
TRANSFORMING SHAPE: INNOVATIVE APPROACHES TO PRINTED TEXTILE DESIGN AND GARMENT INTEGRATION

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ABSTRACT

Printed textile designers, working within the mass market, traditionally work within 2 dimensions, to create designs which are printed in repeat on continuous lengths of fabric. Alternatively they may design engineered prints which are then applied 'to' garment shapes. Which ever approach is taken, in general, the form (garment or product) comes first and the printed textile design is applied to it. There are exceptions to this mass-market approach, such as, in haute couture where designers are often more involved with the development of the fabric as well as the garment. When this is the case the textile patterns or embellishments may even lead to particular approaches to cut or fabric construction.

Developments and links between new technology, namely, image generation software, pattern construction software and digital inkjet printing, led a group of researchers at The Nottingham Trent University to develop a project which used simple shapes; a rectangle, circle, square and developed a series of 'dialogues' between both 2 and 3 dimensions. Each designer developed these dialogues independently; hyper real photographic imagery, small scale repeating imagery and trompe l'oeil effects.

This resulting collection of fabrics enabled us to analyse clearly the impact on form that pattern and image has. However, what was also analysed are different working methods and approaches that are taken to image generation, and our own idiosyncratic methods of working between two and three dimensions.

This paper will demonstrate this working methodology and approaches to the form, to highlight the conflicts and questions being asked by each designer as well as the resulting shapes themselves.

1. INTRODUCTION

Printed textile designers have historically worked within two dimensions within the confines of a square or rectangle and this was a strong part of my training and experience as a commercial textile designer. My experiences of working in industry had been strongly 2d due to working primarily in home furnishings and wallpaper design, where consideration of image continuity across a wall, or lengths of fabric for sheeting and bedding rely upon a clear 2 dimensional 'reading' of the image.

The idea of considering form, particularly the body, was a challenging one. During my PhD I recognised that my experiences were limited and began to question how thinking in a 3 dimensional form may affect the design process. Primarily I considered what questions might be asked during the development of the imagery, how the form may affect the 'reading' of the image, and how pattern may affect the form. Can pattern be transforming?

In general the mass market utilises print to ‘fill in the garment outlines rather than to interact with the garment and body’ (Bunce and Briggs, 2001:78). Print is placed on top of garment shapes rather than being developed in unison. This often creates a clumsy and inappropriate use of print. In industry the responsibilities of the fashion designers and the textile designers are often kept separate. However, in haute couture designers are often more involved with the design of textiles, consulting with manufacturers and textile designers to produce exclusive fabrics for specific styles. In this situation, a textile design is likely to inspire a garment design and ‘sometimes adventurous fabrics lead to new approaches to cut and construction’ (Mendes, 1987:15). At this market level we might also see what has been described as the ‘simultaneous design method’, (Townsend 2003) whereby the form and surface are created ‘simultaneously’. There are designers who are known for this approach most notably Sonia Delaunay.

2. IDENTIFYING THE RESEARCH PROJECT

While these two distinct practices occur at different levels of the market and have been occurring for some time. There have been other developments particularly in technology which offers new possibilities of how the integration of pattern and garment shape may be approached.

Software for fashion and textile industries has evolved for each distinct discipline in design and production, textile design printing, fashion design, pattern cutting and lay planning. The way this software development has occurred an increased separation between these disciplines has resulted. However, multi-disciplinary approaches are being explored. New technologies are both enabling and are the business drivers of this approach; for example e-marketing and made to measure concepts. CAD/CAM is now offering links between disciplines and one of the key components in this progress has been full production digital printing. The shifts in the technology may result in the reappraisal of how fashion and textile designers are trained and therefore has wider implications for the industry. A PhD research project was established in 1998 to look specifically at the issue of garment and pattern integration. Interest in this research area had been identified and it was an interest which grew from discussion and in collaboration with Winifred Aldrich, at this time, a Professor in the School of Art and Design. Interest and research in this area continued leading to discussions between doctoral and post-doctoral researchers as well as other members of staff in the School of Art and Design at The Nottingham Trent University. This led us to approach the School with a small research project that would result in an exhibition. A title of Transforming Shape was identified. The research team was Gillian Bunce (print), Katherine Townsend (print), Rosemary Goulding (embroidery), Sue Keen (shape) and Graham Cope (multimedia) and Amanda Briggs-Goode (print). The group identified that the aims and objectives of the research project was to:

Explore the design opportunities created by new technologies, specifically the relationship between innovative imagery and three-dimensional forms. The central inspiration was the premise that textile designs can be mediated through pattern shapes and that pattern shapes transform the body. (taken from press release for the exhibition).

