HOMAGE TO THE FRINGES

EXPLORING TUFTING WITH THE AIM TO INVESTIGATE FRINGES IN DIFFERENT MATERIALS AND LENGTHS, FOCUSING IN THEIR ABILITY TO CREATE SHAPE AND TEXTURE IN WOMEN'S WEAR.

Karin Mellqvist
BA in Fine Arts; Fashion Design
The Swedish School of Textiles, Borås May 2014
Degree Work Number: 2014.3.04
ABSTRACT

This work began as an investigation of tufting within fashion design. It is interesting because there is a lack of tufting within fashion design, especially of long tufted fringes. How can a technique that is usually used for interior design, for example rugs, be brought successfully into a fashion context?

The question how to create longer fringes than usual for tufting emerged after experiments made in various materials. In order for the machine to create long fringes, lighter materials like plastic were tested and also different ways of using the machine.

Since the tufted expression became very organic with the long plastic fringes, tufted try-outs were made in geometric shapes to see what happened at the front of the garment. Would the geometric shape totally disappear?

It was decided to take the plastic material further together with more traditional materials for tufting like wool and linen, in order to get the expression of both lengths and materials in the fringes and to investigate how they could be combined in interesting ways on the human body.

During the way it was found that the long plastic fringes together with the traditional materials needed a flat contrast, and that is when the plain tufting weave was introduced as an important part of the garment with different placements of the tufted areas, which give great shape and volume to the garments.

There are great possibilities to find new expressions through tufting with long fringes within fashion design, shown in this work. If the technique is developed with fashion in mind, could it be a technique used to replace parts of the fur industry?

KEYWORDS

tufting, fashion, 3D, fringe, loop, texture, plastic
INTRODUCTION TO THE FIELD

Tufting in design development is a type of embroidery where the textile is embroidered with a cut pile or loops (Frausin, 2013). The tufting machine is both a sewing machine and a pair of scissors (figure 1) and the polyester weave can be tufted with a cut pile, or loops if the knife that cuts the yarn is removed. Tufting is a technique particularly used for making rugs (Wikipedia, 2010) and a tufted product has a similar expression to the traditional rya rug but as stated by Crawshaw in Specialist yarn and fabric structures (2011, p. 188), “tufting remains by far the most important method of carpet manufacture.”

The tufting technique was used by colonists in America in the 17th century. At that time, twisted wool yarn was sewn to loops on a potent weave, then cut up and formed tufts during washing when the yarn twisted up (Signild Wiklund, 1990, p. 251).

Today the rug’s pile is created with a tufting-gun that with air pressure forces the yarn into a strong tensed polyester weave (figure 2). The length of the needle on the gun decides the pile height together with the tension wheel. Every needle comes with a wheel and same size in needle and tension wheel gives same pile height in both ends, called U-pile, while bigger size in tension wheel than needle gives different height, a J-pile (Jönsson, 2005 p. 10).

The pile can be cut off in desired length or made as loops. In fact, this technique gives the possibility to create an image or a pattern with no limitations in the number of colours, density or size. The backside is glued, sometimes with an extra layer protective fabric called second backing. Second backing fabrics are laminated to the soft tufted cloth to transform it into a practical carpet (Crawshaw, 2011, p. 206).

The quality of the tufted product is influenced by material and pile density. Clearly, short stitches and several threads of yarn give a dense pile, while long stitches and less threads give a sparser pile.

Common materials used as pile are wool and linen, but other materials can be tufted as well. The fabric base is often a strong polyester weave. Importantly, tufting is used manually as well as industrially. There is industrial robot tufting (figure 3) and hand tufting.

Robot tufting is used industrially where the tufting machine is fastened on a rail where it is controlled by a computer. In fact, the tufting gun is programmed with how many stitches it should make in colour by colour on each row. It is for example possible to follow a pattern where one pixel is one stitch with the tufting gun.

Figure 3 is a picture of a robot tufting machine at Kasthall in Kinna, a company that makes woven and hand tufted rugs. They deliver unique rugs to their customers by producing custom-designed hand tufted rugs with any imaginable motif and shape. Since Kasthall is one of the leading companies in Sweden within tufting, a visit was made to see their factory with impressively four robot tufting machines and over 20 frames in the measurements around 10x10 meters.

