

# DOWN TO THE ROOTS

- design with value

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LUND UNIVERSITY



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- design with value

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Project work conducted in 2017

Report printed in 2020

ISRN-number: LUT-DVIDE/ EX--21/50512-SE



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## ABSTRACT

Down to the roots is a project about just that; seeing where things come from and how are they made. I have a background in textile design which I wanted to enhance in this project.

Therefore I wanted to examine the technique of tufting. This is a textile technique that is not talked about that much, but most of today's carpets are made this way. In tufting threads are shot into a fabric, situated in a vertical frame, with a machine driven by compressed air. The technique is very free; it is like painting on a canvas with threads.

I also looked into what local production could be. When can you say that something is locally produced? Is it just about production or could it also be about the raw-material? And what about when local materials are exported and then imported again as ready items? Are they still considered local?

Aiming for a long lasting product the carpets are designed to work separate and together, creating a value of flexibility.

They are designed with a hidden message - the message of the environmental impact that the fibres they are made from have. One is made from natural coloured Swedish wool, where the whole process from raw-material to fine yarn was studied. The other is made from coloured yarn, spun and imported from Norway.

A hidden message creates the form, a subtle value for the one that knows.



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# INTRODUCTION



## BACKGROUND

This project idea started in my background as a textile designer. For me this project is a way to combine the knowledge I gained from this two different educations. I want to work with a textile technique, but in the context of design, local production and not art.

Tufting is a textile technique I never got a chance to learn, it is a technique mostly used for carpets and it is very free, with a lot of opportunities. Talking about it with others I have realised that not so many people know about it, for me this project is a way to change that and raise the knowledge of it. How it is done and what it can be used for.

In my work as a designer I have grown interest in where all our products come from and how many products we surround us with and “need”. And also how designers can work with producing items nearby the consumer. For me it is important to have control or at least knowledge over the manufacturing...

## VISION

Learn how tufting work thru local production and see how local the production can be from raw-material to the finished product, in Sweden today, without it being handy-craft. Doing this I can examine with what prices local production comes and if the design can be a way to control that.

Tufting is for me a new technique, so I will look into the history of the technique and were it is today. How does it work? What advantages and disadvantages does it have? How come it is not as recognised as weaving?

For the other part of this project I want to define what local production is for me and where I am as a designer. Local production and sustainable materials often comes with a high price, but does it have to be that way? And what do we mean with local production? Can it be seen in different ways?

## METHOD

This project is booth theoretical and practical. For the theoretical part I will work with interviews and study visits to gain knowledge in more way than reading. Furthermore I will learn the technique of tufting and produce my final product at Designstudio Brenner. For raw-material I will go down to the roots and make yarn from scratch at Alpaca of Sweden.



# SCHEDULE

JANUARY

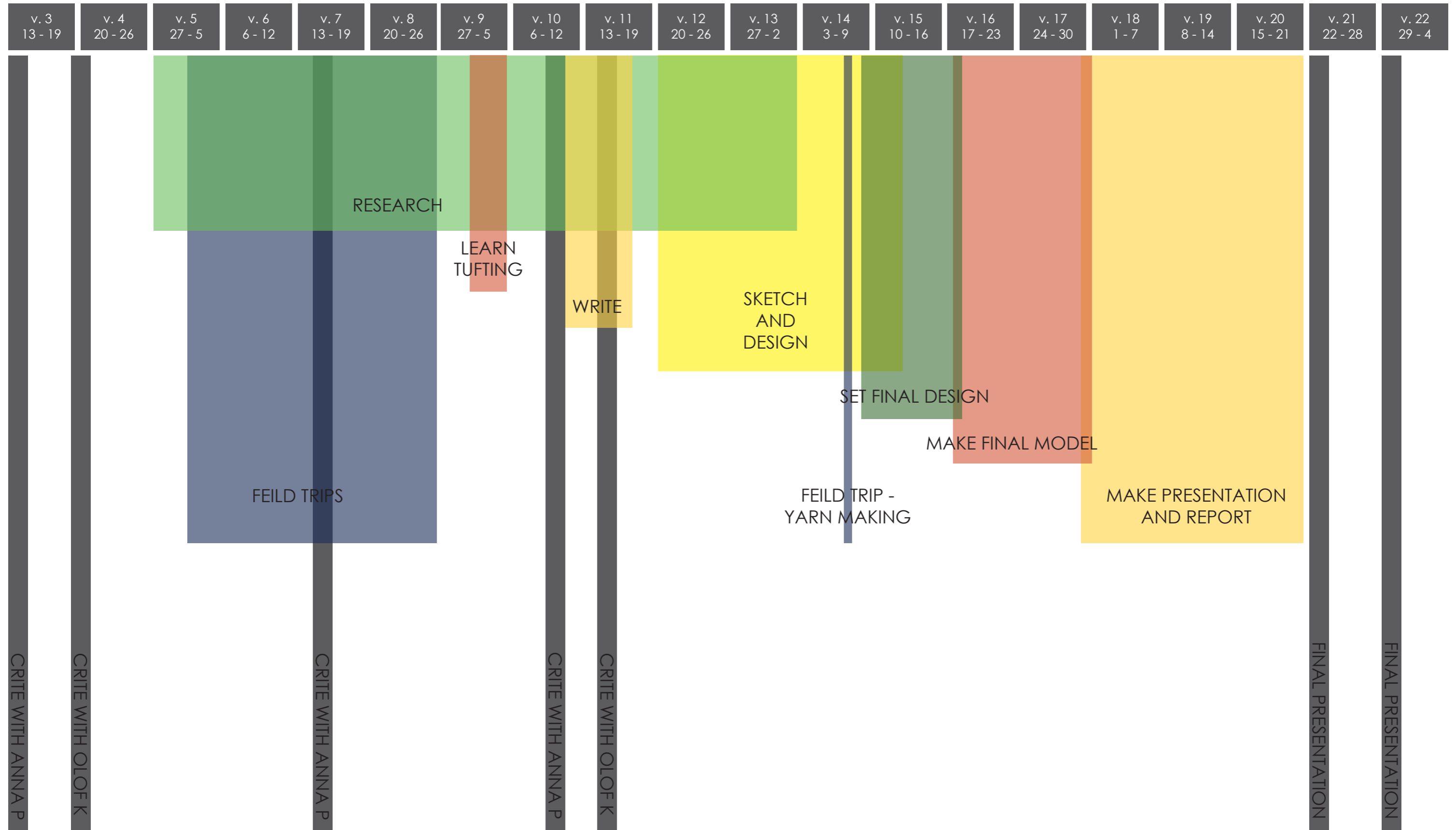
FEBRUARY

MARCH

APRIL

MAY

JUNE



# RESEARCH





## TECHNIUIQE

# TUFTING

Let's start where I began in this project with the technique. Tufting is a textile technique that is not talked about that much, but it is well used and many of today's carpets are made this way. Most Swedish people would call the outcome a "ryamatta", but the outcome of this technique can be very versatile, see opposite page (*samples from HiTex*). The simple explanation of this technique is that threads are shot into a vertical backing with machine driven by compressed air (*Tooming, 2007, Toward a poetics fibre art and design, p. 35*). The machine could either be hand-steered or computer-steered, for this project I have been using a hand-steered machine. In many ways it is like painting or embroidering on a blank canvas.

## HISTORY

There is little written about the history of tufting, however it is known that the technique was practiced by the early settlers in America. Stripes of fabric or yarn were drawn or stitched into a coarse foundation fabric using a small hook. On one side the fabric is left as raised loops, this forms the pile and other it is made flat. The technique is called rug-drawing or rug hooking. (*Bateman, 1929, p. 280, 293, Tooming, 2007, p. 36*) Just as rag rugs it was a way to take care of old cloths and fabrics. Exactly why it started is hard to say, more than a take care of worn out cloths, but it could be a way to imitate the Middle East knotted carpets.

This technique could be connected to the hand woven pile carpets that have been done in Scandinavia for decades, "rya". According to Tooming there are some differences between the two techniques. The outcome might look similar, but a pile weave are often made in a loom where knots are made around the warp threads. After every knotted row a weft thread is put in to secure the yarn which is not the case in rug-hooking and tufting. (*Tooming, 2007, p. 39*) She continues writing that because hand-tufting is done on an existing backing it is possible to work over the whole surface direct (*p. 39*).

A development of this technique is the Aladdin-needle which is a mechanical hooking needle that works with a crank (*Tooming, 2007, p. 37, www.danella.dk*). Were the result and process is pretty similar to what a hand-tufting gun does. The connection of the two does not seem to be too far away.

In the 30s tufting becomes an industrial technique. According to Rolf Brenner (*R.*

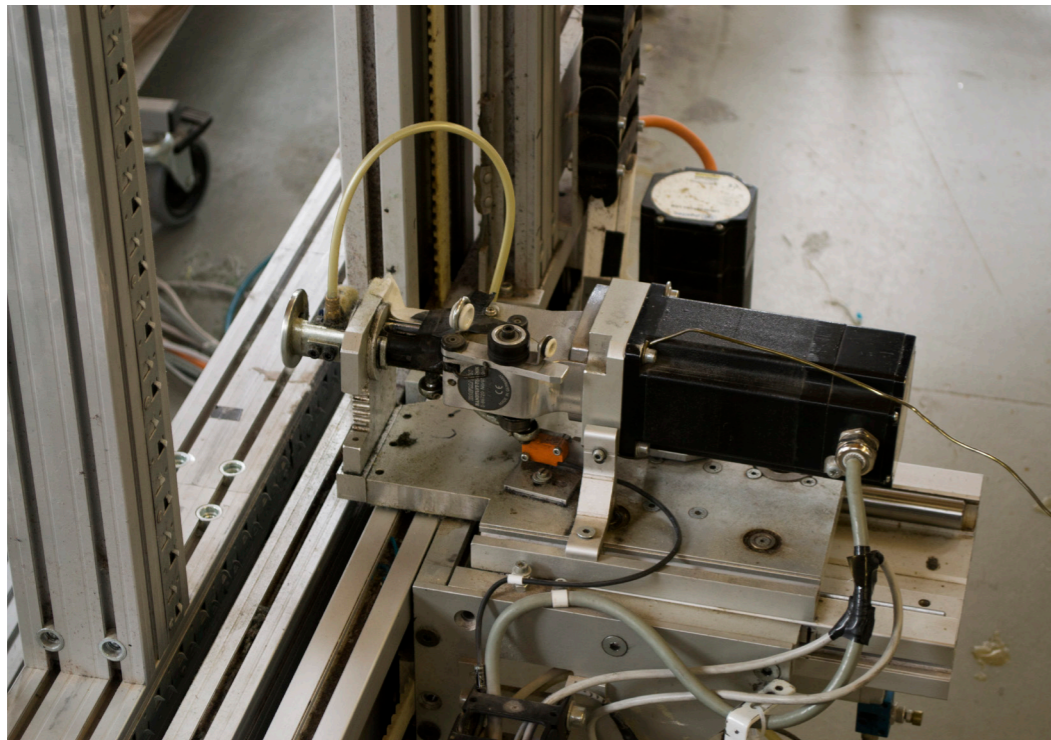




*Brenner, personal communication*) machine tufting was the first industrial tufting technique. The German company Hofmann Company was one of the first manufacturers of hand-tufting machines in the 1970's. To start with the hand-tufting gun where used for fixing mistakes in the production of machine tufting (*R. Brenner, personal communication*). The technique came to Sweden from Germany (*R. Brenner, personal communication, L. Runeman, personal communication*). However it is freer than machine tufting and needs shorter set time.

