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Textiles from Cradle to Grave

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Recommended Citation

Harper, Catherine Ph.D, "Textiles from Cradle to Grave" (2023). *Arts and Design*. 13.

https://buescholar.bue.edu.eg/arts_design/13

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'Textiles from Cradle to Grave'

Keynote for 4th Hangzhou Triennial of Fiber Art International Conference, Zhejiang Art Museum, Hangzhou, China, October – December 2022

In: Textile Reader (4th Hangzhou Triennial of Fiber Art, Zhejiang Art Museum, China, 2022), Chinese and English, 2023

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It is a great pleasure to be invited to provide a keynote lecture for the Hangzhou Triennial 2022, and I would like to thank all the organisers, and especially Dr Jia Xu of the China Academy of Art, for their kind invitation and technical support in making it possible to be with you from a distance, using the greatest textile network – the world wide web of cosmic, digital and technical interconnection – to enable this communication.

This triennial is concerned with the dynamic relationships between text, texture, culture and civilization as they play out across time, geography, materiality and humanity. The ubiquity and significance of textiles in their very widest form cannot be overstated in our shared human culture, with cloth, fabric, clothing, thread, fibre, yarn, skin and even hair part of us literally from cradle to grave. As well as the actual phenomenon of textile, the metaphorical, critical, historical and imaginative deployment of textile allows huge opportunity for rich and inspired thinking, contemplation, reflection, engagement, participation, intervention, and further creative production.

This paper seeks to trace a research-weaver's knotted thread through the non-linear text I have created to examine my selected creative and primary sources in textile culture, that is, the ideas and emotions that inform my labour of both word-smithing and materials practice. My starting point is French philosopher Michel Serres' assertion that "fabrics, textiles and material provide excellent models of knowledge" with "pure touch giv[ing] access to information, a soft correlate of what was once called the intellect". Serres gives permission for the senses – namely that of touch in particular – to provide an alternative model to intellectual examination of the world. I contend that textiles enable a specific approach that combines both the sensual and cerebral in understanding the 'things' that both surround us and make us. Knowledge of textiles is not only located in the texts of textiles, but in the *materiality* and the *narration* of textiles, requiring interrogation through sound, smell, taste, memory, touch *and* scholarship to unlock deep meaning. The Irish poet, William Butler Yeats captured the narrative of cloth perfectly when he wrote in 1899:

Had I the heavens' embroidered cloths,
Enwrought with golden and silver light,
The blue and the dim and the dark cloths
Of night and light and the half light,
I would spread the cloths under your feet:
But I, being poor, have only my dreams;
I have spread my dreams under your feet;

Tread softly because you tread on my dreams [Yeats: 1899].

Mythologies and 'arachnologies' are also part of the rich and complex narratives of textile culture. In Greek mythology, Arachne, whose name means spider, was a talented mortal maiden, a weaver, and the inventor of linen cloth. As told by Roman poet Ovid, Arachne challenged the weaving skill of the divine Athena, goddess of wisdom and crafts, creating a perfect and very beautiful tapestry that enraged Athena. Punished for her shameful audacity in pitching her textile skills against those of a deity, Arachne hanged herself. Athena then transformed Arachne into a spider, wishing her to live, but destined to weave her ancient web forever.

The mythological Philomela, the youngest of two daughters of the King of Athens, was raped by her sister's husband. According again to Ovid, her rapist brother-in-law then cut out Philomela's tongue to stop her speaking of his crime against her, at which point she turned to what Sophocles called the 'voice of the shuttle' to voice her trauma. Weaving a tapestry that told the story of her violation, Philomela sent the tapestry to her sister, who then kills, cooks and serves up her own son to her husband...and the rest is Greek myth.

Homer's Penelope, faithful wife of Odysseus, keeps over one hundred unwanted suitors at bay for two decades by her repetitious day-light weaving and nocturnal unravelling of a burial shroud for her father-in-law until her husband returns from the Trojan War. Penelope tricked the suitors into believing she would choose one of them when the shroud-making was completed, with the holding pattern of making and unmaking being variously interpreted as a sign of her sexual loyalty to her husband or alternatively her use of denial and potential as an erotic device designed to hold the suitors' attention for this lengthy period.

