

Evolution/Revolution

How textiles have remade our world time and again and why we need them to do it again.



Bernadette Casey

CREATIVE DIRECTOR, THE FORMARY

Bernadette Casey holds an MSc in marketing and is the founder and creative director of The Formary (a sustainable textile research, development and consulting company) and board member of iD Dunedin Fashion Week.

Ancient Greeks worshipped Athena the goddess of wisdom, craft, and war, she was the protector of ships and of weaving (the sail cloths that propelled the ships). According to Professor Elizabeth Barber, textile production is older than pottery and perhaps even older even than agriculture and stockbreeding. Textiles are our earliest and most enduring form of technology, more ancient than bronze and as current as digital currency.

Before metal currency was invented cloth was used for transacting trades, now Bitcoin pioneers have adopted the term 'weaving' rather than 'mining' as their metaphor for recording transactions on Bitcoin's socialised ledger.

Today's computer technology borrowed from the binary system of weaving and directly from the punch card technology developed for the production of Jacquard cloth by Joseph Marie Jacquard in 1801. Our language reflects the profound impact of textiles on humanity and society's development, words like fabricate from the Latin word fabrica 'something skilfully produced', text and textile from the verb texere, to weave. We speak of hanging by a thread, or being frazzled, of catching a shuttle, of spin-offs, and looming deadlines. Textile terminology is so deeply imbedded in the vernacular we give little thought to its genesis.

The fashion industry is now valued at about 3 trillion per year, container after container of clothing leaves South East Asia and is shipped across the world to Europe and the States and the south Pacific where the latest outfits are worn for a period (an average Zara garment is worn 6 times). Then about 70 percent of the worn garments are shipped to third world countries, where the uncontrolled export of our waste clothing has decimated local textile industries and created an industry of poverty where people try to etch a living out of the resale of used garments, this has resulted in significant social impacts through the closing of local industries (which cannot compete with the import of cheap clothing) and the loss of skilled jobs to significant environmental effects from the dumping of unwanted used clothing.

People want to do the right thing, as is indicated by the large volume of used clothes donated through clothing bins rather than just thrown out. In reality they are providing free stock to multi-million dollar businesses which then on-sell the majority of this clothing to poor second hand clothing traders on foreign shores. The issue is so significant that in 2016 a block of East African Government's proposed a ban on the importation of second-hand clothes, but a counter move from powerful US rag traders to have trade agreements rescinded to enable the continued

dumping of waste clothing on those less fortunate looks far from benign.

New Zealand is part of this global system, so, when we have worn the latest outfits and moved on to the next season where does billions of dollars worth of our clothing go? Auckland Council estimate discarded textile and clothing waste at about 9 percent of landfill and is their fastest growing waste stream. Our donated clothes are sold into the Pacific, New Zealand exports a cool \$14 million a year in used clothing a year to Papua New Guinea alone.

The recently released Pulse Report on the State of the Fashion Industry, predicts the industry aims to double its use of polyester by 2030, placing their hopes on the emerging fibre to fibre technology which uses green chemistry to break down used polyester to its molecular componentry and then be reformed back into polyester without the loss of quality. Promoting the concept that clothes could be "infinitely recycled".

But this ignores the environmental impact of the use and laundering of synthetic clothing. Microplastic fibres from clothing and other plastics is so prevalent they are now a common contaminant in our drinking water and food sources. Tap water samples from over a dozen countries have been analysed with over 80 percent contaminated with micro plastic fibres from clothing and other plastics. According to Greenpeace's 2017 'Fashion at the Crossroads' report "Recent studies of the plastic waste along the western coast of Sweden found that more than 90 percent of the microplastics found in ocean surface waters (which are themselves a portion of overall marine plastics) consisted of synthetic textile fibres." While the focus of the fashion industry is on recycling of synthetics, the green chemistry recycling of clothing and textiles made from natural fibres is also developing rapidly.

The recent revelation of British luxury brand Burberry burning millions of dollars of excess stock has ignited conversations around the globe on

the issue of slow, obsolete, excess and end-of-life clothing, turning the spotlight on this less fashionable side of fashion and the extended chain of custody. Close on Burberry's disclosure came Earth Overshoot Day, that calculated on 1st August, 2018 the world had consumed a year's worth of resources in just seven months, amplifying the issue of resource use and responsibility.

Cognisant of these issues, a collaboration of prominent New Zealand organisations including Fonterra, AlSCO NZ, Wellington City Council and Wellington Zoo has formed to create a step change in how end-of-life clothing is managed. New Zealand based textile research company The Formary was approached to lead the Textile Reuse Programme with the aim of reducing environmental impacts and producing social and financial benefits for New Zealanders. The programme is now open to other organisations, assisting to meet customers' expectations for responsible management of clothing. Approaching the issue from a systems perspective will advance the fashion and textile industry towards a circular model for clothing, looping used clothing back into useful production as valued industrial inputs, with the potential to unlock billions of dollars of resource value (globally) that is currently lost.

Spinning technology was the catalyst that sparked the industrial revolution, weaving punch card technology, the computer age, the invention of polymers and hightech fabrics have enhanced mankind's physical performance on this earth and beyond. Since time immemorial, textiles have remade our world, repeatedly revolutionising society. Our current production and consumption of clothing is now impacting the earth's ecology, it's time for the textile industry to do what it does so well and usher in a new revolution, a restorative one.

Edited and updated version of the article by Bernadette Casey published in Pure Advantage (Oct 2017).