FLIP THE PATTERN
An exploration on designing adjustable printed textiles.

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Title
Flip the pattern - An exploration on designing adjustable printed textiles.

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1.1 Representative image of work

Piece one, “Flippin”
Piece three, "ZigZag"
1.2 ABSTRACT

How can a textile designer work in an exploratory way to find methods and taking advantage as much of a fabrics surfaces as possible?

This work explores a combination of techniques as laser cutting and transfer printing, how they can be developed and combined to influence each other. The aim of this project is to explore the combined techniques of laser cutting and transfer printing, with a focus on designing adjustable printed textiles.

Through a method in practical working, exploration was carried out in techniques like laser cutting and transfer print, as well as the combined visual expression of several patterns with cut-outs and modularity.

The result of this project is three pieces each representing adjustment in different combinations; One adjustable repeat, modularity, and modularity with cutouts. All three except one consist of two repeated patterns on each side of the fabric. They present examples of how a textile can be changed, the relation between construction and surface print. They all show that a printed textile could be more than just a static surface.

By taking the method of printing two patterns and use laser cutting gives a value for both sides of the fabric and shows how to produce printed textiles with modularity. Additional material or more prints and colors could be investigated further.

1.3 Keywords; Transfer print, laser cut, double sided, adjustable, moduls, patterns, textile design,
2.1 Introduction to the field

Patterns occur in fields as fashion, interiors, architecture, and textile design. It is surrounding the daily environment in general, in a repeat of windows, brick walls and a lot more.

Patterns, including printed and woven, play a significant role in the aesthetics of textiles (Tao, C. Zhou, J & Yin, M, 2017) and makes the expression of a surface more playful and stimulating. Patterns bring a repeated movement.

The definition of patterns is; An decorative element or ornamental design in a piece of fabric. Pattern may be produced by applying designs in different ways, for instance, embroidery, embossing or printing, or produced by the construction of the fabric (Tortora & Johnson 2014).

There are several different printing styles and printing methods, but all of them include a process of applying pigments, dyes or other related materials to the textile in the form of motif or patterns (Briggs-Goode, Townsend, 2011). To avoid applying pigments techniques as transfer printing is given, the only preparation in the process is the printing of sublimation paper.

Manish Arora (fig. 1) and Kairi Lentisius (fig. 2) brings cutting into fashion as a way to print a pattern into a surface (fig). Without the pattern, the dresses would have looked completely different. This technique could be applied on top of an already printed pattern to achieve new expressions.

Camille Welala using are using patterns as a way to enhance a specific surface on a three-dimensional object, the top of the form has one pattern while the side has another (fig. 3). With the black and white details, some really good contrast is achieved. It is something that could be useful in other types of patterns instead of sharp symmetrical forms.
Ravensbourne College Building in London (fig. 4) consisting with a repeated pattern by the construction. Abstract forms are combined with geometrical holes by the windows. The windows itself create a pattern with a repeated circle form. If the pattern had been figurative would the window most probably destroyed the pattern but the abstract appearance allowing the pattern to be interrupted by the artificial "cut outs" without affecting too much. The geometrical forms are still visible. The technique of laser cutting as shown in previous pictures of Manish Aro-ra and Kairi Lentsius (fig 1,2 p. 8) could be used on top of the pattern considering if it had been printed and applied on textile.

Linn Warme (fig. 5) has developed a method in combining patterns, using transfer and screen printing combined with knitting. The patterns consist of geometrical forms on top of an organic motif and in the opposite way. Blending and contrast between the expressions appear with an effectual result. With the knit the fabrics get a structure while the printing is flat and constant. As a repeated structure with the form being placed upon another the interaction may achieve unexpected results (Wong, 1993 p. 66). The unit form and the interaction between techniques could be a cutout form on top of a printed pattern instead of only
2.2 Motive and Idea Discussion

This project relates to printing and laser cut technique as a way of exploring how printed patterns combined with cut out shapes could be a way to integrate two printed surfaces with each other.