Ariadne, daughter of King Minos of Crete and wife of the Greek god Dionysus, was placed in charge of the labyrinth where sacrifices were made and in which the Minotaur, her half-brother and a half-man half-bull creature, lived. Ariadne falls in love with Theseus, who has volunteered to kill the Minotaur and save those waiting to be sacrificed, and betrays her father, husband and country by providing Theseus with a red flannel thread to lead him safely to the labyrinth's sacrificial centre and then safely out again.

And Lachesis, the second of the Three Fates, is the measurer of the thread spun on her sister's spindle, determining an individual's destiny or the length of their thread of life. Life hangs by her thread, only to be cut by another of the Fates when the time comes for death. Tread softly on the mythic dreams of Arachne and her spinning, weaving, embroidering sisters, Philomela, Penelope, Ariadne and Lachesis.

From the webs of ancient Greece via the Grimm Brothers' fairytale of Rumpelstiltskin's alchemical spinning, through British design historian Judy Attfield's configuration of the "web of women's texts", and around English modernist writer Virginia Woolf's allusion to her fiction as

...like a spider's web, attached ever so lightly perhaps, but still attached to life at all four corners...not spun in mid-air by incorporeal creatures,

but...the work of suffering human beings...attached to grossly material things...

Through all this – to the late 1930s patenting of extruded nylon in time for war-time's man-entangling 'silken' stockings, to Nexia Technologies' transgenic techno-textile 'spider-silk milk', to the complex structures of orb spiders' dragline silk that surpasses the toughness of synthetic polymers and informs micro-constructed knitted heart valves, woven aorta catheters and braided veins – is a clear trajectory joining arachno-mythology seamlessly to aerospace, medical, defence, and bio-material, -mechanical, -technological advances that profoundly question what is 'natural' and what is 'synthetic'. As Spanish academic María Jesús Martínez Alfaro confirms:

What is past and what is to come, the vast and the small, fantasy and experience, mythological deities and spiders, all form part of the same thing...

The 'rewriting' of Ovid's Arachne story typifies many of postmodernism's transformational and labyrinthine 'inter-texts'. Through what English novelist and poet, A.S Byatt refers to as "Greek myths retold at a gallop", a form of ambiguous, interconnected and disruptive writing in textile culture over the past four decades is enabled and enacted. Martínez Alfaro describes how Byatt's *Arachne* comprises elements of writing that

...generate in turn so many echoes that the intricate web they constitute seems to be only a part of that which the reader may continue to weave just by tracing the references that the narrative contains and/or by adding his/her own connections to the subject of spiders and weaving, as the author herself does.

The implication, entanglement and agency of the subject – reader, viewer *or* author – is a hallmark of this form of textile-textuality and its fragmentary and quilt-like text construction: Martínez Alfaro again:

Arachne's thread is the writer's narrative line, her skill at weaving is the author's skill at writing; weaving becomes one with writing (spinning yarns) but weaving is also a pre-eminent figure of women's work.

English academic Victoria Mitchell's search for the nexus of text, textiles and *techne* takes the textual expression of affection by the spider Charlotte for the pig Wilbur in the fictional narrative of American E. B. White's book *Charlotte's Web* as a starting point. Linkages of, and dislocations between, language and textiles are then Mitchell's subject, as she considers the places of tactility and perception in the fields of Western vision-centric understanding of the world. Perhaps etymology, ontology, mythology and arachnology can be drawn together or rethreaded to assert a form of textile 'being' in the 'word' textile?

In transferring, perhaps appropriating, the articulacy of threads from material to textual practice, the metaphorical ambiguity of textile

terminology has unleashed previously undisclosed meanings for textiles as well as for critical theory...

Textiles as metaphor have assumed in recent writing the agency of a sensory idea, a material of thought, so that it becomes possible to speak of textile thought and tactile literature. The haptic and the conceptual have moved closer together through the agency of textile experience as expressed through metaphor and through words [Mitchell: 1997, 329-330].

But, I ask, are we tangling ourselves up in knots of tension, woven conspiracies, or frayed nerves?

