3D-2D-3D
TO EXPLORE HOW TO CREATE 3D EFFECT ON 2D IN PRINT DESIGN THROUGH DRAPING IN DRESS.

BA IN FINE ARTS; FASHION DESIGN

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The area of this work is a combination of draping and printing. It strives towards the technique that dazzles the eye with illusions of more than one dimension. As a viewer you will believe that the prints are real drapings while they are flat surfaces.

Today prints in fashion are categorized as placed prints or all-over prints, and generally created as a flat surface to decorate the garments. In this work the idea is to manipulate and challenge the boundaries of print and give it life through the body shapes and in the movement. Potentially this work could be an introduction to a new way of working with prints in fashion. This work could possibly be presented as a new technique where placed print and all-over prints comes together called placed all-over prints. Also, it could develop into further techniques in using two-dimensional flatness and save fabric in using photography as an option to the real three-dimensional drapings. Furthermore could it mean savings in material as a conscious choice in the process?

This investigation explores two particular kinds of techniques, - print and draping, that are merged into one expression. The aims of this work is to find new ways of using print in combination with draping in dress and explore the possibilities to find a new technique to create interesting womenswear. To unite dimensions like two-dimensional and three-dimensional as a method of finding new forms and expressions.

Through experiments with striped textiles the focus is to investigate the possibilities of greater visual effects on two-dimensional prints. For a depth and to exaggerate the directions in the fabric before translating it into a flat surface the striped textile can be a tool for further design. The striped textile has the potential to help the eye to understand the directions in the print and can be used in more than one dimension and color.

To explore how to create 3D effect on 2D in print design through draping in dress is the aim of this work.

**KEYWORDS**

Design / Digital printing / Dimensions / 3D / Directions / Draping / Print / Women's wear / Digital communication / Optical illusion
LOOK BOOK
Model/ Therese J
Photographer/ Jan Berg
In this work, the perspective is a factor that is needed to understand the technique as viewers. Adelbert Ames mentions, this is the tool to create illusions. From distance, the prints are indistinguishable as draped fabric, but in a closer perspective, there are no fabric draped but a flat fabric hanging on the body.

Figure 1. "Peep-show" by Adelbert Ames.

In French, trompe l’oeil is the correct translation of the phenomenon that means to fool the eye. The scientific exploration of illusions was something that the artist Adelbert Ames junior was using in his laboratory. He did examples of perspective studies such as the one he did with three different chairs in a "peep-show" (fig. 1), but in the scientific exploration of illusions, it was something that the artist Adelbert Ames junior was using in his laboratory. He explained that the viewer and her participation is required to interpret the picture and the perspective. According to Ames, it is a deceptive tool to make pictures intended to create illusions. (Gombrich, 197).
Since long time back in history designers have used Trompe l’oeil to develop and revolution the prevailing ideas in fashion. One of many designers to use this technique was Elsa Schiaparelli who was the pioneer exploring the possibilities of Trompe l’oeil in fashion. In 1927 she designed the “Bowknot Sweater” (fig 2, Schiaparelli 1927), that had a knitted two-dimensional bow as decoration. This stated the fact that decorations of women’s sportswear, in Elsa’s opinion, was not prerequisite or for a useful purpose. Another designer by name Roberta di Camerino was a prominent fan of this technique during the 50’s. In one dress (fig. 3, Camerino 1950) from this era she painted her dresses on blank canvas. The Italian designer didn’t use to sketch her creations on paper, but she painted her clothes as if they were proper works of art. Some of the pictures of Roberta di Camerino’s work looks like ambitious paintings. The dresses she sketched were colored, which added a certain three-dimensionality to her designs. (Battista 2009)

Other designers that have been using the trompe l’oeil concept include Geoffrey Beene, Jean-Charles de Castelbajac, Moschino, and others. (Gero 2012). In the conference paper by Cassandra Gero, she states that the Trompe l’oeil technique challenges people to rethink about the purpose of fashion and why we engage into it. This statement points out the importance of what people see and think about fashion and communicates why this work is important. To change the perspective for people and let the fashion be something to engage to.

In the 19th century designers made printed dresses looking like woven motifs to simulate the luxurious effect to the textile. Ever since 17th century, manipulating textiles through prints has been a way of avoiding high costs but to get an exclusive and rich result both in dress and interior design. (Moss 1978, Pp 18). In this work manipulation of fabric in the print are made to create and to simulate a depth and a structure, and could be compared to the technique from the 17th century. The only difference is that the manipulations in this work are made in Photoshop.

During the Bauhaus era the artist and designer Oskar Schlemmer was a proponent of using geometry to twist and reshape the human body. Furthermore the work of the Bauhaus designer has inspired the Scottish born designer, Jonathan Saunders in his work (fig. 4, Saunders 2005). He deploys principles of the Euclidion geometry to sketch his print designs and his kaleidoscopic patterns and fragments of color that dazes the eye and defines the body as common theme in his work. His ability to integrate the pattern into three-dimensional form, and his creative sense of color makes him to some of the pioneers in the modern print design era (Fogg 2011, Pp.77-81).
Saunders design is in contrast to the whimsical and the garments design are not always in relations to the prints. Jonathan explains: “I’m not interested in “conversational” prints, or symbolism of any kind. My work is deliberately divorced from any kind of representation, I’m concerned with balance and line. My clothes aren’t about titillated decoration added on as an extra, I have an innate desire to decorate the body, very much in the way of tattooing or body painting. I like to frame the body”.

