Investigating the dynamics of straight lines through experimental construction of dress.

Fashion design Degree work, Bachelor of Fine Arts
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Abstract

Lines are a fundamental part of visual perception. This work explores how to conceptually work with lines as guidelines when constructing garments. Using the lines as a starting point, I wish to explore new ways of constructing form and find new expressions. By studying line dynamics and using it as a method, I wish to fully examine the properties of dynamic and straight lines as the basis for constructing dress. The aim is to investigate the dynamics of straight lines through experimental construction of dress.

This dissertation is conducted through experimental artistic research. The aim is to produce a result in the form of documented experiments and acquired knowledge as well as produced artefacts. The main applied method is constructing from line compositions to three-dimensional shape. Developments lead to restriction of only using striving line compositions that were more dynamic than others. Other line properties, such as angle, width or length became influential variables in creating form and dynamic in combination with the choice of colour and fabric.

The method produced more possibilities than anticipated, leaving evaluation as an essential part of the process. Line compositions can provide strong dynamics in its relation to body and movement. The next step could be the development of striving non-static line combination with the ambition of integrating them more naturally in garments and also to explore the use of different fabrics that support the visual expression of the lines.

Keywords

Design, fashion, conceptual art, body, design method, construction, 2D, 3D, dynamics, lines, composition, perspective, grid, experimental, guidelines, perception, instruction, design process, striving, womenswear, structure, outfit, garment, collection, clothing, clothes.
Background Part 1: Subject Frame

LINE AS FORM
Lines can be found everywhere. They are important for our fundamental functions of perception, how the visual sense perceives shape and direction. Our eyes are constantly searching for contours to discern objects from the background, detecting direction and making sense of the visual world (Arnheim 1974). In both architecture and art, there has always been a fascination for lines and composition. One picture illustrating this fascination is from the book *The Triangle* by Munari (1976, p.12). It is a grid of lines creating form and direction through its intersections. In football tactics, there is another type of grid where you draw the grid with direction in mind (Aid The Boss, 2012). By studying line dynamics and use it as a method, I wish to fully explore the use of dynamics of straight lines as the basis for constructing dress. Figures 1-2 indicate the base of the background.

![Fig. 1. Architecture of a triangle (Munari 1976, p.12).](image1)

![Fig. 2. Football Manager 2012 Grid Tactic (Aid The Boss, 2012).](image2)

Professor Wucius Wong writes about the foundational principles of form and design (Wong 1993). A line is described as a path of a moving point, a line has length but no breadth. It has position and direction. It is bound by points and it forms the border of a plane. A form is recognized as a line based on two grounds: (a) its breadth is extremely narrow, and (b) its length is quite prominent. A line generally expresses the feeling of thinness, which is relative. What makes a line is the extreme ratio between length and breadth of a shape, but there is no absolute standard for this. Three separate aspects should be considered in a line: the overall shape, the body and the extremities (Wong 1993, p. 42-45).

ABSTRACT EXPRESSIONISM AND CONSTRUCTIVISM
In the late 1950s, two neurobiologists, David Hubel and Torsten Wiesel discovered by accident, how the visual system in the brain reconstructs reality from separate stimuli when detecting lines, shapes, texture and colour. In the early 1900s, abstract Expressionists such as Piet Mondrian and Kazimir Malevich had been trying to extract the fundamental elements and the very essence of our visual language. “To create pure reality plastically” Mondrian believed, “it is necessary to reduce natural forms to the constant elements.” In communist Russia, Malevich attacked traditional painting in favour for purity of form. In his paintings this was represented by simple geometrical shapes which he called “simple energy”. He called this kind of painting “Suprematism” referring to a non-objective or abstract world, beyond that of everyday reality (Neault 2013).
Malevich and other artists in Russia would later develop this idea and define what they called Constructivism as the combination of faktura, the particular material properties of an object, and tektonika, its spatial presence. There was a fascination for mechanical and industrial structures and their three-dimensional and dynamic qualities. Besides the socialist causes of this movement, the Constructivists initially worked mostly with three-dimensional constructions often built from iron bars or timber. Later the definition would be extended to designs for two-dimensional works such as books or posters. The experimentation with expressing spatial quality using simple two-dimensional shapes like straight lines and bars has obvious connections the work of the Cubists, such as Pablo Picasso (Myers 1985).