Was design historian David Brett right when he questions whether “in modern conditions, where few people ever touch a loom or even a sewing needle, the cosmic metaphor of weaving is much diminished and in danger of becoming a literary fossil”?

Does fernando marques penteado have a point when he asks:

...‘the’ mythological, univocal Ariadne deed: why on earth do people have to use ever again such an example to purport intellectually authorized perspectives for textiles? Will daily, ordinary teeth floss ever do the job?.

The inter-relating of textiles and architectural structures conjures German textile artist and printer Annie Albers’ proposition of the apparently antithetical materiality of *pliable weavings* and *rigid buildings*, under which lie important scaled similarities, founded – she asserts – on *process*. These, echoed by considerations of the technologies of warp/weft verticals and horizontals, and their *felt/perceived* antithesis, then have become increasingly fused, more than linked, as new integrating methods develop in each. After all, Michel Serres names weavers and spinners as “the first geometers, because their art or craft explores or exploits space by means of knots, proximities or continuities, without intervention from measurement, because their tactile manipulations anticipate topology...We had to dress ourselves before building, cloth ourselves in loose garments before constructing solid buildings”.

Albers noted the crafting and construction of shelters – mobile as clothing, immobile as homes – as the domain of both weavers and builders for centuries. Architectonic references are numerous in the physical formation of woven fabrics, and their textural delineation as warped and wefted cloth. As much as spiders have spun webs, tents, bundles, nets and strings, pliable planes and flexible materials have evolved via human industry over great spans of time – through practice, myth, performance and aesthetics – to inform contemporary architectures, interior design and clothing constructions. Deleuze and Guattari note that:

...among sedentaries [us], clothes-fabric and tapestry-fabric tend to annex the body and exterior space, respectively, to the immobile house: fabric integrates the body and the outside into a closed space. On the other hand, the weaving of the nomad indexes clothing and the house itself to the space of the outside, to the open smooth space in which the body moves.

A word, an idea, a material common to so-called 'architextiles' discourse is *skin*. Our largest, most visible, vulnerable and distributed organ, the skin is the body's primary covering. Stephen Connor, critic and extraordinary essayist, overviews in detail the historical, cultural, social and anatomical positions of skin in terms as potent for both the *materiality* and *mathematics* of architecture... The material imagination; the imagination of matter; the materiality of imagining; *and* the imagination of the material that Connor works though is exactly the territory of new architectonics concerned with "the making of textile membranes for a behaving architecture" by combining novel fibres and innovative hybrid fabrication processes. In such a scenario, fabric becomes a dynamic building technology, informed by techno-textile concepts of programmable skins, curtain walls, mega-scaling upwards, wrapped membranous and versatile structures, and malleable compositions.

The poetic idea that a building can breathe or ripple, like the lungs and muscles, humanizes the notion of an interactive, intelligent and responsive (geo)textile tectonic, offering what Canadian Charles Stankievecch terms "an experimental entanglement of body, building and the environment". Stankievecch rejects the sterile and disembodied curtain wall as a form of 'distantiation device' for humans to be separated and even alienated from their natural environment. He, echoing Finnish architect Juhani Pallasmaa, urges that even ergonomically sensitive architecture misses the combination of phenomenological, somatic, emotional and cerebral content that would permit an holistic, radical and (re)conciliatory approach to our sensory *and* technological needs, as the inhabitants of the *fabric* of our buildings and the dynamic ecological *membranes* of our gardens.

And so, we find our way back to Michel Serres, to the contingent feminine, the materially sensual, and to the selvedged marginal – what Serres call the:

...veil, canvas, tissue, chiffon, fabric, goatskin and sheepskin, known as parchment, the flayed hide of a calf, known as vellum, paper, supple and fragile, linens and silks, all the forms of planes or twists in space, bodily envelopes or writing supports, able to flutter like a curtain, neither liquid nor solid, to be sure, but participating in both conditions. Pliable, tearable, stretchable ...

The – *pliable, tearable, stretchable* – history of humanity is the history of textiles. Historians and scholars point to the critical importance of trade route webs – opportunistic in the beginning, speculative subsequently – and of the territorial disputes that followed their global tracery.