Jonathan Saunders is working with complex inheritance of artists as M C Escher, Victor Vasarely, Richard Hamilton and Jackson Pollock and their unequivocally abstract shapes. Print and patterns-pieces designs simultaneously and the engineering of the print to fit each pattern piece is based on traditional craft techniques. “It starts off being calculated, and then becomes uncontrollable”. Jonathan says while explaining how precise and careful he works with his prints. (Fogg 2011, Pp.77-81)

**“I LIKE TO FRAME THE BODY”**

The investigation emphasizes on exploration of boundaries and possibilities to merge three-dimensional into two-dimensional of print into dress. The art of draping in combination with digital printing are the foundation for further design. The primary motive is to play with the visual effects and trick the eye to make the viewer explore something that actually not exists. There are several designers and artists that create fashion and art, that frequently been investigated medias as print in combination with draping within fashion design. There are few that actually combine a flat two-dimensional experimentation with the illusion of depth as in three-dimensional with the actual fabric to push the edges of the dimensions in their designs. What makes print technology interesting is the digitalized culture that has grown to its own “ism” in fashion. The investigation to explore flatness in combination to three-dimension is not yet solved which makes it even more interesting to explore in this work. As Basso & Brooke mentions in the book The Fashion Design Dictionary (2011), there are such possibilities to work in a digital way to be able to actually create whatever we like nowadays. They state that the concern of translating the print into a material for cutting and construction still are under development (Fogg 2011, Pp 64,65). Digital printing is the technique that is most common in the collections of Basso and Brooke. Their print has depth and color intensity. In the collection of Fall 2010, Basso & Brooke has created a feeling of textile structures as knitted and draped fabric. As in figure. 5 by Basso &Brooke 2010, you can see the clean and common constructed outfit that are applied with all-over prints to trick the eye. In their collection fading and contrasts are of great importance although it exaggerates depth and form.
According to Rix van der Tol, "Draping is a three-dimensional design and production technique that generates a considerable degree of freedom in design" (Duburg 2011, Pp. Preface).

Draping means arranging textile in folds and flares to acquire more negative space at a particular point. There are several ways of draping. Fixed pleats, ruffles and waterfall draping are conventional and common ways to gather fabric and create pattern. One of the aspects in the work is to be able to drape on a half-scale mannequin to later convert it to a full sized body (Duburg 2011, Pp.12-13).

Vionnet experimented with draping on half-scale mannequin (fig 6, Vionnet 1920) and founded a new and innovative way to reach higher levels in draping technique. (Duburg 2011, Pp. 12-11). She also worked with fabric on its diagonal to take the drapings to its highest potential (fig 7, Vionnet 1920). This technique made her to one of the pioneers in draping-design of our time. In this work draping has been the motive but also the method. The history of draping not only as a construction technique but a technique to create form has a great impact to this work and is a framework both aesthetically and in terms of the process. In the ancient Greece (600 B.C. - 100 B.C.), the draping of dress was a basic principle for clothing. The usage of the bias (fig 8) created garments with freedom of movement. The pieces of cloth that was draped around the body were both elegant and comfortable and in some senses designed based on the ideal of freedom (Duburg 2011, Pp 10-11).
Another example of working with drapings is Freudenthal and Verhagen, Dutch artists that are working with contemporary imagery, questioning the relationship between two-dimensional photography and three-dimensional art that grows out from the flat photo. The artists create intricate drama of surreal imagery in combination with a savage reality where the spectator often situated in a position of wonder; is it real or not, beautiful or unattractive, fashion or art? (Moolhuizen 2010).

For example as in figure 9 by Freudenthal and Verhagen, the eye cannot see where the two-dimensional converts to three-dimensional. In one moment it seems to be a piece of fabric hanging on the wall that involves a body, but with a more focused eye you can see that the body and the drapings are a photography that are combined with real three-dimensional fabric draped on the floor.

In the work of Stéphanie Baechler there are examples of using prints to create new illusions (fig. 10 and 11, Baechler 2011), but in a different way that deals with digitally printed fabrics that are folded or dragged out which creating oblique body shapes. In the work of Stéphanie, curtains, fabric pleats, plastic bags and fabrics that happened to be spread on the floor are the inspiration to the prints. This sheer fascination that fabric drapery can evoke and be almost kaleidoscopic is a method that explores material and motif in a new way. In this example the designer puts more emphasis about the visual manipulation than the deconstruction of the body and its shape (Fenske 2011).

Digital printing could be translated to a paper-printer but for textiles. A print head goes line by line dropping ink onto the surface of the textile. The most common digital printers are equipped with at least three or four primary colors, namely; cyan, magenta, yellow and black, also shortened as CMYK inks. (Udale 2014, Pp.110).

