SURFACED PRINT

Investigating the relationship between texture and the printed check by the use of surface manipulation within the transfer printing process

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1. LINE-UP
This bachelor degree work explores the interrelation between print and surface in fashion design and aims to investigate the expressional possibilities in merging of techniques. With focus on creating an irregular surface through embroidery and fringing, three-dimensional expressions are created, resulting in an illusion of depth and movement within the motifs.

The work is textile-driven, hence the main focus has been to find materials, applicational techniques and motifs that interact with each other without conflicts. Through the use of heat sensitive yarns within the transfer printing process a clear relationship between texture and motif occur where the different aspects affect each other and are equally important for the final visual expression. It is the heat press used to transfer print from paper to surface that is the most vital step of the process.

This work strives to propose a transposed order of applying techniques within a design process. Whilst the act of embellishing existing prints has been investigated by a range of designers, this project propose an order where the print is added post additive surface-manipulation. Therefore this work is to be seen as a suggestion of new ways of approaching the use of prints within the fashion field. Balancing between fashion design and textile design, the collection is based on generic prints and shapes which are affected by the surface manipulations used.

1.3 KEYWORDS
fashion design / textile design / transfer printing / check / surface manipulation
2.1 INTRODUCTION TO THE FIELD

PRINT - BASIC DEFINITIONS

The basic definition of the word print is to "transfer (a design or pattern) to a surface" or "a repeated decorative design" (Oxford Dictionaries).

One of the main objectives of printing is the production of designs with well defined boundaries. The printing itself can be carried out through a range of different techniques from stencil methods including screen printing to modern printing techniques such as digital printing. The prize of the later is the fact that the motif does not need to be constrained concerning size, range of colours and shades or complexity of motif. The innovative technology of digital printing allows designers to work in a more experimental manner while creating prints, freed from concerns about colour separation and dimensions of repeat patterns (p.1-2 Tyler, 2005).

ENGINEERED PRINTS AND PLACEMENTS

Within the technique of engineered prints, the motifs are created in order to perfectly fit the pattern pieces of a garment. This provides the designer with the possibility to tailor the print around the body, seemingly seamless without it being interrupted by any cuts. During this process print and form are created in unity (Bowles and Isaac 2009, p.19).

When creating placement prints, one is simply allowed to approach the garment as an artist approaches a blank canvas. The only boundaries being the actual parameter of the garment shape. The placement print is so to speak developed to fit in a certain area of a garment and is often applied to a finished garment such as t-shirts. (Townsend 2003).

TRANSFER PRINTING

Transfer printing, most commonly known as sublimation printing is a subgroup within the digital printing techniques which emerged within the commercial scene during the 1960s. One of the limitations of this technique lies in that it can only be used to print synthetic fabrics in their natural state. When using other materials pre-treatments are needed such as coatings. As a result of this it only maintains a market share of less than 10 percent (2013). However this technique can be seen as less environmentally harmful than many of the other print processes in use. The main reason for this is the absence of excess dyes and due to the minimal use of water. The only essential waste product is paper, which will often be recycled (Briggs-Goode, 2013). The procedure of transfer printing consists of two main steps, the application of print inks onto paper and the actual act of transfer of print to a fabric using a heat press. When exposed to heat, the polyester swells and allow the dye in gaseous form to leave the paper and move around until it finds a new bonding site. Once the polyester cools down, the dye molecules are locked in their new position inside of the fibres. (p.25 Tyler, 2005) The different stages of the process is presented in Figure 1.

One of the negative aspects of new printing technology is the loss of surfaced tactile qualities associated with traditional printing such as screen- and roller printing. In order to avoid this, designers find ways to use techniques such as overprinting and embellishment to enhance the tactile and visual expression of their work. Traditional crafts such as knitting, crochet and embroidery are brought into the motif design, both in the actual depicted imagery but also as add-ons to the printed designs. This could be viewed upon as an attempt to bring back a more hand-crafted expression. (Bowles and Isaac 2009, p.154).

PRINT IN FASHION

When discussing motifs commonly used in printed designs one can easily identify four main design style categories: floral, geometric, world cultures and conversational (Briggs-Goode, 2013). Two designers that often use floral and geometric designs in their collections are Dries Van Noten and Miuccia Prada. In his Spring/Summer 2013 collection, Van Noten (fig. 2, Van Noten 2013) successfully mixed the two styles, something that had been tested by Prada already in the Spring 2008 (fig. 3, Prada 2008).

TROMPE LOEU'L

Designers have been successful in creating three-dimensional expressions in print by using motifs that cheat the eye. The french expression trompe loeu’l translates as “trick of the eye”. The expression is used to describe imagery created to be extremely realistic and create an illusion that the motifs printed actually exist. (Bowles and Isaac 2009, p.17) One of many designers who have used this technique is Hussein Chalayan. In his Spring/Summer collection (fig. 4, Chalayan 2013) he presented garments printed with trompe loeu’l motifs, creating an illusion of multiple draped cloths within one single garment. Acne Studios fall 2013 collection (fig. 5, Acne 2013) is yet another example of the use of this illusionary technique applied on regular dress. In the process of creating this collection the design team collaborated with the artist Katerina Jebb. Using material found in the historical archive at the Musée de la Mode de la Ville de Paris, they created photomontages of draped fabrics. By crafting prints that portrait draped fabrics, an illusion of depth is created in the two-dimensional surface of the garments (Singer 2013).
FABRIC MANIPULATION

Designers have the possibilities to explore textile surfaces in several different ways. Apart from by printing, these explorations can be conducted through a vast range of techniques such as beading, felting, treatments, embroidery, pleating and dyeing. (Black, 2006, p.10)

According to the Textile resource guide (Textile resource guide 2015) the term fabric manipulation includes "any technique that reshapes the surface of a material". Both additive techniques including embroidery and subtractive techniques such as drawn thread are included within this term.