Mia Cullin, a Swedish designer who works with modules and a restricted color palette with both architecture and product design (fig. 6). In the modules, a pattern appears with a repeated unit form while each form has a color as blue, beige, green and white. Considering that she is using different colors on each shape a further development could be to use a different pattern on each side of the forms.

A similar way of working is Nasia Burnet, woolen textiles with circle used as a unit form. In her work, she combines a round squared form made of repeated circles (fig. 7). Instead of having four circles stuck to each other could one single circle be one unit.

Both Mia Cullin and Nasia Burnet are using felt like material to their modules. Conclusions about this are that it should be possible to use another material to achieve similar functions and go against the norm of using felt in modular textiles.

Wong’s description of “Unit variations” shows how different position of a repeated form create a new expression which could be useful to create a modular textile (fig. 8). Shape the shapes with laser cutting and repeat it by joining them together.

According to Paul Jackson, a unit form can be simple, abstract, representational, two-dimensional, three-dimensional, black and white, multicolored, many materials (Jackson, 2018). In a way of doing the form multicolored, it could have a printed pattern with two or more colors.
2.2 Motive and Idea Discussion

Paul Jackson’s technique of “Incising and lifting” (fig. 10) could be developed further. For instance, the cutouts could be able to bend in different angles. In his design, the surface has a structure but it is static while it is only possible to be lifted in one direction, to go further could be to make it possible to bend the cut-outs hand hook them in different directions.

Sally Cheung (fig. 11) is taking advantage of Paul’s method but develops it further by putting a printed pattern behind the incised area, when the cut-outs separate from the surface the pattern appears. Instead of combining two materials one material could be used and be printed on both sides.

Lyndi Sales (fig. 12) has laser cut a contrasting form on top of a placed print of a queen. The picture gets after treated and some excitement appears in the expression. It becomes something more than just a flat print, parts of the motif is rising. The technique could be used on a fabric with a repeated pattern, symmetrical forms could be cut on top of something more organic to create contrast.

Most of the fabrics we see with printed patterns have the most common one side that is supposed to be visible but is also static. The textile modules for interiors are able to be rearranged, but they do not have a repeated pattern printed on its surface.

The projects mentioned above all present different ways of working with geometrical structures and cuts. Several of them are made in the fields of textile design or art. This work positions itself in the gap between modules and incising in the combination of printed patterns.
2.3 AIM

The aim of this project is to explore the combined techniques of laser cutting and transfer printing, with a focus on designing adjustable textiles.
3.1 Design method and design experiments

This project is based on an exploration of printed surfaces and laser-cut technique. How to combine them by using both sides of a fabric.

The design method in this work is a combination of theory and practice-based design research to get an understanding of how to work with construction in relation to print. The development has to be done through practice and sketching, hands-on in the materials to understand how the result will turn out (Koskinen, 2011, p. 33).

Working with experiments of samples and an observant technique, from different angles, look at it or take photographs, then analyze them (Steed, Stevensson, 2012, p. 40). Take decisions of what would be relevant for the project, why it will be relevant for the project, consider construction and scale.

The project is controlled by different parameters in material and printing techniques. Awareness of the properties and the behavior of a specific material when getting in contact with heat.

Since there are many aspects and combinations that have to be designed and produced through experimental research, the design method will be done in a specific order of steps.

Order of steps

- Digital sketching of patterns and moduls
- Transfer pattern and moduls into paper (fig. 13)
- Moduls into fabric sketches with different properties
- Scale of moduls, cuts and pattern
- Pattern and color

Limitations

The main focus of this project was on creating adjustable textiles. To propose a way of working with patterns in laser cutting and printing combined. Early on the decision was made to work only with polyester the printing method was limited. Transfer printing with disperse dye was chosen as the printing techniques depending on the specific fabric. For the patterns, graphic and abstract, and contrasting geometrical cut-outs and module forms. These decisions were all based on the results from the pre-study.
3.1 Design method and design experiments

Pre-study

The pre-study had a focus on printing and an exploration of function in different textile materials. Find ways to combine a printed pattern. The starting point was to get a greater knowledge in modeling and how different materials behave when cutting holes. To get an understanding of how the fabric will behave trials of different cut-outs were made, with different sizes of the cutouts. (fig. 14,15,16).