Figure 1 Figure 2 Figure 3
MOTIVE AND IDEA DISCUSSION

Undoubtedly, it is possible to create any realistic rendering by tufting, such as Jody Harrow's Rocks at Ise from 1990 (figure 4, Contemporary Rugs p.40). Clearly, the varying height of the pile, the rounded edges of the rocks and the intricate use of so many soft colours could not have been achieved by any other method (Farr 2002, p. 118).

In textile art the technique has been used as a way of expressing tactility and texture as a single technique or combined with other techniques such as glass art, embroidery, crochet, knitting, LED lights or as a part of an installation. Artist Tina Frausin is one artist who works in this way with mixed medias, and tufting being one of them (figures 5-6, Frausin 2011).

Unlike Frausin, graffiti and multi artist Jonathan Josefsson, works mostly with one technique in his works of art (figure 7-8, Josefsson 2013). He started tufting during his BA in Textile Art at the University of Design and Crafts in Gothenburg and found that the tufting gun can be used in a similar way as the spray can, used for making graffiti, that he have been practicing since he was a kid.

In fashion design tufting has been used with traditional materials in completely covered short pile tufted garments as shown by Elias Högberg, in his degree work CTRL + V, the Swedish School of Textiles (figure 9, Högberg 2013). In Helen Price's MA degree collection from Central Saint Martins College of Art and Design, there is a more irregular and organic expression with random formations, colour blocks and tufted areas in contrast to non-tufted areas, everything tufted by hand (figure 10, Price 2010). She has like Högberg used traditional materials, although they are a bit longer in some places.

Leutton.Postle is using a lot of fringes in their designs and they have used them in different ways, like in figure 11 as part of a knitted print where tufted hair is coming out from a dress in 3D (figure 11, Leutton Postle 2011). While Jenny Postle was still at Central Saint Martins she worked with tufted patterns in colour blocks in her MA degree work (figure 12, Postle 2010). She worked with different tufted materials and various lengths of piles, but still not long enough to show what possibilities tufting has.
What would be interesting to investigate within tufting is the different expressions in machine tufting and hand tufting and different pile-height in loops and cut surface. Can the machine create longer fringes than 4.5 cm, that is set to be the longest?

It would be interesting to mix yarn qualities and densities, to see what happens if an area in the weave is left without being tufted, to use colour blocking to enhance different pile lengths and to use experimental materials. What materials can be used in a tufting machine?

The goal is to make a collection totally based on tufting with a focus on maximal effect of long fringes where the pile or fringes decide the fundamental shape of the garment.

In this project it would be interesting to learn more about colour and to work with it in other ways than before. Therefor studies of Josef Albers and of his work Interaction of Colour were made. How do colours interact on each other and is a colour visually perceived as it really is - as it physically is? The book Interaction of Colour is a record of an experimental way of studying colour and of teaching colour (Albers, 2013 p. 1).

In Arranged Abstraction, Clemens Thornquist discusses Albers work; 'through the composition of each painting and the arrangement of the entire series, Albers argues for and demonstrates his theory that alterations in the environment will produce changes in the colours. With differently shaped and coloured geometrical shapes which challenge and echo, support or oppose one another, Albers studied this interaction of colours. For example, in the work Homage to the Square (figure 13, Albers 1959), the chromatic interactions are studied with flat coloured squares arranged concentrically, proposing an epistemology based on direct sensory perception (Thornquist 2012, p. 122).

**AIM**

This work explores tufting within womenswear and it aims to investigate how fringes or piles in diverse materials and lengths can create shape, volume and structure.
DESIGN METHOD & DESIGN OF EXPERIMENTS

In this part the general methodological framework as well as specific working methods employed to achieve the aim set up for this degree work will be summarised.


According to Jones there are three stages in a design process; divergence, transformation and convergence. He describes them as “breaking the problem into pieces, putting the pieces together in a new way and testing to discover consequences of putting the new arrangement into practice” (1970, p. 63). These three stages presented below has been of great importance in this work.