In an interview with trespluscool.com the textile designer explains: “I like that you have to take a closer look, to understand what you are looking at”. In the film by the Swiss Federal Design Award (fig. 12, Beachler 2011), you can see her working with the fabric pieces in different steps. As a first step she hangs the fabric pieces in different versions of drapings on the wall, then she takes a photo. This is in a second step printed out on full-scale and placed on a body to drape with. Stéphanie is cutting along the edges of the draped fabric to ensure that the optical illusion will sustain a realistic as possible.

The synergy of two dimensions and three dimensions in fabric manipulation could be seen in the fall 2013 collection by Acne. The design team made collaboration with the artist Katerina Jebb, in which they created clothing through a historical archive at the Musée Galliera and the Musée de la Mode de la Ville de Paris. It resulted in photomontages of drapings in various collage techniques seen in figure 13 Acne 2013. (Singer 2013)

Furthermore Georgia Hardinge made a collection in fall/winter 2012 named “Inverted” that were inspired by the three dimensional-working artist Rachel Whiteread (fig. 14, Whiteread 2012). With a sculptural and modern aesthetic the collection incorporates innovative prints and minimalistic design in the same time. The focus is on sculpture and negative space. Resin cast techniques, painted and manipulated colored transparency is used with intelligent spirograph techniques to create contemporary geometric designs (Fede 2012). Similarly as Acne, Georgia uses digital printing as medium for her collection, but on the contrary she works with placed prints while Acne has a collage technique in their way of placing the prints.
Moving on with the designer Ida Klamborn who elaborates with directions and stripes in the collection: "Trace". Based on an interview with Radar Magazine she explains her point of view in investigating dimensions. "The collection started off as an exploration of the stripe", Ida says. In the same time I was also developing a 3D sketching method. The sketching method was based on ‘how to avoid sketching on flat paper’, mostly to challenge my way of creating shapes and proportions in relation to the 3D body". (Nettelbladt 2013)

In her collection the stripes are a tool to create lines and shapes in the garments, but also exaggerate the angles and the over-dimensional contrasts. In the work of Ida Klamborn the wide stripes are the fundamental shapes that gives the garments a graphic approach and plays with the proportions (Fig 15, Klamborn 2013). This work relates to Ida’s collection in matter of working with stripes.

"THE COLLECTION STARTED OFF AS AN EXPLORATION OF THE STRIPE" / IDA KLABORN
While analyzing mentioned designers, both Acne and Georgia Hardringe have chosen to elaborate their work with artists that put a great depth into the themes of the designers work and are inspiration-sources for the concepts of the collections. While comparing the results of the collections based on the print-technique, Acne results in a fluid feel in both print and construction. On the other hand Georgia Hardringe creates more controlled prints in order to her pattern-construction. Ida Klamborn uses the motif of the print to create form. What is meant by that is that the lines and directions in her work creates form and silhouettes which is her aim for the collection; to fold and place stripes and create dress as a result of the directions. The usage of illusions are not in focus in the same way as Acne or Georgia Hardringe, directions in the stripes are the core of her work that creates the silhouettes that tricks the eye in order to reshape the body and its expression.

The print is the main focus and the paramount factor in this work, which rules decisions as the form of the garment, the volume and the expression. In this work the print interacts with the body, but keeps the status as a piece of printed art. In this work the digital print of fabric as a motif like the collection by Acne is the main part, while the stripes as in the work of Ida Klamborn exaggerates the idea and the expression. In this work the design are focused more on the print and less on the pattern-pieces to bring the print and the illusions to the matter. To keep it simple in construction while working with the print in combination to the body and its movement are the primary focus of this work. In the collection “Inverted” by Georgia Hardinge the depth is ascendant and reflects the aesthetics that are aimed for this collection. To conclude the aim of this work, it strives towards a print collection that dazzles the eye with illusions of drapings in three-dimensionality. The focus is to let the spectator believe in what they see, even if its not what it seems to be. In order of shape, the garments and the print will be part of each others to see what happens, instead of placing them into two different departments. The stripe will be a tool to exaggerate the angles and directions, but also to highlight a graphical aesthetic.

To summarize, the intention for this work is to let the print interact with the form of the garment and let the garment interact with the body through draping. This work will also try to work with a technique which in order to enhance the illusions in the best possible way. In that way also trying to explore how to let the print be the primary object for the collection, maybe to let the construction of the garment be simple?

The aim is to explore how to create 3D effect on 2D in print design through draping in dress.
METHOD

During the two last decades people have been debating concerning the role of art/design-practicing in the field of academic research. This anthology are discussed in which way designers relates themselves to the field of research. The social scientists Donald Schön believes that research ought to be geared towards an understanding of our origin and nature of knowledge, also called epistemology, which is associated with practice. (Schön 1995, viii). Furthermore, knowledge also resides in the actual artifacts, in the materials or their forms. The knowledge could also be inherent in the process of the making, and it is possible to gain artifacts through making and reflecting upon the designing of those artifacts. (Cross 2001, p. 54-55). This triangle of structure: designer, making and product gives us a perspective of the possibilities to approach practice and a practitioner’s way of knowing. (Biggs, Keinonen, Laakso, Mäkelä 2006, Pp. 21-22).