Since the 90's the hand-tufting gun has been developed into robot tufting, something that both Rolf Brenner and Lasse Runeman has been a part in. R. Brenner has his own tufting studio in Holsljunga, here he both works with hand-tufting and robot tufting. L. Runeman is the CEO of HiTex, a Swedish company that today, 2017, focuses more on developing and manufacture the actually robots than making carpets. Robot tufting is similar to hand-tufting gun with one needle head and it is the machine that moves over the backing, vertical or horizontal. However the design and adjustments, such as length of yarn and sizes of the stitches, is done in a computer program. According to R. Brenner the biggest benefits with using the robot are the precision and equalness of the stitches and rows, something that is hard to do with a human hand.

Kasthall also needs to be mentioned, the most well known Swedish company working with this technique in their manufacturing of carpets. They were one of the first companies in Sweden that started to use tufting as production technique (*Tooming, 2007, p. 38*).





Machine tufting is still used mostly for bigger quantities, because it is faster but the set time is longer. Hence that around 2000 needles are placed next to each other and that the backing is placed horizontal are moving instead of the machine itself. This also limit down the opportunities for design.

Hand-tufting guns is today mostly used as a handicraft tool and repairing tool.

## PROCESS

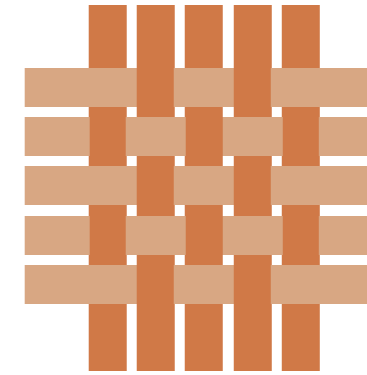
In this project hand-tufting has been used and I learned the technique by R. Brenner. Beside that the freedom around pattern and form, the biggest difference to weaving is that tufting is made on a vertical backing and weaving is mostly made in horizontal loom. Tufting is also much faster than weaving a pile rug, which can take up to 3-6 month depending on the size and quality. In weaving you need a binding to fix the threads together, and as I wrote earlier for a creating pile weave some threads of plain weave is placed between every row of pile. Plain weave is the simplest binding, the illustration to the right shows this and the process of tufting.

When starting out it all begins with the machine, which parts does it have and what is there to switch. The most important part in this case is the needle and the knife. This two parts is used to change the pile of the carpet, which length shall it have and should it be cute or looped pile. For the hand-tufting machine 8 needles exist, this gives 8 different lengths on the pile, 16 mm to 45 mm (*Tooming, 2007, p. 41, R. Högberg, personal communication, 201702*). Removing the knife creates loops instead of cut pile.

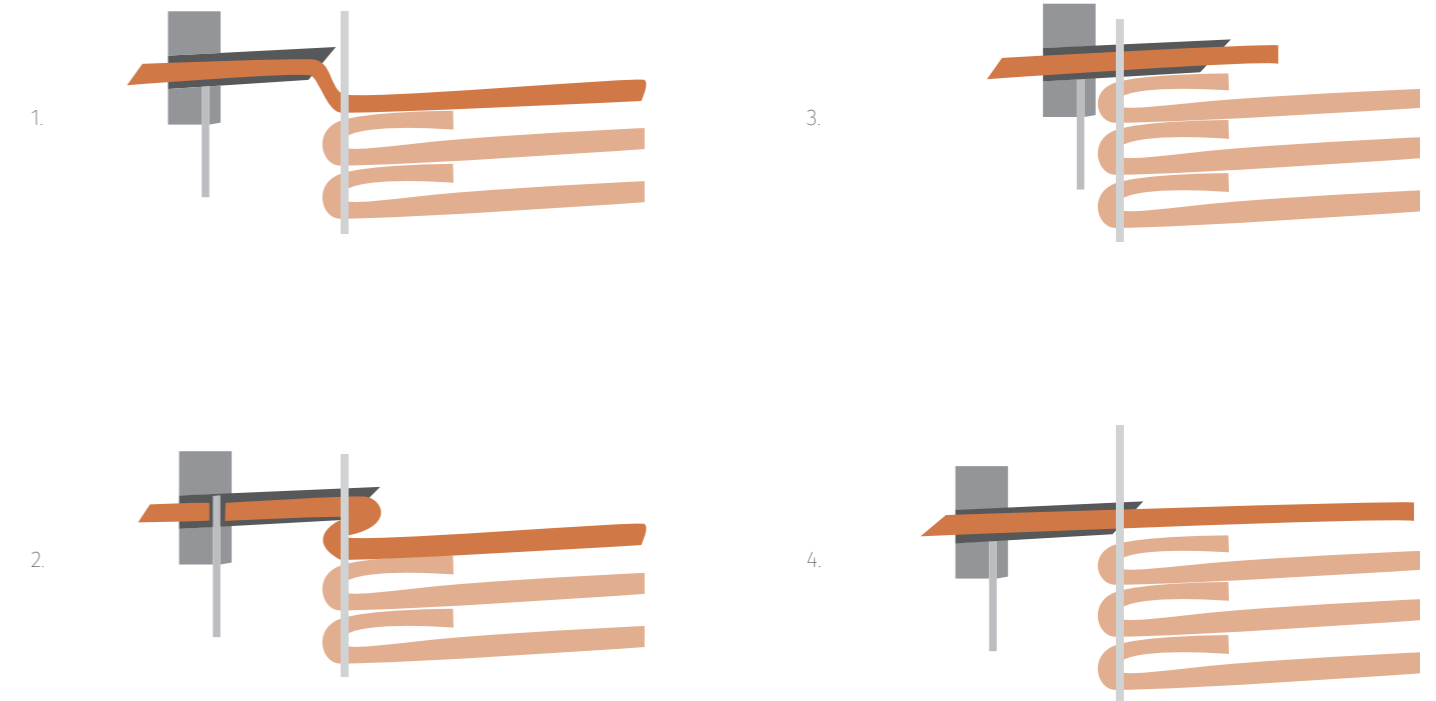
A fabric is stretched out in a vertical frame with the help of small needles on the frame, it should be stretched evenly and feel like a drum skin. The pattern and form of the object are then drawn directly onto the backing fabric in full scale, which was the case for me, if a robot tufting machine would be used the pattern would be programmed in the computer and the will just start to work.

But nothing will happen if the yarn is not in place. Depending on the thickness of the yarn different amount can be used at the same time; it just needs to go thru the needle that has a diameter of 6 mm. In my case I had 5 threads working together. Using 5 threads gives the opportunity to mix different colours to get exactly what you want. For this yarn pom-poms are made so that the end colour can be seen, this

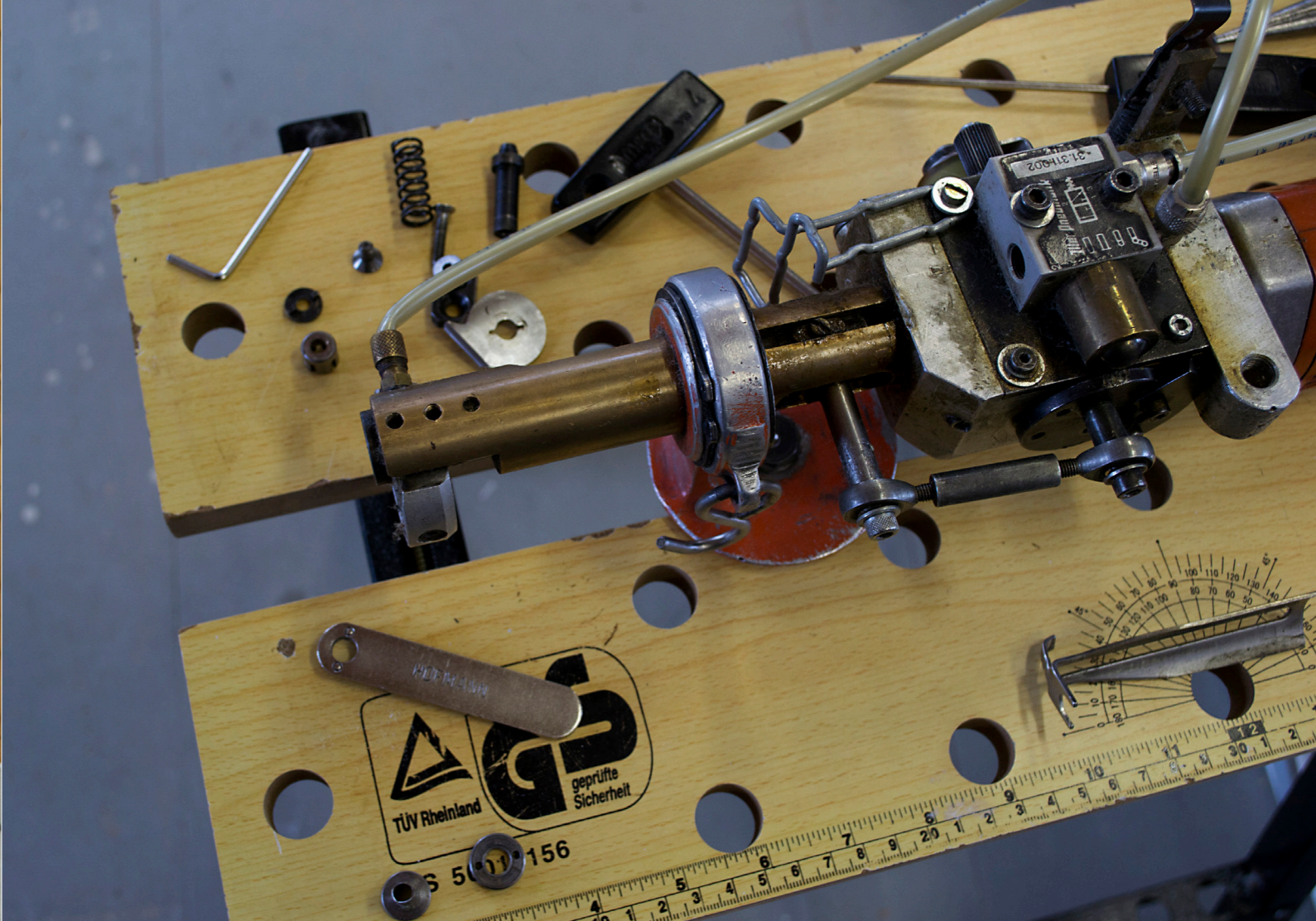
## PLAIN WEAVE



## TUFTING









is important to do, due to the fact that the colour of the yarn changes if you see it from above cut edges, or from the side. Before threading the machine the yarn is placed in a rack so it will stand still.

The machine always goes in the direction of the little foot and you are pretty free to move the machine in the way you want. Air pressure and electricity is connected to the machine and when it on the machine moves over the backing, the needle is moving back and forth like a sewing machine and when the air is blown the yarn goes into the fabric.

