Smocked patterns
-an exploration of jacquard woven patterns and smocking techniques
for a spatial textile design context

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1.1 REPRESENTATIVE IMAGES OF WORK
1.2 ABSTRACT

This degree work relates to the textile design field where the aim is to design jacquard woven patterns for smocking techniques, in order to create three-dimensional pattern surfaces for a spatial textile design context. Smocking is a traditional embroidery technique where the stitches manipulate the fabric and create decorative areas. Jacquard woven patterns work as templates for the smocking stitches so the pattern shapes the fabric. Bindings and yarn colour combinations were explored in an industrial jacquard machine and tried out with different smocking variations made by hand. Experiments with scale and materials have been done. The result consists of three woven textile objects smocked with two variants of lozenge smocking. The work demonstrates examples of smocked three-dimensional surfaces in various scales and shapes, which can be further developed into interior products, for instance room dividers or sound absorbers. The primary motive was to update the traditional smocking technique with patterns and colours, with the intension to develop a contemporary expression. The smocking technique acts as a method to manipulate patterns and can work as a sketching tool in pattern design. The purpose is to inspire alternative ways of sketching with patterns.

1.3 KEYWORDS

Textile design, Design, Weave, Jacquard, Smocking, Patterns, Scale, Form, Interior
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2.1 INTRODUCTION TO THE FIELD

Challenging the field of textile design is an on-going process where the combination of technology and tradition has been possible with new developments of materials and techniques (Gale & Kaur 2002). One of the primary techniques within the field is weaving. Woven structures are built of two thread systems, warp in vertical line and weft in horizontal direction. When warp and weft interlock with each other a woven fabric is made (Nationalencyklopedin n.d). The warp threads are lifted or lowered in groups and create small pattern repeats. In jacquard weave every warp thread lifts individually and brings opportunity to produce complicated, figurative and large repeated patterns (Briggs-Goode & Townsend 2011).

Philippa Brock call herself as a “woven textile design engineer” with interests in yarn interaction and three-dimensional jacquard weave surfaces. Brock develops the possibilities of finishing techniques done in the jacquard loom, with the purpose to see how much of the finishing process can be completed before the fabric is removed from the loom. The research can gain the production of woven fabric by reducing the amount of finishing steps. In the Self-Assembly series (fig.1), crêpe/high-twisted yarns were used to create self-folded surfaces. The woven textiles are engineered to fold them self in vertical, horizontal and diagonal axes when the fabric came of the loom. (Hemmings 2012).

Smocking is a sewing technique that manipulates the fabric and create three dimensional surfaces. Grids of dots are used as templates for the stitches and are marked out with transfer sheets or by hand with a marking tool. The stitches are sewn by hand, visible at one side of the fabric (Wolff 1996).

Smocking secures and adjusts the folds of a finely pleated field of fabric with hand stitching. When the stitching is visible, it superimposes an ornamental thread design on the surface of the pleats, organizing and bending the underlying folds into cellular formations. When the stitching is invisible, the fluctuating movement of the folds becomes the decorative focus. Smocked fabric acquires the same thickness as its pleats, and loses flexibility across the pleating.

(Wolff 1996, p. 125)

This indicates that possibilities of three-dimensionality are apparent, as well as including the smocking thread as an equal design variable.
Textiles surround us and is a natural part of our life covering various needs and purposes. They embrace, protect, are decorative and create pleasant environments for us to live in. Textiles in public spaces have different expressions and functions. They can hang from a wall, be placed in the centre of a room, or be located outside.

Petra Blaisse runs the company Inside Outside engaged in interior architecture and landscape design (Inside Outside 2016 a). The studio primarily works with large scale textile curtains. In an old locomotive Hall in Tilburg, Netherlands, Inside Outside has created the concept *Transversals* consisting of three pairs of custom-woven curtains (fig.2). The space functions as a library and creative workplace. The curtains hang from the ceiling and can be moved depending on the activities in the building (Inside Outside 2016 b).