In an introductory lecture for digital designers by Rhodes Hileman, the term divergence is explained as “the act of extending the boundary of a design situation so as to have a large enough, and fruitful enough, search space in which to seek a solution” (1998; Jones, 1970). This means that the problem formulation - in this case, in order to get long fringes made by the tufting machine, different materials and ways of using the machine has been “tested to discover limits, consequences, and paradoxes” (Hileman, 1998). Experimental work typically happens in concept testing and selection and in the evaluation phase of the prototypes. (Koskinen, 2011 p. 51)

This work explores the possibilities of tufting, the use of conventional and unconventional materials for tufting and it applies critical thinking - questions such as why there is a lack of long tufted fringes and of tufting in general in fashion design.

The next stage, transformation - also called synthesis, is the stage when the aim and intention are redefined, when adversities are recognised, when opportunities occur and when decisions are taken. One example of transformation in this work is when the judgement was made to use plastic yarn as one material. As stated before the main goal in this work is to achieve as much effect of the long plastic fringes as possible in every single experiment or example. In order to achieve that, it is necessary not to have them all over the silhouette in every single outfit. This has been tested, both in a dress and a two piece outfit with a skirt and a top, both tufted heavily with plastic yarn (figures 13-14). Material and shape-wise these outfits doesn’t show the full potential or effect of the plastic yarn. It is when the plastic is tufted in parts of the silhouette in combination with the traditional materials and the backing fabric that it gives an enhanced and more interesting effect.

Another example is the investigation of tufting in geometric shapes to see what happened at the front of the garment. Studies of Josef Albers were made to look at his geometric shapes and to see how he works with interacting colours. Would the tufted square still be perceived as geometric, or rather organic? (figures 14-15) Simple pattern construction is used in the garments to let the fringes decide the shape. As described by Koskinen (2011, p. 52) “research questions, hypotheses, and the rich interaction framework came after the first designs, and they were based on the insights gained during the design process”.

Figures 14-15

Convergence or evaluation, is the final stage when “the problem has been defined, the variables have been identified and the objectives have been agreed” (Hileman, 1998). This is when “models become more concrete and detailed”, in this case decisions taken regarding the placements of materials and colours that will enhance the shape and the tufting technique (Hileman, 1998). Unexpected colours have been added to promote the tufting technique.
A similar way of looking at a basic design method that functions as a general possible way of working when starting a project is mentioned by Thornquist (2010 pp. 155-159) where the idea is ‘to work through a basic process from conceptualism to realisation.’ Stages one to three are called re-interpret, re-mix and re-imagine. The second one, re-mix, is described ‘experimental design [rather uncontrolled experiments]: Continue the work from the first stage by trying different constellations of main elements [fragments and things] in different and rough ways looking for shape, volume, line, direction and repetition for silhouettes and garments. Work in 2D and 3D, constructing, draping, trying out details, sketching directly in fabrics, taking pictures etc. In short, use any method workable for the idea.’

In order to find new expressions and solutions in this work, a lot of full scale experiments has been made while working in a trial-and-error way during the whole process. Tufted experiments have been tried out, taken down from the frame to be put in 3D on the dummy and when changes have been made, a new weave is put up (figures 16-17).

Koskinen sites Stappers: “Prototypes and other types of expressions such as sketches, diagrams and scenarios, are the core means by which the designer builds the connection between fields of knowledge and progresses toward a product.” (Koskinen 2011, p. 60)
DEVELOPMENT & ANALYSING OF EXPERIMENTS

TUFTING BY HAND

To start investigate tufting, tufting by hand was explored, where threads of different qualities and densities were inserted by hand into a mesh base with holes in different sizes. The mesh varied in softness and flexibility to get different expressions and came in a variety of constructions such as nylon, metal, polyester, cotton canvas usually used in embroideries, jersey, coarsely knitted cotton and lace. Materials used to tuft the mesh were glass fibre yarn, jersey shreds, wool, rope, paper yarn, pipe cleaners, chenille and silicone tubes (figure 18). The example in lace, tufted in various materials, is a unsuccessful one because the material combinations does not work and it is too obviously placed on the torso, boring to look at (figure 19).

Also, a hand tufted reconstruction of a basic sleeve was made. While doing research, it was found that sleeves in voluminous materials often are constructed as dropped, raglan or patched sleeves, such as designs of Högborg, Price and Postle mentioned earlier (figures 9-10, 12), and not with the traditional shoulder sleeve seam. The point was to see how much volume it created instead of a dropped sleeve that gives a softer transition from shoulder to arm. Figure 20 shows a combination of this hand tufted reconstructed sleeve and machine tufted pieces placed on a dummy.