One of the first working Constructivists was the female artist Varvara Stepanova. Stepanova had contributed to the exhibition in Moscow $5 \times 5 = 25$, exhibiting compositions based on a mechanical and geometrical analysis of the human figure, including Two Figures. Her objective approach to the creation of art with the help of geometry and linear structure was commented by her in the accompanying catalogue: “Technology and industry have presented art with the problem of Construction as effective action, not as contemplative figuration”. Stepanova also designed standardized production clothing and sports clothing using the same principled of economy of means and geometric elements (Lodder 2009).

It is interesting how these early movements in modern art show so much in common with scientific research on visual perception during later years. It seems that even though the artists were driven by ideology in their quest for the basic visual elements they were actually closing in on the scientific reality of the human visual system. One could argue that the search for the “constant elements” also was a search for refined stimuli. The detection of pure visual components for evoking emotions and cognitive response.

WORK OF OTHERS
Looking at the work of some of the contemporary designers and artists such as So LeWitt, Issey Miyake, and Peter Pilotto, you can find different approaches to working with lines.
The artist So LeWitt’s conceptual work “Incomplete open cubes” is an investigation of a cubes construction (Fig. 6) and exemplifies the deployment of a single idea to become, in LeWitt’s words, “a machine that makes the art.” With the use of a serial system that enables a kind of “noncompositional composition” LeWitt’s work forges a new way of making art. LeWitt shows in his scheme how a cube can vary in expression depending on the amount of constituents used from the complete cube. His work is executed experimentally and conceptually starting with 3 part pieces and gradually increasing (Baume, et al., 2001).

Issey Miyake’s work in both textiles and clothing design is also conceptual and renowned for innovation. He has left an incredible mark on the design industry with his technological explorations into clothes-making and the resulting organic sculptural creations (Hodge, et al., 2006, p.164). Miyake’s conceptually animated video “A-Poc Inside” (promotional campaign of the new site) illustrates very clearly how attention is paid to movement and line (Fig. 7). Combinations of lines create silhouettes and indicate direction (Miyake & Fujiwara 2001).

In recent years, Nicolas Ghesquière’s collections for Balenciaga have been technical and edgy containing a mix of solid blocks and straight lines. Ghesquière is skilled at composition working with blocks and lines in contrast colour and material. The importance of direction in the composition is clearly seen in his collections. (Style.com, 2012). (Fig. 8)

Peter Pilotto are known for their inventive construction of dress that utilize 3D printing techniques. Many of their prints have lines to highlight the cuts in the garments’ construction. After the garment is constructed, the lines are added to the print placed in the right position and they seemingly become a part of the construction and shows direction (Style.com, 2012). (Fig. 9) Through personal observation during a 3 month internship in their studio I saw the whole design process up close. Almost all designing is made by using a 3D approach. After making sketches first of how the lines should run, the most important part happens on the doll and during the numerous fittings.
LeWitt and Miyake have not applied their theoretical concepts to clothes. Balenciaga tends to work more with geometrical shapes. In Pilotto’s collections, the importance of lines can be found both in the construction and in the prints where they are added after constructing. Consequently, the designers and artists can be said to have explored the use of lines to some extent, but there is more to do. No one has fully taken the step to explore the use of lines as the basis for construction. There is a gap for working with lines more conceptually as a tool of construction in dressing and not only for the visual effect.

**EXPERIMENTAL CONSTRUCTION OF DRESS**

There are different principles for pattern cutting approaching the relationship between body and form in various ways. When fashion is about relating form to the human body it is natural to work on the body when constructing. Draping is modelling or shaping a piece of fabric on a mannequin or a life model (Fischer 2009, Duburg, van der Tol 2008). Draping is a three-dimensional design and production technique that generates a considerable degree of freedom in terms of design. (Duburg, van der Tol 2008). Compared to creating a three-dimensional garment from a two dimensional pattern, there are advantages draping on a body when you directly see proportions, fit, balance and style lines. Also when working with the materials you get a better indication of the flow and performance of the fabric (Amaaden-Crawford 2005).