Substance architecture (2019) played with the scale of honeycomb smocking, applied to curtains in a public space in Winterset, Iowa, where a room was built out in the public environment (fig.3). Scale influences the aesthetic experience and sometimes also affects the behavior of the material.
2.2 MOTIVE AND IDEA DISCUSSION

The concept for this degree work is to design fabrics customized to the smocking technique. Jacquard woven patterns will work as templates for the stitches so the pattern shapes the fabric. The vision is to create smocked three-dimensional patterns for a spatial context.

*Volume 01,02,03* by Alissa van Asseldonk and Nienke Bongers, is a project where patterns on flat surfaces are transformed into three-dimensional objects (fig.4). The result is two room-dividers, one in acrylic and the other in steel (Asseldonk & Bongers 2019).

*Crafted Technology* (fig.5) is a collaboration project by the designer Tamara Efrat, Moran Mizrahi and Dr. Amit Zoran at Bezalel Academy of Art and Design and Hebrew University. The work is a research project how craft and contemporary technology are fused together in order to enhance the traditional smocking technique. An algorithm is based on the technique and transforms two-dimensional surfaces to three-dimensional objects (Efrat n.d). The smocked surface is created in a computer program, the grid for the stitches is marked out by a laser cutter and then the smocking is sewn by hand (Efrat 2016).

Patricia Urquiola combines the expression of craft made by hand with industrial production. Urquiola’s armchair *Smock* (fig.6) shows the smocking technique related to furniture in order to shape the construction (Robertazzi 2013).

Petra Blaïsse and her studio Inside Outside designed the stage curtain (fig.7) for the main auditorium in the Hackney Empire Theatre, London, when the building was restored (Inside Outside 2016 c). The top of the curtain is smocked with large scaled honeycomb stitches which create a three-dimensional surface. The smocking plays role for the expression where the technique adds structure to the surface and shape the fabric where it is left un-smocked.
For this work, the smocking techniques will add volume and shape the surface of the fabric. When using the jacquard loom, it gives opportunity to design the fabric with purposes fitting the smocking technique. By choosing bindings, density and at same time design patterns several steps in the design process are produced simultaneously.

This project will, similarly to Asseldonk and Bongers Volume 01,02,03, explore the transformation of two-dimensional patterns to three-dimensional surfaces. However, this degree work focuses of jacquard weaving, soft materials and textile thinking. The jacquard loom gives opportunity to produce double sided fabric showing the patterns on both sides. The combination of jacquard weave and smocking techniques creates two sided textiles with different expression and structures.

*Crafted Technology* demonstrates how digital tools and craft can be combined together in order to revive the smocking technique. In comparison to this degree work, the algorithm and the laser cutter are replaced by the jacquard woven patterns in order to create templates for the stitches. This reduces the amount of steps in the production process, the fabric is ready to be smocked when it is removed from the jacquard loom and the step of mark out the grid can be skipped.

Smocking plays a major role in the expression in both Urquiolas’s and Blaisse’s work, demonstrating the technique’s potential for shaping materials for interior and spatial contexts. It has the function to bring form to the objects and create three-dimensional surfaces. However, these projects do not challenge how patterns can be added to the surface and be a part of the expression.

By combining industrial production of the fabric in the jacquard loom with the hand stitching of smocking, the expression become lively and organic and gives freedom to shape the object by leaving un-smocked areas. The smocked patterns will be essential when shaping the fabric. The technique changes the experience of the patterns depending on if the areas are smocked or not, challenging the viewer to think and brings curiosity to understand the construction of the textiles.

Much of the research carried out in the design field primarily contributes to how the smocking can manipulate plain, monochromatic surfaces and work as a method to give shape. The technique is added onto another object. But what if the smocking is in main focus during the design process and every decision taken regarding to the construction of the technique? How could patterns be designed and customized for the surface that enhance and renew the expression of the traditional smocking technique?