Moreover Christopher Frayling says, "Research through art and design is less straightforward, but still identifiable and visible," and it consists of materials research, development in mental work and action research. (Nigan Bayanit 2004). As a conclusion of what Schön and Farhylling indicates, art forces us to have knowledge from our history and nature. The practice of design and the knowledge of materials give the artifact an identity and a meaning to the creator. Draping and print could be seen as to techniques but also as art with a history. As a start of this work, research about these techniques became relevant. Both to learn how to use them and learn how they have been used back in the history. This made the research process to start with working with fabric on the bias as Vionnet (Duburg,2011), to see and explore the possibilities in drape and fall, and then take pictures of the result. The pictures was then printed on fabric in full size, and once again draped on the body. In this stage the history and the artifact became a unit of the new technique.

Design methodology, more specifically practice-based research has been argued to be focusing on issues and concerns. The artifact created translates the link between concrete object and abstract requirements. This is a way to evolve the constructive and solution-focused thinking as a designer. (Cross 1982, Pp. 225). In this work the solution-focus has been present in matter of solving problems as suitable print technique that matches with the aim, and material choices that has a great drape, but no qualification to be printed on. By the method of "knowing through making" this work has developed and found a way to challenge the print-design influenced fashion industry. As mentioned in previous texts there are different print techniques that are used today. One of them is "all-over prints", which means that the print covers the whole garment. This technique emerged to the project in an early stage, and came out to be suitable for the method of using prints to later on be draped on the body.

In the book ‘Print in Fashion, Design and Development in Fashion Textiles’ Fogg mentions “[t]he most obvious assumption is that the print comes before garment, but that is not always the case. Sometimes the print is the garment ” (Fogg 2006, Pp.8). This statement points to the fact that the print sometimes is the main focus and does not deal with the silhouette or the design of the garment. Usually, the flat pattern-piece is printed on and the method of using print interacting with the body and its movement are not the primary as in this work. As Marnie Fogg mentions, the print is the garment in this work (fig. 16).

According to what Clemens Thornquist (2010) mentions in his book Artistic Development in [Fashion] Design “[t]o invent ideas by using two words that constitutes a vital meeting with each other” can be a way of finding a common concept but also developing a mode or a trend. Clemens Thornquist also refers to Tales of our time by J. Friggieri “Poetry is when two words not only meet, but when they rendez-vous for the first time” (Thornqvist 2010, Pp. 97). Printing and draping are two words that appear in the process of this work. To find a way of merging the techniques together and create new expressions to apply in dressmaking the notions need to find a common concept. The method of use to find this concept was to be opened-minded a do tryouts. The method “learning by doing”, known from the pedagogy in teaching (Meley 2012, Pp. 18), was the only way to explore the possibilities in how to work with prints and body together.

"Poetry is when two words not only meet, but when they rendez-vous for the first time” / J. Friggieri
In addition, another method that refers to the draping technique is the idea of open up senses by blocking others. Clemens describes the method as a draping technique that is not controlled by the eye; instead the process starts out with the hands creating drapes that decide the form while not looking at the body. It supposes to be your senses deciding by feeling and listening (Thornquist 2012, p.87) In this work the idea of opening up senses while blocking others have been a helpful method to find interesting drappings in relation to the body. Also, in the process of planning the form and explore the possibilities in working with two-dimension versus three-dimension, this method have put a freedom and open mind to it. In addition it became helpful in matter of the ambition to achieve perfection that only restricted the process rather then became an asset. The method of blocking senses also blocked the high demands that I had to myself and let the creativity take the command and create unexpected imperfections that became interesting beauty. In this stage the printed fabric of a draping was put onto the body. By closing the eyes the most common and obvious placements of drapings in garments disappeared, and the drapings on the print was placed on more unrelated places (Fig. 17). Another approach to this step was to adapt the draping to the printed piece while it was in only one all-over printed pattern piece. Easier said, to emphasize the piece of fabric with the body, and explore what forms that appeared with no choice in construction as seems and cuts. This method made some of the garments even more interesting in order to the prints and the illusion of it.

Case studies: current design methods

While doing my design assistant trainee-program at one of the bigger fashion companies in the world, printed fabric was a daily subject in the team. To further exemplify and learn about current applications and methods within print in fashion I will compare the experiences from the company to this work. At the internship the team used both placed prints, such as t-shirt prints but also repeated/all-over prints. After decisions like style, colour of target group, the product designer starts out creating the form of the garment. Then the print-designer gets the sketches and continues with creating prints. To clearly explain the method and process, it starts out with garment and ends up with different sorts of print applications. As in figure 18, the comparison of the design-process of a swedish known fashion company and this work, are quite different. Firstly the order of producing the garment starts out with research, then the differences appears. At the fashion company the designer starts out with the form of the garment, while in this work the print are in focus in order to decide the shape of the garment. As a conclusion of this comparison as, the company produces their clothes in divided stages, and does not work with print and form as one. In this work the print creates the garment and the garment is designed with guidelines based on the print. In figure. 19, a simple t-shirt are printed with a placed print designed by the print team at the company. In figure. 20, on the other hand the t-shirt are all-overprinted with a disney license. This two t-shirts are the most common ex-