Digital printing techniques are often used to display photographic prints, whether they are realistic or edited. The technique provides the designer/artist with the possibility to, in a fairly easy way, mix different expressions within one single motif as well as the ability to use a combination of greyscale and color. Mary Katrantzou (fig. 6, Katrantzou 2014) one of the most influential designers within the area today focuses on precise engineering of figurative and decorative prints (Doe 2013). Katrantzou is also a frequent user of embellishment of motifs, by adding beading that is also included within the motifs she strives to create a three-dimensional and tactile aspect to her design.

EMBROIDERY

"Embroidery is the art of decorating fabric or other materials with designs stitched in strands of thread or yarn using a needle" Jaspal Singh, B. The art of textile designing (2008) p.111

When creating an embroidered design, a needle is used to design stitched patterns on a material. The needle is inserted to the fabric, and in the same manner as in plain hand sewing, brought back to the surface in one single movement (Jaspal Singh, B. 2008, p.106).

Embroidery can be divided into several different techniques. One main category is Surface embroidery. Within this technique the choice of pattern is worked upon the foundation fabric by the use of stitches and laid threads. Surface embroidery encompasses free embroidery, which includes designs that are applied without any regard of the weave of the material. (Jaspal Singh, B. 2008, p.111) The underlying fabric acts simply as a canvas for the applied imagery, an example of this method of embroidery is crewel (fig. 7, Crewel).

DRAWN THREAD

By the act of withdrawing threads from a fabric gaps are created in the weave. Traditionally, the exposed warp is pulled together and decorated with stitches (fig. 8, drawn thread), yet this technique can be performed in many variations (Swift 1984).

PRINT AND FABRIC MANIPULATION IN ART

What differentiate the use of digital print within art from that within dress appears to be the choice of motifs. The human body is an important part of the works created by Matthew Stone, Hong Songchul and Ana Teresa Barboza, who are all playing with the possibilities of the accuracy provided by the digital printing technique.

Stone has re-photographed his own images originally printed on plywood, re-printed the motif on a fabric which he then drapes on the original image (fig. 9, Stone 2011). This creates new veiled works that occupy a space between dimensions. In an interview with curator Kathy Grayson, Stone points out that his "veil" works reaches towards the infinite. This two-layered print is impossible to install in the exact same way when being moved between locations. Stone use the precise technique of digital printing to create something that is inconsistent (Grayson 2011).

Hong Songchul creates three-dimensional string sculptures in his series entitled String Mirrors (fig. 10, Songchul 2012). Rather than simply displaying solid pictures the artist uses dangling strands of elastics with images printed on them. The elements do not necessarily touch, but when brought together, there is a bigger picture the bee seen. In this manner, Songchul use the properties of his chosen canvas to find new visual expressions, even if the motifs would appear quite similar if displayed as solid pictures.

Ana Teresa Barboza is a textile artist who combines prints with embroidery in a very significant way (fig. 11, Barboza). Her mixed media pieces includes embroidery, prints, knitting and graphite sketching and are often made up by works centred around the human body (Gutierrez 2013).
designed in order not to remove the focus from the surface. Much in relation to how Hazel Clark (2009) describes certain contemporary practices within textile design in relation to form. What is commonly seen as decoration is rather explored as an integrated part of the process of developing a product instead of only being an addition. Applying these perspectives within fashion design could result in new possible visual expressions but is also a way of questioning the systems in use today. Combining print, shape and texture not only in the finished garment but early on in the development process, allowing the printing process itself to affect the result, is something that has yet to be investigated. And that is also the area of interest of this work.

One designer who has been investigating print in relation to material and form is Central Saint Martins MA graduate, Jessica Mort. She has combined material and print in such a way that they have an obvious impact on each other (fig. 15, Mort 2014). The non-static appearance of the garments, where movement is allowed to give impact to the nature of the shape, adds yet another dimension. Mort employs precise techniques to create a fading stripe that on one end ends up in fringes and on the other in jersey strand weaving. The weight of the jersey strands are used to create volume by simply being stretched and pulled from each other. The material clearly has an impact on the print, but it is rather a fading technique than a method of creating depth in the motifs.

COMBINING TECHNIQUES

One textile artist that has found a way of incorporating different techniques in order to create transcending works of art is previously mentioned Ana Teresa Barboza. She uses the human body as a recognisable aspect. What could be described as successful in her work is the strong relationship and connection between the print, the fabric and the embroidery, all three aspects are needed to withhold the same expression (fig. 16, Barboza 2).
When elaborating with several different aspects, at least one constant is needed in order for the audience to understand what they are looking at. Presenting an image that is recognizable in a new way you immediately attract attention (Loscheck 2009). Working with well known motifs or patterns, the audience will immediately react to what is displayed, and react to the unexpected features incorporated. In his graduation collection 2011, designer Shaun Samson (fig.17, Samson 2011) presented pieces of clothing where different materials and techniques meet. Using needle-felting he blurs the border between the woven plaid and the cable-knitted sweater, the transition is easily read due to the strong recognizability of the two aspects. Creating prints that can only be viewed under ultraviolet lights in combination with fabric manipulation and fading motifs the Japanese brand Anrealage’s Autumn/Winter 2015 collection (fig. 18, Anrealage 2015) is an example of when generic patterns are displayed in an inventive manner in prints.