When hand-tufting you need to find the right rhythm to get the same stitch length and width between the rows, this affect the thickness of the carpet. This is hard and takes a while. According to Rolf Brenner there should be 2 stitches/centimetre and around 2 rows/centimetre. Tufting with a robot this is adjust in the computer program.

After finished tufting it is time for the after process. Still in the frame a glue is brushed onto the backside and then a second fabric placed on it, this to make the finished objects stronger. The glue is very strong and not the best for the environment, which I would have liked to look deeper into and maybe find something better, but it will make the carpets long lasting.

When the glue as dried the carpets need to be cut down and removed from the frame. All around the sides 5 cm are left, this will later on be fold in and glued to the back. First it is cut down in the bottom, then the sides and last the upper side, the order is done so that the carpet not will fall down on the floor during this process. Finally it is on the floor and the pile will be trimmed, a rough cutting was done when the piece was still in the frame. For trimming a machine is used, the trimming is done against the tuft direction. Last but not least the edges are glued and folded against the backside of the item.











## MATERIAL

# MATERIAL

I believe that we as designers also have to look into the material we are working with, where does the material come from and how is it processed? This is already an important part when we talk about food, but how is it when we talk about design and products? In this project I have looked into the textile production in Sweden - raw material to yarn. What is going on today and in the future?

But first let's look at some different materials. Textile materials are divided into natural fibres and manufactured fibres. With natural fibres we mean fibres that exist direct in nature such as cotton, wool or flax. When it comes to manufactured fibres they are made by machines. They can still come from a natural resource like oil or wood, but the fibre in itself does not exist in nature.

According to Fletcher all fibres because an impact on the environment (p. 6-7) and trying compare them with each other is complex case they all have different environmental impacts (p. 14). Some need a lot of water, others a lot of energy and a third uses a lot of transports. In her book *Sustainable Fashion & Textiles* Fletcher has done a graph where she compares the water and energy consumption for some of the most common materials (see next page). I found this very interesting, but also not so clear. Would there not be a way to compare environmental impact so that more factors could be taken in consideration and to get a whole picture?

*“The great benefit of using radial diagram is that it opens architecture, any new indicator can be added as soon as we have a benchmark”* - Marilyn Waring

Natural fibers		Manufactured fibers	
Plant	Animal	From natural polymers (vegetable and animals)	From synthetic polymers
Cotton Linen Hemp Ramie Sisal Banana Pineapple Natural Bamboo	Wool Silk Cashmere Mohair	Regenerated cellulosic fibres: <i>Viscose</i> <i>Modal</i> <i>Lyocell</i>  Alginate fibres: <i>Acetate</i> <i>Triacetate</i>  Elastodiene (rubber)  Regenerated protein fibre: <i>Casein</i> <i>Soya bean</i>  Biodegradable polyester fibre: <i>Poly(lactic acid) (PLA)</i>	Polycondensate fibre: <i>Polyester</i> <i>Nylon</i>  Polymer fibre: <i>Acrylic</i> <i>Polypropylene</i> <i>PVC</i>

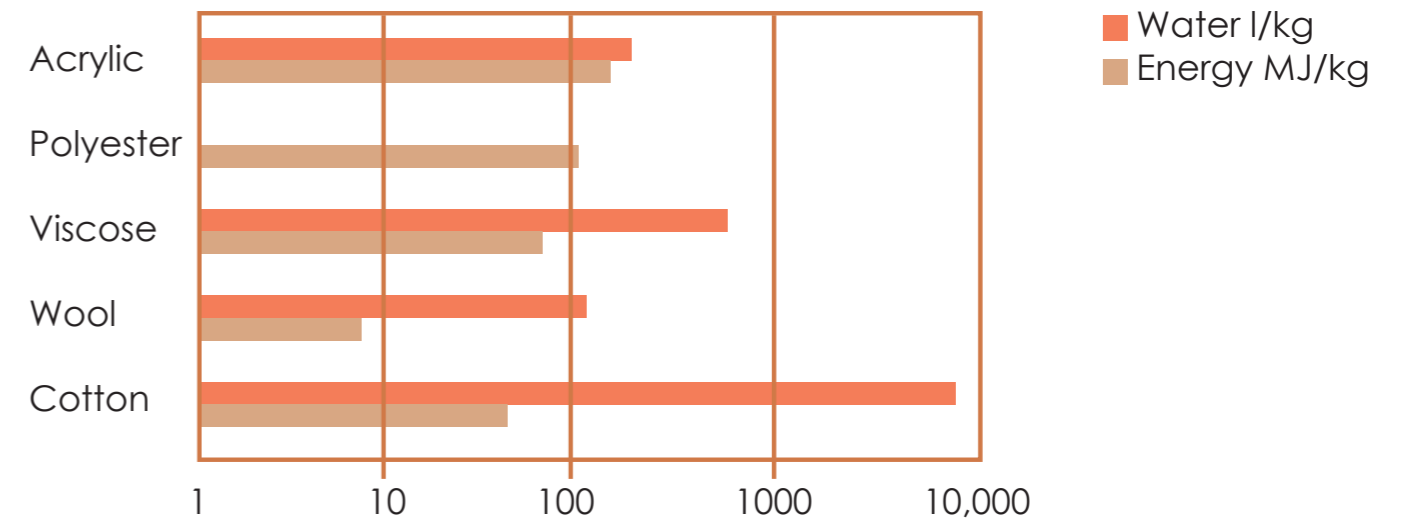
Marilyn Waring is a professor in economy, a feminist and the first woman in the New Zealand parliament. Waring gave me inspiration to compare the materials in radial diagrams, which is the same as spider charts diagram. Using Fletchers diagram and text about the materials I pointed out 5 variables; water in farming, water in manufacturing, energy, chemicals in farming and chemicals in manufacturing (see p. 36).

The variables were chosen with an environmental focus in mind and with the different materials in consideration. As a starting point I worked from Fletcher diagram and texts, where I already had some statistics on variables like the amount of water and energy. In her texts I could also find information about chemical use in different materials. Water was divided into water during farming and water in manufacturing. The same was done with chemicals, chemicals during farming, pesticides, and chemicals during manufacturing. Separating these variables was done with polyester in consideration, where farming doesn't exist. Furthermore I used my knowledge from my background as a textile designer and my gut feeling.

In the variables I have tried to take in consideration the environmental impact from raw material to finished yarn, not the finished product. The value chain moves from the lowest impact in the middle of the spider chart and increase closer towards the symbol.

One problem with the variables is if they are truly comparable, are they equally good or bad? In my case I consider the chemicals to be worse than the other variables. Because chemicals don't go away, they end up in water and soil and pollute the earth. Compared with water for example that in some cases can be re-used in closed manufacturing loops.

Two other variables that were considered, that I in the end chose not to work with, were transportation and cost. Just looking at environmental impact transportation is an important variable, but it became a hard variable to compare due to the fact that one material can be produced in a lot of different places around the world. Wool is for example produced in Australia, China, Turkey, United Kingdom and some other countries (<https://www.farmersjournal.ie/australia-driving-world-wool-production-208377>). Another thing was that in the diagrams I wanted to compare material from raw material to yarn and not a finished product, and materials as cotton, viscose and polyester are often imported to Sweden just as a finished product. Cost was also a parameter that was removed, due to the fact that it was just too hard to find a statistical value on.

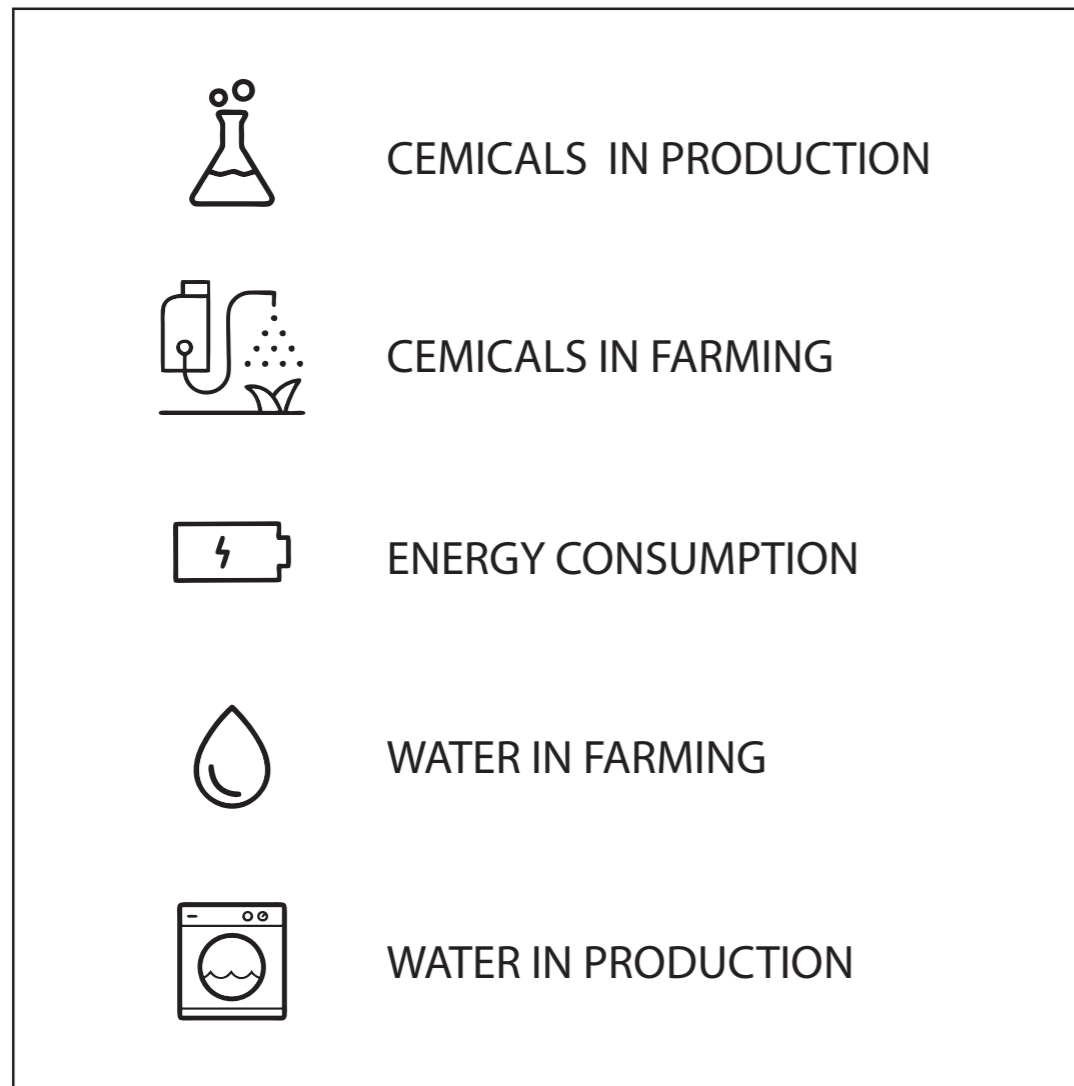


The diagram shows energy and water consumption in the production of some of the most common fiber types information collected from the book Sustainable Fashion and Textiles.