Textiles have been documented as a form of coinage or in commodity exchange circulation from the 3rd millennia BC, with nomadic merchants, seafarers, and builders of the great Persian imperial highways such as the Royal Road linking Ephesus and Susa (in modern Turkey and Iran) or the famous Silk Routes connecting the Asia, African, European and Mediterranean worlds, and sustaining situated colonies of weavers, dyers and later, embroiderers. The glossaries of textile technical developments contain such seductive words as *soumak, slit tapestry, twill chevrons/lozenges, sprang, cross-warp tablet-woven borders,*

and *weft-loop pile*, as spoken, written and textile languages combined and were transmitted along these lucrative and interlinked trading routes.

The seduction of textile terms, classifications, and descriptive devices is a significant and not unproblematic part of textile culture, pointing to the magic of innovation and invention in each chapter of history. Royal College of Art's Susannah Handley's "'N' Day" saw the "miracle" of nylon's emergence as "a new word and a new material" in the 1930s. This pliable, elastic, strong, fine and long oil-based filament found its immediate place in the creation of the much sought after and (almost) indestructible stockings mentioned earlier, and thousands of subsequent products. The spidery extrusion of what Handley calls "cobwebby filaments, which solidify in the air and are wound on spools" hailed in the new polymer era, but was simultaneously responsible for both the near destruction of the oriental silk trade and the considerable decline of the US cotton industry...

That trade and terminology are linked to global politics and economic relations is well known, but the invention of Nylon was a case in point, releasing the US from a politically and financially uncomfortable connection to Japan. That Japan supplied 90% of America's raw silk in the 1930s, and that 75% of that was destined for hosiery which saw an annual expenditure of \$475M, shows how incredibly important it was for the latter to be in a prime position to make beautiful the legs of its (let's say mainly) female citizens from this *home-produced* wonder fibre. And that trade and terminology are vitally connected to marketing and branding is also clear – hence, the deliberation over what to call the tongue-tripping *hexadecamethylene dicarboxylics* was critical to its impact!

Handley's "wizardry of ancient alchemy" – Nylon – that began the age of polymers and extended the textile language, was formally made available to the American public on 15 May 1940. Elastic Spandex was patented by DuPont in 1954, Dacron and Orlon appeared mid-1950s, and invention of Lycra® followed in 1959, liberating swim and sportswear from droop, and bringing mouth-watering limes, sharp lemons and shocking pinks to the fashion palette. Of course, a 'treasure-to-trash' counter-revolution followed in the 1970s and 1980s, with synthetics (bar rayon) relegated to the cheaper-end market and to blended presence. But, for Nylon and its counterparts, arguably, 'textile futures' began in 1940.

Textile technology now wildly eclipses Yeats' "embroidered cloths". Smart and intelligent fabrics are now ubiquitous as we witness massive shifts forward in fibre, fabric and finishing technologies. Futuristic scenarios are proposed daily via speeding developments in genetic modification, biotechnology, bio-mimicry, nano-technology, new material sciences, electro-engineering, and so on. Their impact on textiles, and their potential to inform 'embroidered cloths' that Yeats would not have dreamt of, is extraordinary... This future is here...

Imagine a bed that pulls back its quilt for you and your lover, remembers how you both curve together, adjusts to cool or warm you, and memory-forms the hollows in your pillows to cradle your heads. With programmable fibres and responsive wireless technology, this level of automatic and magical material response becomes a design possibility rather than a future-science dream... With kinetically reactive shape memory alloys, the prospect of your bed snuggling up to you is no longer a future-fiction...

Phase Change Materials allow your 'intelligent' bedding to maintain a stable body temperature for you and your lover as you sleep... and electroluminescent fabric technology wakens you 'naturally' with a 'digital dawn', Or you can 'softswitch' on your bedside light from the fabric sensor in your sheet...

From your bed, you and your lover may want to make calls, receive messages, surf the net, play digital games. Seamless, wireless entertainment and communications, electro-embroidered conductive circuitry, fabric antennae and sensory body-architecture all provide textile templates for doing these via your quilt. And if you both tire of your bed's aesthetic, then thermochromic fibre treatments – such as micro-electronic light emission fabrics – allow that to be altered to suit your mood...

