

# The 'i' in the Textile Toolbox Team

## Huddersfield Keynote Speech

### – Becky Earley

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I'm going to talk about a project that my team's been working on for the last 3½ years and where the self, the designer, our identities, and our sense of our selves in the future emerging landscape is heading.

I'm director of the Textiles Futures Research Centre based at Central Saint Martin's and Chelsea College of Art, at the University of the Arts London. I'm Professor of Sustainable Textile and Fashion Design. I studied BA Textiles at Loughborough, MA Fashion Textiles at Central Saint Martin's, and set up my own label on graduation called B.Earley. That was 20 years ago now. I started teaching whilst I was making and selling my fashion and accessories, and over time teaching became research, and then the research and my making switched roles. I'm now a maker that makes to support my research. So a lot of my talk today is about the future of us as makers, as educators, and as academics.

I work in a team and the team is incredibly important to me; the team is ever changing. This is the TED team. TED is a platform within the Textiles Futures Research Centre - Textiles Environment Design - which was set up in 1996 by Kay (Politowicz) who's here today. Team is absolutely essential to the way that we research with our practice-based textiles. We include PhD students and we support emerging researchers. We bring in research assistants and bring them on into PhD or emerging researcher roles; and we

connect with our lead tutors, our course directors and encourage them, support them, to make work and to continue to research whenever they have time. Obviously that's our way of getting ideas through to the curriculum, and I think this is something that we have been doing since we set up in '96. I hope that the curriculum at Chelsea reflects this.

We became interested in the environment and our role as designers around 1995 when a report came out by Graedel et al, which said that designers made decisions, which affected up to 80-90% of the environmental impact of a product. So we felt a very great sense of responsibility about finding out what those decisions are, and really wanting to explore this through making – in a hands-on way. So that's really formed the practical framework for our research.

Our thinking framework then developed further over time and this is what we call TED's The TEN. This is 10 sustainable design strategies that we use with all kinds of stakeholders to landscape the really broad decisions that need to be considered in the future of sustainable textiles. I'm not going to talk about that today, that's another entire lecture, but Kay's keynote is actually online, Design Lifetimes, if you want to look at it later. We've also just brought out 10 short animations for The TEN. So go to our website, [www.tedresearch.net](http://www.tedresearch.net), and there are reading lists and downloads. We've built it to be a resource for

educators and for students of textile design.

We have been taking our 10 strategies out into industry from around 2009 – 2010. More often than not we end up teaching the industry designers, as if they are our students, giving them lectures, and work-shopping their ideas with them. We ask them to bring along their best selling products, or a product that's giving them a particular problem, and we use The TEN to rethink the problems, sort of turning their barrier into a creative opportunity. We had industry engagements around this time, which took us to work with the Gucci Group in London; we worked with PPR (Home). I worked with in Cambridge developing their CSR proposal and now, of course, they're the Kerring Group. We worked with Sloggi and the Sustainable Fashion Academy. We also worked with businesses in Nottingham (NTU) through the Future Factory EU funded project.

So we began to understand our role as not just educators within the university culture, but as academics, educators and designers in the industry context too. Through the Mistra project, for example, in the space of a one-day workshop we were able use The TEN coupled with the Higg Index to reduce environmental scores for best selling product by up to 41%. Which means that we're educating designers to make slightly different decisions but keep the aesthetic and the function of the product the same. But we enable them to make changes, which for a best-selling, high volume product can have a significant environmental impact.

Perhaps our biggest engagement was with VF Corporation in 2012, where they approached us to curate a sustainable design exhibition within their bigger Futurewear global summit showcase. This was an innovation summit in North Carolina that brought together 350 of their brand leaders. The VF Corporation - if you don't know who they are - are different big brands like North Face, 7 For All Mankind Jeans, Lee, Wrangler, Nautica, etc. We were asked to make prototypes, curate new work and mentor designers, and also to time code the innovation to things that were useable 'now', things that were 'near', and things that were 'far' from market.