The importance of trying a lot of different combinations and reflections of the samples got clear during the process. By trying out every combination an evaluation could be made. Every piece was marked with the name of the sketching model and a prescription of the laser setting (fig 14). These prescriptions were important to consider that each material needed a specific setting in the program combined with the distance between the laser tip and the fabric, to be able to cut through without getting any burning marks.

With new knowledge from the pre-study conclusions about the scale of modules and cut-outs had to be considered incoming work. The method of using cut-outs in combination with print is a perfect way to achieve a more playful textile.
To enhance modularity the starting point was to make cuts that were supposed to work as a function to hook modules together. The thought was to make something that could be moved sideways as a zigzag but also up and down (fig. 17). The disturbing thing with these was that they needed additional square forms at the sides to make the function work, that in a way destroyed the circles.

Except for the circles, some square edge forms were tried out (fig. 18). These had the same function as the circles except the small detail, they did not need any extras additional except the main form and the cuts to make the function work.
3.2 Development & Design rationale

With knowledge from the pre-study such as properties of materials, laser cut settings, and sizes of cut-outs, new experiments were made.

Material

Different materials were tested combined with transfer and silkscreen print combined with the laser cutter. Materials with different properties to find a fabric that was able to print on both sides with a fine finish and clear colors. Considering using prints on both sides it was important to find a thick material so the patterns and colors not get mixed which could mess up the expression. When the project partially is about double-sided a printing method that is bleeding through the material can’t be used if the prints are not supposed to blend with another through the material. (fig. 19).

Most of the fabrics are often white and are not able to print on both sides without see-through of light. During the printing process, unexpected things happened, by printing on both sides of different materials the colors and pattern were mixed together (fig. 20). The purpose of the project was to use cut-outs as a way to combine two printed surfaces. With the see-through effect, both sides are already combined. If both sides already are combined the cutouts would not be necessary for the project.

Experiments of making own material were tried out. Combining two polyester canvases with "Vliesofix", a double adhesive film which gets fixed with iron, the material got stable but the layers were broken and the see-through were still there (fig. 21).

A second try was made by using "CB 21" (fig. 22), an acrylic-based coating for textiles, glued between the layers. The fabrics got stuck together but the see-through effect was still there even with three layers of fused fabric.

With the new knowledge of the properties of the material, a new solution was needed to make the project doable. By researching new material were found " Blackout ex. white", double woven fabric made for curtains and banners. The fabric is able to be printed on both sides and has a black weave inside (fig. 23, 24), the black weave takes away the see-through effect.
DOUBLE PRINTED FABRIC

Fig 23  Blackout ex. white fabric, printed both sides

Fig 24  Blackout  white fabric, printed both sides
Colors

By mixing two surfaces together in combination with cuts, awareness of color choice be considered. Some combinations may not work together depending on the colors and patterns expression.

Through experiments with printed paper (fig. 25, 26, 27) and fabrics (fig 28, 29, 30) good and bad color combinations have been tried. With bad combinations means colors that have to big contrast with another. According to Josef Albers, if a primary red is mixed with a primary blue a vibration effect appears which could be disturbing for the eye (Albers 2013). With awareness of the expression in the textiles itself, this had to be considered to get a balance between colors, pattern, and cut-outs. Both strong bright and more settled colors were tried with cut samples.

By using black and white against a surface with a bright color (fig. 27) may work out really good because of the relation to each other, the big contrast between them. If the colors on both sides are too similar to the other, the contrast would be lost and it would not make sense for the project. For instance, red against a pink with the same saturation would take away the contrast (fig. 25, 26). Pink against pink but with a contrast color on both sides is not working either. If the background color is too similar even if there is one other contrasting color or another pattern, there will not be enough difference to separate them (fig. 30).
**Colors**

With conclusions of previous experiments, some inspiring references were found, used as a starting point of new color choices. A pallet with more calm colors and with a close relation to one another in the color circle.