Conductive printing ink and fibres enable the printing and weaving of circuits, and the possibilities opened up for communication, play and design effect by making your bedding electronically 'live' are immense. Ceramic core filament fibres are capable of converting the solar energy of the rising sun on your bedroom balcony into heat and electrical energy capable of altering thermo-affected inks used to dye the patterns on your bed linen... photovoltaic membranes permit the transfer of light energy into the textile substrate, while sensory networks permit the generation and distribution of energy from your body and that of your lover...

To keep you both fresh and healthy, microencapsulation technology delivers vitamins to your skin, fragrance to your bed, and provides insect-repellent, anti-bacterial and antifungal properties for your comfort through the 'fabricetical' cloth structure of your duvet... while embedded technology monitors your vital signs, sending data to a collection centre for scrutiny of your well-being as you make love and fall asleep. For safety and security, your bed frame itself can be woven three-dimensionally using composite technology and glass, carbon – or even bullet-proof polymer fibres – to achieve strength far in excess of that of steel. And finally, the sciences of biomimesis and nanotechnology open up the way for your bedding to be scientifically manufactured from your DNA and that of your lover achieving a genetic intercellular textile intercourse way beyond the body as we know it....

I'm both seduced and repelled by this level of possible enhancement and/or interference by technology in the most intimate spaces of our lives. Human culture, cloth and craft are inextricably linked to myth, artefact, magic, and ritual, and the potential for new textile processes and materials to surprise and delight is immense. The race continues to be on, however, to technologically solve the massive global problems of efficiency, power, communication, reliability, connectivity, intelligence, security and control. And while my bedroom scenarios above are technologically possible, do they convincingly entice us to experience our beds as technologically enhanced spaces where we – cradle to grave – are born, nurtured, have sex, sleep, suffer and die?

Textile futures' technological and crafted scenarios – in the main – still sit and are thought about oppositionally in textile design, pitting 'hand' against 'digital', sensory versus rational, science denying artistry, tactile facing technological, 'flawed' opposing 'perfect', even human contrasting with machine... Thankfully, key and critical practitioners and

commentators continue to seek the 'emotional body' in technological advance, searching for something more 'felt' than cool efficient technology or (al)chemical 'magic tricks'. Textile futures are ultimately framed and formed by what textile visionary, Bradley Quinn asserts as the "mega-materials of our age":

- photovoltaic threads, fabrics and foils that transform sunlight into solar energy conducted via substrate-embedded electrodes;
- fibre-optic woven layers and panels that transmit emitted light through computer-controlled micro-bends in solid forms;
- electroluminescent and electro-conductive digital embroidery powered by user-movement to create responsive decorative surfaces;
- nanotechnology digital printing inks, phase change and shape memory alloy components on/in fabrics with integrated power-sources enabling materials with 'smart' kinetic control responsive to external stimuli;
- ion-enabled electrically conductive and prismatic crystals, crystal laminate films and liquid crystal emulsions to transfer electrostatic, heat and light energy allowing thermochromic reactions on fabric surfaces;
- ceramic-fibre sensors and actuators that create energy-harvesting and high temperature tolerant fabrics;
- high-performance carbon, aramid and other fibres enhance tensile, flexural, abrasion-resistance and aerodynamic properties in engineered bi-axial, tri-axial, braided, knitted and (non)woven fabrics and composite laminates;
- reflective 'solar sail' membranes and spinning textile discs harvest energy sufficient to power and moderate satellite movement in space and in descent;
- spider-silk and its synthetic equivalent evolution creating compounds able to dissipate energy with maximum tenacity, fracture-resistance, elasticity and strength-to-length ratio;
- metal fibre, electronic frequency emitting, radioactive-hazard protection fabric shield suits allowing post-radiation disaster plant workers 40 seconds of site time in a highly toxic environment;
- extreme protection fabrics withstanding the incredible shifts of temperature in aerospace, the extreme colds of space, permafrost and the deep ocean and the intolerable temperatures nearer to the sun;
- chemical and bio-hazard impregnated and contaminate- textiles, typically combined as layers of semi-permeable, non-permeable, micro-porous, ultraporous and nonporous fabrics or membranes, that operate as offensive and defensive weapons in war and espionage;
- ubiquitous and redistributed computing allowing for a 'cyborgian' notion of wearable electronics and augmented reality, permitting communication, interactive and mobile operational devices that are almost seamlessly – and often softly – integrated with the body;
- vital signs monitoring textiles – heart rate, blood pressure, body temperature, calorific consumption, and even ovulation time and hormonal balance – as well as wearable devices for wound healing and drug delivery, and with microbicidal, antiviral and antispore properties that have advanced medical textiles immeasurably;