In the Patten Magic series (Nakamichi 2007) a creative approach to pattern making is presented. Two-dimensional pieces of fabric are cut and joined to assemble into a three-dimensional garment. The somewhat static result can be questioned and draws parallels to sculpture.
Background Part 2: Motive

A possible way of developing construction methods could be to work more conceptually (more relaxed or passively) in the experimental searching for form. Working conceptually gives you a frame, a set of rules to have some control but that also leaves some parameters to the undecided and ambiguous. Lines and sequences of shapes derived might have the potential to provide a sort of constant guidance and lead into new unexpected directions. The straight line is the visually simplest shape invented by the human mind. It is an invention of the human sense of sight under the mandate of the principle of simplicity. Being the simplest, the straight line stands for all elongated shapes before differentiation of this feature take place (Arnheim 1974, p.182-187). It can be objectively studied as a mathematical and geometrical object. Still, it can be very expressive and impose challenges when used in compositions. When combining the need for a relaxed and objective method with the potential of simplistic straight lines, it hopefully opens up for new expressions.

In a minimalistic way, Sol LeWitt’s conceptual scheme of cubes is a good example of a method of how to study form and construction, how to experiment and understand lines through gradually studying one line at the time. LeWitt’s scheme could be used as a tool for decision-making when constructing garments. Through the study of straight and sharp lines, you can find an alternative way of garment construction. For example, this could lead to a set of line compositions illustrating the collections lineup and then conceptually use the compositions as a basis when making the collection.

Pilotto’s way of having lines in mind when designing and adding them to the prints to enhance the construction is another approach. It could be interesting to develop the method, by using lines more conceptually in the as a starting point to find the construction, with direction in consideration. Pilotto’s way of constructing with lines and direction might be a way of going back to basic and finding the core of the fascination of lines. This can be achieved through studying and elaborating with straight and sharp lines, i.e. exploring the complexity vs. simplicity of lines. Through experimental construction of dress using the Pilotto method, it might be possible to find new shapes and expressions.

Aim

The aim is to investigate the dynamics of straight lines through experimental construction of dress.
Method

METHODOLOGY
This dissertation is conducted through experimental research. This scientific method has its roots in long the 17th century and the establishment of inductive methodologies for scientific inquiry by Francis Bacon. In his work *Novum Organum* (1620) he argues for objective observations and reasoning and for the conduction of experiments as a means to provide additional observations of a phenomenon.

Scientific research in the field of art, such as dress, has been under debate during later years. Since the act of creating art is commonly understood as non-objective, institutions have tried by different measures to legitimate art as academic. Theorist from humanistic faculties have been invited to the game as one way to solve the problem. But this may cause other problems. In his book *Arranged Abstraction*, Clemens Thornquist says: "The development towards textual and communicative issues is problematic because it has made the otherwise so statuesque fine arts engage predominately in applied activities, e.g. narrating and representing different issues, instead of concerning itself what is crucial for the development of the field: it's own theoretical development" (Thornquist 2012). What Thornquist suggests is to include the act of creating art as part of the scientific method. Experimentation in art could be one form of methodology for exploring and constructing generic knowledge in order to explore the relationships between form and material, technique and expression, and to let the art or artifact contribute to the scientific result.

This reasoning raises another issue: whether the creations themselves can be seen as enough as a scientific result. Dr Michael A R Biggs debates this in his article *The role of the artifact in art and design research*. He recognizes artistic activity first and foremost as personal development and by nature not always relevant or significant to others. He also states that artifacts always are the objects of subjective interpretation and in a scientific context must be supported by textual reasoning. "Since the aim of research is to communicate knowledge or understanding, then reception cannot be an uncontrolled process", he says (Biggs 2002).

Although Thornquist argues for "research in art through art", Eva Brandt and Thomas Binder point out the difference between art and art research in their paper “Experimental Design Research: Genealogy – Intervention – Argument”. They define design research as "practice based research" where there is a need for both artistic experiments and a clear program. They also argue that the individual experiment is subordinate and that interventions by peers are important for progress. When involving peers it is also important that they can understand what happened, how it was evaluated and how the result was derived. This is what they refer to as genealogy. This would in a way support Bigg’s argument for textual support.

My conclusion from these theories is that the role of the designer needs to differ when creating design as opposed to conducting design research. Artistic experimentation is motivated and legitimate, but since research has a purpose for the common good, the individual expression or development may need to be secondary. On the other hand, this also means that the process, more than the artistic result, will be important and that failures may be of just as much significance.
SPECIFIC WORKING METHOD
Exploring the experimental construction of dress with the help of lines to find form requires a method with a focus on the act of making: on the physical experiments combined with sketching and analysing. Discussed here are the ideas and factors that have had the most influence on my work during the process. The method has been based on LeWitt’s conceptually method using different amounts of constituents to vary the expression (Baume, et al., 2001) and Pilottos construction method working in 3D on the stand. The amount and type of lines has gradually been studied through various experiments. Most experiments has been made in 1:1 scale to quickly get an overview how the final could look like. All experiments has been photographed and documented to be able to compare and evaluate them in relation to each other. By arranging and rearranging them it has been easier to visualise the result.