### 2.3 Aim

The aim of this work is to design jacquard woven patterns customized for smocking techniques, in order to create three-dimensional pattern surfaces for a spatial textile design context.
3.1 DESIGN METHOD AND DESIGN OF EXPERIMENT

This project is based on practical experimentations where the jacquard loom has been the guiding tool during the process. Candy and Edmonds (2018) claim that practise and research can complement each other and conduct to new knowledge that can be shared. The act of making in this degree work has been important through the development, for example, hands-on experiments have made it possible to visualize how colours in warp and weft are blended.

The design process can be divided in steps of practical experiments, analysis and evaluation. The method is similar to Muratovski’s (2016) model of a cyclic spiral where the steps are repeated in systematic loops (fig. 8). All three final pieces have been developed in parallel and therefore affected each other.

Methods for experiments

- Sketches: Patterns painted on smocked structures, drawings on paper and in the computer program Scotweave, woven samples in the jacquard machines.
- Material experiments on jacquard. Sampling different warp and weft: Monofilament, cotton, linen.
- Testing patterns, textures and colour combinations in the jacquard.
- Scale experiments- What happens with the material when changing scale?

LIMITATIONS

The patterned fabrics were produced in a jacquard machine and then smocked by hand. The warp in the jacquard machine was white. Weft-faced double-faced satin binding was used for all pieces because of the property showing the weft colour as much as possible and minimize the effect of the warp colour.

The jacquard is threaded in blocks of 4 repeats over full width. Every repeat has the maximum width of 40 cm but can be divided in smaller repeats.

Two variants of the Lozende smocking technique have been used during the development of the degree work. The variants enable it to work with both sides of the smocked fabric.
PRE-STUDY

The aim of the pre-study was to explore the possibilities of smocking techniques and colours with jacquard woven textiles, in order to create three-dimensional surfaces.

Lattice, lozenge, and honeycombs are examples of smocking techniques (fig.9-16). Those were smocked in cotton fabrics with the purpose to compare the variations of the stitches. Two variants of lozenge were tested, they were named to *Chain* and *Block* to be kept apart. The smocking techniques had repetitive structures of the surface but differ in the expression. The honeycomb was the one of the techniques without a stable structure, the fabric had the possibility to be tensioned and relaxed, which created a changeable surface.

The two variations of lozenge, *Chain* and *Block*, were chosen for further development in the degree work. The techniques create non-elastic surfaces and brings the property of stable constructions. The sides of the smocked structures had different expressions from each other and showed patterns in a clear way, which meant every side had the possibility to be displayed. The lattice and the honeycomb stitches had unstructured surfaces which did not show the patterns clearly and were eliminated from the process.
Experiments were made with the purpose to translate the shape of the smocked construction into flat patterns. The two variants of lozenge smocking, *Chain* and *Block*, were sewn upon fabrics. Markers were used to outline the smocked structure. Afterwards, the stitches were cut out and a pattern sketch was shown on the flattened fabric (fig. 17-22). This was a good method to understand how to construct patterns for the smocking techniques. The pattern sketches were further developed in the computer programs Photoshop and Scotweave and woven in the jacquard loom (fig.23-26).

Fig. 17,18,19. *Block*, pattern sketches with markers on smocked surfaces, on fabric.

Fig. 20, 21, 22. *Chain*, pattern sketches with markers on smocked surfaces, on fabric.

Fig. 23 & 24. Jacquard woven patterns, *Block*.

Fig. 25 & 26. Jacquard woven patterns, *Chain*.
A lot of samples were made in the jacquard loom trying out density and colour combinations for the patterns. The purpose was to find bold colours that enhanced the smocked structure. 

*Brick* and *Chain* (fig. 27 & 28) are smocked with the same smocking technique, the lozenge variant named *Chain*, but with two different pattern designs. This proves that patterns influence how the smocked surface is experienced.
Fig. 29. The pattern design Blocks smocked with the smocking technique named Block. Selections of colourways, showing both sides of the samples.

The pattern of Blocks (fig.29) is divided in squares, based on the smocked surface. The squares enhance the repetition of the structure and create straight lines.