Other experiments made by hand are the ones where the yarn is inserted from both sides of the mesh, making it extend or come out in two directions. Try-outs have been made in a nylon mesh with small holes tufted with paper yarn (figure 21) giving a more stiff expression than the plastic net with bigger holes tufted with thick chenille yarn which gives more of a flow (figure 22). The right side with the tufting was considered to be used as inside of the garment (figure 23) but it seemed at that time more interesting to focus on the fringes and at a later stage when the try-outs were looked at again, it was a too big gap between these and the tufted plastic. Likewise with the hand tufted samples, it is maybe something that can be used in styling and accessories but is a different project for a collection development, with the stiff mesh in metal and cotton canvas. The shapes of the garments would have to be totally different developed than the machine tufted ones.
MACHINE TUFTING

To learn the basics in tufting, a course in tufting was attended at the Artists’ Collective Workshop (KKV) in Gothenburg during the fall. When later starting to explore the technique, a material and colour investigation was made, where unexpected and experimental materials not usually used for making tufted rugs were tested and found alongside more traditional ones such as wool and linen. The point was to see if traditional and contemporary materials could be combined in such a way that it came to enhance the perception and volume of the tufted pile and be combined in interesting ways on the body (figures 24-27).

The tufting machine makes the pile even in lengths between 16-45 millimetres. In order to get a longer, more uneven pile and fringes, different materials and ways to use the machine were tested. One of the methods tested is to only thread the machine partially, without letting the thread go by the tension wheel. Other ways tested to use the machine were to not push it hard enough against the weave to create the so-called beginner’s mistakes of long pile, to tuft loops that were later cut open in different lengths and to make the tension wheel bigger with elastic band and tape which did not make such a big difference to the length of the pile.

The only way that worked out was to push the machine hard against the weave and at the same time lead the machine very slowly over the weave together with full pressure on the trigger or gas. The only yarn that was found, working to do long fringes by this method is light plastic yarn (figures 28-29), since the air pressure pushes the light yarn through the weave in a way that does not work with wool or other traditional tufting materials.
This material, the plastic yarn, is the starting point in this work and it was decided early in the process to take this material further. Tests were made with the plastic yarn in combination with other materials, both synthetic ones such as monofilament, filling yarn etc and cellulosic yarns usually used in tufting like wool, linen and cotton.

The polyester backing weave usually used in machine tufting is grey, although it also comes in black and white, but could it be possible to use another backing material? Tufted try-outs with both wool and plastic yarn in fabrics that failed are linen, cotton, both woven and non-woven wool, denim, velvet, thin silk and different synthetic qualities. These fabrics were all too densely woven for the needle of the tufting gun to go through the fabric, but the ones tested where it actually worked out are sackcloth and sparsely woven silk (figure 30). Although these fabrics were successful backing fabrics, they did not have any specific characteristics that the original backing didn't have, like shine or came in a multitudinous amount of colours. Therefore they were not chosen as final backing material.

Lining has been added in certain parts of the tufted pieces in order to get a softer surface against the skin (figure 31). This is done after gluing the pattern pieces still tensed in the tufting frame by gluing one second time while the pieces lie flat on the floor. The glue is spread on the backside of the tufted patterns and then covered by the lining. Obviously, it has to be a thin lining such as single jersey or thin fusing, to be able to attach to the uneven backside surface. Jersey gives the best result since it is elastic and flexible.

In most of the garments there is no lining since a lot of them have untufted areas where it is important that the backing fabric stay a bit transparent and does not become stiff and loses its fall.

COLOUR CHOICES

This work has struggled with decisions in colour. Therefore studies of Josef Albers were made and that is when geometric shapes were found that also helped taking this project further. After having studied Albers geometric shapes and his book Interaction of Colour, some of his colour assignments were made and try-outs were tufted in motifs of his series of paintings Homage to the Square (figures 32-33).

When applying the squares in the tufted garments in terms of both colour and shape, it was found that the long plastic fringes make the squares blur at the same time as they still are recognisable as squares, at least in some cases (figure 15), even though the plastic fringes are hanging over the square underneath and create shades of different colours where the yarns mix.
In the above left example (figure 15) the pile in the top is short, then long, then short, then long etc, in every other square. This works out well if the wool that makes short pile is placed in the outer square. It makes a definition of where the shoulders and arms are located, this without becoming as boxy as outfits where the longest pile in plastic is tufted closest to the neck (figure 15 right example).