- well-being enhancement, refreshment, restoration and revival of mind, body and spirit with therapeutic bio-functional fibres with moisturizing, vitamin delivery and perfume applications, anti-allergenic properties, circulation improvement capabilities, and the latest technologies in microencapsulation;
- textile architectures to provide tissue re-growth support, and knitted, braided, woven and embroidered surgical components are in use in, for example, stents, arteries, replacement ligaments, etc;
- three-dimensional printing, most typically used for rapid prototyping of products – using nanotechnology, luminescent fibre, conductive components, and downloadable and animated pattern, colour, image onto flexible fabric-screens – allowing for innovative and essentially *dynamic* textile design and ‘specification specific’ garment design...

That Professor in Design for Sustainable Futures at University of the Arts, London Carole Collet drew parallels between the “biological fabrication of life and the man-made fabrication of textiles” is apt: but where do we go from here? Collet suggests that – for a start – the traditional textiles response to nature (a raw material, an inspiration) is replaced by a different relationship with the natural world – that of a “role model and a mentor” whereby “biology, the study of living organisms, together with biomimicry, the emulation of nature’s principles, become[s] the new formula for sustainable textiles”. We can understand the magical seduction of new technologies, but be fully cognizant of the danger of “novelty for the sake of novelty”, head-line grabbing trickery, and the dangers of loss of meaning, ethics, aesthetics and poetics in a scramble for the ‘techno one-trick pony’. We cannot return to the Arts and Crafts Movement, nor can we reject the Industrial Revolution, and consequently there must be a new carving out of a space of critical integrity for textile designers:

A craftsman in a job shop can keep tools in plain sight; working with them every day makes them familiar to his eyes, hands, and mind. He gets to know their abilities naturally, and can put this knowledge to immediate creative use. But people - like us - who have to understand the future face a greater challenge, because the future's tools exist now only as ideas and as possibilities implicit in natural law. These tools neither hang on the wall nor impress themselves on the mind through sight and sound and touch - nor will they, until they exist as hardware. In the coming years of preparation only study, imagination, and thought can make their abilities real to the mind.

Professor at Carnegie Mellon University, Jonathan Chapman too writes of Utopia’s “uncomplicated vision of an apparently flawless future”. In design terms, he cites the ‘lighter; faster; smarter’ – constant improvement, constant obsolescence – mantra of the world of the mass-manufactured:

Corporate futurologists force-feed us a ‘happy-ever-after’ portrayal of life where technology is the solution to every problem. There is no room for doubt or complexity in their techno-utopian visions...Despite the fact that technology is evolving, the imagined products that feature in their

fantasies reassure us that nothing essential will change, everything will stay the same.

If performance stripped of emotional or embodied referents equates to peerless (established or emergent) technological function only, is our world then impoverished or enriched?

Where do memory, attachment, subjective experience, meaning and transformation lie in 'textile capability'?

Is the utopia of textile engagement the space between knowing the performance and capability and the untouchable and experiential aspects of the 'fabrics of our lives'?

And what about those 'fabrics of our lives'?

The total amount of clothing and textile waste arising globally per year is trillions of tonnes. A tiny proportion is reclaimed, some materials recovered, another proportion incinerated, and the majority going directly to landfill, where textiles contribute to the overall environmental impact of these sites, including production of methane emissions to air and pollution of ground water through toxic leachate. Synthetic textile materials with long decay times prolong these impacts, while the decomposition of fibres such as wool – a 'natural' fibre – give rise to especially high emissions of ammonia, a toxic pollutant to both air and water.