Using materials that are affected by the printing process itself, such as heat sensitive yarns in combination with transfer printing, could be a way of finding new expressions within print. The combination of different techniques, where the individual aspects are allowed to affect each other and they are equally important for the final result. This work is textile-based and aims to explore designs where print and surface manipulation are the main interests throughout the entire process.

The idea of using embroidery and fabric manipulation such as drawn thread and fringing in a way that it clearly connects with a print, is something that is currently close to non-existing within fashion.

Moving away from the use of material manipulation such as embroidery after the act of printing and instead use those kinds of applicational techniques prior to printing and later on reductive techniques such as drawn thread after printing, new visual and tactile expressions could be found. This means to use a transposed order of applying techniques and is one of the main objectives of this work.

2.3 AIM

To investigate the relationship between texture and the printed check by the use of surface manipulation within the transfer printing process.
Looking at design research, experimentation can be used as the main method for producing knowledge in form. In ‘Experimental design research: Genealogy - Intervention - Argument’ Brandt and Binder (2007) argues that the notions of program, experiments and questions are useful as methodological grounding for design research driven by experiments. They state that a design project often is initiated with a research question, which could be described as an aim and a context, which purpose is to frame the experimental progression. This framework is followed by a conduction of experiments. However, Brandt and Binder also states that the research necessarily does not have to follow a specific succession. The design program can instead emerge from experiments conducted, which later on helps to form the research question and set the framework.

With this in mind, the result of initial experiments in this investigation has been allowed to at a later stage reformulate the aim.

In ‘Artistic Development in fashion Design’ the author, Clemens Thornquist refers to ‘Tales of our time’ by J. Friggieri “Poetry is when two words not only meet, but when they rendez-vous for the first time” (Thornquist 2010, p. 97).

The two words of importance in this work is print and surface manipulation. When combining these two techniques it is of huge importance to stay daring and open-minded during the ongoing investigations. It is, in order to be successful in finding new expressions, vital to dare to try new ways and not simply lean on and rely on works and investigations made by others, successful or not.

As Bacon (1902) states: "It would be madness and inconsistency to suppose that things which have never yet been performed can be performed without employing some hitherto untried means.”

Working according to the method “learning by doing” known from the pedagogy in teaching (Meloy 2012, Pp 18) in order to find new expressions and solutions, it is possible to stay open-minded and constantly push the experiments forward. This idea of trial-and-error based decisions allow high-speed and results in a large quantity of experiments that can later on be evaluated. By revisiting the outcome of early experiments during the ongoing process it is possible to make sure that the essence of the work is maintained.

During the investigational process of this work, a vast series of experiments are conducted. All experiments are first conducted in small scale in order to gain knowledge of the differences in properties and reaction to the printing process. Material and print has already at an early stage been investigated in relation to each other. Through the results of these combined experiments and knowledge of how the two affect each other, the different techniques can later on be investigated one by one. Three-dimensional sketching is vital in order to fully understand the possibility to create full-size shapes placed on a human body.

Looking at the different methods previously presented one could draw parallels to Archers model of the design process. He presents a model that consists of six separate activities which are divided into three phases. The initial part of the design process is the analytical phase. This is where observations, measurements and inductive reasoning is made. The second phase is the creative, where evaluation-judgement-deductive reasoning and decision comes in. The final stage is the executive phase, where description, translation and transmission of the collected data is made, which can be translated to the result of the investigation. (Archer, L B 1984)

One difficulty in this work lies in balancing the relationship between the different techniques. There should for example not be a complexity within the print that takes over and diminish the importance of the texture of the material used.

In reference to Brandt and Binder (2007) I have allowed the result of the conducted experiments to shape the process and in extent the outcome of this investigation.

The initial problems to be solved within this work was the choice regarding a suitable printing technique and the choice of motifs. The importance of recognizability is discussed by Ingrid Loscheck (2009), if a well-known image is presented in a new way there is a great potential of attracting attention. In connection to fashion and textile design, the importance of structure in motifs is mentioned in ‘Print in fashion, design and development in fashion textiles’.

“Visually we are programmed too seek out straight lines, and this innate preference for order makes stripes one of the most satisfying and versatile print motifs...” (Fogg 2008) p.138

These combined ideas set the framework for the choice of motifs used throughout the experiments.
**MOTIF APPLICATION**

As mentioned earlier, a common way of using applicational techniques in combination with print is the act of embellishment using components of the motif itself. One way of developing this act of creating tactile aspects in print could be to allow the applied component to act as an abstraction of the motif (fig. 21). Yet still, it is an act of adding to an existing surface after the printing process. Even tough the added material is visual in the print, the two techniques are combined late within the creational process and could be compared to what has already been applied within the fashion industry.

**INTEGRATED THREAD**

By integrating thread that interferes with the print a three-dimensional expression is created. This can be conducted in several different ways. One of these is the idea of applying and removing in order to create blank spots (fig. 22). This technique would be more suitable for a work framed by the idea of exposing the underlying fabric.

A way of integrating thread that works in relation to the aim of this investigation is the idea of using embroidery prior to the printing process (fig. 23).

Using yarns that react with the heat applied during the transfer printing process, depth is created both within the surface of the material and the motif. This way of creating three-dimensional expressions proved to be suitable for this work. There is a vital connection between surface and print, where the structure interferes with, and transform the visual appearance of the motif by the creation of depth. This due to the fact that the material used in the embroidery is affected by the print-process.