It meant that we had to rethink the way that we worked as a team, and train ourselves really to interact with the CEOs, and the brand leaders, to articulate our ideas in a different way. This is really quite a bit challenge - it's sort of a language barrier really that we found - from having to be academic speakers and publish papers and write articles, to then switching our brain to, say, talking to students, to then selling our ideas and interfacing with CEOs. It was during this project that I really realised that we had a great potential as a team, but we had to really rethink who we were as we moved forward.

I'm showing you the VF Corporation work, but I'm not going to talk in detail about it because what happened around this time was that we were being pushed and pulled in many different directions. Our workloads in the university meant that we were publishing and preparing outcomes for the REF (Research Excellence Framework) but that we were teaching PhDs, and also supporting the MA courses, and the BA courses, and we were also being asked to generate an income through enterprise. This project for example, VF, is a large enterprise project. The push and pull exists between us in how we are regarded as researchers when we do this kind of triangulation - because it's seen as too commercial by some researchers. It's sort of seen as 'selling out' or perhaps not really truly academic to work, to engage, to translate our ideas for commercial use in this way. On the other hand the industry clients see us perhaps as too academic: and not having ideas that are relevant and useable.

So we realised that we had a kind of new designer in mind, one that could traverse these worlds and make work, which was relevant and useful and impactful to all stakeholders. So that was our challenge at the time and then we then got a phone call asking us to join a research consortium in Sweden. This was a four-year Swedish funded consortium, which brings eight different projects together, and we were being asked to join as the design researchers. We're working with policy researchers, consumer behaviour experts from Copenhagen, fibre and recycling scientists in Sweden, as well as interaction designers and material psychologists who are working in the public sector.

So we were asked to really put our money where our mouth was, take this world- traversing design research attitude to Sweden, and really see what could be done. The whole remit of this funding was to produce sustainable and yet profitable ideas for the Swedish fashion market. A much bigger team, so this is just our project team within the eight teams. Our regular researchers are here, and also an expanded group, bringing in PhD researchers and other teaching staff to join. Through the funding we had the opportunity to invite lots of external experts to join. This was crucial for us; to literally have a chequebook, to say, 'hey, Otto von Busch, we love what you're doing, come and talk to us, come and work with us'.

We built this network of brains that we wanted to solve problems with us. On the whole, the gang on the right (the guest researchers) do the writing, and write with us, or write about us, or reflect, or go out and find case studies in the Swedish market that we want to unearth. The gang on the left (the internal TED team researchers) by and large are the makers, who then translate that research and make new design items.

So there were four key challenges with this consortium work. The first of them I think was the fact that we had to cross disciplines, that we were not only travelling to Sweden and Copenhagen an awful lot, but that we were having to find new languages and new ways of thinking, and new ways of publishing. So in collaborating with the scientists we had to look at the way that they would need to score points, literally, to publish enough about the new ideas and the research; and we would have to articulate our thinking alongside them and that was for us quite a big step. As practice based researchers we'd always focused on the product as the outcome, and if that product had gone into exhibition and then been collected by a museum - that was valid. That was it, that's what we were doing. But with this group we had to really, really think how we were going then take the idea into the written word, and articulate it across disciplines in the most appropriate manner.

The challenge extended into working with a group of key Swedish industry stakeholders and our challenge in particular was spending around two

years at H&M. There's 1,500 staff in the Buying Office in Stockholm, and it fell to us to create an educational 'inspiration programme'. This would offer a one-hour lecture given six times to reach everybody in the Buying Office; and four 3-hour workshops which would be an immersive, sort of deep-dive experience, with the 30 new development team who create the Conscious Collection at H&M. Really, really challenging to translate our ideas, and our strategies, and our teaching methods into that kind of context.

We also became Guest Professors at Konstfack and taught electives there to cross-disciplinary groups - to industrial designers, fine artists, graphic students. They actually don't have fashion designers there; they have textile artists, so not really any fashion or textile designers for us to work with. We had to take our strategies and probe their thinking, and that was really interesting for us to do as well. In fact that wasn't a problem, that was a joy, but this was also typical of the way in which we had to meet the demands of a whole set of stakeholders through this consortium work.

