

# Making a material difference

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## Abstract

Dressing is an everyday action that defines us. Clothes envelop our body to provide protection and privacy. They do for us on the outside what food does on the inside—nourish, warm, engage body and soul. Preferred garments vary with our age, stage, work and wallet—they impact how we feel and how we present to the world.

Clothing changes over time as new designs, techniques and materials become available. We expect a modicum of change in the product itself: that is fashion. Yet in recent decades, the transformational shift in the process of sourcing and shedding clothing has brought changes to substance as well as style. Most clothing is now made in factories in developing nations where supply chain transparency is limited and workers can be exploited.

Fast, cheap food influenced dining in the same way that fast, cheap fashion has changed dressing. As there is rising interest in home cooking and food growing for health and wellbeing, there are pressing ethical and ecological reasons for rethinking our approach to textiles and fashion. It is time to look more closely at where our clothes are coming from, question why they are so cheap, and consider what actions we can take to dress with good conscience.

## Introduction

The built environment shapes the way we live; food choices influence how well we live; and the clothing we choose to wear makes a statement about who we are.

We are naturally attached to our clothes on a physical, emotional, even spiritual level. We wear them next to skin, the biggest living organ in our bodies. We're fussy about what we wear because

we want to look good, feel comfortable, reflect an image, belong to our tribe. Wearing any old thing is rarely enough. We want to make a statement, perhaps an ethical one.

Most of us are spoilt for choice with every conceivable item available in a plethora of colours, styles and sizes ready for our consuming pleasure. We purchase our identity according to whichever brand message has grabbed our attention from the rivers of print, screen, digital and social information flowing our way. This all forms part of the trillion-dollar global fashion industry feeding insatiable, contrived Western desires for more, more, more.

Any thinking person knows that endless consumption is destroying the planet. Our wardrobes bulge with clothes we don't wear because we purchased them for a single occasion, our shape has changed, or we bought them cheaply, hurriedly, without longer-term consideration.

This paper will explore issues associated with fast, cheap fashion and propose some ways forward for consumers to rethink the way they engage with clothing.

## The quantum of clothing

Desire, buy, use, reject and toss are the five stages of engagement with material goods that make our world go around. *New Scientist* (2014) said humans are materialistic by nature, but we have an odd relationship with the things we own. George (2014) said that it is our ability to imagine how new things might change our lives that drives us to acquire them; we have transformation expectation about new stuff. Furthering the discussion, Bond (2014) made the case to refrain from retail therapy because of the sizeable toll consumerism has on the environment. He said

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‘In part to make way for new stuff, people in the US throw away an average of 30 kilograms of clothing and other textiles each year. Also, it turns out that the more you prize possessions, the more likely you are to dismiss environmental concerns’.

Our consumption of clothing has been increasing incrementally since the emergence of ready-made fashions in the 1920s and ’30s. Ready-to-wear became mainstream in the 1970s, liberating Western women from sewing machines as the feminist movement opened professional career pathways.

Now global supply chains mean that new clothing has never been cheaper or more plentiful. The process of shopping, trying on and buying clothing in stores (or online) provides recreational therapy as well as a constant supply. Figures crunched by financial commentator Alan Kohler show women’s clothing is the cheapest in 25 years (see Figure 1), fuelling consumption of ephemeral fashion.

**Figure 1. Women’s clothing is cheapest in 25 years**



Source: ABS, CommSec in Alan Kohler, April 2015, www.alankohler.com.au

In her book *To die for: Is fashion wearing out the world?* United Kingdom journalist Lucy Siegle (2011) said that every year about 80 billion garments are produced worldwide and textile production has doubled in the last three decades. Siegle said research suggests that each one of us is indirectly responsible for using 0.6 kilograms of oil, 60 kilograms of water and generating one kilogram of solid waste for every kilogram of fashion that we buy.

Meanwhile, in *Overdressed: the shockingly high price of cheap fashion*, United States journalist Elizabeth Cline (2012) said Americans consume

nearly 20 billion garments a year (that’s 62 per person). When they’re tired of the garments, Americans throw them out at a rate of 30 kilograms of textiles per person per year. Although many are donated to charity, Cline said the reality is only about 20 per cent of the clothes Americans donate are sold in charity thrift shops because there is simply too much to resell. About half of secondhand clothing is turned into fibres or wiping rags, and the rest is shipped overseas as used clothing.