Interesting colour ways or combinations found after studying Albers, and applied in a way suitable for this work, are different shades of one colour (figure 34, Albers 2013) in the same outfit and to work with colours together with black and white (figures 35). I also thought a lot about the quantity of colour (figure 36) and the value of having outfits where colours are more dimmed (figure 37).

FINDING SHAPE

Shape-wise, a lot of rectangular garment shapes were tested, an aspect from studying Albers. An example that is not a square, is the A-line skirt. It does not work out very well, since the tufted material is stiff and the form therefor becomes very boxy and away from the body (figure 38). Figures 40-41 shows earlier presentations during the degree work with more garments made this way. A skirt solution that is more body conscious is the one in figure 39 where the backside comes in an ordinary fabric. In order to find the body in this way, the plain tufting weave was introduced as an important part of the garment with different placements of tufted areas.
Since the plastic is the primary material, the traditional tufting materials such as wool and linen are thought as a supplement to areas tufted in plastic and the challenge is to combine them in different ways so that they come to enhance the shape and technique. This is reached by the placements of the different lengths of the fringes (figure 37).

Different placements have been tested in photoshop sketching and by placing tufted pieces on a dummy (figure 42). Shapes and placements have thereafter been developed from outfit to outfit. Instead of tufting a whole Homage to the Square painting on a garment, I tried to zoom in parts of the square, for example a corner or a line were two colours meet.

Outfit one is for example the zoomed in top right corner of one of Albers’ painted squares (figure 43-44) and outfit two a shorter version of that corner, reflected (figure 45), in combination with tufted sleeves. Outfit six is a skirt that is tufted at the front, half in the traditional tufting material wool and half in plastic. To exaggerate this imbalance, the dress in outfit seven is tufted at the left side with plastic yarn that gives the greater volume, while the right side is left untufted.

How to zoom in and where to place different materials is decided by enhancing the technique and by having variation in the outfits. There is squares in both three and four colours of different measurements and dimensions (figure 43, 46-47) and this has also been taken into consideration. Other geometrical shapes by Albers have been looked at, for example his series of Graphic Tectonics and Structural Constellations.

For every new tufted piece, decisions are taken from looking at earlier pieces, how the fringes worked on these ones and what could be enhanced and improved. From sketches made in Photoshop with different volume placements on the body, physical 3D-experiments has been made in full scale. Areas tufted in plastic are much more flexible, soft and light than areas tufted in heavy wool and linen, which has also been taken in consideration.
For the two skirts in the collection, all three colours of the backing weave have been tested for the t-shirts. The skirt in outfit three was first planned to be combined with a long sleeve top with tufted areas around the forearm or wrist (figure 48) but it became something totally different apart from the rest of the collection and the shape did not work out as planned. The shape in the sketch (figure 49) was more powerful and cohesive with the rest of the silhouettes.

Shortening the sleeves (figure 50) did not enhance the shape and the top was taken away and replaced with a black t-shirt that showed that it was a two piece outfit (figures 51-53). The white t-shirt was first considered for the final result but since it became unclear if it was a dress or two pieces, the black one was chosen. The grey one gave a boring expression and likewise for outfit six (figures 54-56), where the white t-shirt worked out the best, both in front where it corresponds well with the white tufted plastic and at back where it meets the black backing weave in the skirt (figure 57).

BACKING WEAVES

The grey backing weave is the most common one for tufting but there is also white and black ones. These three backing weaves comes with lines in them every 50 centimetre to make it easier to tense the weave in the tufting frame. At an early stage they were seen as problematic and when drawing the patterns on the tensed weave, the patterns were placed in a way to avoid them. Since it was impossible to avoid them in all patterns, try-outs were made with them placed in centre front and centre back. When looking at these examples with the lines, they did not occur to disturb at all, on the other hand, they add a conceptual touch to the project. They also make it more clear for the eye to see where and how the tufted areas are placed (figure ).
WORKING WITH A LINEUP

For a long time during the process a square was present in the lineup (figure 58) but it was taken away, because it was not needed in order to make it clear where the geometric shapes came from. Instead a link between playful and colourful outfits 2, 4, 7 and dimmed outfits 3, 5, was needed. Below is a demonstrated process of how this “bridge” outfit happened.