The fourth opportunity was that we had a funded PhD within the project and Clara Vuletich took this on. She had been part of the team that developed The TEN, but for her The TEN was missing a card - and it was the social card. It was the people and the spirit, and the consideration for these aspects within the design strategies. So she set about pursuing a PhD called Social Textiles at the outset. By the end of this presentation I'm going to show you what her PhD has become because it's changed quite a lot on this journey that she's been on. And she's taken some of us on it too, to really question the self and the people in the supply chain.

For her there was a great distance between where the fashion designer sits, particularly in a corporation like H&M, and all the other players, in the making of a product and where the garment worker sits. She was interested in the skills, the ideas, the energy, the empathy, the support that fashion and textile designers could bring to the factory context, and she wanted to find a way to get there.

All of this meant that for me, I was slightly worried

that we weren't ready for this kind of challenge. It meant being exposed and vulnerable in a massive industry situation and lots of the team members were very junior, one of them had just left a BA course. So I started to research the kind of training and 'upskilling' that would be useful to support a research team in this expanded context. I'm actually not going to talk about this training too much now because I've written a paper for the EAD11 Conference - which is in Paris next April (2105) called 'A New 'T' for Textiles: Training Designer Researchers to Inspire Buying Office Staff Towards Sustainability at H&M'. So that covers the technical training, but there was another kind of training that we actually began in this phase too, which was working on ourselves, and on the softer side of the knowledge and the support that we needed.

So by taking you on a guided tour of this exhibition now I'm hoping to show you this shift in thinking - through materials, through the social and to the self. It's at [textiletoolbox.com](http://textiletoolbox.com). It's an exhibition of 10 artefacts that we've created for Swedish stakeholders, and there's a survey there, and if there's one thing I'd love you all to do is to see the exhibition online and to take the survey, because this is important feedback for our research.

The exhibition is curated by Kate Goldsworthy and myself, and uses The TEN. At VF Corporation we used one card to create each of the exhibits. So, one strategy to inspire each new artefact. Now, since we've been playing and developing this strategic approach, we've actually played a hand of cards. So we've asked each exhibitor to pick one lead card, let's say 'Design for Cyclability', and then choose other cards to build a new design brief. So some people are playing up to eight cards and, of course, this is really the physical manifestation now of what we hoped we would be able to achieve - which is that we start with the things that we feel really passionate about, and that we're good at, and we have skills in; and then we build in and we bring in other ideas and other considerations, until we arrive at hopefully the most sustainable version of a design idea.

The first exhibit, Seamsdress by Kate Goldsworthy, was produced with a zero waste pattern cutter

(David Telfer), and this was progressing Kate's existing laser finishing work. She uses a laser welder to surface the material - this was the PhD she did with us in TED - but she's now taken that technology even further and developed a way to cut, construct and embellish the surface of the product all at the same time. So effectively she's turned the laser into a kind of one-stop-shop vertical production line, where you can create the entire garment. She's able to programme the laser so that it welds materials between layers so she can create a kind of multi-layered garment that's loose on top but welded in between. The whole point of the work she's doing is to work towards monomateriality, to use all different kinds of polyesters but not to introduce any toxic pollutants like glue or printing ink. She can colour and create flock effects, and create varnish effects, all with the laser welding technology.

Number two is A.S.A.P and paper cloth. We have also been working on this before we were working with H&M. The idea that fast fashion, although we would like to rule it out, is of course here to stay to some extent. The DEFRA research shows that 16 - 25 year olds consume fashion quickly; very often they discard it before they've even washed it, or in a very, very short timeframe. Then they go out again on a Saturday afternoon and they'll buy their next purchase. Much of the work that we're doing in the field is about longevity, about extending life, but at TED we also realise that there is a very significant opportunity to develop appropriate materials and production responses to fast fashion. So this is what Kay Politowicz has been pursuing, in this case along with Kate Goldsworthy, but with material scientists from Innventia, as well as Sandy MacLennan from East Central Studios, and David Telfer, to create some prototypes that are genuinely fast, wear-once clothing. The aim is to make these garments and these textiles beautiful, and aesthetic, but actually cheap and dispensable. If we don't wash our clothes we save 50-60% of the energy impacts of that garment, so not washing clothes and having genuinely fast clothing is a real opportunity.