A University of Cambridge study *Well dressed?* (Allwood, 2006) recommended the greatest beneficial change in future sustainability of textiles would occur if less clothing was purchased and it was kept for longer. Increased spending coincided with dropping prices largely due to the rise of ‘fast fashion’ bringing faster turnover of styles than previously. It said UK consumers are purchasing and disposing of around 35 kilograms of clothing and textiles per person each year, of which around 13 per cent is collected for re-use, 13 per cent is incinerated, and the remainder—26 kilograms per person—is buried in landfill.

### Meeting our material needs

While clothing meets our material needs, fashion emerged to satisfy non-material needs for participation, identity, freedom and to signal wealth and social status. Fletcher (2014), in her second edition of *Sustainable fashion and textiles: Design journeys* (2014) said fashion links us to time and space—and caters to emotional and social needs. Where the fashion sector and the clothing industry come together—in fashion clothes—our emotional needs are made manifest as garments. This overlaying of emotional needs on physical goods fuels resource consumption, generates waste and promotes short-term thinking as we turn our gaze from one silhouette, hemline and colour palate to the next in search of a new experience. It also leaves us feeling dissatisfied and disempowered, because external physical possessions are unable to satisfy internal psychological and emotional needs, no matter how much we consume.

In their book *Planet obesity*, Garry Egger and Boyd Swinburn (2010) link obesity with consumerism and climate change. They suggest we can help ourselves by living a low-carbon lifestyle, changing our way of thinking about how we live as much as our actual behaviours.

## Everything is fast

Fast food is having a profound influence on our diet. Society is now literally bulging through over-consumption of easy, yet ultimately unhealthy, fast-food choices. Two-thirds of the Australian population is identified as overweight or obese (Australian Institute of Health and Welfare, 2012) at the same time as one-third of the world's food goes to waste (Food and Agriculture Organization, 2013). There may be a correlation between bulging waistlines and the burgeoning mountain of waste clothing. With changing body shapes and clothing now so cheap, it is easy to upsize with new items and toss the too-tight ones.

It is accepted that fresh, varied, nutritious meals enable us to survive and thrive as human beings. However, the BBC documentary *The men who made us fat* (ABC, 2014), shown on ABC television in Australia in 2014, revealed the truth of consumption habits that see us overfed while undernourished. In the British documentary series, Jacques Peretti exposed how corporations devise tactics to sell us more and more unhealthy addictive food. This downward spiral of socially irresponsible businesses exploiting human weaknesses and addictions for commercial gain is troubling.

In the same way our food intake is manipulated by commercial interests, our clothing wants are, too. We allow ourselves to be victims of fashion trends, feeling the need to have the latest look. Yet we often feel dissatisfied, with a wardrobe full of clothes and nothing to wear!

Running contra to the pervasive presence of processed food, during the past decade there has been growing interest and awareness in where food comes from, how it is grown and what its nutritional and sustainable values are. In a similar way, there is growing interest in where clothes come from.

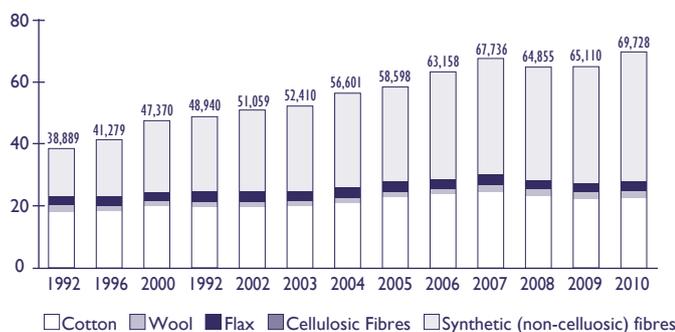
Global supply chains mean we have lost sight of the making process. Skills, knowledge and understanding about where and how clothing is made are diminishing. Many are troubled that some clothing has become so cheap and available that it is effectively disposable, with many items worn only once or twice before being discarded. It is possible that two-thirds of clothing in bulging wardrobes are being worn only once or twice and, as WRAP UK statistics show in the *Valuing our clothes* report (WRAP, 2012), nearly one-third of clothing is going into landfill as waste.

This cheap fast fashion, like cheap fast food, satisfies an immediate need to dress for the day—but the true social, ethical and ecological impact is only just coming to light.