Figure 21. Motif application, additive surface manipulation

Figure 22. Integrated threads creating blank spots

Figure 23. Integration of thread through embroidery prior to the printing process
HEAT SENSITIVE YARN

The most important material used during the ongoing explorations is a polyamide yarn. The yarn reacts by pulling together when put in contact with heat. Using a material that reacts with the printing process clearly fulfills the intentions of this work since the print affects the material and the structure of the material affects the visual expression of the print.

In order to allow the use of more than two colours within the motif without creating a messy expression, I decided to use checks as the foundation for the printed motifs (fig. 26). With strong directions both vertically and horizontally the disruption created by the embroidery will not be lost. There is also an aspect of depth within the motif itself that will be increased through the applicational technique. A vast amount of experiments using different materials, colours and applicational approaches has been conducted during the ongoing investigational process. This trial-and-error method has led the work forward.

Figure 24. Polyamide yarn and its reaction to heat

Figure 25. Abstract motifs

Figure 26. Generic patterns

CHOICE OF MOTIF

As discussed earlier, the importance of recognizable motifs has been my main inspiration in creating prints. By using generic patterns the visual expression will be easily read. This allows the audience to see where the surface interferes with the print. Using traditional patterns, such as the check, will work well together with the diffusion created by the heat sensitive yarn.

Evaluating both small-scale and full-scale try-outs using this technique, I found that motifs that are more easy to read work better than those unstructured and abstract (fig. 25).

Investigating the transformation of the material was necessary in order to fully understand how it can be applied. Using to long strands of yarn attached to a material canvas proved to be problematic since the shrunken yarn pulls the pattern-pieces together.
The use of a generic plaid pattern proved to be successful in many of the initial material experiments. The structure of the pattern has a layered expression in its natural state which is then further enhanced when combined with different textures. What I see as its only flaw is that it takes over when the surface is manipulated with small amounts of yarn as in fig. 31. In this example the disruption of the motif is lost in the structure of the motif.

Using a grid structure as motif proved to be successful in many variations of scale, however the disruption created by the surface manipulation is not as visibly clear in the try-outs shown in fig. 33 & 38 where the thickness of the grid is too heavy or where it is too slim in combination with large scaled gaps.
WADDING AS CANVAS

One material that proved very well suited as a canvas for this technique was wadding (fig. 39). The properties of this non-woven material worked in combination with the polyamide yarn. Less stitches are needed since the yarn attaches to the surface of the wadding within the heat press used during the printing process.

LIGHT MATERIALS AS CANVAS

Combining the stiff wadding with light-weight fabrics has allowed me to explore the use of different amounts of yarn applied and to gain knowledge of how the yarn affects the visual expression when applied in different ways. Shiny materials (fig. 43) proved to be a poor choice since the transition between fabric and yarn becomes to distinct. Using prints that only consists of dark colors was another difficulty that emerged, the print is not clear enough, hence the disruption of the motif dissapears.
**PRINTED YARN**

The process of printing on yarn without the use of a fabric canvas resulted in a fur-like structure. The motif disruption is clear and the yarn is allowed to move freely without any restraints. This way of working with the material can take place in the finished work, acting as an abstraction of the embroidery and also as a relating aspect to the fringing.

An interesting aspect of the result of these tests is the fact that a synthetic material can be transformed into a state where it looks animal-like.

**DRAWN THREAD**

The act of removing either the warp or weft from a piece of fabric can be conducted both prior to the printing process and after the print has been applied. Integrating this subtractive surface manipulation can enhance the disruption and the visual impression of deconstructed prints. This is a motive of using fringing as the focus surface manipulation of garments as well as a finishing detail in addition to further underline the transition of surfaces.

Figure 44. Printing on yarn with no fabric backing

Figure 45. Drawn thread
Using embroidery with heat-sensitive yarn applied on large areas of light-weight materials creates cracks within the motif as well as has the possibility to create shape. During the transfer of print from paper to fabric with the use of a heat press the yarn shrinks and pulls the fabrics into uncontrolled drapes (fig. 46 & 47). Here the cracks created act as a break between surfaces. When using this method, additional embroidery or fastening of the embroidery used might be needed post-printing in order to avoid a distinct border between surfaces.

This creation of shape due to the materials reaction with the print process also proved to be successful when applying the yarn on the back of the fabric (fig. 48). This is viewed upon as an interesting addition, investigating the possibilities to in new ways use applicational techniques that affects the print as well as form. Working with this method it is important that the cracks that appear works with the motif and not against it. Combining this technique with scaled down checks, as shown in fig. 48 proved to be the most successful choice.

In the process of using application in order to create drape there are several aspects to consider. Since the yarn shrinks, the shape of the fabric/pattern-piece will be affected. Using this method a plan of how and where the yarn will affect the shape has to be made.

The fact that the printing is conducted on cut-out pattern-pieces and not piece-goods demands addition of fabric to the areas affected.
FINDING SHAPE/GARMETS

Since this work is print- and textile-driven the decision of shape has been made in order to enhance the expression of the surface. All silhouettes are based on simple garment construction methods, using block patterns as a foundation. The reason for using straight lines is the idea of letting the material to be the main focus. Creating complex shapes, the surface would be partly hidden in drapes and cuts, and therefore becoming the secondary visual aspect. The drapes created in the printing process presented earlier is in clear relation to the creation of surface and print, however they express something different than the surface-based. Therefore they exist as an important part of the experimental process but are left out from the result of this work.

In the process of finding shape the main tool used has been computer-driven collaging. This provided me with the possibility to work with scale, print and silhouette parallel without any restraints. These collages are based on the outcome of experiments and the nature of the materials used. In order to realize these collages, the creation of toilles was a natural step forward, these toilles represent the canvas for the embroidery.