We then embarked on a series of meetings to discuss shape. We made a conscious decision that to avoid standard garment shapes, so that the work was not only viewed in 'fashion' terms. We wanted people to be able to see beyond fashion, to be able to see the approach to pattern and its relationship with form. We also wanted simple shapes, with minimal or no seams, to enable us to consider the form readily. It was realised that if we used a minimal shape that interesting interactions with the form could be achieved and innovative seams and joins could result in exciting drape and movement. The team therefore decided upon square, rectangle and circle.

3 SQUARE, RECTANGLE, CIRCLE

A range of shapes were created by Sue Keen and Rosemarie Goulding. These toile's were a range of differently sized squares, rectangles and circles designed for a standard size 12. Full-scale and half-scale mannequin were used and the fabric samples were completed in a variety of fabric qualities. These pieces gave each designer a set of shapes of 2 and 3 dimensions to consider the aesthetic qualities, in particular the drape, form, scale and proportion of each piece. The use of a single pattern piece, as opposed to a series of pieces, maintained image continuity, which was important to all the designers. After some deliberation three shapes were developed as final pieces: the circle skirt (144cm diameter), square dress (100 X 100 cm) and the rectangle wrap dress (140 X 100 cm). Each designer worked independently though regular meetings were held to discuss ideas and consider design development. This paper from now on will consider the research of the three print designers in this project.

The three print designers were all beginning with image sources, which were generated in very different ways, as well as utilising different software and design approaches.



rectangle toil



circle toile



square toile



rectangle and circle toile

3.1 SQUARE

The square created a fairly graphic shape mainly due to its placement on the form, the square was positioned as a diamond extending along the central vertical line of the body, and there was little drape. The shape offered points from the neck to the ankle, creating an elongated form and a strong sense of direction and each designer utilised this in different ways, Katherine and Gillian utilised the vertical where as I explored the horizontal, utilising as an anchor point, the join at the back to bring the images around the body.

In Katherine's work she wanted to accentuate the form by utilising imagery that flowed sculpturally with the form and the fabric:

The shape implied that the print should be integrated according to the directional drape; from the neck to the hem...I wanted to use CAD to create a trompe l'oeil impression of liquid drapery on the form.. (Townsend 2003:23).

Katherine's approach utilised the multi-directional integration of the pattern to the form and she focused upon drawing several contour lines in the 2d form based on how she had observed the dress in its 3d form.

Gillian's approach was to utilise simple geometric patterns that were then placed on a mapping grid, which had been developed to correspond with the observations of the square dress. The resulting static images appear fluid and optical illusions are manifest, however in movement the distortion and undulation of the forms create dynamic 3 dimensional patterns. 'to show the directional use of patterns alters our perception of 3D form' (Bunce 2006):

...I started with very simple motifs, and used drape software to distort the repeated patterns in ways that emphasised the features that interested me in this form. This method relies on the use of repeat, but subverts it to create fabrics with patterns that do not repeat at all (Bunce, 2005)



Examples of the square dress Townsend, Bunce and Briggs respectively.

My own work utilised a completely different kind of image source, as Katherine's has been non 'pattern' orientated, but a 'natural texture'. Gillian's use of 'subverted repeats', their 'texture' and 'pattern' are utilised in an all over effect. My imagery relied upon the use of negative space as well as positive image and it is that space which guides your eye around the form. The use of negative space allows the flowers to appear as though they are drifting and floating on the form. Their hyper real qualities are emphasised by the scale that is dramatically increased. And while I have used the horizontal line rather than the vertical as my anchor point the downward direction of the flowers still lends weight to the garment. . I found particularly the back of the form an interesting place to consider as my starting point as this join could be utilised as a pivotal point where we can see dense pattern on one side and none on the other.

The flowers were manipulated during the scanning process and then within the software further. This lead to an intentional fracturing of the flower head which became further fractured while worn on the body.



Examples of the square dress from different directions with the pattern emanating from the back of the garment.



Pattern placed on the form in alternative directions

Examples of the dress with the shape placed in alternative directions to show the pattern growing up and flowing down the dress. We can see that the form alters dramatically in these positions. The organisation of the pattern weighting on the form is disproportionate. Whereas due to the placement around the body in the final design the movement across the body keeps the flowers balanced and proportionate across the form.