Miriam's work, she'll talk about this tomorrow, DeNAture, looked at the idea of creating a DNA code for fibres. We can recycle everything

in the material world but we don't often have the economic drivers to do that. Our biggest problem is going to be the way that fibres are mixed in the future in terms of recycling. There are technologies coming through that will now chemically separate fibres but it's going to be less expensive and quicker if we can identify fibre types at the outset. So Miriam's developed a coding system which allows you to use UV light to see coded fibres in a textile, and enable the appropriate processing to take place.

Smorgas Board by Melanie Bowles and Kathy Round looked at the democratisation of design, and a toolbox that would enable people to design for themselves - anyone from school children, members of the public, to professional designers, to use their Smartphone or tablet device and to create a repeating digital print. Even through to the making of the garment with a digital bureau. So they're really interested in design being personal, design being useful, and open and democratic. The sustainability argument here is that if we have this, if we have this connection to our products, we may wish to keep them longer, we may look for other products that give us this kind of wealth of emotion. Bearing in mind that in Sweden now, at Stockholm Station, you can actually go to a vending machine, choose the articles you want in your newspaper, and only have those things printed in your newspaper, and then get on your train. We're reaching a point where technology is able to give us what we want and quite quickly, and actually that has an implication for reducing waste too.

Sweaver. Our Swedish member of the team, Josefin, our BA graduate, produced a beautiful collection of woven textiles using a traditional form of Swedish weaving called Rep Weaving. She was really inspired by consumer behaviour research that showed the rate, the quantity and the volume of textiles being discarded in Sweden. Sweden's the only country in the EU that burns and incinerates it's textile waste and if you know about the hierarchy of recycling you know that we should be re using and recirculating and remaking and repurposing, remanufacturing before we get to the bottom layer which is incineration, which is reclaiming the energy back. But there's a gap between the rate at which Swedish consumers

are buying and discarding clothing, and there's very little trickle through this hierarchy. So she asked friends to donate clothing to her, which she then shredded, and made into these beautiful woven textiles that could be used for the Swedish furniture industry. But the really interesting thing happened when we were working with her. She found that there were still 10,000 cabin weavers in Sweden, and if she connected them all to do very small runs of this kind of re used of textiles - she started to imagine a kind of craft system for recycling certain textiles, and a community and a sense of connection, all feeding back to one of the great Swedish industries - the furnishings industry.

So we began to see with the curation of the exhibition that for all of our material transitions, new social and service and community values were also present. Working with business and consumer behaviour experts from Copenhagen Business School meant that we were able to talk to them about how would this work. How would this work for H&M? What would be their barriers? How would this work for Filippa K? So we were able to really develop the products and the ideas thinking about systems more than we have ever been able to do before.

Fast ReFashion. My own work: I've been working with polyester for 15 years. I developed a way of printing on polyester whilst I was at Saint Martin's, and then after a few years of using recycled fleece and various other materials, I got into using polyester shirts. It's become a vehicle for exploring research ideas now, every time I have an idea I can make a shirt which exemplifies it, and then I can write it up, and the whole body of work really starts to embody the landscape of sustainability and where it's going... It got to a point about two years ago where I thought, okay, let's try the idea of democratising this. Let's try the idea of getting the consumer to remake the shirt for themselves. So I took the iron and started to make proposals for how somebody at home could give a garment just one more life. By extending the life of a garment one more time, for perhaps six months, that can have a huge impact on resource use if you scale it up. So I began to develop the tools, the techniques and the ideas that would take this upcycling out into the social realm. This is from the EAD10 workshop

where in the space of an hour just before dinner at a conference, participants made shirts for themselves.