## Why does it matter?

The World Apparel Fiber Consumption Survey (Food and Agriculture Organization of the United Nations and International Cotton Advisory Committee [FAO/ICAC], 2013) shows we now consume clothing at three times the rate we did two decades ago. Since 1992, global population has increased by 25 per cent and textile consumption by 80 per cent. In 1992, we averaged 7 kilograms per person and that increased to 11 kilograms by 2010, with most of the increase being synthetic fibres, derived from petroleum and coal (see Figure 2).

**Figure 2. Evolution of world apparel fibre consumption, in million tons**



Source: FAO/ICAC World Apparel Fiber Consumption Survey, July 2013

Our Earth is finite. This escalating growth and continuous chase of new clothing consumes resources at the production end (water, energy, nutrients and petroleum) and results in pollution at the disposal end (dumps, leaching and methane).

In her book *Naked fashion: The new sustainable fashion revolution*, Minney (2012) explained why the price tag on fashion you buy rarely covers the real social and environmental costs. Minney, founder of fair trade fashion brand People Tree, wrote:

For many developing countries, clothing manufacture is a leg-up into industrialisation and so-called development, and is a substantial part of their earnings. In Bangladesh, clothing exports account for 70 per cent of GDP and the industry employs over three million workers, mostly women. The clothing industry offers opportunities to low-income countries because of the relatively low cost of setting up factories, and a burgeoning population that provides a constant supply of deft hands as

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semi-skilled labour. Developing countries end up competing with each other to be the world’s garment factory, in what has been called a ‘race to the bottom’ for wages, health and safety and job security (p.12).

In *Sew eco*, Singer (2011) said textile and fashion industries are fraught with potential environmental and ethical issues. Some to consider are:

- chemical use in fabric production
- fair and ethical working practices for producers
- the burden of waste textiles in landfill
- the use of precious non-renewable resources
- pollution caused by production of textiles—for example, dyes and plastic byproducts
- the amount of energy used to produce, process and transport fabrics
- the amount of water used in textile production and processing.

### Threads of change

In earlier times, before synthetics were invented, most clothing was utilitarian and locally made from natural fibres—cotton, linen, wool, leather and silk. Back then, clothing was valued and relatively scarce compared with today. People looked after their clothes, they were mended and handed on to others until the fibres wore out.

The fabric of our clothing has now changed significantly, which has implications for water use, energy use and pollution. Data from the World Apparel Fiber Consumption Survey (FAO/ICAC, 2013) showed only 33 per cent of clothing is made from natural fibres—down from 50 per cent just two decades ago—with the remainder made from synthetic fibres derived from petroleum and coal.

Global research led by ecologist Dr Mark Browne (Browne et al., 2011) found synthetic clothing can shed microplastic particles with every wash,

and these fibres are then flushed into oceans to contaminate the food chain and the planet. Browne et al. (2011) said ingested and inhaled fibres carry toxic materials and a third of the food we eat is contaminated with this material. The study, published in *Environmental Science and Technology*, found: Experiments sampling wastewater from domestic washing machines demonstrated that a single garment can produce >1900 fibers per wash. This

suggests that a large proportion of microplastic fibers found in the marine environment may be derived from sewage as a consequence of washing of clothes. As the human population grows and people use more synthetic textiles, contamination of habitats and animals by microplastic is likely to increase (p. 9175).

Based on research for the New Zealand Merino Wool Association, linen is the most energy-efficient fibre available (O Ecotextiles, 2013) (see Figure 3).

**Figure 3. Embodied energy used in production of various fibres**

	Energy use in MJ per KG of fiber:
Flax fibre (MAT)	10
Cotton	55
Wool	63
Viscose	100
Polypropylene	115
Polyester	125
Acrylic	175
Nylon	250

Source: LCA: New Zealand Merino Wool Total Energy Use, Barber and Pellow, <http://www.tech.plym.ac.uk/sme/mats324/mats324A9%20NFETE.htm> in O Ecotextiles (2013). Climate change and the textile industry, <https://oecotextiles.wordpress.com/2014/10/15/climate-change-and-the-textile-industry/>

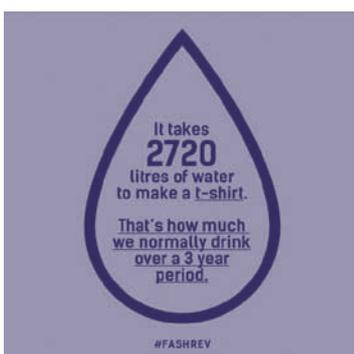
Linen and cotton are plant fibres (linen made from leaves of the flax plant and cotton from the cotton flowers) while wool is a protein fibre from sheep fleece. All three have much less embodied energy than synthetics, requiring 10, 55 and 63 MJ per kilogram of fibre respectively.