3.2 RECTANGLE

The rectangular form was handled more individually, while we had all followed the same shape in the square dress we opened up further possibilities with the rectangle. Katherine sought to 'explore space beyond the physical boundary of the human form'. (Townsend 2003:27) she wanted to explore how the scale of motifs are traditionally understood to relate to the human form. This piece was finally printed at 100 x 280 cm which was twice the ratio of the original toile.

The increase in scale of the imagery, pins, darts and stray threads gave the piece a disarming quality, emphasised by the use of colour, it had an antique quality about it.

This contrasted in an intriguing way with my own work, again involving large scale out of context floral imagery. This time the size of the fabric was 180 x 60 cms. Image manipulation was engaged with at the scanning stage to create an elongated staggered floral image. Again the image was engineered within the software to be utilised and weighted, so that with placement on the mannequin the effect of the flowers being dragged was emphasised. It was placed so that the fragmented movement of the image fell away behind the form, and a larger flower was evident at the front of the form.

3.3 CIRCLE

The circle shape which was eventually chosen was one which could have a waist placed in it at any point to create an asymmetrical or symmetrical form. However, all of us chose to find a focus from which all of our patterns emanated from and this gave a strong anchor point around which the pattern could fall and flow. The video clips of this garment being worn is incredibly dynamic. The model clearly wants to move in these forms she wants to twist and turn and in so doing the patterns become animated 3 dimensional forms.

Katherine created a form that was filled with a continuous flow of 'pleats'. They changed scale as they move around the shape, creating a shell like spiral in its 2 dimensional form, but this aspect is not appreciated in 3 dimensional form, other qualities are demonstrated when placed on the model and movement is introduced.

Gillian's collection again employed the mapping grid specifically to explore the dynamism of the optical pattern, with movement, these forms, created a real excitement in the video suite:

The scale of the pattern varied from front to back and was determined to some extent, by the asymmetrical positioning of the waistline...I chose to use viscose for its soft draping qualities and level of transparency. This gave greater pattern complexity where the soft folds of fabric

overlaid each other and enhanced the kaleidoscopic effect of the pattern in movement. (Bunce, 2006)

My own work integrated a sense of movement into the circle by overlapping an image so that it appeared to radiate from the centre point of the shape. The original image was a geometric photo-montage of floral scans and stripes. I then cut away a circle and then used the remaining 'remnant' of the image to create my design. This pattern was then copied and pasted and reduced repeatedly. I then used 'filters' to begin to skew and create a spiral quality. Finally 'cutting out' the circle shape from the square, the positive from the negative space. I wanted to play with the concept of the circle and square with this design.



While the gentle movement they were exposed to while hanging in the exhibition hinted at some of that resonance of movement. It was this collection, the circle skirts, which when combined with movement created an exciting and dynamic visual image when worn by the model.

4 THE EXHIBITION

The exhibition became an important part of the design process. It was desirable to maintain the quality of the range of fabrics that we had used, transparent, semi-transparent and opaque and therefore we did not want the mannequin to interfere with the fabric qualities. A transparent mannequin was sourced, which could be suspended invisibly. The exhibition also involved a video installation of the image to demonstrate the design process and also the dynamic movement of a model wearing the shapes. The exhibition lighting and construction by Sue Keen and Graham Cope-Koga meant that the shapes and images could be viewed individually with shadows and layers of pattern merging together as well as viewing the larger group interactions.



The exhibition

5 ISSUES RAISED

We had intended to test out the concept that pattern could transform shape. By working with the same shapes and taking an individual visual approach we demonstrated clearly that pattern does affect form. It affects the shape of the form in terms of length and breadth, the way in which we ‘read’ the image – the direction we follow the pattern around a form. This reading is also strongly related to the fabric quality. These are issues that we expected to be able to demonstrate. However, I was surprised at the extent that movement and transparency can impact upon our interpretation of the visual image and form.

I began to recognise aspects about my design process and ways of seeing imagery that I had not been aware of previously. The dominance of working in 2d appeared to be a stronger in my design process than the other designers. This may be to do with my prior experiences or a perceptual issue. I see predominantly in 2 dimensions and I found it difficult to translate the ideas of my images from 2 to 3 dimensions without seeing the real thing. I had to print them out and place them around a mannequin, analyse and then go back to the 2 d work.

In contrast Gillian and Katherine appeared to make much clearer intuitive decisions about the relationship of the image to form they were clearly able to do much of their analysis from the calico toile.

This experience has enriched my design process and I did begin to build up a tacit knowledge to enable judgements to be made between 2 and 3 dimensions. I also began to build the ability to be able to analyse the relationship between an image the form helping me to develop strategies to work with particular shapes. I have developed new working methods as a result of this research project.

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