Sally Cheung, a textile designer who works strongly with a graphic expression and colors. In her project "Soda" (fig 25) she combines colors from the same side of the color circle while she adds a strong color from the opposite half to achieve contrast in the expression. A similar palette as Kristine Mandsberg (fig. 32, 33).

With inspiration from Sally and Kristine conclusion about color, choices were settled. To work with purple hues combined with a primary color to achieve contrasts.
Form and pattern

With inspiration from Nathalie du Pasquier (fig. 33), the patterns were formed. Her main expression is the simple organic forms with an element of structures reminiscent of crackled artifacts.

With this in mind, the pattern was supposed to have surface structures in each piece to combine the collection, as small details. Du Pasquier’s language of expression considering forms and the number of colors were developed further. In each pattern, the structural elements were included. The way of using the black and white in the pattern to make it stand out from the areas with colors. The patterns were shaped with simple base forms as a starting point. Afterwards, the structures were added on top to see where they could come to the best use and achieve depth to the expression (fig. 34).

The modules were shaped with the inspiration of forms that could be found in the patterns of Pasquier.

The hardest aspect of the project was to figure out how two patterns could get along with another and at the same time, work with the cutouts and modules. Compared to only working with a static and flat printed surface this was a struggle. This was an aspect that was the main reason why the patterns had to be abstract and not to advanced or figurative. The pattern must be able to move around bit by bit and be able to have a cutout over the surface without affecting the expression.
Printing methods

The choice of printing method was easy. Consider that the material had to be the Blackout polyester material and printed on both sides, the methods of printing is limited. Trials of printing were made such as screen printing and transfer printing considering that digital printing is not able to do while the material is made of polyester and the digital printer are using with reactive dyes. To print on polyester the colors has to be pigment or sublimation. With pigment, the colors are bleeding through the material to the other side of the fabric and the binding in the fabric is sateen, with the sateen weave the colors were bled out on the edges of the printed motif (fig. 35). When the project partially is about double-sided could a printing method that is bleeding through the material not be used if the prints are not supposed to blend with another through the material.

With sublimation, the print only get attached with a thin layer on top of the fabric without any bleeding colors (fig. 36).
Development, piece one

With inspiration from the pre-study, a specific shape was following into the degree work, a stair form. Piece one was not supposed to be build of modular pieces itself. The main thing was to achieve surprising cut-outs. Consider that the cut-outs get folded a new color appears with a repeat.

To print on both sides could be a struggle to consider using two different prints that were supposed to meet. Samples with only one pattern on one side and a color on the other were made (fig. 37). When the other side got a bit too simple, decisions of using patterns on both sides were settled. The biggest challenge was to find the balance between the prints and use different transpose on each side so to
Development, piece one, repeat and form

When the size of the laser cutting machine was limited, the space of doing the cutouts also became limited. The next challenge was to figure out how many of those forms that could fit into the size of fabric and at the same time get a good-looking repeat (fig. 39). Considering the shapes were supposed to be able to fold in different directions without crossing each other.

To make fit the cutouts better together with the whole piece the edges of the fabric were cut in the same way and with similar size as the cutouts in the fabric, instead of having a simple square form. Considering the fabric properties it was not possible to cut too deep into the edges without making the fabric fold (fig. 40).

Fig 39  Printed blackout, the function works better on one side then the other, the pink is to bright and dissappears into the other pattern.

Fig 40  Trial to make a shape of the whole piece, blackout fabric 850x600 mm
Group one (fig. 41), the development in this group had a focus on purple and blue combined. The black and white were there to create highlight and shadow so the pattern would get more contrast and depth. Some orange were tried out but instead of using colors from both sides of the color circle on both back and front in the piece. The contrasting color should only be on one side, to make it pop instead of blending in.