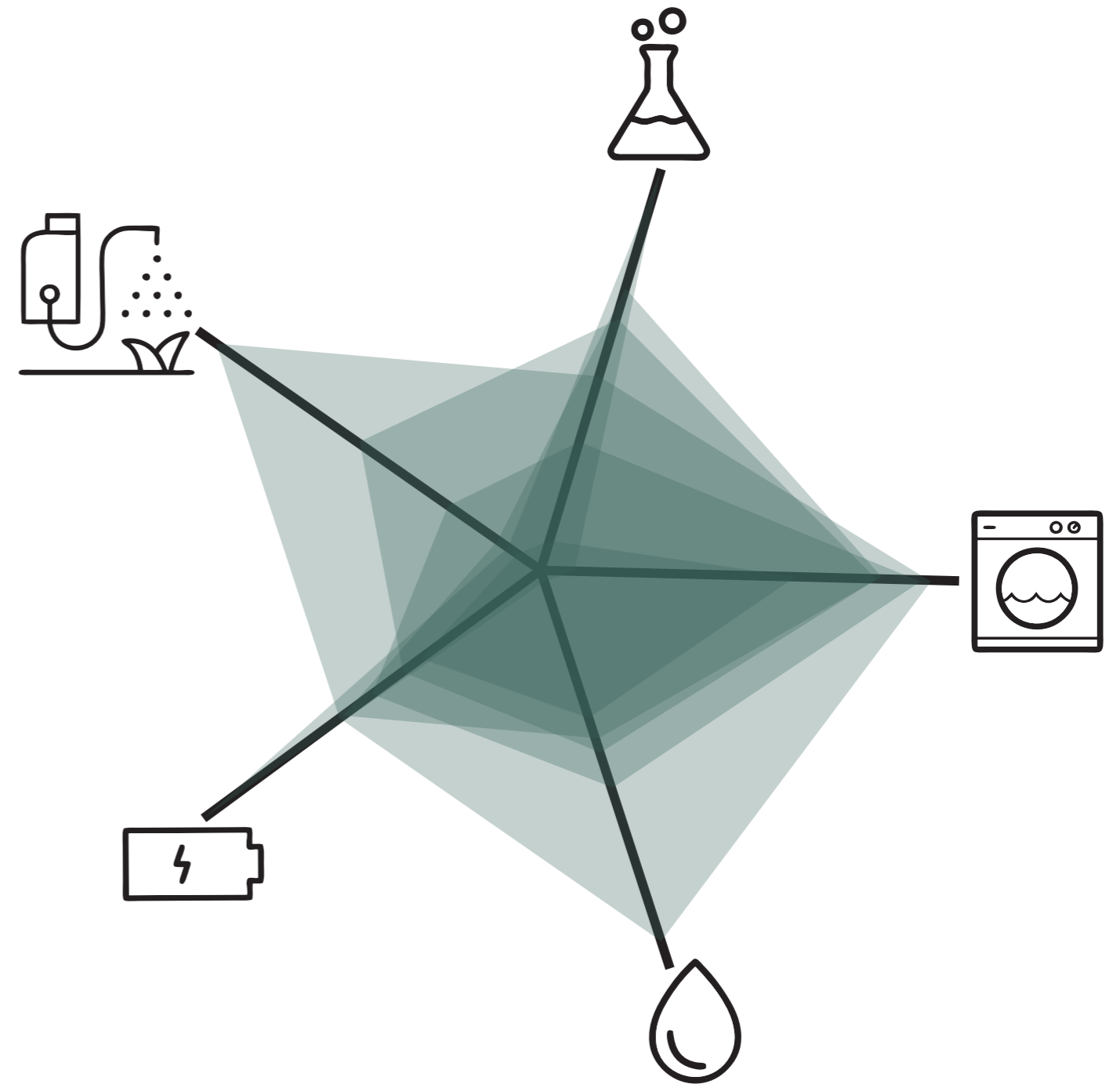
FIBER TYPES AND SOURCE	
NATURAL FIBRES	MANUFACTURED FIBRES
COTTON - PLANTS WOOL - ANIMALS LINEN - PLANTS	POLYESTER - OIL VISCOSE - TREES

Chosen materials

# ALL MATERIALS IN ONE DIAGRAM



Key to chosen parameterar





## Analysis:

**Cotton** – One of the most common textile materials today. As shown in the diagram the biggest problem with cotton is the amount of water used in production, both in farming and in manufacturing. Furthermore a lot of pesticide are used especially in farming.

**Wool** – Here the variables are placed rather central of every line. No variable stand out in any direction.

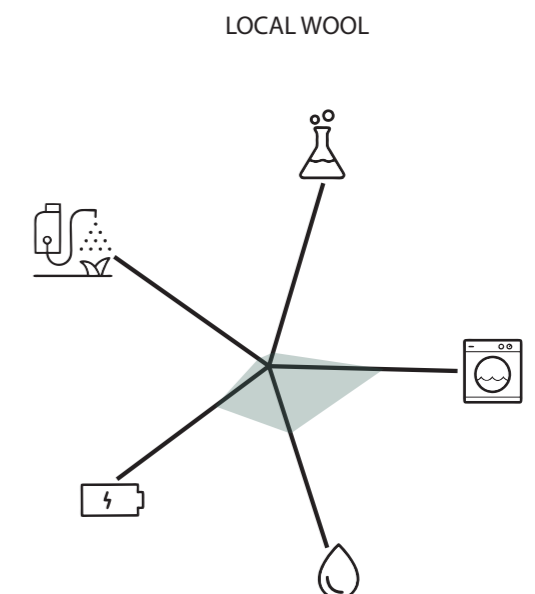
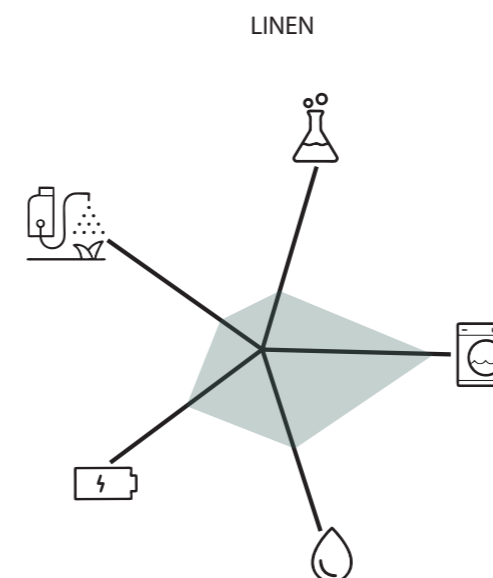
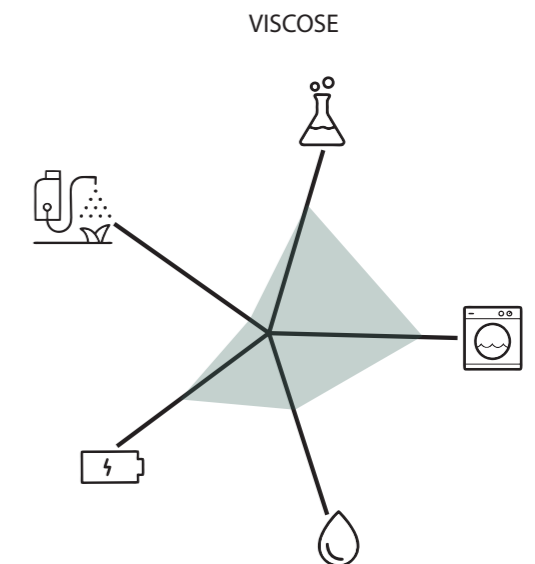
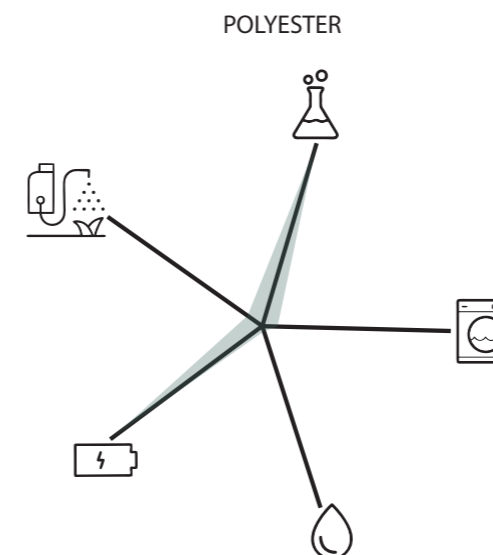
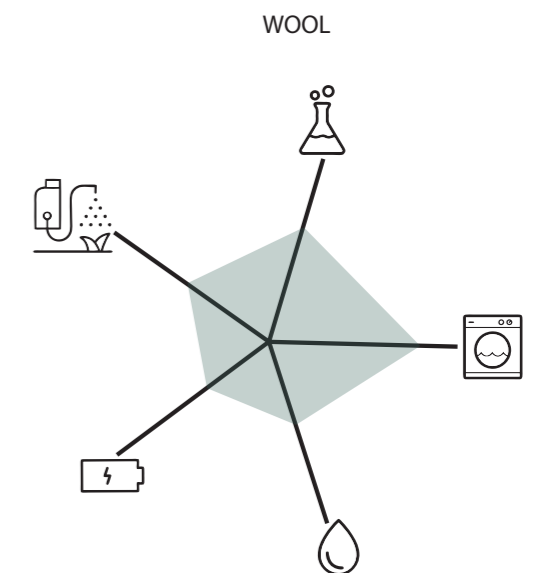
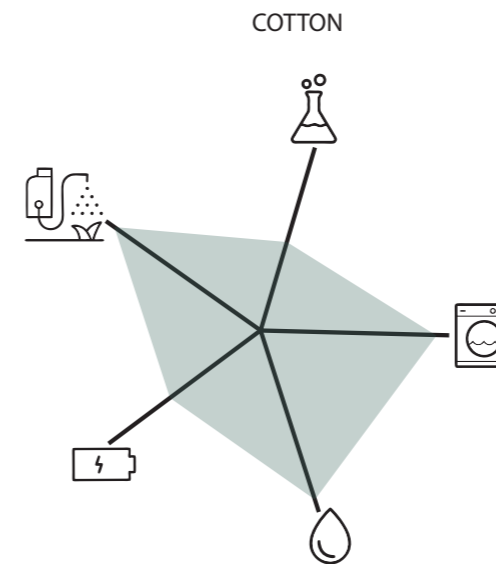
**Polyester** – Looking at polyester it seem like a good material, no pesticide are used and no water is used, but the problem here is that it is made out of oil or plastic so the raw material is not a renewable resource which make it not so environmental friendly. The process of re-use polyester is an ongoing researching area today, but there is still a long way to go.

**Viscos** – Like polyester viscos is a manufactured material, but it is made from wood pulp which makes it more environmental friendly, though it comes from a renewable recourse. Chemicals in production stands out slightly more than they others.

**Linen** – Also here the water consumption in the manufacturing is rather high, but all the other variables are rather low compared with some of the other materials.

**Local wool** – Here lays the lowest environmental impact, due to the small scale production in smaller fabrics and smaller batches. The rather controlled animal laws in Sweden may contribute to the lower chemical use as well. Also *eco-friendly* and *good to the environment* could be selling points for smaller local businesses.