ILLUSTRATED PROCESS OF A TUFTED GARMENT

When starting the making process of one tufted garment, in this case the tufted dress in outfit four, material and colour swatches of plastic yarn are made and put together with swatches from the other outfits in the collection (figures 58-59). The swatches are placed on the different weave colours to see where the plastic comes out the strongest and how to get a cohesive composition in the collection.

When colours and backing weave are set, sketches are made in photoshop to get quick visuals of how the silhouette could look (figure 61). When a shape is found, a toile is made to see the fit on a model (figure 62-64). After corrections are made on the pattern, tufted pieces are placed on the dummy wearing the toile (figure 65) and then some more sketches where the lines in the backing weave are considered before the exact measurements of the tufted areas are decided and drawn on the pattern pieces. It is important here to not place the fringes all over as in figure 14, where it does not work in relation to the body and its proportions. In this case, the fringes were considered to go all the way around at back for more of a show piece, but outfit seven was already had an expression towards that direction and the collection needed a more calm outfit that could be the link between outfits one & six (figure 37), where colours are more dimmed, and the rest of the colourful and playful outfits.
When the backing weave has been put up and tensed in the tufting frame, the pattern pieces are taped on the weave to draw the outlines of the pattern directly on the fabric. Thereafter the pattern pieces are taken down and the lines for the tufted areas are drawn. Try-outs are tufted with the plastic in different orders to see which one works the best and what quantity of each colour is needed to create nice shades.

It is now possible to start tufting. Meanwhile, it is important to go to the front to look every five minutes to see how the garments emerge since it is then possible to add more of a specific shade if needed. When looking at the front, it is important to stand both close and far away to see the different perceptions of colours and materials. Traditional materials tend to look darker when cut in a tufted pile than when seeing them on a roll, around 30% darker in average.

When the tufting is done (figures 66-68), it is time to mix the glue by 50% glue and 50% water, since there is no need for strong carpet glue when tufting garments. The glue needs to dry for 12-24 hours and it makes the tufted areas not shrink when taken down. If lining is added on the garment, it is glued directly one second time, lying flat, since the thin single jersey lining will fall down if glued when the weave is tensed in the frame. The pattern pieces can be cut out and sewn together, sometimes it is necessary to try the garment on a dummy or on a person before the garment is totally done (figure 69), to see the fit and if corrections in the pattern construction have to be made. Last this is obviously to fit it on a model (figure 70).
CONCLUSIONS

As stated before it is important to find the right placements for the tufting, since if tufted all over, the body is lost. In order to find the body the backing weave was introduced in this project as an important factor of the garment. The backing weave is also there instead if additional garments. Now, there is no need for those.

Shapes and placements of the tufted areas have been found through trial and error via testing and sketching but also with a thought of exaggerating one side of the body, for example in outfits six, where the fringes creates an exaggerated shape of the left shoulder and the right hip.

There are three different sleeve constructions in the collection. Outfit one is made of one long pattern piece with a hole for the head and panels on the side. This expression comes back in outfit two, although it has long sleeves, since it is tufted in linen over the shoulders in the same way as in outfit one. Outfit seven also has long sleeves and then there are four outfits with t-shirt sleeves. The sleeve length is a way to get some variation shape-wise in the collection, since there are similar pattern constructions in the dresses for example. Outfit two is an example of this, where the sleeves are tufted in plastic which gives great volume.

Finishing in the sparse backing weave has not been the easiest thing. After trying out to fold in bias tape and fastening it with a stitching, similar to a sport binding, the discussion came up at tutorials, that raw edges might correspond well with the tufted fringes (figure) since the folded edges did not look good with tractions.

Tufting with plastic yarns in different colours has similarities to painting without really seeing what is happening since the person tufting is standing in the back side of the tufting frame. A comparison can be made between one tufted line and one brushstroke on the canvas. In tufting, the stitches consists of lines, different length of the lines, but still lines where the limit is the width of the needle. In this project the tufting has happened in either vertical or horizontal lines, since it is wearing for the backing weave to tuft diagonal lines.