![Figure 17. Opening senses by blocking others result in draping](Author’s photo)

![Figure 18. Comparison between a swedish fashion company versus this work in method and process (Author’s photo).](Author’s photo)

![Figure 19. Placed print T-shirt (Author’s illustration)](Author’s illustration)

![Figure 20. All-over print (Author’s illustration)](Author’s illustration)
Summary - Method

To summarize the methodology for this work, the methods have grown into shape through the process. The idea of merging print and construction/draping together in an early stage, could be seen as a method to develop fashion in a new direction. Also to follow the rules that the print demands can make the final construction different from what it could be without a print. In the comparison between this collection-work and the fashion company, this work provides to start out with both parts- print and construction to develop and find new ways of creating fashion, while the fashion company devises this parts and gets a non-experimental outcome to the clients. In the collection 3D-2D-3D, the words of "learning by doing" has been prominent since the earliest stage. To experiment and do tryouts and fail has been the only way to find success.
To visualize the idea of something photorealistic into a two-dimensional media, the first experiment started out with a series of drapings on half scale mannequin. The material was woven cotton with stripes to illustrate the folds and the depth in the drapings. As a second step some of the pictures was merged in Photoshop to create a panorama version able to be printed on a flat surface (fig. 21). The different drapes and folds were spread out to cover the front part of the garment to be created. In this tryout the chosen print-technique was transfer-printing, a print technique that requires polyester as material to be printed on. Transfer printing was the easiest and most manageable print-technique for doing tryouts and prototypes for this work because it was a quick process that showed the result immediately (fig. 22).

After printing the material, the body became the context. Previously in the process all focus had been on the print and the transition from three-dimension to two-dimension. Now, the challenge was about bonding the body and the print into one object. As a start, the fabric had to be folded to fit on the body. Those pleats were a three-dimensional part that was supposed to merge with the printed folds in the fabric. Already in this moment, the expression became interesting and was a great start in the developing phase. The print was in this experiment not an all-over print, more of a placed print when the white area still was shown (fig. 23). After this experiment a lineup was drawn to explore the possibilities on body (fig. 24). The result of experiment number 1 was taken away because of the white parts took too much attention away from the actual print. Instead random photographed drapings where drawn to see what could emphasize in order to the aim. This lineup was digitally illustrated with photos of drapings from a mannequin.

Also the result of experiment number 1 was taken away because of the white parts took too much attention away from the actual print. Instead random photographed drapings were drawn to see what could emphasize in order to the aim. This lineup was digitally illustrated with photos of drapings from a mannequin.

Further development. In this lineup outfit, number two seems very heavy in contrast to the other looks, but it is presented in the lineup to see what can happen if not using a striped fabric to work with. In this case it is to dark to work with, even if it gives a great balance to the whole expression. In this look the silhouette seems prominent both in color and form.
Finding technique and effect

While working with folds and drapings that had a great influence on the final outcome an idea grew into what would happen if the whole process was turned upside-down. To see what would happen a tryout began of printing two-dimensional prints on a classic, blank garment. This experiment could be compare to the work by Georgia Hardringe that strives towards placed prints on common forms and shapes in dressmaking. (Fede 2012)

In the example of (fig.25) the print was applied on full-scale pattern pieces that were sewn together. The print became a placed print that faded into the fabric naturally. The result made the directions of the work to turn another way with focus on applying prints on garment. This direction did not result in an outcome that gave the collection space for further exploration to a higher design-level. One of the reasons was that the print did not affect the form or the silhouette which was of great importance in the aim.

The focus in the third tryout was to see if it was possible to translate shapes from a draping on a half scale mannequin (Fig. 26), to normal sized mannequin. Instead of taking photo at the draping on the mannequin the idea was to put the whole draped fabric-piece on the floor (fig. 27), but to keep the significant pleats and folds from the draping. It could be called as a tryout to physically make a three-dimensional form to two-dimensional flatness by hand, and then take a photo to be printed in full size (fig. 28). The inspiration for this tryout came from Stéfanie Bacheler and her work with fabric cloths spread on the floor. In the experiment digital printing with reactive color was the used technique. Finally the construction and the printed material were draped on a normal sized mannequin that resulted in an interesting silhouette in comparison of the outcome from the earlier tryout when the silhouette was unchanged and not affected of the print (fig.29). Unfortunately the color went to dark and the highlights and shadows lost their contrasts, which did not match the original idea of a print that was photo-realistic. Moreover the usage of reactive color made it easier to decide which printing technique that was not suitable to convey the effect of three-dimensional. Another reason to not chose this technique was the lack of fabric to drape with.
As the work progressed the lineup was updated. In lineup number two (fig. 30), the idea of draping with the printed fabric in the last stage is shown. This was a approach inspired from experiment No 3, which resulted in a combination of prints that looks like drappings, and real drapings.

Likewise the silhouette was changed in the result in comparison to the first draping in the print.

Despite of the successful experiment, the outcome of the prototypes from the lineup went to forced and did not capture the optical illusion, since the print was too entangled in the last stage drapings (fig. 31).
The idea of working on half scale mannequin was changed during a print tryout of a satin fabric. The print had high contrasts and was scaled up to full size. Sadly the print of the drapings became unclear and lost the photo-realism effect, mentioned above. This made the process turn to work on full sized mannequin in the first step in the creation of the print. The result of working directly with the size of the final outcome made it easier to create drapings to fit the body and the garment.