In order to get a well put together final expression I decided to narrow down the use of different foundational shapes. The shapes chosen are archetypical silhouettes with modifications: the coat/jacket, the dress, the t-shirt, the trousers and the skirt.

Some of the collages have been conducted in live, in fullscale going through the process of surface manipulation and printing in order to fully understand the translation form collage to realized prototype. The outcomes of these experiments has later on been used as inspiration and guidelines for the pieces visible in the finished result.
**THE DRESS/T-SHIRT**

The first dress- and t-shirt prototypes created did not meet up with my expectations. The idea of a dress in wadding (fig. 66) worked fine before the yarn was added but then the garment looses its shape and becomes undefined.

The foundational shape of the prototype shown in fig. 65 works, but the print does not. The thickness and layout of the print comes across as messy and undefined.

**THE COAT/JACKET**

One garment with a clear connection to plaid/checkered-patterns is the coat. Working with this type of generic garments and patterns together, there will be a recognizability in the finished expression, which will allow the viewer to clearly see the new structure.

After looking at different sizes, lengths and silhouettes I found the rounded shoulder and the boxy and squared body (fig. 62 & 64) to be the most successful combination. This works well with the stiffness of the wadding as well as the fact that it creates a distinct shape. The lapell and the collar are scaled up visible in fig. 61 to match the chunky expression.
In order for the silhouettes to relate to each other, I decided to bring in the construction used in the coat when deciding on suitable shapes for the dress and t-shirt. Using the rounded shoulder as well as a stiff set-in sleeve, there is a clear connection between the different silhouettes.

THE TROUSERS

When deciding on a suitable construction for the trousers I had in mind that they would exist within the collection both as surface-manipulated pieces and as complementary garments. What I found to be the most suitable leg-width was a straight, slightly wide leg. A straight pattern-piece would work well with drawn thread since the amount of full-lenght fringes then would be at a maximum. The wider pant also works well in the wadding material (fig. 77 & 78).

This silhouette also connects to the boxy feeling existing in the garments used for the upper body. The prototypes with a slimmer silhouette (fig. 74 & 75) proved to be inhibiting the movement of the wearer as well as risking tearing since the material itself is quite fragile.

The full-lenght flowy trouser (fig. 73) has the possibility to act as a contrast to the boxy silhouette as well as to enhance and elongate the movement in texture when used as a complementary garment.
THE SKIRT

To relate to the generic appearance of the coat, I decided to test the possibilities in working with a typical skirt-foundation. The difficulty in this shape is the limited amount of fabric used. When making prototypes in wadding a longer skirt (fig. 79) inhibits the movement of the wearer and a shorter (fig. 80) looks too common.

To find a different approach I also made prototypes using drawn thread both as the only surface manipulation (fig. 82) and in combination with yarn application (fig. 83). I found the outcome of the mixed-manipulation try-out to have an interesting appearance, yet those details are easily lost when looking upon the garment from a distance.
**DRAPING WITH PRINTED YARN**

In order to understand the nature of the materials draping has been a necessary part in the decision of placement. Using a dummy and a selected canvas shape it is possible to play around with the material before the act of computer-driven collaging was initiated.

The yarn that is printed without a fabric acting as a canvas is in need of a structured backing when placed on a moving body in order for the material to not collapse. Therefore the draping was a vital part of the decision of shape for this method.

**COLLAGING WITH DRAPES**

The collages where the yarn is heavily draped come across as abstract, forced and unstructured, whilst the more collected assembling clearly express the characteristics of the material. In the two collages marked, the printed yarn is free to move and collapse in a natural manner. Since the material and texture is the main focus, it would be unnatural to force it into a complex shape.
THE PROCESS OF CREATING FINISHED PIECES

The transition between canvas, yarn and fringes found successful in one of the skirt-prototypes was, as discussed earlier found interesting but in need of further development. In order to allow the different textures to take more space, I decided to transform the skirt into a dress, where the transition between the different structures are more visible.

The canvas-garment and the yarn is printed separately and then assembled in order for the shrinkage of the yarn not to effect the shape of the silhouette. The fringing and the application of yarn was made parallel in order to create a harmonic expression.

Figure 86. The creational process of a dress with yarn application and fringing

Figure 87. The outcome of the creational process of a dress with yarn application and fringing
The jacket in wadding material is a shortened version of one of the successful prototypes. The pockets are created by folds in the material prior to printing. Since the unwoven structure sticks to itself when placed in the heat press, no stitching is needed to maintain the fold. In order to limit the area of fusing a piece of paper, in the desired size of the pocket, is placed within the fold.

The yarn application is faded upwards, leaving the shoulders and neckline un-manipulated. This is in order to display the transition of materials and create an illusion of the material slowly collapsing.

In the process of finding the most suitable garment to combine with the jacket, I looked at several options. I found that a skirt with massive fringes would be the best choice. The heavy layering of the fringes corresponds with the boxy and rough expression of the jacket. The movement in the fringes also works as an elongation of the illusion of movement in the print created by the yarn texture.

Looking at a suitable material for the skirt, I found that removing the warp from a double weave quickly created a heavy fringed effect. Using multiple layers in different lengths could create a massive form where an offset placement of the print would further highlight the disruption in surface.

Figure 88. Creating a jacket in wadding material with fading application of yarn

Figure 89. Finding a complementary garment

Figure 90. One layer of fringed fabric - the warp of the double weave acting as fringes
The process of creating the skirt - from fringed fabric to finished garment.
The foundation for the shape is a pencil-shaped wraparound skirt. Since the fringes get tangled up in each other the wraparound construction is needed in order not to disturb the fringes when sewing and dressing.