Viscose (similar to rayon) is a man-made fibre from reconstituted plant fibres and requires 100 MJ per kilogram to produce. Then there’s the jump to synthetic fibres made from the non-renewable resources of petroleum, coal or gas with energy consumption ranging from 115 MJ up to 250 MJ per kilogram.

On the other hand, natural-fibre production consumes more water. In his book *The coming famine*, Cribb (2010) said growing one kilogram of wool (enough for a suit) required 170 000 litres of water. WRAP (2012) said the cotton used to make a pair of jeans required about 10 000 litres of water to grow, while a Fashion Revolution Day graphic (Fashion Revolution, 2015) indicated that it takes 2720 litres of water to make a T-shirt (see Figure 4)—as much as one person drinks over a three-year period.

The Australian cotton industry has made serious strides in improving sustainability credentials, with pesticide use down by 90 per

**Figure 4. Fashion Revolution Day graphic 2015**



cent (Roth, 2014) and water use down by 40 per cent (Trindall, Roth, Williams, Wigginton & Harris, 2012). The industry began its Best Management Practice program in 1997, along with environmental auditing and water-use efficiency programs. Significant reduction in pesticide use has been enabled by adoption of integrated pest management systems and cotton plants genetically modified to resist insect pests.

### Awash with waste

Never in history have there been so many clothes in the world, and another 70 million tonnes of garments are added every year (FAO/ICAC 2013).

Clothing waste has led to organisations such as UK-based charity TRAIID working to stop clothes being thrown away and Hong Kong-based non-government organisation Redress promoting environmental sustainability in the fashion industry. Figure 5 shows how Redress (2011) graphically demonstrated the problem, with this 5-metre high textile mountain being just the tip of a precipice because it represents only 3 per cent of the daily dumping of clothing in Hong Kong.

Figure 5. The 3% mountain



Source: Redress <http://redress.com.hk/the-3-mountain/>

In his forward in the book *Eco fashion* (Brown, 2010), recycled menswear pioneer Geoffrey Small is scathing about fast fashion, planned obsolescence, ignorance and waste:

Bad for the customer, bad for the worker, bad for society and bad for the environment, fashion today is one of the industrial age's biggest human failures. Dominated by large global corporate groups and their sponsored media who encourage a dream lifestyle of selfishness, apathy, superficiality, greed, sex and drugs to a growing worldwide audience of billions, fashion has been sold to the rafters, leaving its consumers and producers poorer,

dumber and more ill-equipped than ever to face, combat or survive the doomsday scenarios that everyone from religious fanatics to Nobel laureates predict will take place within a lifetime. Fashion is indeed a massive human, social and environmental disgrace in need of a paradigm shift (p. 6).

### Consumption in Australia

The rise of cheap fashion in the past 15 years has led Australians to purchase one billion units of clothing each year (Wells, 2011), which amounts to 48 items each, nearly one a week. We are encouraged to consume, for economic good, for perpetual growth.

Australians annually spend an average of \$2300 per person on clothing and footwear, according to a recent *Choice* magazine article (Castle, 2014), which said about 92 per cent of clothes sold in Australia are imported because they can be delivered faster and cheaper. Castle (2014) reported that The Council of Textiles and Fashion Industries of Australia data indicate that 73 per cent of imports are made in China, 6 per cent in Bangladesh, 2 per cent in India, with the rest from Italy, Indonesia and other countries.

We are buying a lot of clothing, wearing some and throwing much away. There are many reasons why people discard clothing, such as de-cluttering a bulging wardrobe, boredom, dated style, change in weight and body shape, the owner has moved on, needing mending or wanting to help a charity. While donating is to be encouraged, anecdotal evidence suggests only about 10–20 per cent of clothing will find a new home locally, the rest is either ragged or enters the global clothing trade. The fastest-growing household waste in Australia is clothing, according to the Council of Textile and Fashion Industries of Australia (2013), which said Australians send \$500 million of fashion clothing to the tip every year and charities take 22 tonnes of clothing waste per day, but only 10 per cent of it is used.

National Op Shop Week is an initiative to encourage clothing donations, with a *New Idea* magazine survey of 900 women finding:

- 62% have clothes in their wardrobe that have never been worn/still have tags on
- 83% have clothes in their wardrobe they have only worn once or twice
- 23% of a woman's total wardrobe has either never or rarely been worn.