UNPLANNED LINE STUDIES
The first method consisted of 2D to 3D experiments. The experiments were carried out by draping on the mannequin with the help of unplanned drawn lines on a square piece of fabric. Through experimenting in full scale you could quickly find interesting forms indicating different garment types. The various fabric pieces with different line combinations in different sizes were easily moved and played around with. With unplanned I mean working with intuition, accident and the unexpected. Fixed points has been the size of the fabric and the width of the lines i.e. my pen. The fabric size has always been restricted from the width of the fabrics used but unrestricted in length. The lines have been drawn both with a ruler with a fixed length or freely by my hand. In some examples I have chosen to look at two parallel lines as one thicker line. The lines functioned as guidelines and indicated where to fold and place the lines in relation to each other in order to create form. When folding, one flat piece of material becomes a volumetric form through the introduction of creases. Folding and pleating is one of the most frequently shared strategies by fashion and architecture. As a device to create greater visual interest through dramatic effects of light and shadow architects have used folding since the early 1990s (Hodge, et al., 2006, p.19).

PLANNED LINE STUDIES
After various experiments from unplanned drawn lines a scheme of recurrent line combinations could be made. From this analysis the method was narrowed down to using a chosen type of striving lines only. What I refer to as using planned lines.

Through projection it was quick and efficient to continue experimenting with the striving lines by changing the scale and distorting them directly on the mannequin. Tryouts were also made in the same line combinations but with materials with different properties. This method let the form together with the material properties lead to the garment type.

FITTINGS AND EVALUATING
Draping on the mannequin and transferring the same forms to the human body has been important in my method in order to include the aspect of the moving body. Fittings of the prototypes or experiments on a human body have been made frequently to be able to evaluate the interaction between body, form and movement. Another part of my method has been selection and composition.
Development

All design choices taken to develop this collection are based on my aim. When working with lines as a part of the construction, it is essential to clearly visualize this. The lines should not only be visually decorative. When finding interesting line combinations while creating form during experimentation it is important to analyse and explore scale and angle in the final result to enhance the form. For example: how the lines are represented visually (filled out or outlined), the lines start or endpoint and the amount of lines in one garment/outfit should be considered. It is also important to leave space for intuition, accidents and the unexpected. The findings of mistakes from practical processes cannot be learned from theory.

The first experiment consisted of intuitional basic line studies with a pen. (Fig. 10) The study indicates roughly a visual pattern of interesting line combinations formed by the brain. In figure 11 (below) selected line combinations where extended and outlined before placed in relation to the human body in 2D. The scale and width of the lines determine the form and silhouette. This method was a basic exploration of the relation between lines and form. When draping the 2D line combinations on a half scale stand into 3D garments, the outcome is flat and static and the lines seem more like decoration than a part of the construction. (Fig. 12) Figure 13 shows lines projected on body and indicates how the lines should be placed and scaled to work with the body.

![Fig. 10. Free line studies](image)

![Fig. 11. Free line studies in relation to body](image)

![Fig. 12. Half scale experiment](image)
A reconstruction of a Peter Pilotto garment was made to analyse the construction and visual outcome and point out interesting parts for this project. The top is draped from a square piece of fabric with two parallel lines. The straight lines seemingly become nonstraight through folding and creates shape to the garment. This was a good exercise and starting point to move forward in the process using this method (Fig. 14).

Through experimenting in fullscale with unplanned drawn lines on fabric, placed on a mannequin and played around with, the result of these experiments quickly showed high potential in finding interesting shapes. The lines function as guidelines and indicate where to fold and place the lines in relation to each other in order to create form. Figure 15 and 16 clearly show an example of when the method pays off and how it is developed from fabric to garment. With only small variations in the amount of lines, other line properties, such as angle or length became influential variables in creating form. Symmetry and asymmetry are also crucial for the end expression. The first prototypes were later placed on a human body to see the garments in motion and analyse proportions, scale and construction (Fig. 17).
Fig. 15. First prototype from fabric to garment.

Fig. 16. First prototypes. Lines drawn unplanned on fabric and then draped on a mannaquin.

