1. TRAID Remade refashioned post-consumer clothing. Photo courtesy TRAID (Textile Recycling for Trade and International Development)

Fig 2. From Somewhere autumn/winter 07/08. Upcycled pre-consumer fabrics from industry surplus. Photo courtesy From Somewhere.

Fig 3. From Somewhere patchwork garment pieces autumn/winter 04/05. Photo courtesy From Somewhere.

Fig 4. From Somewhere spring/summer 2007 Upcycled pre-consumer fabrics from industry surplus. Photo courtesy From Somewhere.

Fig 5. Patagonia fleece. Fabric from recycled PET bottles, Photo courtesy Patagonia.

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Fig 10. Alabama Chanin skirt 2009. Hand crafted small-scale production using local manufacturing skills in Alabama USA. Courtesy Natalie Chanin.

Fig 11. Steven Harkin AC Bag 2009. Handmade batch-produced leather bag incorporating unique metallised textile by Frances Geesin. Photo Steven Harkin

Fig 12. Cute Circuit Hug Shirt 2006 and ongoing. Electronic functionality via mobile telephone technology transmits an electronic hug to a remote partner wearing a similar shirt. Courtesy Cute Circuit

Eco Chic book, 2011 edition.

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[i] Black, S. *Eco Chic: the Fashion Paradox*. London: Black Dog Publishing, 2008.

[ii] OECD, (Organisation for Economic Co-operation and Development) *A new world map in textiles and clothing: adjusting to change,* 2004

[iii] Allwood J, Laursen S, De Rodriguez C. M, and Bocken N, *Well Dressed? The Present and Future Sustainability of Clothing and Textiles in the UK,* Cambridge: University of Cambridge Institute for Manufacturing, 2006. p12.

[iv] See for example Allwood et al pp26-28 ; Bio Intelligence/Ademe life cycle analysis of denim jeans available at http://www.ademe.fr/internet/eco-jean/Ecoprofil_jean_final.pdf accessed 20 Feb 2011

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[vi] Klein, N. *No Logo*. New York: Flamingo, 2000.

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[viii] Mintel Report, *Can Ethical Clothing Break Through Its Niche*? 2009

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[x] McDonough, W and Braungart, M. *Cradle to Cradle*. *Remaking the way we make things*. New York: North Point Press, 2002.