(Do Something Near You, 2013).

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Charity shops are the main way that second-hand clothing (also known as post-consumer waste) is processed. Clothing is resold and recycled through 3000 outlets in Australia, operating under the National Association of Charitable Recycling Organisations (NACRO) umbrella. The NACRO (2013) submission to the National Waste Report said Australia exported 70 000 tonnes (i.e. 70 million kilograms) of second-hand clothing in 2012 with an estimated value of over \$70 million (about \$1/kg). It said:

Second-hand clothing for export is usually baled in Australia and shipped as unsorted textile waste to low labour cost countries where the goods are sorted and re-exported. Three-quarters of all second-hand clothing exported from Australia goes to one of three primary destinations for sorting, UAE (38%), Malaysia (21%) and Pakistan (14%) (p. 7).

Developing nations may welcome our second-hand offerings but it is only a matter of time before that outlet for spent clothing is saturated. The downside of such trade is it negatively impacts local clothing industries and amounts to Western countries shifting waste onto developing nations, where it ultimately has to be buried or burned.

### The revolution

In a tragic watershed on 24 April 2013, the world had a window into fast, cheap clothing when 1133 people lost their lives and thousands more were injured in the Rana Plaza factory collapse in Bangladesh. There can be no excuses for ignoring such lack of safety and care.

Conscientious consumers now have a growing interest in the ethics of where and how clothing is made. There's a spotlight shining on ways to turn our purchasing into a force for good, to make informed choices and step away from constant and conspicuous consumption.

The global Fashion Revolution Day movement earmarks 24 April, the anniversary of the Rana Plaza collapse, as a day to foster curiosity, discovery and action towards a fairer fashion future. It aims to use the power of fashion to catalyse change and reconnect the broken links in the supply chain. It hopes to initiate a process of discovery, reminding consumers that buying is the last click in a long journey involving hundreds of people: the invisible workforce behind the clothes we wear. It encourages positive change by celebrating the brands and businesses that are helping to consolidate a fairer future for fashion.

To empower Australians to purchase from companies that treat workers ethically and reduce the risk of modern slavery, Baptist World Aid Australia has released its report *The Australian fashion report 2015* (Nimbalkar, Mawson, Cremen, Wrinkle, & Eriksson, 2015) and an accompanying *Ethical fashion guide* (Baptist World Aid Australia, 2015), which rates companies based on their labour rights management system and living wage guarantee. The pocket guide grades 59 companies and 219 brands operating in Australia based on 61 separate criteria of policies, knowledge of supply chain, monitoring and workers' rights practices. In the two years since the release of the 2013 Ethical Fashion Guide, two-thirds of the companies improved their labour management systems.

While this guide is a great initiative, the globalised nature of clothing manufacture means a label 'Made in China' tells little of the true origins of garments. In his book *Clothing poverty: The hidden world of fast fashion and second-hand clothes*, Brooks (2015) notes:

Starting from the cotton (which could originate anywhere from Alabama to Zimbabwe) onwards, the production of jeans is nigh-on impossible to audit. They are not made in one place, but are constructed as a commodity with a particular set of social values through a whole web of relationships (p. 31).

### Sewing a fresh seam

Few people in Australia sew their own clothes. Having access or skills to use a sewing machine are relatively rare. Home-made was considered old-fashioned and consumers embraced easy (and cheap) opportunities to buy off the rack. The more consumers bought into the fashion thing, the more they lost the skills and confidence to 'do for ourselves', becoming disempowered and dependent on fashion houses and clothing supply chains.

In her book *Sew retro: A stylish history of the sewing revolution*, Ketteler (2010) writes about feminist history and women's role in the home in the 19th century when everything was sewn by hand. Then in the 20th century, women won the right to vote, cut their hair, ditched their corsets and joined the work force in earnest. Ketteler contends that sewing was on its way out during the self-indulgent 1980s but is now making a huge comeback, thanks to a third wave of feminism that folded together ideas about DIY creativity, self-reliance and eco-awareness. She said: 'In 2010, sewing is about empowerment, creativity, sustainability, and sometimes sticking it to The Man. I can't imagine a better place for sewing to have ended up' (p. 124).

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## The upcycled way

While most people buy new clothes off the rack, some buy only second-hand, and a few sew with new fabric and patterns. Another way is refashioning what already exists in our wardrobes or op-shops.