Kate Fletcher has been working in sustainable fashion and textiles since the early 1990s. Her critical work on life cycle sustainability impacts in textiles and fashion lays out the issues but goes further by proposing plural and complex solutions – as Chapman does. Her plans rely on new considerations of what systems of thinking and doing can be implemented, how local sourcing and a more measured approach to fashion cycles, plus materials intelligence and empowerment of makers and consumers, can impact production, use and disposal of textile and fashion items. Fletcher references the textile industry's long history of working imaginatively and efficiently with waste: rag collection and shoddy manufacture; reuse, repair and reconditioning of clothing and textile goods; recycling for commercial or charitable purpose; and now a growing contemporary focus on the serious reduction or indeed eradication of a concept of 'waste':

While some assert that nothing in the textile and apparel pipeline should be sent to landfill, Fletcher notes that even the prevailing strategies for recycling and reuse currently still involve dealing with waste through what critics - such as architect William McDonough and chemist Michael Braungart - refer to as merely an "illusion of change", and fail to impact on the inefficiency of energy-intensive industrial systems of production – stretching back to the rapid developments in technology and transport; agriculture and urbanization; labour-use, mechanisation and materialism – causing it in the first place. The 'built-in obsolescence' of the fashion system, its global dimensions, demand for over-packaging, material complexity, and economic reliance on over- and continual consumption, perpetuate the issue. Reversal thinking would require the fresh, intelligent and paradigmatic approaches of 'industrial ecology' and 'cradle to cradle' thinking. Fletcher, referencing Chapman, calls for

...a fundamental shift from a view of the economy as a linear system where we make, produce and discard (with over 90 per cent of the resources taken out of the ground today becoming waste within only three months), to a cyclical one where resources circle around the economy, becoming the source material for new goods.

So, to return to my introduction – I spoke about the greatest textile network – the world wide web of cosmic, digital and technical interconnection – to enable this communication. That same technology, the digital dream that we humans have turned in to reality, and our unique human ability to relate text, textile, culture and civilization across time zones, geographical locations, materiality and humanity, is our potential solution for our cradle to grave journeys. With textiles in cloth, fabric, clothing, thread, fibre, yarn, skin and even hair such a significant and ubiquitous part of life itself on this planet we inhabit, we can – and indeed we must – drive the highest level of metaphorical, critical, historical and imaginative deployment of textiles to inspire the creative solutions we badly need. By ensuring that we do not lose sight of the human, the emotion, the justice, and the touch necessary to understand our world and our condition, critical interrogation of the materiality and the narration of textiles will lead us to the “heavens’ embroidered cloths” Yeats wrote of so eloquently over a century ago.

For afterall, we emerge from womb to world, onto cloth. We are wiped, swaddled, comforted, blanketed. We are caressed, cosseted...or wrapped as lost souls, left for dead in rags... Our blood enters the world. Cloth touches our intimate senses at the moment when skin tissues and mucous membranes fold upon themselves, the histories of foetal life inscribed on the surface of our new born skin. The tactility-traces of the materials that touch us awaken our sensory and intuitive understanding of bodies – ours and others - and the blood matter of those bodies.

I made *The Big Red* in Belfast, Northern Ireland in 1994 before ‘peace broke out’ with the 1998 Good Friday Agreement. A livid wall of twining, twisting red fabrics, so all-enveloping that it...shrouds an entire wall with masses of ragged, falling fabric strands of different textures and densities...a sanguinary waterfall, which bleeds into a thick carpet of fleece that...fills the room with a warm, heady animal odour” Women deploy their bodies to bleed and blot, enacting revolution and resistance through revulsion: “this is my blood, but that is cloth, soft and porous; this comes from inside of me, but that lies outside of me”. Resistance is also in the body, celebrating itself through its joyous materiality and through the delight and decoration of its cloths and clothes.

Freedom of expression, civil rights and social justice, truthful enactment of identity, erotism and sexuality are not a given. Rather they must be won, cherished, protected and re-asserted, and where we have the privilege of liberal speech, we should celebrate that freedom through action in our lives, loves and creativity. So, in that spirit, I would like to end this talk with a 5-minute long film by a wonderful, young artist called Faye McKeever. She uses Sharon Owens’ wonderful poem *Dangerous Coats* to create her personal and political narrative, to find her own creative truth, telling her own creative story, in her own creative tongue. Here goes...