Group two (fig. 42), with inspiration from the first group a pattern with an organic expression was made. Considering the color tones from another color group were tried out, bright pink, red, orange, yellow and how they played together. The different hues were placed as a bottom color and the opposite. Even if the color worked together there was one problem with the pattern. Combining the first group with the second did not create that much of a contrast. Expression wise, the patterns were to simular, both had a really soft organic appearance, something sharper was needed.

Group three (fig. 43), to make a pattern sharper could be coactivation. Like a broken window or wall. With a sharp expression, the contrast will appear when it fights with a softer organic pattern. Together they get along. Color wise the orange and yellow were picked up from the second group and combined with a new color, blue-white, and red-violet. The last trial was with a white background and a yellow foreground. This pattern combined with the last one from the first group was a good combination. The white color fights with the black while the yellow fights with the purple and blue color. With this conclusion, the pattern and color were settled for the first piece.
Development, piece two, repeat and form

With the knowledge from previous experiments (fig. 17, p.15) new experiments including circle forms were tried out. To avoid additional forms outside the circle the cuts were made inside the circles instead. With this method, the circles could be combined and keep its form and at the same time, a small square form appeared inside of it (fig.44, 45, 46).

Fig 44 160 mm broad circles combined together, non functional repeat on both sides

Fig 45 140 mm broad circles combined together, floral pattern with one color

Fig 46 Three variations of circles
Development, piece two, repeat and form

To make it possible for the pattern to follow the repeat while combining the circles each piece had to be cut out one at the time (fig. 47). This made the whole piece more complicated to do compare if all the circles had been cut out at the same time from a full piece fabric. Before cutting the circles a paper was laid in the machine as a function to do a stencil, this was necessary to be able to know the exact place where the laser will cut. The module form was printed as circles from the beginning so they could be placed in the paper stencil. To be sure that the circle was laid right an angle ruler was used (fig. 47). Small lines were printed on top of the circles with a shape of a square so the ruler would have a straight line to follow. The lines were almost transparent so they would not mess up the pattern.

By utilizing this method, various ways of emphasizing and combining shapes were tested (fig. 48). By coating the circles, it was able to construct a three-dimensional shape (fig. 49).

Fig 47 Printed circle under paper stencil in the lasercutting machine

Fig 48 Canvas sketch, grayscale and two colors

Fig 49 Trying out forms with coated circles
Development, piece two, patterns & colors

Group one, (fig. 50). The development of this group had a starting point in black and white. Something was missing, a color had to be added in some way, instead of using black as a dominant color blue and purple were tried out in both background and foreground. The blue combined with white made the expression felt a bit bleached while blue and purple looked a bit too much as monochrome. Purple background with the white as foreground and a bit of black in the details made the expression pop and worked perfectly, the big contrast between white and purple.

When it was not possible to fit repeated patterns on both sides only single colors were tried (fig. 51). Since the repeated pattern, I supposed to be purple and white the orange color was a good combination. Bright blue is to close to the purple, red was too dark and that’s why the orange was a good choice, the hue and the contrast in the color.
Development, piece three, repeat and from

The third piece was designed to be able to move around and change the position. The units were supposed and can be moved as a zig-zag but also to flip the sides so one pattern would be more dominant than the other (fig 52). The cuts had to be at each side of a regular form, with an unregular form the construction could not hold up (fig. 53).

Fig 52 Coated and transfer printed sample

Fig 53 Black out fabric without coating, the construction can not hold up by itself because of wrong cuts and material properties
Development, piece three, repeat and from

To make it possible for the pattern to follow the repeat while combining the forms each piece had to be cut out at the same time from a whole piece of printed fabric. Each form also had to have two small cuts on each step to be able to combine them (fig. 54). The cut was there so the other form would have something to lay on without falling apart. Before cutting the fabric was coated on each side (fig. 55). This to make it possible for the form to hold themselves up when they are combined, to make it more stable (fig. 56).