All materials affects the environment in one way or the other this is a complex question that might not have only one good answer. Nevertheless from the diagrams plus having in mind the idea of working as local as possible so I choose to examine wool and viscose further. This is two materials that are produced from a raw-material that we have here in Sweden.





# WOOL

Wool is a natural fibre from animals, such as sheep's, lama's or alpaca's. It is a soft fibre that works well in both warm and cold climate, due to that it can keep air inside this can give either a cooling feeling or a warming feeling. Small hooks on the surface of the fibres make it stick together very easy and make it possible to felt. It also has a low rate of flame spread which makes it suitable for interior design - such as carpets.

Before yarn making the wool is always washed, because it contains a lot of dirt and grease. The uses of water are the most environmental process in the wool industry, next to this it can also be bleached and coloured. Not all wool can become yarn. A big part of the sheep farming industry is focused on meat production and the wool from some of these sheep's cannot be used for making yarn, because of its quality. (Fletcher, 2008, p. 10)

In Sweden we do have a wool production and we have small spinning mills, but it is not that big or organised as in New Zealand, one of the largest wool producing countries in the world today. However the productions from the Swedish spinning mills are not large and cohesive enough for bigger companies to use (Lasse Runeman and Peter Magnusson, personal communication). Another reason to this is that until 2013 we did not have any industrial washing process of wool in Sweden for years ([www.ullkontoret.se](http://www.ullkontoret.se)). Most of the small spinning mills in Sweden are doing this process themselves. One of them is Alpaca of Sweden.

Alpaca of Sweden is a small spinning mill at Österlen that spins both alpaca and sheep wool only from Sweden. They make approximately 2 to 8 kg yarn per day depending on quality. When the wool arrives it is first cleaned, sorted and washed before it is spun into threads. Working with them made it possible for me to visit and decide exactly which quality I needed for the purpose.

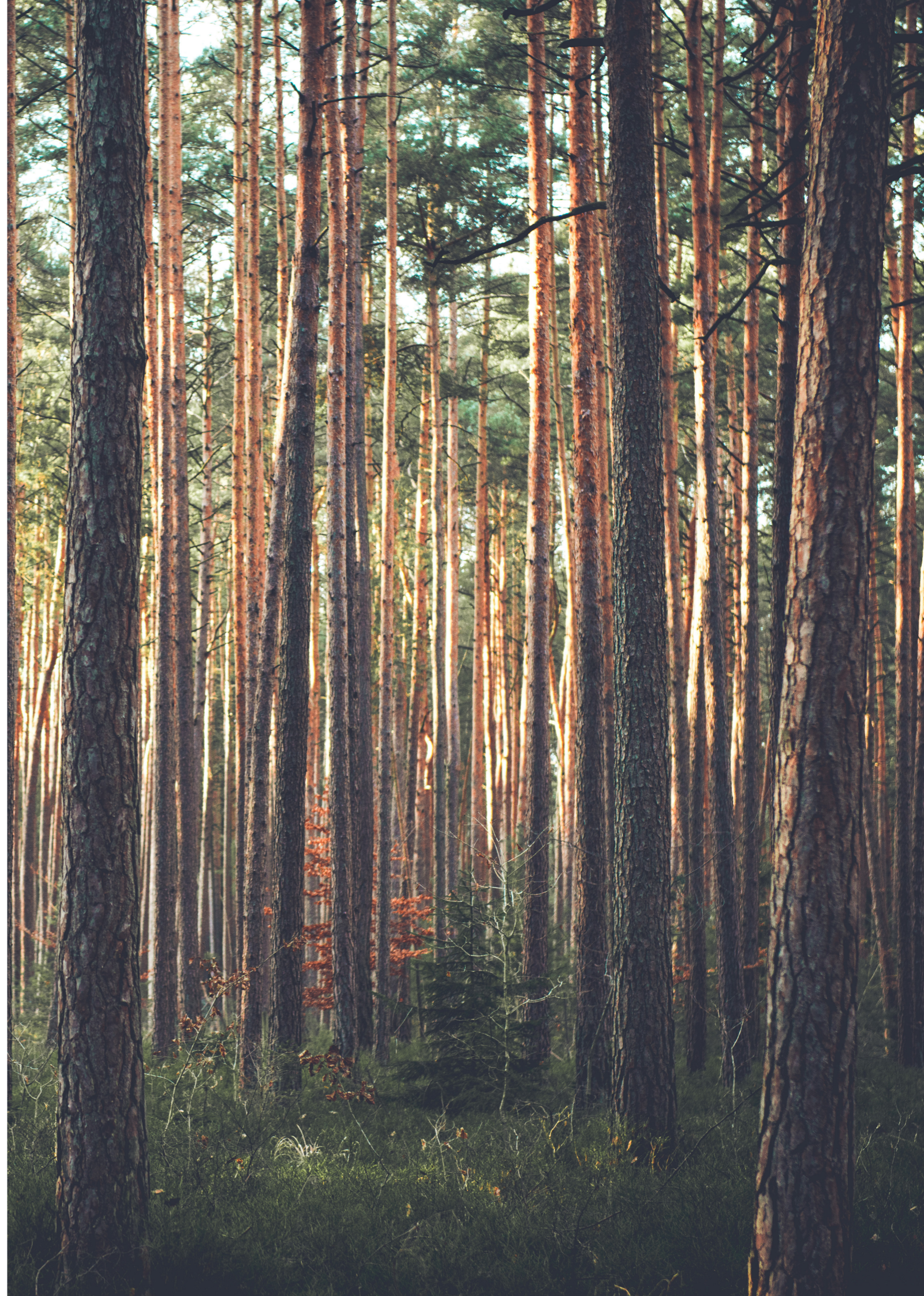




# VISCOSE

Viscose is a manmade fibre from natural polymers. This means that it is made from a renewable re-sources in this case wood plump, from for example pine, which makes it a regenerated cellulose fibre. Since viscose is manmade it can take the character you are after, however it is in many ways similar to cotton. More and more the textile industry sees it as substitute for cotton. In Sweden it was used to be called “konstsilke”, because of its shine/glow.

Wood is the raw-material for viscose a rescores that we have allot of in Sweden, but there is no production of viscose. What there is is the production of wood pulp, but the spinning process it is done abroad. Hence this there is an ongoing research project at SWEREA, were they research if it would be possible to produce viscose in Sweden in the future. This will then be done in a large scale in direct connection to a pulp mill. According to Eric Perzon (*E. Perzon, personal communication*) at SWEREA the idea of this project is not to focus on local production, it is seen as a global project where big companies like H&M and IKEA are involved to find a new industry market for Sweden. In 2015 Niklas Gilmark and Stefan Söderberg started the company Allvar. Allvar makes men’s underwear from Swedish viscose ([www.allvarunderwear.com](http://www.allvarunderwear.com)). Hence the raw material comes from Sweden the yarn and final products are produced abroad. However they showed that this resource can be possible to use in a future scenario. Today there is no existing viscose yarn made in Swedish, so I tried to locate any viscose yarn that fitted for the purpose, but did not manage.





# LOCAL PRODUCTION

- a reflection and discussion of today

*“We live in a time more and more people are thinking about how items are made. Just as in the food industry there is a bigger interest of being surrounded by objects that are locally produced.”* - SPOK, 2017.03.14

SPOK is an actor in Skåne that collect information about different producers in the area and made a web-based platform, which has made it easier for designers to find them and see that producers in Sweden do still exist. This chooses that local production is possible and that the manufactures are interested in working with designers.

Today there is an ongoing discussion in the design world about using local producers for development and manufacturing. But what do local production actually mean? Is it just the manufacturing processes that should be made local or could it be possible to work with local materials? Is local just about geographical point or are there different ways to see it? This is some questions that I will try to sort out. As designers we have a huge responsibility because 90 % of the environmental impact lies in our decisions (*Mistra Future Fashion 2015*), choosing local could be one strategy for minimize this impact.

*“Many designers want more control over how their design manufacture and more is taking the question in their own hands to be able to sell a good product.”*

- SPOK

## Defenitions

In The National Encyclopaedia the two words are explained as follows, local means limited to a certain small area of occurrence and activity and production

is the process in which goods and services produced by various production factors. So according to this description local production would be connected to a geographic point and is the process about making items. However if local only is connected to a geographic point it all comes down to how close we are to that point, a big part of the decision of what or when something is local then lays i the eyes of the viewer, the designer, producer or the consumer. Just seeing local as a geographic point then as a designer living in Sweden, it would be local for me to produce items here, but if the items are sold outside of Sweden are they still local for the consumer? Or do they become exotic?

According to Schwarz & Krabbendam local is today more of a value than a geographic spot. They write that local values are more about the relationship between the local producer and the consumer, *“close to the source”*. As an example they bring up the Farmers market, a growing movement all over the world, and meaning that this is the direction we should go in the design as well (p. 39). Seeing local as more than a geographic spot is a very interesting way of looking at it. The important in creating a value around local is a way to make local production stronger. In this case we are not talking about quality in the product, but about that being local should in itself be a quality, the quality of transparency. Seeing and showing what things are made of and how they are made, should raise the value and make people willing to pay more. So if local instead is seen as a value it does not matter if it is produced and sold in different places, it is more about controlling the processes.

In Sustainable Fashion & Textile, Fletcher combines it and writes that *“local production inspire and challenge a community while at the same time creating jobs and making use of local resources”* (p. 140). Further on she writes *“the local agenda... - it is a combination of product, skill and emotional investment”* (p. 146). She means that the essence lays in distinctiveness and that we should not only preserve local production, but also make it grow (p. 146).

Farmers Markets are growing bigger, in Sweden have two rules, first the farmer most have grown or raised what is sold; this also includes processed food themselves. The second rule is that the farms need to be placed not more than 250 km away from the market (*www.bondensegen.com*). According to the quote above in combination with the knowledge around the fact about farmer's market, I believe that allot lays in the transparency - knowing what you are selling or buying, not the

exact distance. In the design world I think it is the combination between the closeness, which gives the ability to control, and the soft values that make us choose to work local.

But could the same rules be applied to design? From the raw-material to the consumer in a set distance. It might be possible, however it might give another price than the consumer are used to today. For textiles Fletcher mark it out very clear *“material diversity does, however, comes at a financial price - producing small scale fibers at multiple locations near to markets translates into more expensive textile products - and this will be passed on to the consumers”* (p. 37, 2008). According to this shorter transports will makes the prices on the items rise, see graph.

So where goes the line for what is local?

If we still see local as a geographic point it all comes down to where we are located, but seeing it as a value it comes down to the transparency.

*“For us has the closeness to the production in Sweden been very important. It is in the factory the knowledge is.”* - Fredrik Färg & Emma Blanche, Recidense nr 3 2017, p.130



I think many designers of today agree with Färg & Blanche and find it important to work with producers here. Working with producers in Sweden facilitates for the processes because it is where we are located.