Next, an experiment based on projection came up of interest. The idea was about not having to print full sized prototypes, that resulted in expensive tryout-costs. Instead different photos of drapings was projected on a mannequin. While draping a regular piece of cotton-fabric, pictures were taken (fig. 32). The idea was to drape after what was projected, to be able to see a quick result. The pictures where then merged together in Photoshop, with all angles put together (fig 33). This investigation resulted in interesting outcomes, but did not highlight the aim of the work. The problem was the transition between capturing the print and put it back into 3D after printed it out on fabric. This experiment helped with finding interesting drapings in the process, but did not work technically due to the print quality as in figure 34.

Finding the final print technique
In order to all experiments that where done throughout the development phase a hybrid of two techniques became clear and appropriate for this project. To be even more clear I will divide the techniques into three different groups;

Placed Prints
All-over prints
Placed all-over prints

The two first mentioned techniques are both common in the fashion-industry. In this work a combination of placing prints on a garment and fill the whole pattern-piece with a print have been reality. The three-dimensional drapings are in one way placed, while the patternpieces are printed all-over. It is a engineered technique that are inspired from to classic techniques in the world of print.

In aspect of production this technique became a bit more complicated in order to plan exact placements and size of the patternpieces before printing. Though, it gives a freedom to be more playful and opens up the mind to find solutions instead of blocking ideas.

Firstly I developed the idea of making the print on my own by taking photos of drapings. In that stage the focus was were to place the print on the garment- placed print. Later on in the process the rework of the photos in Photoshop became more of a all-over print process. The engineering of making the piece of cloth to cover the
Finding material

The final part of the research of suitable techniques became the order of working on a full-sized mannequin, doing drapings with fabrics and take pictures of the result. To start with, the importance of finding the right fabric to use for the drapings became of large scale. As mentioned before, the usage of stripes to create directions in the drapings had a main and focus. In all chosen fabrics, stripes were current in three different dimensions. The reason for that was to create a playful expression and work with scales. As of second importance the ability of drape appeared as focus. One of the striped fabrics was in a soft cotton material that could fall nicely on the body, while the other striped fabric embodied a slight stiffness. The intention in the use of different fabrics in terms of thickness and stability was to create different sort of drapings to make a wider and less expected result. In the last minute a solid colored fabric where taken away because of the lack of stripes that divided the collection into two different collections with two diverse expressions. Instead another striped fabric took its place and made the collection to turn into a wider but more coherent expression in the collection (fig. 35). While working with the fabric in the computer the stripes were scaled up and vice versa, so the outcome turned to be more playful and balanced. In matter of material-choice, I decided to use two different materials to create a good balance in the collection. The first selected fabric was a polyester weave that had a great draping ability and fitted well for the garments that was more fluid and light. The second material was a thick Trevira polyester with a slight stiffness and ability to create shape and be more sculptural. In this work the form and print have gone hand-in-hand. In the process draping and print have implicated transitions that have resulted in a shape that has been affected to both of the terms. Ever since the draping stage to the final construction, the body and the form have been slightly planned. The reason why, is that the print is dependent of the shape and there is a thin line between involving the print naturally in the form and placing in on the form. This is of main importance to be able to create illusions that tricks the eye to see something that is not for real. In this stage the simple and clean could be more effective than the complicated.

After the process of creating the prints were done, it was time for printing. After several tryouts with transferprinting on my own, I decided to send the work to Tobex. One reason was that I wanted to be sure that the colors matched with my vision, which did not succeed in the designlab at the school. To print at Tobex - a digital-print supplier outside of Borås, I could focus on the last stage of construction and sewing even more, and save time for finishing and styling. At Tobex they printed digital with a process called sublimation. When the prints arrived back the colors were exactly as ordered and the construction-phase could take its place. In figure 36 you can follow the print process in three stages.
From draping to print to garment

To catch the effect of the illusion and to simplify for further construction, the photos of the prints were taken in a studio with set lights in front of a white wall. The drapings were taken one by one on a mannequin and some of the drapings were also pinned onto the wall or held up by hand. The reason was that the photo later on could be made as a panorama in Photoshop, as in experiment No. 4, which meant that the print would become wider in versatility, and as a third step, it would result in more fabric to work with in the ending process of construction (fig. 37). The photos that were taken were put into Photoshop. In all pictures, the drapings were adjusted in curves such as contrasts, shadows, and lightness to exaggerate the optical effects. The reason of that was to be sure that the print later on had a depth in the two-dimensional version of the drapings taken in the photo-studio (fig. 38). While having a fitting with a model the simple dress as a result of the printed fabric came in its right place. The illusion felt real and the movement in the dress exaggerated the illusions even more (fig. 39).