Library Jumper. So the material transformations started to become a social transformation. For one of our PhD researchers, Bridget Harvey, we gave her the task of designing a garment for a fashion library. So if we're going to really achieve some level of sustainability in the future, we have to shift away from generating so many new products, and recirculating existing ones and extending the life of products. So something like a fashion library is becoming of great interest at places like Copenhagen Business School. We asked Bridget what would need to be different, how would the product change? She took on the idea of making something where its repair was very visible; constant repair, added value to the experience, but she also started to take the material back to its raw form, so the longer it's worn the more it transforms back into a sheep... The last slide I'm showing today is the transitioning of the jumper back into the sheep. She's actually adding lanolin back in and undoing the work of man, if you like!

This idea of the fashion library, designing for longevity, and for short life, is where we're going with the research for the next phase of Mistra (which is 2015 – 2019), and I think it's just so important that we re evaluate as designers our relationship to these materials and the systems that they operate in.

ReDressing Activism. We also took ourselves to China - really trying to challenge and take new contexts and the bigger picture on board. Swedish manufacturing – some of it is done in Eastern Europe, but a massive amount of it, particularly with H&M, is done in China, but this huge distance exists. So again it's a sort of bridging dilemma. We wanted to work with an activist organisation in Hong Kong to see how the young designers, the next generation, were being educated and were setting up small businesses. We worked with them on a shirt, 11 of us made one shirt together as part of this process. It really throws up the question about what we are teaching our young designers. None of them had ever been to a recycling plant before, none of them were re using materials; none of them

had given any consideration to using natural dyes. All of them had set up businesses but were not thinking about that business in any way being sustainable. If you scale that up then by the hundreds of thousands, the way in which we felt was quite typical of the way that education is producing textile designers at the moment, and it goes right back to schools. It goes back to schools for us in the sense that what we're seeing in primary schools now, apart from the lack of art being a subject in its own right (because of the focus on STEM subjects), but instead being part of and embedded within a curriculum - there is a detachment from materials, understanding materials, and understanding making, and certainly a lack of value around clothing.

School Shirt. This work is part of something called 'Fashion Revolution Day'. This is great to get into your diaries, 24th April every year. This is an organisation that remembers Rana Plaza and the factory collapse that happened two years ago; and the 1,100 people that died in that factory disaster. This is a growing movement to really look at who makes our clothes. So again, a reminder back to the people, back to ourselves. It's not just about material in the future for textile designers.

That's my daughter meditating. What happened through this period of time was that we were undergoing change and challenges that made us need more support. So apart from the new technical skills support that we got, we also began to start practicing meditation and yoga; to look at sleeping habits and nutrition. This came from a personal perspective, but grew into something that became part of the team dynamic, and part of the practice of what we were doing through MISTRA. The idea of the self and sustainability is incredibly important. In 2008 Ehrenfeld wrote that 'in order for us to become sustainable we have to become our whole selves'. This about this idea of disconnection; the disconnection between Sweden and China; the disconnection between the designer and the factory worker. We're having to find a way to bring these disconnected factors together, if we're to really care; if we're to really move towards change; and particularly if we're going to move towards change with the younger generation. Younger people are more depressed than they were in the 1950's; in fact the

average rate of depression now in young people is something like 45%, which would be considered chronic in the 1950's, in terms of their ratings at that time.

We're finding that students are more stressed, more anxious, more liable to depression; and that recently meditation has been introduced into schools and into businesses, and into college environments. I don't know if you have that in your environment, but we have meditation now onsite in the UAL colleges because it's proven to change habits, to lower depression, to enable people to build more fulfilling relationships, to overcome chronic pain, and to boost the immune system. I'm not turning into some hippy dippy New Age person right now! I'm taking this very, very seriously. If you look at Professor Mark Williams at the Oxford Mindfulness Centre and his book 'Mindfulness', he rolls out statistic and medical research in a really digestible way about the practice of meditation; of giving ourselves the time and the space to think and to create the ability to actually connect, and feel a sense of what we're doing and what we're teaching, with young people.