In April 2017 I interviewed Hanna Bruce owner of Våxbo Lin AB, a small weaving factory in Hälsingland, to get the views from a producer. I asked her if they have notice that more designers want to work local. *“Yes, she says, we get around at least one question a week. Mostly it is about designs that they want to get manufactured local. However there is often a big gap between what they can pay and what it actually costs. But we have taken the decision to not produce for someone else, we want to stay to our quality and design.”*

One argument for using local production is that gives higher quality, but I do not believe that this is the howl truth, during my discussion with Jenny Ekdal, designer at Stoff design studio, we talked about just this; her experience is that quality of craftsmanship from example Vietnam can be as high as in Sweden. Quality lays probably more in the quantities and how quick the end result is needed, due to this comes everything around working conditions. When good working conditions is found, traveling there you will be working with local production during your time there. This might even comes down to working more local than here, due to the fact that they also work raw-material from Vietnam and the transportations are not that long between the different craft-villages, something that I believe is a big part of local production. Further on in this project I have been looking at the opportunist to work from raw-material to finished product in Sweden today, how local can I come and what price do I end up with?

Another example of what could be local is Klippans Yllefabrik AB were the howl production line, from spinning of yarn to after treatment of their blankets, is placed in Lativa, which is close and local to Sweden if it is placed in compared to Kina or India. CEO Petter Magnusson sees is as *“the best of two worlds”*, they still have the production close by and to a lower prices than in Sweden. If they place an order on Monday they will have it by Friday, also doing changes in the collection and re-order colours is easy done. (P. Magnusson, personal communication, 2017.02.22) This could be argued as local production, and many consumers will probably see it as local to an affordable price. Some people I have been talking to does not even know that the blankets are made in Latvia even thow it says on the label and due to the fact that Klippan has never have a weaving production in Sweden.

Transportation is one big argument for choosing local production, for example all the transport of an ordinary cotton during production equals one lap around the



world, another one is competence. Some years ago research showed that the fishes fished outside of Sweden is transported to China to be filleted and then send back to Sweden where it is sold, ([www.svt.se](http://www.svt.se)). Something that is cause huge amount of carbon dioxide emissions and seems totally absurd, but this is done because of competence. The industry in China filet fish by hand so less fish will be thrown away, so more fish but higher carbon dioxide emissions. Researchers come up that the best solution for the environment would be if the fish was filleted by hand as close to fishing place as possible, again this would come with a higher price which comes down to what the customers are ready to pay.

A similar example is swedish wool. In my conversation with Petter Magnusson he told me that Klippans Yllefabrik use Swedish wool from Gotland in some of their blankets. This wool is transported from Sweden to Great Britain where it is cleaned and washed, because of the high competence there, then Klippans Yllefabrik buys it and send it to Latvia where it becomes yarn and blankets. The finish products is send to Sweden where they are exported to different retailer. This might seem a bite weird, but according to Petter Magnusson the best knowledge of washing wool is in Great Britain so this wool makes a fine quality yarn. How does this affect the locality of the yarn? The wool comes from sheeps in Sweden, but has been processed in other countries to become yarn or a blanket that the consumer wants, is the ready made item a local product then?





This is hard to answer, the ready made product is sold as a blanket made out from Swedish wool, which is true, however it does not tell all the traveling it has gone true before it is sold in store. So for a consumer in Sweden I believe that this product would feel very local.

Preserving the knowledge of craftsmanship. How small can you be to be a producer?

*“the tension between the handmade and the industrial made”* - Jenny Nordberg, designer.

Something interesting happens when you combined the handmade and the machine made. So many times I have found myself there, in between, and also now. But where goes the line, between handicraft and producing? During my discussion with Ekdal we talk about this fine line. If we go back to the description of production in the beginning it is when you are making things for someone else and sell the service of doing so, then even a one man company can be a producer.

The handicraft organisation, Svensk Hemslöjd, started as protest to industrial production, a way to perceive the knowledge of crafts and make the everyday items that you needed, ([www.hemslojden.org](http://www.hemslojden.org), 2017). Saying this handicraft, as hemslöjd, might not be seen as production, however today the preserving of knowledge is an argument for work with local production. From Lilly Zickerman's idea we have taken it one step further and combined the working with machines and craftsmanship.

*“All items are made in Sweden, combining high-tech production methods with quality craftsmanship.”* - Lisa Hilland, designer, 2017

According to an article in Shortcut, nr 1 2017, 53 % of our jobs will be taken over by robots in 20 years. What will then happen with the craftsmanship and knowledge in the fabric? Even if we want the speed from the machines and the equalness of items, we still desire the knowledge of a craft man. Knowing that time is a cost we must find a balance between that and the handmade, a way to working together with the machine side by side. However this could also make the production more effective and faster, which will lead to lower prices and making it even more pos-

sible to work with local production.

*“We're talking about a new movement in its infancy here. People are taking their first steps with the technology, producing the stuff they just need.”* - Ronen Kadushin

Kadushin is a designer living in Germany that is taking this one step further and work with open design. Making it possible for anyone anywhere to produce what they need. This is an interesting thought using new techniques and making the design global, but at the same time local in the production. However the value of the product is a bit lost deepening on how it is seen, you do not have the story of where it comes from, but you might have the value of do-it-yourself. Hence it could also lead to new ways of mass-producing.

Local production could then be everything between big manufacturing processes to small scale producers depending on if we see it from a geographical point of view or a value point. Comparing the design field to the Farmers Market again where it in many cases is the relationship we are after local production then might not be about big scale manufacturing, but the soft value in one single product and small scale production.

Value vs price!

If we look at locally produced design in Sweden, because it is where we are, it may cost more. But does it have to and can the consumer adapt to the price if the story is told right?

At Växbo Lin they have seen a change in the customers the latest years. When Bruce took over the company most of the customers were weavers themselves and they saw the quality in the products, like a woven selvage. Today people know less about the quality and the technique of weaving but they have heard the story about the little fabric and appreciate the story behind the products.

She also tells me that the overall awareness has risen among the customers when it comes to mass consumption. According to her many people say that they prefer locally produced, but when it comes to a decision they still choose the cheaper alternative. In the interview Bruce also states that there has been a skew reality between manufacturing costs and end product - *“a lot of people are used to the low prices we have today, and there is somebody that pays for this.”*



What is it that cost? The biggest costs in producing lay in time and every step in the process requires man labour. Here the consumer also is a big part, are they willing to pay and is local production even important for them. Designing items that last is important for the future. Paying more for something when we now where it comes from and see the steps. But just as in Vietnam of lot of the objects made in Sweden are exported, aren't we then a bit the same? Producing objects local for then selling them global, doesn't then value in making things local lay in the story and the transparency? The value of almost having a relationship with the person who made the object.

*“The story behind the design can and must be as beautiful as the design itself. Our customers should be able to make the most informed choices possible.”* - Honest by, 2017.

However this kind of soft values only counts for the buyer of the object not in the long time economic system. According to Marilyn Waring the only value that counts in this case is the economical.

*“Economic system today is build out from money, money is what is counted.”* - Marilyn Waring

She means that this used is a tool for people with power and counting like this will make it good to smash the car or in the case with mass production transport items all over the world would be good for the economical system, because this gives more people jobs. Waring believe that this should be counted differently, according to her time use would be the best indicator of how the world is feeling.

With Bruce I talked about a similar problem, the non existing regulation around Made in Sweden. She means that there should be some kind of standardization on what that can be marked Made in Sweden. Counted from in which country most money for the product is spent, in for example salaries. According to her today it is okay for a producer to make the parts somewhere else, mounted it in Sweden and mark it Made in Sweden. She means that this makes it hard for consumers to compare products on the same conditions.





# CONCLUSIONS



# CONCLUSIONS

Finding one definition on local production is hard, since it is a big and complex question. I believe it comes down to from which point you are looking; are you the designer, producer or buyer. Even do a product is locally produced from a designers/manufactures point of view, the item might end up being exported and then it is not local from the consumers perspective it might even be exotic.

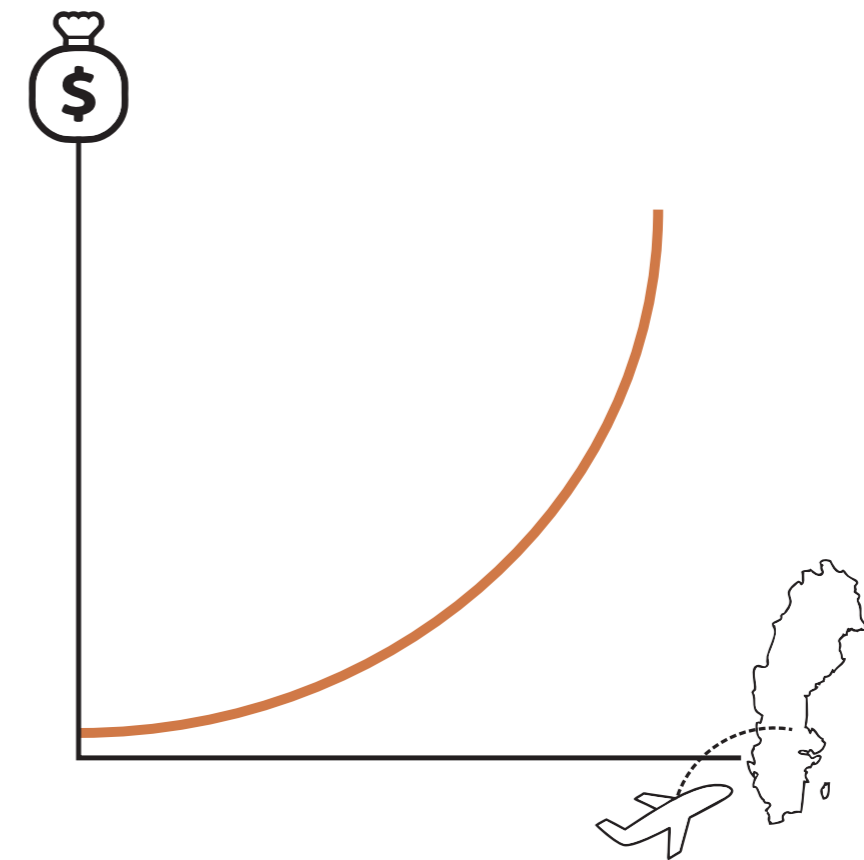
Local productions might not be connected to a geographic point, however it in many ways easier for a designer to work out from where you are located and find producers in the nearby surroundings. For designers it becomes more and more important and a lot of responsibility lies on the designer. Working with the transparency I see as most important. It can be seen that the closer to Sweden, in this case, the production gets the higher is the price.

Tufting is a free-form technique when it comes to pattern and shape, the only limit is the frame. Using more colours adds more manlabour, due to the fact that it needs to be switched manually, which equals a higher price. One problem with the technique is the using of glue, which is not so environmental friendly.

In the end I decided to work with two types of wool, commercial and local, due to the fact that I could not find viscose. The commercial wool yarn will be the one Design Brenner usually work with and it comes from a spinning mill in Norway, Hillesvåg. This is a high quality yarn that Brenner's have been using for years; it is made of most Norwegian wool and some New Zealand wool.

I choose to work with Alpaca of Sweden because of their location in Skåne, which made it possible for me to go there. They also use only wool from Swedish sheep's and alpaca in their own yarns, something that they had in stock. For me this was a way to go down to the roots and actually see/be a part of the manufacturing. This combination gave me an opportunity to also design a yarn after my needs and create more value around a part of the end result. Using two types of wool gave me the opportunity to compare the price between them.