Outfit seven (figure 71), consisting of six different colours of plastic yarn, is an attempt to intensify the pink colour in centre front and back with vertical lines. The colour fades when going over the chest, then increases in intensity again at the sleeve and finally fading over the sleeve. This can be related to Albers in terms of colour subtraction (Albers 2013, p. 94), where there appears to be a lower amount of colours than there really is.
OUTFIT ONE - LONG TUFTED DRESS

Tufted dress with side panles in black polyester backing.
OUTFIT TWO - TUFTED DRESS

Dress tufted in linen, with sleeves tufted in plastic.
OUTFIT THREE - SEMI-TUFTED SKIRT

Skirt in white polyester backing, tufted at the front, together with t-shirt in black polyester backing.
OUTFIT FOUR - T-SHIRT DRESS, TUFTED AT SIDES

Long t-shirt dress with tufted side panels.

TUFTED LOOPS
GREYSCALE
PLASTIC,
15-50 CM

GREY
POLYESTER
BACKING
OUTFIT FIVE - TUFTED T-SHIRT DRESS

T-shirt dress tufted at left shoulder and right hip.
OUTFIT SIX - TUFTED SKIRT

Skirt in black polyester backing, tufted with wool at left front side and with plastic at right front side, together with t-shirt in white polyester backing.
OUTFIT SEVEN - TUFTED DRESS

Dress tufted both in front and at back, at left side.

TUFTED LOOPS
MULTI COLOURED
PLASTIC, 15-50 CM

WHITE
POLYESTER
BACKING
DISCUSSION & REFLECTION

This project explores tufting with the aim to investigate fringes in different materials and lengths, focusing on their ability to create shape and texture in womenswear, and the main goal has been to create longer fringes than usual for tufting. This problem formulation has succeeded since one specific and unexpected material for tufting was found that could create long fringes. Comments received at the examination was that the raw edges did not correspond well with the tufted expression, and that the edges needed another finish in some way. Instead of bias tape, a thin fusing was used to fold and fasten the outer edges.

Also, the skirt in outfit three has been amended since the examination. First it was a long skirt tufted on the left side, with an area at the bottom of the skirt with tufted plastic all the way around (figure 48). The shape when wearing the skirt in that way became strange without enhancing the technique, making the garment too complicated for the eye to look at. That is why the bottom part is cut off and the skirt has been turned around with the tufted area placed in the front (seen in outfit three). The back of the skirt is now plain backing weave.

Could tufting be a technique used to replace parts of the fur industry? When looking at designers such as Fendi (figures 72-74), it would be possible to get similar shapes using the tufting technique. In an article in Surface Design, Jessica Hemmings writes about artists working with feathers, describing how feathers often provoke in a similar contradictory response as hair sneaking in to our food (Hemmings 2014, p.7) There is a great chance that if tufting was developed with fashion in mind, it would be greatly received.

If this investigation would continue, it would be interesting to experiment more to find materials that behave different than the traditional ones when tufted. It would also be interesting to use both sides of the machine tufted material in the same garment and thereby the tufting as inside in some parts of the garment.

‘The fringe has multiple qualities. Its ability to be rooted in continuity prolongs the material quality of an object and lends it spiritual dimensions beyond its physical ingredients. The end purpose of the object is not the bottom of a bag or the end of a belt. The fringe has its own energy. When static, it accentuates the density of the surfaces simply through gravity, while in movement it adds scope to gestures and their intentions. Because of the fringe, a material is basically endlessly transformed from a state of continuity to discontinuity and vice versa.’ (Black, 2009).
REFERENCES


Jönsson, I. (2005) BA Documention, Tufted Floor Jewelleries and Decorative Cushions


IMAGE REFERENCES

Figures 1-3, 14-31, 35-42, 48-71 Karin Mellqvist, degree work


Figure 46 Albers, J. (1964) <https://www.greatmodernpictures.com/albers.htm> [Accessed 26 May 2014]

Figure 47 Albers, J. (1961) <http://www.richardgraygallery.com/artists/josef-albers/> [Accessed 26 May 2014]

THANKS TO
Herning Special Væveri, Kasthall
Karin Peterson, Ulrik Martin Larsen, Pia Mouwitz
Amanda Gerell, Sofie Larsson
Roger, Olle and Hanna
Åsa Lom
Mamma, Pappa & Erik