The coat in wadding material is a combination of two of the prototypes presented earlier. The longer body, rounded shoulder and massive lapell and collare are mixed with the wider body of the second prototype used as the foundation of the jacket. Looking at the scale and color of the print I used collages to visualize the idea. I decided to use an archetypical plaid pattern, in a “normal” scale. This in order to clearly connect to the idea of the generic woolen coat. The stiffness in material and disruption in surface and motif are represent the non-generic idea of a functional outerwear. The entire surface of the coat is embroidered with large amounts of yarn.
The process of assembling the coat:
Since the stiffness of the material makes it hard to fit a large shape in the sewing machine the entire coat is sewn by hand. Avoiding turning the pieces inside out also prevents accidental damage of the surface.

When looking at different choices for complementing garments I aimed to enhance the massive expression. I found that this could be created either by letting the coat to stand by itself or be pared with an exaggerated flowy pant. The flowy pant adds movement to the silhouette, an addition that I found successful. A clean top is placed underneath the coat in order not to disturb the impact of the collar and lapel.
As mentioned earlier, the yarn that is printed without a fabric acting as a canvas is in need of a structured backing when placed on a moving body in order for the material to not collapse. Since the visual expression of the structure resembles that of fur, I wanted to explore how that resemblance could be further enhanced. Choosing color, print and placement with this in mind, the result of this test shows a dress with clear references to a fur-edged coat. I find this to be an interesting addition to the work as a whole. The shape of the garment also has clear references to a generic coat without collar and lapel.

The sharp edge between materials is clearly visible, but at the same time I find it natural presented in this manner. This clearly shows differences in texture, and a clear example might be needed to explain the finalized work. The contrast between the massive yarn texture and the small-scale yarn-application on the canvas-garment holds different possibilities to show the disrupted texture both from a far and when looking at it up close.
In contrast to the orange dress with massive skeins of yarn I also wanted to explore the possibility to create a piece where the texture is massive all-over and the transition in material goes from heavily embroidered to loose yarn. I decided to use the most successful of the collages previously displayed as a guideline in the creation of this garment. Since the structure is massive I also wanted to bring in a massive expression in the print. The decision fell on an upscaled, multi-colored grid with a clear resemblance to the classic plaid. The thick lines placed with a larger distance from each other than in previously used prints will be visible even though the surface is heavily manipulated.

Using a raglan-sleeve will make the transition between patternpieces less visible since the shoulder follows the body instead of ending up in a sharp edge. Hence the construction of the garment does not interfere with the state of the applied texture.
In addition to the heavily manipulated surface I wanted to explore the possibility to use a smaller amount of yarn spread over a larger area. The yarn is treated with heat prior to the application in order to prevent any shrinkage or undesired drapes. In contrast to the plaid print used on the upper body of the orange dress, this garment is printed with a small-scale grid.

The result of this way of applying yarn comes across more as an investigation of how different patterns affect each other. Looking at possible ways to show the difference in surface I brought in fringing as an attempt to focus the expression (fig. 109). Even though the transition works well, the overall expression is yet to be clean and "simple".

I found this use of combining applicational techniques as very successful. The nature of the yarn clearly affects the visual appearance of the structure. The idea of using an upscaled version of the grid works well with the different structures and creates a clear visual expression.
To further explore the use of drawn thread visualized in the skirt I decided to look at how fringes could be incorporated in different garments. I decided to start off with a coat, using the same foundation as in the wadding coat presented earlier. Since the double weave proved to be successful in creating a massive expression this was the material used in this piece as well. The characteristics of the material differs from the wadding, therefore the shape has been narrowed in order to prevent a collapsing shoulder.

In order to decide on the placement of the fringes I used a piece of fringed fabric to drape with (fig. 110). Not complicating the shape too much I decided to work with the placement that I found to be most natural, from chest and down. This will also in a clear way display the transition in structure and the fringes will act as a deconstruction of the garments material.

I wanted to enhance the expression and movement in the fringed body, therefore this coat is longer than the previously created wadding coat.

All of the fringing is conducted prior to the act of printing. The process of printing the fringed pattern-pieces had to be conducted in several steps since the length of the garment exceeded that of the heat press.
In the search of finding a suitable garment to pair with the fringed coat I looked at different pant constructions and materials. A full-length flowy pant proved to be a poor choice, this elongates the silhouette and does not in a clear way connect with the fringes (fig. 114). The flowy pant and the movement of the fringes does not effect each other, I would prefer if there would be a more clear connection between garments and their textures. To connect to the layering effect, I decided to work with a cropped pant. Bringing in wadding in a garment worn on the lower part of the body was an idea that could work well in relation to the fringes. The boxy silhouette of the pant makes it in contact with the fringes (fig. 116). The embroidered surface also creates an interplay between textures even if they are not existing within the same garment.

The mix of different surface-manipulation techniques has proved to be successfull even when the techniques are not combined in one garment. I have strived to explore how the different textures appear when placed in different manners and applied to a variation of parts of the body. At this point I found a lack in the use of fringes in a garment that intersects the body instead of simply surrounding it. With this in mind I started looking at the possibility to apply the use of drawn thread in a pair of trousers. As I briefly mentioned when discussing the construction of pants, a straight silhouette would work well with this technique. When investigating what garment these trousers could be matched with I decided to bring in an exaggerated wadding t-shirt with an application of yarn that connects to both the coat and jacket but also the pieces with loose yarn. This in order to connect all of the different surface-manipulation techniques used in the finalized outfits.
The hem of the trousers is left in the materials natural state. This in order to keep a clear reference to a generic trouser and avoiding the risk of them coming across as a skirt. As in previous fringed garments, the act of removing the weft is conducted prior to the printing process.