Qualities in the yarn I made should be strong but airy. Even do I will only work with wool I will continue having viscose in mind and designing for it.







# DESIGN



## CONCEPT

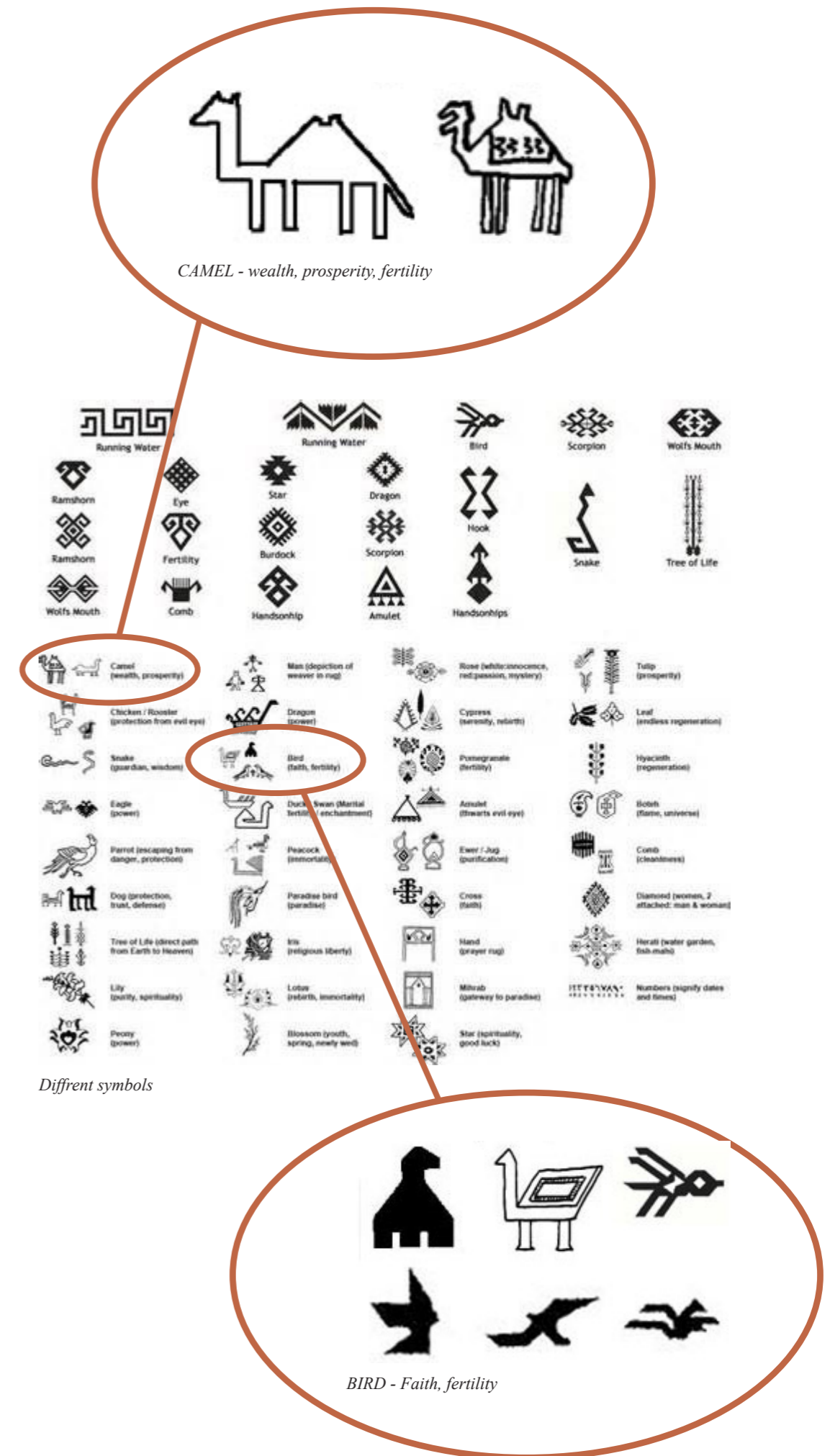
From my conclusions regarding the advantages of the technique and how I could use them, I started to work with the design. Knowing that the more patterning comes with higher prices I rather early choose to work with the form only. To find inspiration and a starting point I looked into the history of carpets, how have they been used.

In history carpets has not only been used as tapestries on walls or lawing at the floor to protected from cold and soil it has also worked as history tellers. Symbols and patterns in a Middle East carpets had a meaning, one example is different family labels, so that would be known how made the carpet. (*J. Bengtsson, lecture*) During the years and the industrialisation/mass production this information and histories got lost, and symbols only became beautiful ornaments. I would argue that we today still appreciate these patterns and are attracted to them even though we don't know the meaning of them and the carpets doesn't tell any stories like they once did, they are just there to be enjoyed and add mysterious vibe to them.

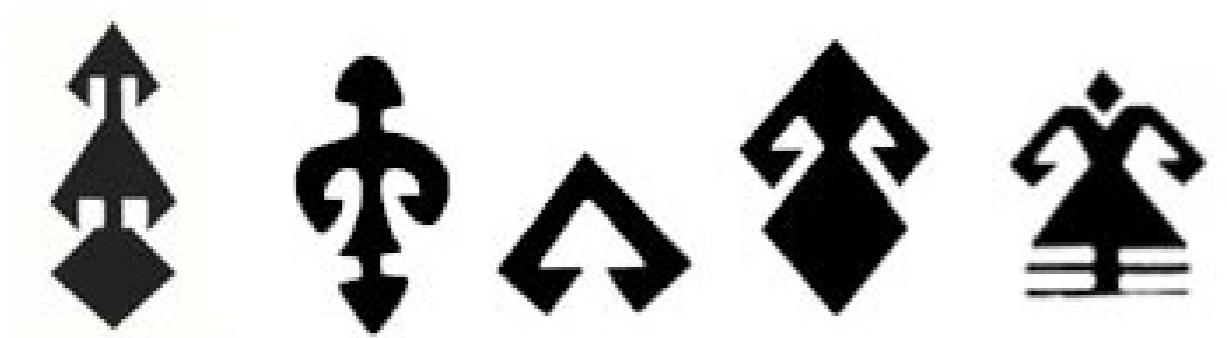
Just looking at the symbols some seems to be clearer than others, a cow for example often looks like a cow, even though it is simplified, but it has a deeper meaning. A cow can stand for earth or mankind, a camel can means wealth or prosperity and a snake can mean guardian or wisdom (see next page). Other symbols are more abstract like the symbol for mother or women or the wish for clean water (see p. 62). So a symbol can have more than one meaning and even appear in different shapes, like the bird (see next page) or running water (see p. 62), regarding region or weaver that it comes from. The fact that symbols also has been passed on from generation to generation of weavers also add to the lost meaning of them. (<https://rubyrugs.com/hidden-secrets-and-symbols-in-oriental-area-rugs/>)

Reading about this symbolism and the lost knowledge inspired me, what kind of history and hidden message could I work with? That could give a story and value to the carpets. The first story that came to my mind was the story of where the material came from and how I could enhance that.

So where did the material come from? Sheep's and wood. Sketching started by drawing on a photo of a sheep, to find different shapes, shapes that directly tell the viewer this is a sheep. What forms could I find in the body of a sheep? How could I simplify the form of the sheep like the nomads did with the symbols they used?







*HANDS ON HIPS - goddess symbol representing motherhood & fertility*



*WATER - life, paradise, fertility, cleanliness & overcome obstacles*

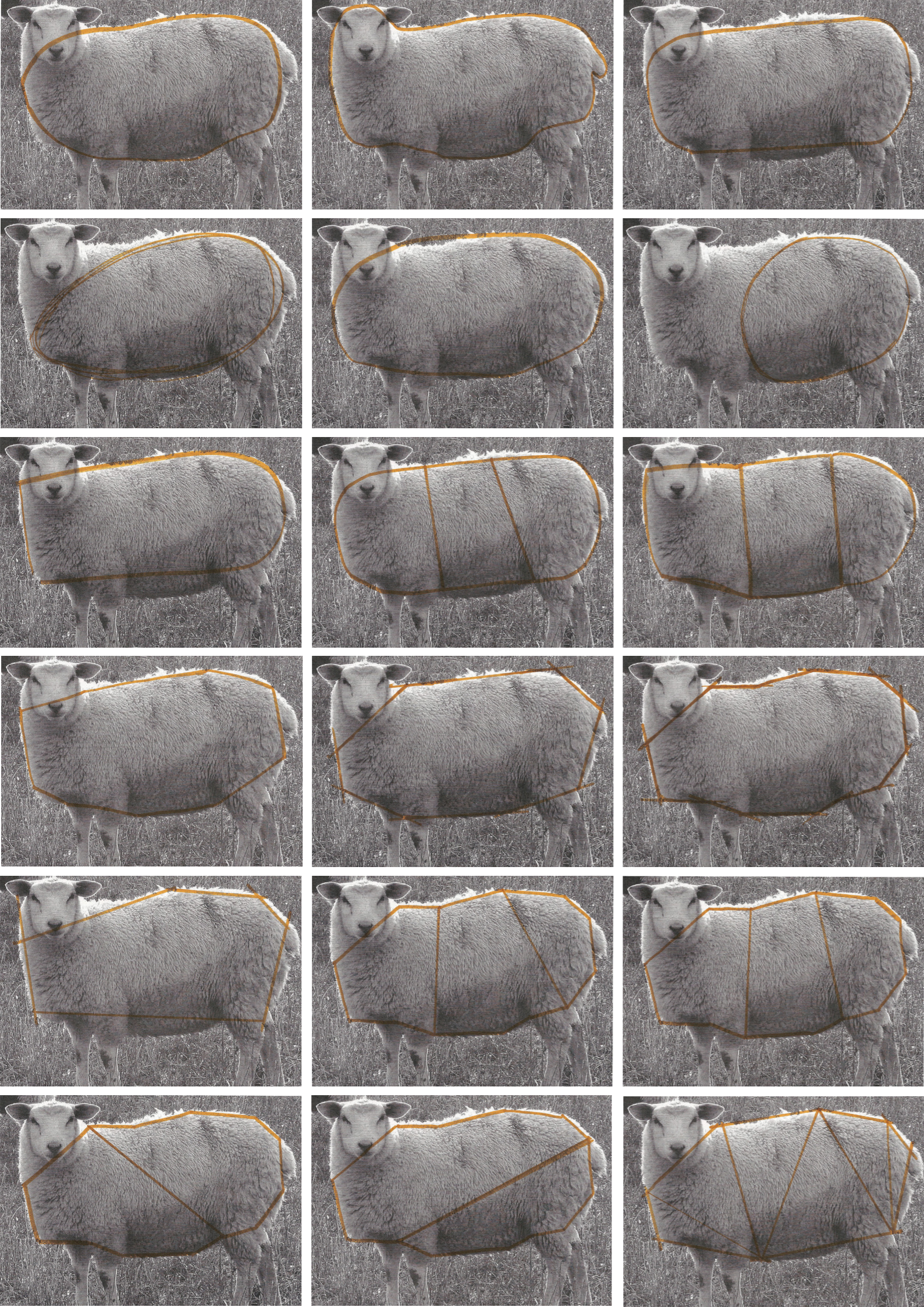
However this was a fun start but did not feel like it led anywhere. Another thought was how would the wood fit into the picture, so in the end this did not really make sense. During a discussion with my supervisor we came to talk about the spider web diagrams and how the outcome could be the shapes of the carpets - carpets with a hidden message - the environmental impact of the fibre. Sketching was made by switching the place of the symbols around in the diagram, this made the shapes different. From this the first shapes were chosen and from there I continued work with them.