As the collection progressed things like trimming, hems and other details had to be solved. One important aspect was to keep the simplicity in the garments and their printed motifs. A seam in the hem would take over the print and destroy the illusions. With that in mind, the solution based on coating the edges appeared in the development. By taping 0.5 cm from the edge and coat with wood-glue, the edges of the fabric became invisible in the context and disappeared from focus (fig. 40). While sewing the pieces together French seams were used. The reason was to keep the garments look well finished while they were simple in construction. Finally, the straps were sewn 0.5 mm wide and attached to the garments with some hand-sewn stitches.

Figure 37. Drapings on mannequin in photostudio (Author’s photo).

Figure 38. Final result after adjustments in Photoshop (Author’s photo).

Figure 39. Final result after adjustments on body (Author’s photo).

Figure 40. Coating edges instead of stitching (Author’s photo).
This collection strived towards working with drapings as prints to dazzle the eye with optical illusions. The usage of stripes became different in order to combine them with drapings. The small stripe as in look number one, fit well in dimension, as the optical effect is quite complex. In comparison with the small stripe, the largest stripe, as in look number four is less complicated and more graphical. It works as a “maximazer”, and explains bigger drapings very well. Furthermore, the usage of different material-qualities, as drapeable chiffon and heavy satin, the outcome of the collection has got a both static and fluid movement. Also in order to form, the looks are slightly different, but works well together. The most successful drapings are look number one and seven. The small stripes highlights the optical illusion and moves well together with the body. Maybe the reason is the choice of material or the dimension of the stripe. The choices of color are based from the original photos that were taken in the studio of the fabric draped on the mannequin. The apricot/nude works well with the graysale, but it could have been a more crazy color added.
This printed polyester dress is made to show simplicity in both print and garment. It’s designed to show the spectator the aim of this work in an easy way. In both front and back, it is asymmetrical necklines that follow the print and makes the garment more optical. In front there are a draping that follows the neckline down to a classic draping in the waist, while the backside has a "hanging" drape-print. The dress has also thin straps to keep the collection match and also result in a simple aesthetic. A pair of thin polyester trousers are added under the dress. The trousers are long and wide, in a fluid polyester fabric. Invisible zip in side. All edges and hems are coated from inside 2 mm wide. All seems-french seems.
<table>
<thead>
<tr>
<th>Dress/</th>
<th>Pants/</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black/white xsmall stripes</td>
<td>White</td>
</tr>
<tr>
<td>Polyester 100 %</td>
<td>Polyester 100 %</td>
</tr>
<tr>
<td>130 gr/m²</td>
<td>130 gr/m²</td>
</tr>
</tbody>
</table>

Digitally printed
THE TUNIC

The striped tunic in printed polyester has a simple construction. Front and back are sewn together in shoulder-seams. There are print in both front and back of this tunic. In front there are two different drappings. One draping in the front of a wrinkled neckline and a more classic draping in the waist. In the back there is a simpler construction of the print with a drape that follows the body down to the floor. Under the tunic there are a pair of long and wide trousers in polyester, with a nice movement and ability to drape. In one side of the trousers there is an invisible zip. All edges and hems are coated from inside 2 mm wide. All seems- french seems.
Outfit No. 2 3D-2D-3D

May 2014

Anna Johansson

Tunic/
Nude/white small stripes
Polyester 100%
130gr/m²
Digitally printed

Pants/
White
Polyester 100%
130 gr/m²
The singoalla dress is a full length polyester Trevira dress with singoalla neckline. This dress is more graphical while there are a high contrast in the black and white stripes. This is a look that aimed to have a more clear optical effect as a result of the high contrasts. In front there is a print of a simple drape, while the front does not have any draping print. The reason of that is to keep the dress and the whole expression clean and simple. This dress was also a development in order to explore shape, the sleeves for example, are wide and short to create an interesting form. In the neckline a silicone band are attached to keep the dress on. All edges and hems are coated from inside 2 mm wide. All seams - french seams.

**THE SINGOALLA-DRESS**
<table>
<thead>
<tr>
<th>Outfit No.</th>
<th>3D-2D-3D</th>
<th>May 2014</th>
<th>Print in 2:1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material/print-form</td>
<td>All edges coated</td>
<td>Anna Johansson</td>
<td></td>
</tr>
</tbody>
</table>

Dress/
Black/white-medium stripes
Polyester 100%
Trevira CS
185 g/m²
Digitally printed

Print

![Printed fabric](image-url)
THE STRIPED SKIRT

The circus-skirt is a skirt in a thick polyester Trevira with a slight shine. It has an invisible zipper in center back. The print is in front and are a illusion of a big fold, while the back is striped without drapings. The skirt is made in wide stripes to explore the possibilities in bigger dimensions in combination with illusions in print. In addition a black satin singoalla top are added to make the collection more coherent in necklines. All edges and hems are coated from inside 2 mm wide. All seems- french seems.
Outfit No. 4  3D-2D-3D

<table>
<thead>
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<th>Material/print-form</th>
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<th>Anna Johansson</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skirt /</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black/white- large stripes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Polyester 100%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trevira CS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>185 g/m²</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Digitally printed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Top + straps /</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heavy Polyester 100%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Satin</td>
<td></td>
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</tbody>
</table>
The wrap-skirt is a piece of printed polyester fabric that are shaped by straps in the side. In the front a illusion of a folded skirt appears. Under the skirt a pair of drapy trousers in polyester are added. They have an invisible zip in side and has a nice movement. For upper body a top in a thicker polyester satin with print of a wrinkled neckline in front and a striped simple back a presented. The reason of printing only in front is to let the spectator rest the eyes to see the prints even better in the front. The back of the top are slightly shorter than the front, to create a interesting silhouette from side, in the same time it is in a thicker fabric to exaggerate the silhouette. All edges and hems are coated from inside 2 mm wide. All seems- french seems.