Upcycling is a way to revive home sewing in the 21st century. Instead of sewing from scratch, existing clothing resources can be reused by recreating them to suit oneself and cut the waste. If sewing is embraced, as cooking has been, and the historical connotations of sewing as a subservient, sheltered skill are overthrown, sewing can be repositioned as an empowering and ethical way to enhance existing clothing.

Fletcher (2014) noted the reuse of textile products 'as is' brings significant environmental savings, with the energy used to collect, sort and resell second-hand garments between 10 and 20 times less than that needed to make a new item. According to Fletcher, very little of the second-hand clothing collected in the United Kingdom is reused there; most is shipped abroad to be sold on a global commodities market before being resold to local traders in Eastern Europe and Africa.

Repairing and reconditioning garments also saves resources compared with manufacturing new items, although it requires labour and materials. In earlier times the incentive to repair was economic, with techniques such as turning over worn collars and cuffs, patching trousers and shirts, darning holes in socks being accepted practice. Fletcher (2014) wrote:

Yet within two generations, the financial incentive to repair has largely disappeared, mainly because the price of new garments and textiles has fallen dramatically relative to the cost of labour. Repairing garments at home—if it takes place at all—is now motivated less by economics and more by ethical factors or lifestyle choices like down-shifting and voluntary simplicity (p. 120).

In *Eco Fashion*, Brown (2010) reflected on our grandparents' 'make-do' culture of mending and repairing as the genesis of redesign that has moved well beyond its historic roots to make use of otherwise unwearable items of clothing by cutting, piecing and embellishing them to create entirely new garments. Brown wrote:

In a fast-fashion universe of low-quality throwaway clothing, redesign is the ultimate expression of slow-fashion, as each piece must be individually conceived and crafted from scratch. It has the added bonus of diverting

items destined for landfill, the ultimate end for much of our discarded clothing (p. 103).

In *Junky Styling*, Sanders and Seager (2009) said: Recycling worn, discarded, second-hand clothing involves taking a garment that already has an identity and looking at it as a raw material, studying the existing form and details, then applying them to a new design—a complete reinterpretation and disregard for the existing identity of the piece. This involves a vision and an understanding of form and functionality. We reckon that you can recycle anything, and it's a wonderful way to engage our imaginations. With such a vast array of materials used in clothing, we have always maintained that distinction between 'natural' and 'manmade' fabric. The quality of natural textiles has always made them first choice for our raw materials (p. 82).

Upcycling has appeal on many levels because it is useful, mindful, resourceful and playful. Most people get the message about consumption overload, yet few are yet to personally invest energy and time in turning the tide.

## Simple ways to dress with conscience

Individual actions can make a collective difference. It comes down to being a conscious consumer, looking beyond the price tag and the label. Apply logic, ask questions, find out, do something. Be mindful that modern slavery equals prices too good to be true. And even if a label says 'Made in Australia', it could be made by an outworker in a backyard sweatshop in your neighbourhood. Actions you can take to reduce your clothing footprint on people, places and planet include the following:

- Buy clothing that comes with an ethical, sustainable and preferably local story.
- Buy the best quality you can afford based on the buy-once, buy-well philosophy.
- Choose classical clothing that you will wear many times.
- Care for your clothes—remove stains, wash with care, mend and repair.
- Wash clothes less and shake, hang, line-dry to minimise ironing.
- Borrow or hire clothes that might only be worn once.
- Re-love existing clothing sourced by swapping, sharing and op shopping.
- Make or refashion it yourself, learn to sew if you can't already.

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Even if a label says  
'Made in Australia',  
it could be made  
by an outworker  
in a backyard  
sweatshop in your  
neighbourhood.

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**About Jane Milburn** Agricultural scientist and communications consultant Jane Milburn is developing Textile Beat as an innovative enterprise focused on slow fashion, dressing with conscience and reducing the footprint of clothing on the planet. In 2014, Jane undertook the 365-day Sew it Again upcycling project to demonstrate creative reuse of clothing. She believes home-sewing is a life skill that enables mindful, resourceful, thrifty, ethical, non-toxic upcycling of existing natural fibres. After winning the Fairfax Agricultural Media open scholarship to undertake the Australian Rural Leadership Program in 2009, Jane was RIRDC Rural Women's Award Queensland runner-up in 2010. She is a member of the Fashion Revolution Day Australia and New Zealand committee.