For the t-shirt I looked at different proportions in sleeves and decided to use the shorter of the two shown in fig. 121. This connects to the t-shirt sleeve present in earlier tests but here in a different material. The pattern-pieces of the t-shirt are heavily embroidered with yarn hanging down over the hem (fig. 122). In order to exaggerate the disruption in the print I used as few stitches as possible to attach the yarn. This resulted in large cracks that gives an expression of a collapsing texture. The irregular hemline created by the use of dangling yarn enhances the transition in structure between the two garments.
Throughout the entire investigational process I have worked with different scales of prints in order to find the most expressive combination of texture as motif. The generic plaid patterns used in the finalized outfits are quite cohesive in scale. When looking at try-outs with larger scales of this type of motif I found that the structure of the pattern conflicts with the textures created. Their complexity works against the disruption created by the surface manipulation and the connection between techniques is not as visibly clear as in the more “natural” scale. Yet I wanted to bring in a large-scaled print to vary the use of scale. A solution was to create a grid-structured check that has a higher complexity than the small-scaled version without it taking over the expression. The grid has over-all proved to be more versatile in scale without conflicting the textures created. Yet I did not want to remove the plaid completely since I strongly believe that their generic appearance adds to the final result.

CREATING PRINTS

All prints used were created using Adobe Illustrator and Photoshop. Initially, I studied the creation of commonly used tartans and plaids in order to find suggestions for scale and composition (fig. 45). The different ideas of scale and complexity has been used within the experiments conducted throughout this investigation.

COLOUR AND COMPOSITION

In order for the visual expression to be well put together I decided to stay focused in use of colour. By doing so, the different examples will connect to each other even though the surface manipulation is conducted in several different ways. It also allow the use of different complexity in motifs, from the traditional plaid to the scaled down grid.
4.1 RESULT

The work presented explores the interrelation between print and surface in fashion design and aims to investigate the expressional possibilities in merging of techniques. What is presented here is a suggestion of new ways to work with print in relation to surface, where the creational process is reversed. Instead of using additive surface manipulations on top of printed materials, this work propose new methods where the manipulation is conducted prior to the printing process. Using materials that are affected by the printing process itself, the connection between techniques is strengthened. Hence, the properties of the yarn applied has the possibility to both effect the appearance of the print and the structure of the surface without only acting as an embellishment.

With focus on creating an irregular surface through embroidery and fringing, three-dimensional expressions are created, resulting in an illusion of depth and movement within the motifs. Even though this investigation could be seen as textile design-based it also suggests new ways of approaching print and materials within the fashion scene.

4.2 PRESENTATION
OUTFIT No.1

DRESS

Material:
Polyester
Polyamide yarn

Surface manipulation:
Large-scale yarn-application (grey-marked areas) prior to printing as well as additional yarn-application post printing.
Fringing of hem post printing.

Fragment of print in scale 1:1
OUTFIT No.2

**COAT**
Material:
- Wadding, 15 mm
- Polyamide yarn

Surface manipulation:
Embroidered with large-scale yarn-usage (all-over) prior to printing.

**WIDE TROUSER**
Material:
- Polyester satin, printed

**T-SHIRT**
Material:
- Polyester satin, white

Fragment of print in scale 1:1
OUTFIT No.3

DRESS

Material:
Polyester/elastane twill
Polyamide yarn

Surface manipulation:
Embroidered with small-scale yarn-usage (grey-marked areas on top) prior to printing.
Yarn without fabric backing attached at hem, printed separately

Fragment of print in scale 1:1
OUTFIT No.4

**T-SHIRT**
Material:
Wadding, 15mm
Polyamide yarn

Surface manipulation:
Embroidered with large-scale yarn-usage (all-over) prior to printing.

**FRINGED TROUSER**
Material:
Polyester double weave

Surface manipulation:
Drawn thread prior to printing.
**OUTFIT No.5**

**DRESS**

Material:
Polyester
Polyamide yarn

Surface manipulation:
Embroidered with large-scale yarn-usage (all-over) prior to printing.
Yarn without fabric backing attached in two layers, printed separately.

Fragment of print in scale 1:1
**FRINGED COAT**

Material: Polyester double weave

Surface manipulation: Drawn thread prior to printing.

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**WADDING TROUSER**

Material: Wadding, 5mm

Surface manipulation: Embroidered with large-scale yarn-usage (all-over) prior to printing.

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**TOP**

Material: Polyester crepe, printed

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Fragment of print in scale 1:1
OUTFIT No.7

JACKET
Material:
Wadding, 5 mm
Surface manipulation:
Embroiderd with large-scale yarn-usage (all-over) prior to printing.

TOP
Material:
Polyester satin, white

FRINGED SKIRT
Material:
Polyester double weave
Surface manipulation:
Drawn thread prior to printing.

Fragment of print in scale 1:1
4.3 DISCUSSION & REFLECTION

The work presented strives to propose a transposed order of applying techniques within a design process and it is to be seen as a suggestion of new ways of approaching the use of prints within the fashion field. The main focus is to create a clear connection between different techniques, where the different aspects are equally important for the final visual expression. Through the use of heat sensitive yarns within the transfer printing process this connection has been created, displaying a clear relationship between texture and motif.