Fig 54 Coated sample with cut in each side of the unit

Fig 55 Coated sample

Fig 56 Coated and printed sample with cut outs, 850x160 mm
Development, piece three, patterns & colors

Group one, (fig. 57), the development in this group had a focus on purple and blue combined. The pattern has a small structure, similar to the previous pieces. The color scheme is picked up from the previous pieces as well. Tests of using purple with blue, to separate them the bottom color is pink but also the orange as a small contrast detail in the structures. The orange and the white working as a highlight and creates depth in the pattern.

The pattern in the second group (fig. 58) has the same expression but without the structures and shadows. Which separates them from each other but at the same time brings them together. Through experiments, the color was settled. The last sample from group one was combined with the last sample in the second group. The blue background with black and purple with orange and pink became a good combination. Sharp contrast and no color that fights too much with another.
4.1 Result

The result of this work is a set of examples of designing within the textile field with a starting point in combining patterns and work with both sides of a fabric. The pieces show different ways of working with symmetrical forms in relation to printed repeated pattern by merging transfer print and laser cutting (fig). By combining these methods each example consists of two printed surfaces and one cut out the pattern.

Instead of putting all focus on the visual print the technical and functional part has been important to be able to combine two printed patterns and use as much of fabric as possible. The function in the samples is the adjust ability and the possibility of being double-sided.

Modular and adjustable, two main things in the pieces. By interaction with the cuttings, the pattern can be changed in more than one way. The printed pattern may not be changed but how much of it that will be visible on each side of the fabrics could be arranged. Some are rotated and others moved aside (fig 59, 60, 61, 62 69).

To present work in the most appropriate way would be in a clean environment with no disturbing impressions (fig. 62, 65, 69) when the textiles themselves consist of a lot of impressions and the double-sided effect, the combined visual expression of several patterns.
4.1 Result, piece one

Digital sketches of form and repeat, the small lines beside the cut outs helps the form to get stuck when folding and twisting it.

The edges of the piece were cut with the same structure as the cutouts in the surface to achieve a good whole. The soft organic pattern is printed on the front while the yellow brick pattern (fig. 60, 61, 62) are printed on the backside. The yellow achieves a really good contrast when it is folded to the black and purple side. The organic pattern also creates a contrast in the sharp stairs-like cut-outs (fig. 62).
4.1 Result, piece two

FLIPPIN

Fig 62 “Blackout ex. white” modul
4.1 Result, piece two

The organic abstract floral pattern (fig. 63, 64) are used to work with the round shape in the circles when the piece is kind of organic itself the pattern was given for the piece. When it is not possible to make the following pattern on both sides of the circle forms a single colored (fig. 64) backside were applied. The bright orange is there to make it pop out when the circle is supposed to be flipped (fig. 65).
Result, piece two
Circles

Fig 65 Digital pattern sketches
4.1 Result, piece three

As the piece is supposed to go up and down the falling appearance in the pattern goes well with the piece. The purple dominant pattern includes raster (fig. 68) and orange details to create depth. Consisting of four colors and inspired from the surface of a cobblestone. The turquoise has black details on top. The black makes the pattern to really pop when the cut out is folded to the opposite side(fig. 69). The piece is including elements from piece one and two, it is both modular and includes lifting cut-outs.

COLOR SCHEME

Fig 68 Digital pattern sketches

As the piece is supposed to go up and down the falling appearance in the pattern goes well with the piece. The purple dominant pattern includes raster (fig. 68) and orange details to create depth. Consisting of four colors and inspired from the surface of a cobblestone. The turquoise has black details on top. The black makes the pattern to really pop when the cut out is folded to the opposite side(fig. 69). The piece is including elements from piece one and two, it is both modular and includes lifting cut-outs.
4.1 Result, piece one

**ZIG ZAG**

*Fig 69* Piece three presented on a metal frame
4.2 Conclusion

The project is about combining textile design with patterns, how to combine practical work and theoretical thinking to find new alternative methods. How to balance construction with colors and patterns, be aware of the limitations in both expression and construction. To enhance new knowledge and what the knowledge could bring to the textile field. Get a broader perspective on how printing in textile design can be developed further.