Fig. 17. First prototypes on human body
A few days were spent on working with only one garment. Different sleeve settings, materials and how to mark the lines were tried out (Fig. 18). One conclusion that was made was that a draped sleeve was not the best choice to match the sharp expression of the lines. A fitted two seam sleeve seemed more natural to this project. It has become important to be aware of strong contrast colours as they do not give the desired expression for the collection. Below has the lines been changed to explore how they could be represented visually (filled out outlined). Together with colour the materials should enhance what is important through contrast in order to achieve good dynamic. Rigid materials should be mixed with light materials both from synthetic and natural fibers.

Fig. 18. One garment focus

Trying out different materials and printing solutions indicated where to go next. Softer, more flowy qualities and knits worked really well in opposition to the stiffer woven materials used so far as a good contrast to some of the static shapes. Figure 19 is from the printing lab trying out different printing solutions.

Fig. 19. In the printing lab.
One exercise/experiment was to make a short film capturing the mood of the collection (Fig. 20). By inverting parts of the film colour where indicated and how they could be used. All was set in a garage with cement walls giving grey, cold blues, black and white. The inverted scenes that gave a feeling of x-ray gave the idea to work with reflex tape. Other thoughts from the movie was how to use the black and white in another way, with lower contrast for example dark grey with light grey. Also, the top of an outfit could be the bottom part inverted or vice versa. The colours set in the first sketched lineup where taken from the movie (Fig. 21). The lineup clearly illustrates how the overall composition and the use of colour could be visualised in the final result. The basic colour contrast combinations have been set such as the total amount of each colour. At this stage of the project a moodboard was missing and felt essential to capture the most important parts in the project (Fig. 22).
The Pre-collection show the first garments sewn in the right material. These garments can be seen as prototypes representing the more “quiet” garments in the collection rather than finished once. Further development is necessary. Through more time invested in experimentation and risk-taking, to see the collections as quiet and loud, the closer it will be to the result. After analysing what has been done so far in a Pre-collection (Fig. 23) it felt important to work more loose to the constructed and to specify what lines and why and from that focus on scale and make new tryouts. More dynamic was needed, the volume was pretty much the same. The materials also needed more work, softer once felt missing. A punch to the colours also felt missing. The extremes needs to be more explored. Size of the fabric, define the lines, composition. Projecting was a quick way to continue. One of the more important findings was a form (Fig. 24), that felt more dynamic that previous once where the lines pulls and breaks in an interesting way.
Fig. 23. Pre-collection
After various numbers of experiments performed in the same manner as above three different types of line combinations could be distinguished (Fig. 25). Lines without surface, could be one line or two parallell or not. The second type contained straight lines - sticks and tape. The third type of line combinations is the striving type indicating a strong direction which provides improved dynamics. From this analysis the method was narrowed down to use only striving planned drawn lines. One question that was raised choosing this type of lines was when do the lines become only form or blocks? How is this relevant in my result? Can the lines be visual more like form just to show the whole perspective of striving lines? Later on this type of lines or forms where also tested.

Fig. 25. Scheme of lines used

Fig. 26. Concept composition
Parallell lines that crosses each other by folding in the construction creates form. If one line, or several, also bends, it gives the form more dynamic. Within the field of striving lines there is strict and more playful line combinations (Fig. 26). To get a good overall dynamic of lines and composition the collection could stretch from one side to the other. Important factors to have in consideration is angle, direction and composition. Contrast in terms of the strict and more playful should also be seen in the choice of fabrics and colours. One of the main materials in this project has been a dipped mesh on meter to cut in desirable shape. This plastic material has helped the form cause of its stiffness and good contrast to other fabrics more fluid and mat.

Continuing experimenting there has only been focus on the striving lines. One of the first toiles from this was this t-shirt with 6 lines all striving to the same point folded into shape (Fig. 27). Before presenting 50% of the project at the Midseminar the lineup was modified with the new focus and suggestions of a punch in colours (Fig. 28). I could clearly see some colours missing at the Midseminar (Fig. 29) to get a better overall dynamic and tension through variation. Scale was discussed and the effect the lines have on the form that could be enhanced. The focus on perspective could also be explored more. The use of the full wardrobe was also discussed to get a well composed collection. Overall the result so far seemed tentative and careful and it was clearly seen that the experiments could be bolder. The long dress and the suit was the only clear and worked through outfits to keep. Now it was time to really experiment with the striving lines, more and less steep and challenging the breaking points to get more variety in volume.
Experimenting only with striving lines in a quick and efficient way was through projection. Using Munaris triangle as base (Fig. 30) lines were projected directly on a piece of fabric pinned to the wall. It was very efficient using the computer and projector to distort, scale, flip and modify the lines in interesting striving line compositions. In figure 31 some of the result can be seen. From this two day workshop new garments started to take form and again the lineup was updated.
When coming alongway with the real garments the use of colour was overlooked in a scheme (Fig. 32) to get a good overview how the colours had been used and evaluate. A new lineup was then made but also with consideration of the materials. Working almost only with woven fabrics more fluid materials were missing and needed to be lift in to get better variety.