We've been teaching sustainability since about 1999 at Chelsea and we see some people really take it on and absorb it; and others who are completely not interested in their young selves. We're finding more and more that there's a connection between this kind of practice and the change in people that will be needed to maybe reduce the impulse to over consume; which is essentially what fashion is suffering from. MRI scans show that the insular in the brain becomes energised through meditation, this is the part of the brain that helps us to mediate empathy in a real and visceral way. We get an increased sense of purpose, a zest for life, an increased sense of physical health. We're more resilient to dealing with life's challenges and knocks, and it's not just meditation. Essentially meditation is breathing. Yoga is stretching. A noble prize-winning scientist advocates walking: Gregory Burns wrote the book, 'Iconoclast: A Neuroscientist Reveals How to Think Differently', because only when the brain is confronted with stimuli that it has not encountered before does it start to re organise perception. The surest way to provoke the imagination is to seek

out environments you have no previous experience with.

Full Circle. So I think this is starting to suggest to us that we need to take our students and ourselves somewhere else. We need to encourage different kinds of behaviours as well as working with materials and processes in order to prepare us and them for the next industrial revolution. For Clara this has become very much the core of her PhD. She's realised that there is no 11th card missing in The TEN; but is needed is maybe the pack that contains the cards. There is a preparation that's needed for both designers and consumers in order to embrace sustainability and be ready to work in a circular economy, in a more empathetic environment. So her frameworks are about developing this process at multiple levels: the human, the social, the cultural, the business, the economic, the environmental. Multiple actors, or rather humans, need to be involved in this network of textile stakeholders. The processing, the making, the use, the disposal, etc. It's a radical way of looking at the way that we're currently educating and supporting textile designers to move forward.

Textile Talk Kit. Our field research in China - from Hong Kong to Shanghai - involved working with factory workers. We used textiles and our skills and our language, or lack of language, to actually generate ideas around how their working conditions could be improved. How we as designers could develop products that would please them more when they made them.

Inner/Outer. I'm going to wrap up the talk now with the last few slides and this is how Clara is currently translating her PhD thinking. The Inner/Outer jacket is for the protection of the designer, to support the designer who wants to go into new territories, who wants to move forward, move ahead into the social realm. She's developed Suture Stitching and combined meditation with making, in order to connect with designers in companies. So she'll actually take group sessions with designers in large companies and tap into their sense of ownership over the products that they're making; ownership over the sustainability agenda within that company; and to consider ways in which they can be more sustainable, and the

company can be more sustainable.

Shanghai Shirt. My own work in response to the Textile Toolbox and the China explorations is Shanghai Shirt. This the latest in my Top 100 series where I've taken a 30 pence yellow shirt from a market in Shanghai, and took a yellow H&M sundress, and brought the worlds together - that of the Chinese worker with the H&M designer in their comfy head office in Stockholm. I combined Chinese imagery with Swedish imagery, and on the inside included the names and the drawings made by the factory workers in China. This is a protective jacket for the consumer. So whereas Clara's was a protective jacket for the designer, I wanted the 16-year old Swedish consumer to think about who was making their clothes; to be protected from unwise buying decisions in the future; and be constantly reminded of the impacts of their purchasing decisions.

So from the material approach, from taking the material into the social and into the business realm and back to the self, this journey through the consortium work has led us to consider what we want to see from design education in the future, what we want included in the curriculum with textile design students. Making is firmly on the agenda, making materials, an appreciation of where the materials come from and how they're intending those materials to move through a lifecycle and end their lives, and how long they can last, and how can quickly they could move.

To conclude, I just want to read out something that Professor Mike Press read in summarising the MakeShift conference last week, the Crafts Council event at Ravensbourne in London, where during the process of the conference they identified makers as being both cowboys and farmers. Cowboys being the ones who ride out on their horse pioneering into the wilderness and discover new frontiers, and farmers who stay put, and dig deep into the land, and make sure that everything's growing and everyone's being fed, nurturing and looking after the homeland. He says,

'We are on a new frontier and therefore we need cowboys and girls who can explore and define new creative territories. The qualities they need above all else are empathy, a confidence in collaboration,

a curatorial spirit and a willingness to constantly shift from the new frontier to the farm and back again, and perhaps above all, the frontier spirit demands a fair bit of courage'.