The conclusion of the pre-study showed that patterns can be applied to smocked structures and work as templates for the stitches. The result consists of three different pattern groups, Chain (fig.27), Brick (fig.28) and Blocks (fig.29), showing variations of patterns and smocked structures. Chain and Brick are different patterns smocked with the same smocking technique which prove the patterns impact of how the smocked surfaces are perceived. The construction of Chain and Blocks were continued into the degree work.
3.2 DEVELOPMENT AND DESIGN RATIONAL

The relationship between bindings, colours, patterns and smocking techniques have been important design parameters for this work. Those variables have been considered and developed at same time during the design process.

Bindings

Bindings affect the texture, expression and how the colours of warp and weft are mixed at the woven surface. Twill and various satin bindings have been tested with the purpose of creating the brightest colours. An eight-shaft weft-faced double-facced satin binding has been used for all three final pieces (fig.30). The binding has the property showing the weft colour as much as possible, which enhances the pattern and creates distinct colour fields. By using the weft-faced double-faced binding there is possibility to weave with several colours in the weft direction.

Colours

Lots of colour combinations have been tested through the process in order to find balance between contrasts in brightness and lightness. The purpose has been to find combinations which enhance the structure of the smocked surface and avoid combinations of camouflaging effects.

The chosen binding creates two different sides of the weave, one where every colour is divided in individual fields. On the other side, the colours are mixed and create new blends. This effect has been used as a design-tool during the investigation of colours. The colours of the warp in the industrial jacquard machine was white and a static parameter, which affected the expression of the colours in weft and something to work around. The binding is constructed to hide the warp threads as much as possible and decrease the colour effect of the warp.

Materials

Cotton in warp and weft has been used for the final pieces in this work. The material has been chosen for the property to create a stable quality for the smocking technique. Flax and mercerized cotton are other materials tried out in the weft which gave lustre to the surface. The sample woven in the mercerized cotton had a soft texture but were unstable and did not kept the smocked structure (fig.30) The flax added stability but, in this case, the surface was too rigid and shaped the smocking in an undesirable manner (fig.32).
Development Piece one: Blocks

Fig. 33. Blocks, sample developed during the pre-study.

Fig. 34. Pattern repeat Block.

The structure Blocks was one of the constructions explored in the pre-study and continued into the degree work (fig.33-34). Variations of scale of the smocking structure were tested to see how the size affected the behaviour of the fabric (fig. 35). The largest scale became unstable and was eliminated from further development. The chosen scale held up the construction of the smocking and emphasise the pattern so it could be seen from a distance (fig. 36).

Fig. 35. Variations of scale

The pattern has been developed through sketches on papers (fig.37-38), Photoshop (fig.39) and then woven in the jacquard machine (fig.40).

Fig. 37. Paper sketches of the smocked structure Block.

Fig. 38.
Fig. 39. Patterns made in Photoshop.

Fig. 40. Jacquard woven patterns, same patterns and order as fig. 39.

The different variants of the pattern *Blocks* were evaluated how they affected the smocked structure. The lines across the squares were too busy (fig. 40) and camouflaged the smocking. When the squares were monochromatic, the lines in between created a wavy movement which emphasised the smocked surface and the pattern was chosen for the final piece one (fig. 41).

Fig. 41. The chosen pattern for the final piece *Blocks*.

The final piece *Blocks* would not have any front or back, which meant that the colours had to work with the smocked pattern on both sides of the fabric. Colours were tried out in the jacquard machine (fig. 42). One side of the smocked surface shown the smocking thread. The colour and the thickness of this thread was considered and a dark blue cotton thread was chosen, the same colour used for the lines of the pattern.

Fig. 42. The colour development in the end of the process, showing two sides of the same fabric.
The fabric was produced in the jacquard machine, washed, ironed and then smocked by hand (fig.43).

Development Piece two: *Chain*

This piece is a further development of the pattern *Chain* from the pre-study (fig.44-45).