**THE SET**
<table>
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<tr>
<th>Material/print-form</th>
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<th>Anna Johansson</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skirt/</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nude/white small- stripes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Polyester 100%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>130gr/m²</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Digitally printed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Top/</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nude/white medium- stripes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Polyester 100%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trevira CS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>185gr/m²</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Digitally printed</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Pants/</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nude</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Viscose 100%</td>
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<tr>
<td>90gr/m²</td>
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</table>
THE ASSYMETRICAL-DRESS

The cocoon dress in a simple silhouette in polyester Trevira with a v-neck in front. The front is printed as a big fold while the back is striped with no draping-print. On the right side the seem is slightly curved- convex, to create asymmetry in silhouette. All edges and hems are coated from inside 2 mm wide. All seems- french seems.
<table>
<thead>
<tr>
<th>Material/print-form</th>
<th>All edges coated</th>
<th>Anna Johansson</th>
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</thead>
<tbody>
<tr>
<td>Black/white-large stripes</td>
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</tr>
<tr>
<td>Polyester 100%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trevira CS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>185 g/m²</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Digitally printed</td>
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</tbody>
</table>

Print
THE KIMONO-DRESS

The kimono-dress is a garment that is supposed to explain the process. By keeping the white fabric around the printed stripes, instead of cutting it of the viewer can easily understand the illusion. There are one print in the front with drappings and one in the back. The drappings in the fron are only a print and not in 3D. This dress is made in 100% polyester crepe du chine, and simply constructed. The front is footlong while the back has 1000mm of train. A belt is added to give the outfit some detail. All edges and hems are coated from inside 2 mm wide. All seems- french seems.
Kimono/
Black/white x small- stripes
Polyester 100%
Crepe du Chine
100gr/m2
Digitally printed
This work was about exploring the possibilities in developing print in fashion. More closely, to investigate how to merge three-dimensionality into a flat surface without destroying the expression of a form and a shape. This work has opened doors to elaborate with traditional techniques in printing. In the text techniques like all-over print and placed prints are mentioned several times as a part of the process. To conclude those techniques with this work, a hybrid of all-over print and placed print has been born during the development of this collection. To be clear a placed all-over technique has been developed. In this case the draping are the placed print, while the rest of the print- the stripes, are all-over the pattern-pieces.

As a start of the project draping and printing where connected as one focus and became to pending on each other. This made the process to have a different approach to the creativity and the final result. By working with print and drapings as one project, the final outcome went less forced and more free in its movement and feeling. The print was not forced into patternpieces and seems, while the garment had a simple and clean aesthetic. In the end of the development, before sending the prints for printing, the planning of garment structure came into focus. In this stage I made the conclusion that to create a less expected collection, and to exaggerate the feeling of three-dimensionality in the print, the construction and the silhouette of the canvas, the garments was presented in a better way if they where simply constructed and easy to understand. This also led to the fact that the collection got a less conceptual approach and a more commercial focus. Though, the print added some more artistic spirit into it and made the collection less boring in terms of form.

As mentioned in the abstract, using illusions of draping, printed on garments, might save costs as material in the fashion industry. The aspect is the usage of fabric that is needed to get the feeling of the prints of this collection, without printing. The prints in this work would replace the big amounts of fabrics that is needed to drape the drapings that are printed on the garments in the collection. This could in the future save fabric and money, but also make the polyester less unliked. The conscious approach haven been covered as something to develop for this collection, while it needs a research of its own, but it could still be something to keep in mind for the future. The usage of polyester could be seen as something to reuse as material to make conscious choices.

Moreover, stripes and its directions has played a grand role in this work. They have given the opportunity to learn about balance and form of the body, but also how to use them in a artistic versus graphical way. In this work the stripes have been a prominent and important focus in matter of develop prints and to understand pattern cutting in combination with print. They have also been a good tool to create depth in the prints which was one of the main questions before this work was started.

While discussing motif and prints of the collection, material naturally comes to the mind. In this collection polyester has been the material of choice. In one way its a great material to use for a work where quality are of second importance, but also in choice of economic reasons. To get a more luxurious feeling silk could have been the perfect option both in movement and feeling. But to put the conscious aspect into this context, silk could also be of a bad choice in matter of our earth and workplace environments for the people in Asia, while polyester does not need nature-, or human resources in that extent. To conclude, this collection could be seen as a prototype for further development in choice of material.

To summerize this work, the intention was to let the print and garment interact with each other, which succeeded in order to trick the eye and create movement that does not exist in a three-dimensional way. To keep the construction simple the prints got more focused and had a greater effect to the body than if the garment had had a complex construction.
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Figure 12. Beachler, S (2011) Swiss Design Awards [photography].

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