The next phase contained the producing of the garments. With fittings and evaluations the collection has been moulded to reach the result. Materials and colours have been changed, tryed out for a better result and dynamic and the construction modified to the better. The result became much clearer when the lineup was updated with photos of the garments on body (Fig. 33).
Outfit 1

PANEL VEST
A symmetric vest with shape created by folds and the contrast between the fabrics. The white fabric is cotton woven with black lines and the black dipped mesh. All facing has black edgetape. There is a zipper in the front.

PANEL TROUSERS
A symmetric pair of trousers with shape created by folds and the contrast between the fabrics. The white fabric is cotton woven with black lines and the black dipped mesh. The trousers features waist pockets and a fly zip.
Outfit 2

SHORT LINE JACKET
A asymmetric short jackets with shape created by folds and the contrast between the fabrics. The black fabric is coated mesh and the green lines are stitched on cut leather. There is a reversed zipper in the front and pressbuttons to close the collar.

LINE DRESS
A symmetric dress with shape created by folds. The fabric is viscose.
Outfit 3

LINE T-SHIRT
A symmetric short t-shirt with shape on the sleeves created by folds and the contrast between the fabrics. The main fabric is a dense sportjersey and the white lines are stitched on dipped mesh. All endings are edgetaped with main fabric.

LONG PANEL SKIRT
A asymmetric full-length skirt with shape created by folds. The white fabric is cotton woven with black lines and the green panels are printed. There is a slit and zipper in the back.
Outfit 4

PANEL DRESS
A asymmetric bandeau dress with shape created by folds and the contrast between the fabrics. The light grey fabric is dyed silk and the blue dipped mesh. At the top of the facing there is a silicone tape for better fit. Zipper in the back.
Outfit 5

LONG LINE COAT
A symmetric long coat with shape created by folds and the contrast between the fabrics. The main fabric is a fused cotton teddy and the black lines are stitched on dipped mesh. The coat features waist pockets and zipper in the front.
Outfit 6

LINE DRESS
A symmetric dress with shape created by folds. The main fabric is dyed viscose and the panels are sewn on reflex tape.

LINE TROUSERS
A symmetric pair of trousers with shape created by folds and the contrast between the fabrics. The light grey fabric is dyed silk and the lines are printed with pigment. The trousers features waist pockets and a fly zip.
Outfit 7

TRIANGLE DRESS
A asymmetric dress with shape created by folds. The main fabric is pigment printed polyetser chiffon and the lines are taped on reflex. The dress is lined and has a invisible zipper in the back.
Materialboard/Fabric scans
Reflecting and interpreting your experiments

Reflected against the aim I found what good dynamics of straight lines mean. It is quite clear that good dynamics is achieved when there is clear direction in the object (line) as compared to a static composition. The dynamics can be intensified when a conflict with another direction (object) occurs. This is evident when studying two or more objects in combination. If one line also bends, it gives the form yet another dynamic dimension (Arnheim 1974).

Through analysis of the lines in the experiments executed, some types of line compositions were found especially interesting. Repetitive striving line combinations seemed intriguing to the eye due to the strong dynamics and three-dimensional qualities. Parallel lines that broke or crossed each other by folding in the construction also created interesting form.

Although symmetry and static combinations of horizontal and vertical lines are said to appeal to most people’s aesthetic preferences (Arnheim 1974), including my own, these varieties were partly left aside. The reason for this is that this kind of static compositions, sometimes seem to work in conflict with the natural movement of the body. The lines direction and composition in relation to the body was found imperative for achieving interesting shape. This was also the reason why experimenting on body lead towards more intriguing results. This method, together with the importance of materials that enhance the dynamics, lead to final garments that enhance the body in different ways. The result would most probably been quite different if I had not worked experimental and full scale on body. A human body in movement can be a powerful aesthetic experience. (Orgs, et al., 2013).