Depending on the scale of the smocked pattern, the expression change (fig.46-47). When different scales of the pattern were mixed in the same piece, the surface became unregular. The large part of the pattern needed to be unsmocked which affected the stability of the construction (fig.48).
The different patterns for *Chain* were investigated in the same way as *Blocks*, through paper sketches (fig. 49) and then translated in Photoshop (fig. 50).

Fig. 51-53 shows examples of smocked patterns woven in the jacquard machine. Both sides of the fabric have been considered to be displayed.
The final piece of Chain shows the side without the smocking thread. The pattern was chosen due to the property of emphasise three-dimensionality (fig.53). The thin lines in the background of the surface enhance the depth of the textile and create a feeling of different layers.

Fig.53. Both sides of fabric. The pattern for the final piece Chain shows to the left.

The construction of the smocking technique shaped the fabric to be round, this was discovered when smocking small samples of the Chain (fig.55). The property disappeared when scaling up the size of the smocked area, the piece was too heavy to be able to hold up the shape.

Fig.54. Sewing process of final piece two, Chain.

Fig.55. Samples shaped by the smocking construction.
Some experiments were done to find ways of shaping the final piece (fig. 56-59). The decision was taken to shape the final piece to a self-supporting column (fig.59) to keep the expression of the small samples seen in fig.55.

Development Piece three: Dots

The patterns during this project have been developed parallel and therefore influenced each other. The piece three is sewn with the same smocking technique as Blocks, but the pattern (fig.60), is mainly designed for the other side of the structure (fig.61).
The investigation of the pattern for the final piece *Dots* has been about to try out scale (fig. 62) and colours. In the other two pieces *Chain* and *Blocks*, the weft colours have been mixed on one side of the fabric. On the other side the colours have been divided in individual colour fields. For the piece *Dots*, colours are mixed in both sides of the fabric in combination of individual colour fields. The colour development has been done in the jacquard loom which led to a large number of colour combinations (fig. 63-64).
The smocking thread was one of the design variables in this project where material, colour and thickness of the thread have been considered.

Pemotex was tested as the smocking thread. The material reacts in contact with heat and crumpled the smocked surface (fig. 65 & 66). The result became an unregular surface where the pattern, together with the crinkly effect of the smocked structure became messy and was not further developed in the process.

Another experiment was done where the structure, smocked with cotton thread, was washed after smocking (fig. 67). The smocking structure was flattened and irregular, which was an unwanted expression.
Fig. 68. One side of the *Dots*, smocked and un-smocked areas.

Fig. 69. The other side where the smocking thread is visible.

The entire width of the fabric was used when smocking the final piece. One orange, contrasting smocking thread was used to emphasise how the smocking stitches runs over the surface, being a part of the design.
4.1 RESULT

The result of this degree work consists of three woven textile objects, each showing how smocking and patterns can be combined together to create three-dimensional surfaces for a spatial textile design context. The three pieces are jacquard woven and smocked by hand with two variants of lozenge smocking. The work demonstrates patterns customized for the smocking techniques in various scale and shape. The traditional smocking technique has been renewed with help of colour combinations and patterns, which bring complexity and curiosity how the textiles are made.
Piece one: *Blocks*

Two panels of smocked fabric were sewn together with a seam in the middle of the textile to increase the size of the final piece. The textile has two different sides which show two expressions of the lozenge smocking, named *Block* (fig. 70 & 73). Some areas of the lower part have been left un-smocked, presenting the modification of the pattern from plain fabric to smocked structure (fig. 70). The pattern is geometric with squares and lines repeated over the fabric. On one side the squares are blue and yellow, while the lines are dark blue (fig. 71). When the pattern is smocked, the lines become wavy and the yellow squares are hidden. The smocking thread has the same colour as the lines and is visible at this side of the piece (fig. 72). On the other side the colours in the weft are mixed, which create new colour hues (fig. 73 & 74).