One of the main objectives in this work is to question the traditional structures currently present within the fashion industry. This implies a change in the way designers most commonly work with print and material in relation to form. Whilst the act of embellishing existing prints has been investigated by a range of designers, this project propose an order where the print is added post additive surface manipulation. In opposition to the garment-led processes discussed by Townsend (2003), this is a suggestion of how a textile-driven process could be applied within the fashion field. This work stands in clear relation to the contemporary practices within textile design where decoration is explored as an integrated part of the creational process mentioned by Hazel Clark (2009). The combination of print, shape and texture used throughout the ongoing investigation has resulted in seven outfits where the connection between the different aspects are clear and the garments are created to clearly show the textures.

The initial decisions necessary to frame this work was the choice of printing technique and motif. In order to stay free in the experimental phase, the decision fell on transfer printing as the most suitable technique. The aspect of the use of heat during the process also proved to create a clear connection between motif and texture, which set the tone of the entire investigation. One early conclusion made concerning the choice of motif was the importance of recognizability. As mentioned earlier, Ingrid Loscheck (2009) states that a well known image presented in a new way attracts attention. This in combination with the clear visual effect created in the experiments conducted, was the reason for choosing the check as the only motif used. The result of this work partly holds a clear reference to arche-typical garments that are often combined with these type of patterns. This has been a conscious decision in order to clearly propose new ways in which well-known expressions can be presented and created.

The most problematic aspects of working in this manner, is the fact that most of the steps within the creational process is extremely time-consuming. The actual printing is done within minutes, but the preparatory work, including embroidery and drawn thread, takes hours when done by hand. This may of course be possible to avoid if applied in an industrial manner, replacing the touch of the human hand with programmed machinery. The downside of a commercialized version of this project would be the loss of a hand-crafted expression. Since there is no possible way to fully control how the materials react within the printing process, even if the embroidery is applied in the same manner, there is a uniqueness to each piece created. Hence, the positive aspect of commercializing this work would of course be to minimize the time it takes to produce the pieces and on the downside, there would be a loss of hand-crafted expression.

The main issue that occurred during the investigation was the vast amount of possibilities provided by the technique. Even tough this is a textile-led process the need of shape became an issue when trying to display a wide variety in the technique. The draping effect created within the printing process worked against the idea of finding new expressions in texture on recognizable garments. There is definitely a range of possibilities in exploring this effect further, but in this work which is limited to a result of seven outfits it had to be put aside. When doing so, the visual expression of the work became more cohesive and clear.

Looking back at the process I can clearly see that it could have been more focused already from the start, yet the knowledge that I gained during the different parts of the investigation has come to use when finalizing this work. To point out one example, exploring the draping effect gave me a wider understanding of how the materials could work with and against each other. This knowledge has been necessary in the creation of the final examples presented. Also, exploring several different techniques, motifs and materials parallel can visually come across as messy and unfocused. But on the contrary it was within these improvised experiments that the foundation of this work was found.

One aspect of the result of this work that is difficult to evaluate is the issue sustainability. Not knowing how the materials react when used over a longer period of time makes it hard to see if the materials used actually work in the long run. The surfaces are sensitive to heat, water and rough handeling. I see this as a possibility to create textures that age and change expression over time, but exactly how the aging will formulate itself is difficult to predict.

There is of course a lot of possibilities left to explore, working with different shapes, motifs and materials. This work is to be seen as a foundation for explorations regarding the use of combined techniques and the application of a textile-design approach within the fashion field.
5. REFERENCES


PHOTO REFERENCES

- Figure 1. Authors photo
- Figure 20-127. Authors photos
The work of Claes Bergman aims to explore stiffness and motionlessness in abstract shapes in combination with concrete garments. The main objective of Bergman’s work is to investigate how garments frozen in a certain movement relates to a body that is not and to question the function of dress. In order to realize this idea, the use of wind to force the fabric around the body has been used as a tool both in the explorational process and in the act of creating the finished pieces.

In overall, Bergman has succeeded in realizing his vision in the finished result. There is a distinct coherency in silhouette and use of method throughout the line-up. The choice of materials clearly reflects the desired effect. The mix of abstract shapes and concrete garments propose different approaches to the idea, without conflicting each other.

Bergman clearly master the technique used and this high level of craftsmanship is vital in order to maintain a clean visual expression. Furthermore, the restricted use of color is also a good choice in order for the technique and shapes to be the main aspect of the result. The idea of bringing in a contrasting color, here orange, is a clever decision in order to give a more dynamic expression.

In outfits no.1 & 5 there is an interesting interplay between the abstract shape and the concrete garment. I see this combination of the two components as a necessity in order to maintain a well put together expression. The clear reference to antique statues visible in the static abstract shapes is given a new value when combined with the conventional wearable garments.

To conclude this work, Bergman shows that when working with innovative methods in relation to classic construction interesting expressions can be found. The idea of working with motionlessness in relation to frozen movements and the high level of technical skill has resulted in an interesting proposal of how garments can be created. The choice of materials and color stands in clear reference to generic garments as well as pieces of cloth.

In outfits no.6 & 7 interesting transition between garments. A good decision to bring in the orange color as a contrast. No change proposed.

Outfit no.1:
Interesting interplay between abstract shape and concrete garment. No change proposed.

Outfit no.2:
A good example of moving the focus-point to the lower part of the body. This is needed in contrast to the shoulder/chest/stomach-focus throughout the rest of the collection. No change proposed.

Outfit no.3:
The oversized shirt is an interesting addition. The transformation might be more referenced to a wet-look instead of it appearing to be affected by wind. I propose a more upwards direction to enhance the effect of wind.

Outfit no.4:
Very clean in shape, maybe an excessive addition when other outfits display the same drape but with stronger visual connection to the aim. I propose an addition of adding a lower-body focus that relates to outfit no.2.