After numbers of experiments, conclusions could be made that step-by-step lead closer to the result. Exploring an idea through different methods lead to varied, but related, results. In this work, accidents and the unexpected have been a part of the process, sometimes leading to a failure and sometimes to an interesting result.

The later experiments, projecting directly on fabric, have been the most efficient way to find new interesting expressions in garments. This because of the quick and efficient way the lines could be modified.

POTENTIAL
The process of this project has been long and there is a large quantity of interesting things to find in the sketchbook. Many which might have lead in another direction. For example, the element of perspective could in itself be one direction to follow. My conclusion is that working experimentally with lines according to this method has much potential for finding new and unexpected shapes. Lines are strong visual cues in the perception of the human shape and are interesting as basis for generating and discovering new design ideas.

The theoretical study of how line compositions play together with the visual perception of the body is by itself also an interesting field to explore further. There are many theories on the subject of composition of geometrical objects in two dimensional art and design, but there is probably more to do when adding the aspect of movement and the human body.
LIMITATIONS
When working on the mannequin there are some limitations. The mannequin is static, non-moving, and therefore the outcome sometimes can become somewhat static and not work well with the movement of the body. This method is also focused on finding form leading to the garment type, which can be a problem. The choice of fabric is also crucial if a dynamic result is wanted.

COMMERCIAL VALUE
In the result, in the shape of the garments, one can see some wearable ones and others, more sophisticated ones that very well could be simplified. Smaller details of the construction in some of the garments can be picked out and scaled to fit more wearable garments.

But maybe more importantly, the learnings from experimenting with methods involving lines could inspire to new ways of approaching design and construction of dress.

The next step is to work even further with the striving non-static line combinations and integrate them more naturally in garments. Investigating the ultimate fabrics for the best line combinations could also be explored further. The technique where the dipped plastic meets the thin jersey could be one direction.
References/Bibliography


WEBSITES


Appendix: Critique

From an aesthetic point of view I here present my critique of Emelie Ahlnérs degree work Kurbitch. The aim of the work is: Exploring the structure of ornament as design method.

I find the method very interesting, using the structure of ornaments in search for form. The result is sharp, modern and works really well on the body even though the outfits consists more of structural shapes than garments and may not be considered as wearable. The garments still have many references to archetypes in fashion and I think there is a good mix between these elements and the more structural forms. Looking at the aim Emelie manages to integrate the structure of ornament with the construction giving the decoration both function and aesthetic appeal. Playing with what some people would say kitchy materials this work is to me not kitchy at all but expresses strong archetectural shapes in materials taken from it’s usual context and put in an new. Reflecting the aim I do think that the relationship between construction vs. ornament is proven to be reversible. The ornaments lead to a new way of construction that equals new expressions in form.

Looking at the process I would have liked to see more experiments and analyses of what did work and didn’t. The ornaments could have been developed and explored the more. It would also have been interesting to see more suggestions on how the the lights or painted kurbits could been used more in the collection.

The overall composition is very good. The choice of materials is very clear due to its ability to hold the form and work well with the method e.g. non unraveling edges. Maybe some more nonrigid materials could be incorporated. I also think that small amounts of a contrast colour could enhance the structural shapes, it could be shoes or undergarments. The skirt in outfit 2 works really well and clearly reflects the function of decoration. I am wondering how it would look if the structure/form was more intergrated with the undergarment and that is an overall question. I want to remove some of the undergarments when I think the structures are so strong in themselves and could be even stronger if the undergarment didn’t disturb. If not intergrated than maybe in a contrast colour or in more luxurious fabrics. The strongest outfits/garments are outfit 4, 6 &7. I think that the jacket in outfit nr 3 is not as strong as the others because it is refined from one original form.

When it comes to the styling I think it works with flats on some of the outfits but also that 2-3 pair of heels are needed in some outfits (as a suggestion on some of the outfits with trousers) to give a good stronger composition. It would have been nice to see the plexi as a bag or other accessorie, maybe earings, to maximize.
Shoes in contrast colour
Undergarment integrated with structure
Jacket all in radiant colour e.g. blue or violet
In stronger contrast colour e.g. blue or violet
Shoes in contrast colour
Undergarment in contrast e.g. white
Undergarment in contrast colour e.g. black. Big plexi earrings to maximize. Shoes in contrast colour