To combine patterns with a cut from is a challenge both in color and visual expression. Each element has to work in mixing of techniques and expression if the main goal is to work with double sided as a function.

In a matter of fact, the main key is the properties of the material and what you can do with it. Both the possibilities of printing, the laser-cut edges, and thickness. The weight of a material is important if it’s going to work as modular and how the edges turn out in the laser cut.

Paul Jackson’s method “Incising and lifting” (fig. 10, p. 11) has been useful in the project. Using it in ways like do cut-outs in paper before moving further to the actual fabric. The project has developed the method in the way of using patterns on at least one opposite side that shows when the fabric is folding.

Same thing with Lyndi Sales (fig. 12, p. 11), the way she is cutting on top of an image to get an unexpected result. The way as she did the image of “The queen of diamonds”, in this project it is a repeated pattern instead of a placed picture. Further development is that the cut-outs itself is a repeat and not only a place cut out in the middle of the print.

The project does include exploration in printed patterns in a combination of function and how it could affect textiles.

By working in the Blackout material you could get a feeling of leather, the material is stiff and soft at the same time it is able to print on both side, the material works perfectly against the aim in the project. It has the possibilities to keep itself stable at the same time keep the textile feeling with its fall in the folding areas.

Using transfer print as a method is also a perfect way to avoid bleeding colors and see-through effect. Compared to if it has been screen print while working with wet pigments that can go through the material.
4.3 Discussion

A pattern could be seen in many different fields but the main thing for a pattern is that a unit is repeated and not just a placed motif. It is a very good tool to make a surface more attractive. See it from a distance or more closely and create curiosity. All the pieces need to be put in the right place to make the pattern functional.

How a pattern is supposed to be applied in a textile context can be discussed. How is the unit formed in the pattern to its expression? Does it have to be figurative or can it be both? What happens if you mix static with organics forms?

The decisions to work with the methods in different ways, both with symmetrical and organic forms, was to achieve contrast. A printed pattern is often placed flat on a surface that was the main key to the project. How to work against the norm for a pattern while at the same time using Wucius Wong’s method of “Unit variations” to actually construct the fabrics. The method of twisting and repeat a unit form to see what could be achieved.

With Nasia Burnet in mind (fig. 7, p.10), the project got inspired by her way of working with modules while at the same time placing a repeated pattern on the surface. The “Flower explosion”, the product could be double-sided and be able to turn in and out with different patterns on each side.

Most of the fabrics are often supposed to show one side and not both. To challenge the norm of these aspects a curiosity to actually brake it was the main tool of finding unexpectedly functions in the pattern. In a combination of making both sides of the fabric decorative and adjustable.

This is a method that could be developed for different products in both fashion and interior design, the problem is the material. For fashion, the curtain material may not be the best. If it was able to be produced thinner, for instance, hoodies could be able to turn in and out and have a similar pattern on each side but with a different color.

The pieces can be used as a social experiment in a spatial art context. By using images that show how to rearrange the pieces and let the spectators become part of the artwork. Use integration with people because the pieces are modular. They could be hanged in a place where people pass by daily or as an installation on a gallery.

From a sustainable point of view, the project is sustainable in more than one way. Considering that the project only consists of one material, transfer print, and laser cutting. Transfer printing does not need any water to consume, comparing to if it had been done with screen printing. The mixture of chemical pigments and water consumption in the washing of colors.

Another sustainability aspect is modularity. Depending on what environment the pieces are supposed to be hanged in, it can be adapted. If the pieces need to be in a smaller format in relation to the placement it is doable to make them fit.

If the pieces were products for interior people who buy them actually can customize them for their own space, instead of throwing them away because of the space they can be rearranged.
**REFERENCES**

**Litterature**


**Figures**


REFERENCES

Figures

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