![Smocked and un-smocked areas of the textile.](image1)

![The pattern *Blocks* on plain fabric.](image2)

![Close-up of the smocking thread creating a zig-zag pattern.](image3)

![Closeup of how the colours are blended.](image4)

![The side of the piece where the colours are blended.](image5)
Piece Two: *Chain*

This piece is smocked with the lozenge technique named *Chain*. The scale, in combination of the smocking technique, create a stable structure and enable the piece to be self-supported in the shape of a column (fig. 75). The pattern consists of thin lines in dark blue and orange with a background in light pink (fig. 76). When the pattern is smocked, the lines are positioned to be in the background of the pattern, while the light pink areas become the foreground (fig. 77).

![Fig. 75. Self-supporting column.](image1)

![Fig. 76. The pattern *Chain* on plain fabric.](image2)

![Fig. 77. Closeup of *Chain*, exemplify how the lines become the background of the pattern.](image3)
Piece three: *Dots*

This piece is smocked with the same smocking technique as piece one, *Block*, but in smaller scale. The textile has two sides which present the pattern in different ways (fig.78). On one side, the dots are placed in the background (fig.79), while they are in foreground on the other side of the textile (fig.80). The orange smocking thread is visible at one side, showing how the stitches run over the surface (fig.80). The pattern consists of dots and thin lines placed in a strict way. In this piece, monochromatic colour fields of a light green colour are mixed with blended fields of green and blue colours, which are reversed on the other side (fig.81 & 82).
4.2 PRESENTATION

The three final pieces are presented as a collection and exemplify how jacquard woven patterns and smocking techniques can be combined and create three-dimensional surfaces. The primary idea is that each piece should all be strong and sufficient enough to clearly communicate the overall idea.

All pieces within the collection are placed so they can be perceived from all angles, with the purpose to show both sides of the textiles (fig. 83). Blocks is presented hanging from a stand to emphasise how the un-smocked areas are draped by the smocked structure. Dots is hanging from the ceiling and leaning on to a podium, which enable it to shape parts of the textile. The last piece, Chain is placed on to a podium so the textile object could be observed from above. The podiums and the stand are made in specific sizes to enhance the quality of each textile.

The collection is presented at an exhibition at The Textile museum in Borås. This is just one way of how the work can be displayed. One idea is to place the surfaces in public spaces as functional textiles, in bigger scale, as for example, room dividers or sound absorbers (fig. 84).
4.3 CONCLUSION

This degree work has explored how jacquard woven patterns can be combined with smocked structures, with the purpose of creating three-dimensional surfaces for a spatial textile design context. The primary motive was to update the traditional smocking technique with patterns and colours, with the intention of developing a contemporary expression. The patterns were designed especially for the smocked structures based on how the structures shaped the fabric and created three-dimensionality.

The result shows three suggestions of how smocking techniques and jacquard weave can be combined and create three-dimensional surfaces. With the use of colours and patterns it is possible to modernise a traditional technique sometimes seen as old fashioned.

The jacquard loom was important in the process of creating fabrics customized for the smocking techniques. The machine made it possible to produce fabric with right density for the smocked structure and create patterns with organic shapes. The jacquard loom worked as a sketching tool when trying out colour blends in weft, which facilitated the process of choosing colours because of the physical samples of fabric that could be comparable to each other.

Two variants of lozenge smocking were used in this work. These were given the names *Chain* and *Block* to be kept apart. The techniques created stable structures with repeated surfaces, showing patterns in a clear way. Both techniques had different sides equal in value, which means no one are presented as the back side of the textile. Smocking has the potential to shape fabrics and when sewing by hand, areas can be decided to be left un-smocked and through the combination of smocked and un-smocked areas, build form. This has been explored to some degree in *Blocks*, but could be further developed by challenging the scale and how to the textile could be shaped. The techniques do not only add the possibility of shaping, they are also, at same time, decorative and a variable of the design.

The three final pieces demonstrate variations of pattern surfaces and shape. The bulky structure created by the smocking techniques could be further explored into functional and decorative interior products, for instance room dividers or sound absorbers for public spaces. Scale is important for the expression and the function, the textiles behaviour change depending on scale of the smocked patterns. If placing the smocked structures in a public space context, the focus of further development would have been on the relationship between scale, structure and materials. Challenging the size of the smocked structure.

The smocking stitches have been sewn by hand which is time consuming and hard to handle in industrial production. Looking for ways of creating structures similar to the smocking techniques, compatible with industrial production, could be something for further development. For examples, woven shibori is a technique were floats of weft threads are used to shape the fabric. By pulling the loose threads, the fabric is gathered and create a three-dimensional structure. This would be interesting to try and see if the floats could be organized in a way so the structure become repeated, as when using smocking.
4.4 DISCUSSION

It was successful to combine smocking technique with jacquard weave in order to create three-dimensional pattern surfaces. The result fulfilled the purpose of this work, showing examples of patterns designed for smocking techniques in various scale and expression. But the smocking technique is time consuming when the sewing part is done by hand and something which needs to be considered, if the project would be commercialised.

The patterns designed for the smocked structures decorate the surface but also work as templates for the stitches when smocking the fabric. The patterns got another purpose than just being decorative.

Eufrat’s work, Crafted technology, used the laser cutter to mark out the grids for the stitches which shortens the process a bit, but it still needs to mark out where to sew the stitches in an individual step. By using the patterns as guiding tool for the smocking, as in this work, there is no need for other steps than the production of the fabric and the smocking part.

Philippa Brocks work with “on loom finishing techniques” can be seen as an inspiration source for further development of this project, regarding to shorten the steps and the time of the production. It would might be possible to replace the smocking technique, which is sewn by hand, with the technique of woven shibori. The technique is applied to the fabric during the weave process and could be a substitute for the smocking thread and the hand stitching. The questions would be, if the structure could be stable enough to hold up the surface? In what way could the gathering thread be fixed so the structure stays in its shape? What if Pemotex, or similar, was used instead of the smocking thread together with the woven shibori?

One important question is, if the technique needs to be commercialised at all? Or if it can be a craft piece made by hand and created for more unique contexts, as Petra Blaisse’s hand smocked stage curtain?

The method of practical experiments in the jacquard loom with the combination of smocked samples have been important for the outcome of this project. When working with physical materials, experimenting in jacquard loom and hand sewing of samples, it provides knowledge that should not been achieved if the practical method would have been changed.

Patterns are often connected with printing techniques and the question has been asked, why weave has been chosen for the pattern making in this project, instead of printing? By using weave as technique to create patterns on fabric, the process is shorter than if printing the patterns. The fabric and the patterns are created at same time in the jacquard loom and have the possibility to be designed for the purpose. This makes the weaving more effective due to time, costs and use of energy in relation to if the pattern would have been printed onto the surface, after the fabric was produced. Another aspect of why weave is more suitable than print is the possibility of creating double-sided effects. If using print there would probably be a backside of the fabric with lower value. By using weave, both sides of the fabric could be designed and displayed.

Cotton has been used in warp and weft in this project which means the fabric consist of one material and therefore facilitates the recycling phase, blends of materials do not need to be separated. There have been some experiments of other materials in both warp and weft but not with the same properties as the cotton quality, which was to prefer. The material choice has not been in focus during this project but something for further exploration. The material is important for the function of the textiles and needs to be considered if the pieces would be produced for interior products.

This project contributes to the textile design field with an alternative approach of pattern design, where the patterns are custom-made for three-dimensional surfaces. The shape of the structure has been in focus from the beginning of the process and determined the framework for the design.
5.1 TABLE OF FIGURE

Fig.1. Brock, P. (2009). Self Assembly series [photography].

Fig.2. Parthesius, F. (n.d). Transversals [photography].

Fig.3. Substance architecture (n.d). Deployable smocked porch [photography].

Fig.4. Knaapen, F. (n.d). Volume 01,02,03 [photography].

Fig.5. Shechter, D. (n.d). Crafted Technology [photography].
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Fig.7. Mech, P. (n.d). Hackney Empire Theatre [photography].


5.2 REFERENCES


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