During the process I had chosen simple symbols for the variables in the spider web diagram, but while working on the design I started to think if they should be shown or not. Though I wanted to have a hidden message in the carpet I choose not to incorporate them, including the symbols as a picture would have created an “in-your-face” statement in the piece something I didn’t want. I wanted the story to be hidden in the design and have the freedom to design from a meaning, which in the end didn’t need to be exactly literal. The form would be seen as a modern version of the traditional symbolism in old carpets.

Somewhere in the beginning of this project I also had the idea of make the carpets work together as one. Away to use the carpet for a longer time and add on pieces or place pieces together to create a bigger carpet or new form when you need it. This in combination with the environmental value was what I continued to work with.

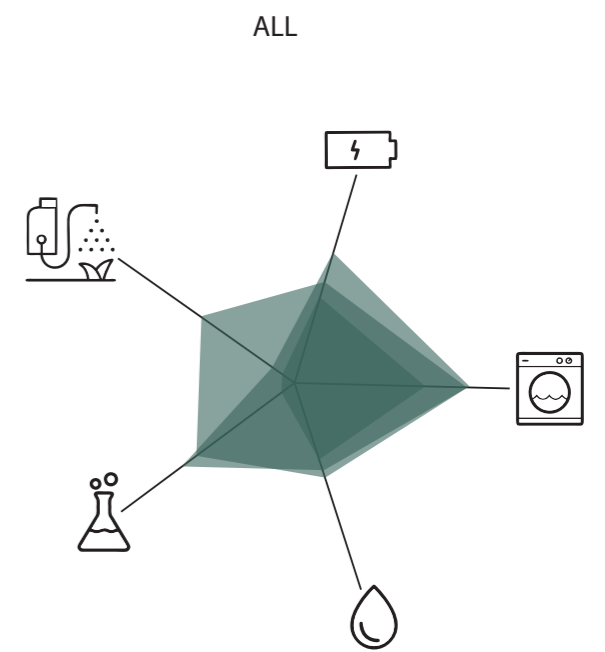
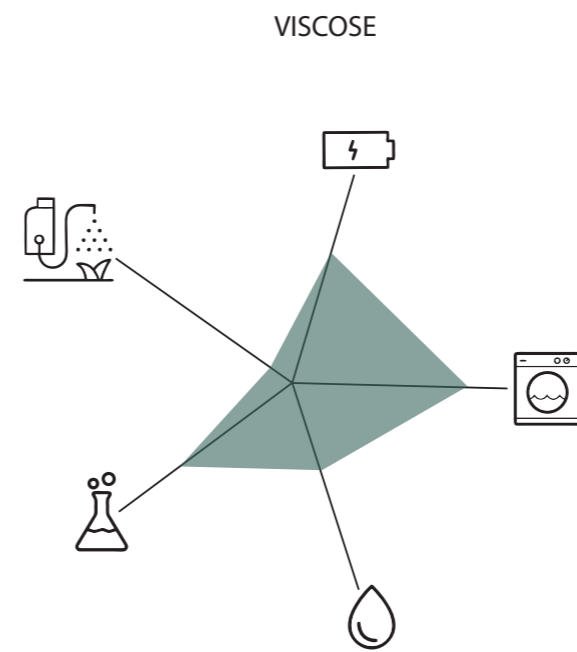
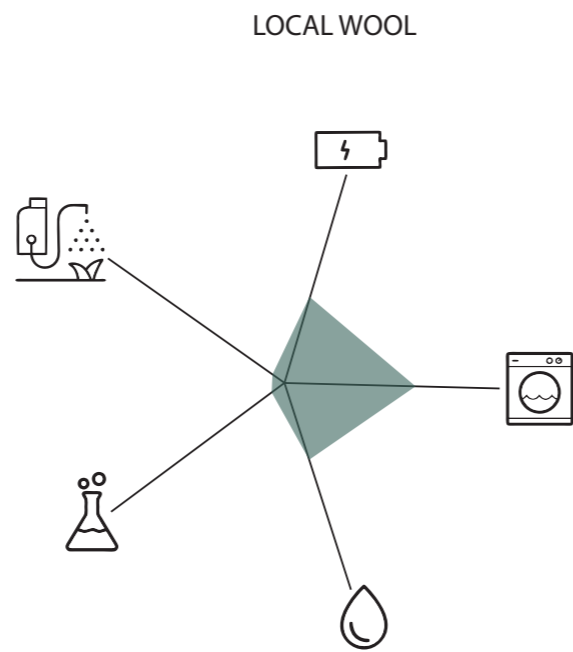
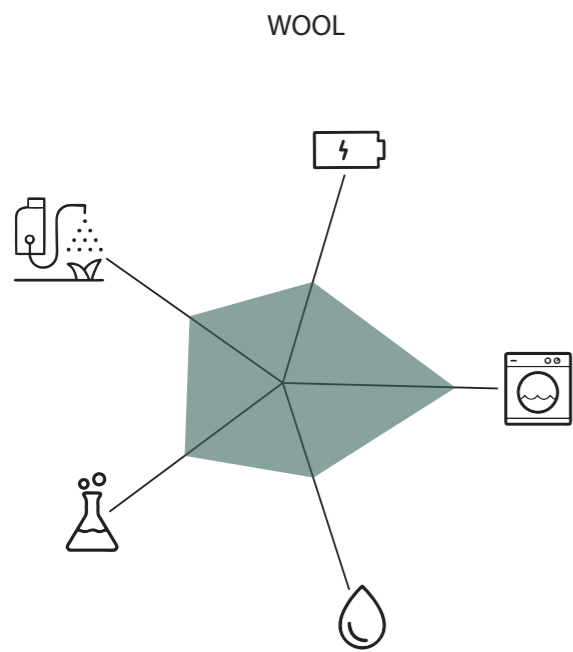
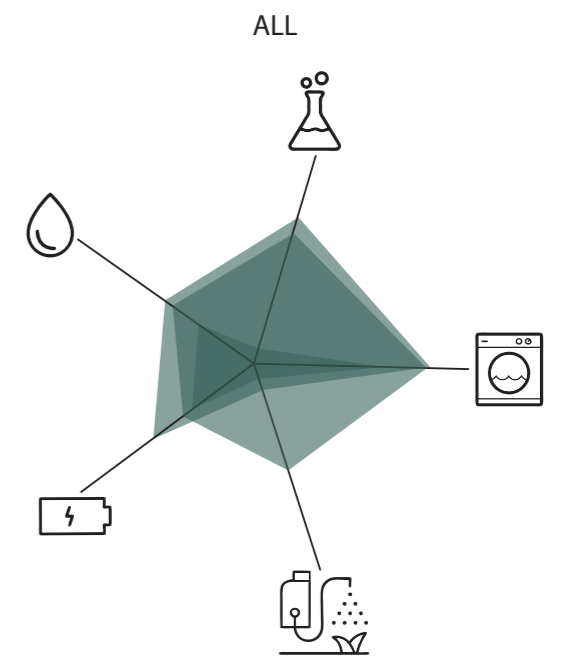
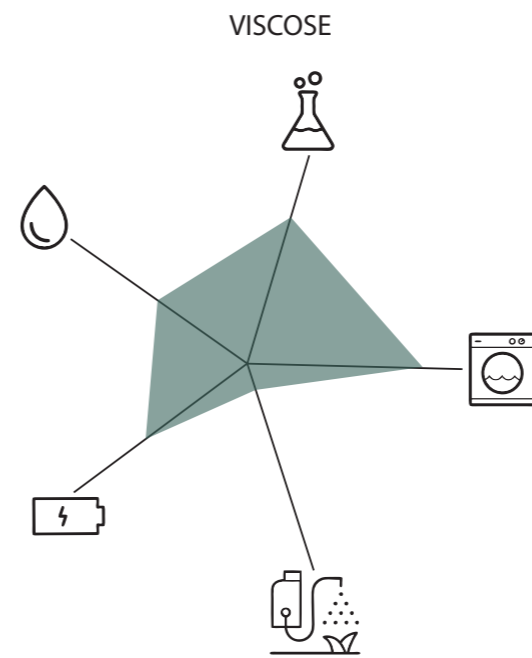
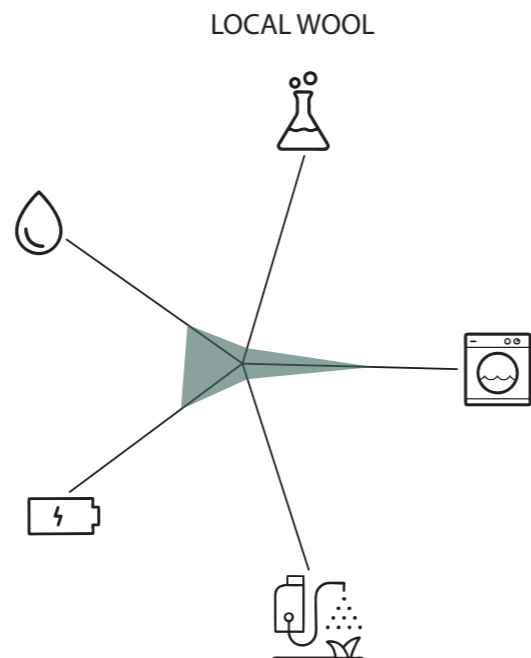
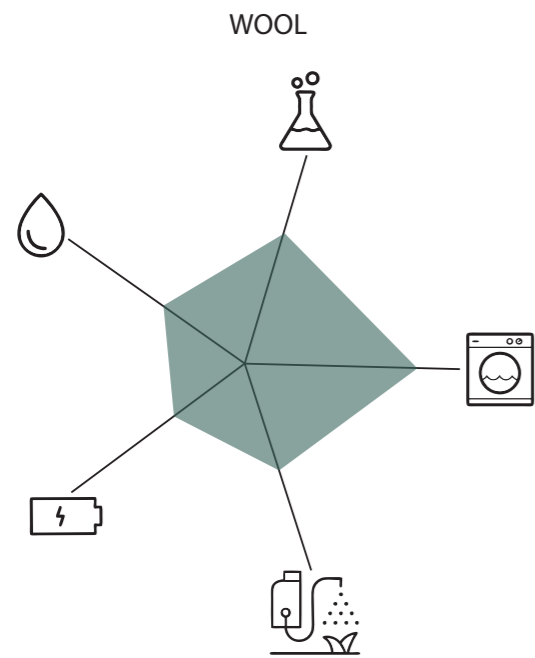
In parts of the sketching process I will be sketching as if a carpet of viscose could be made.





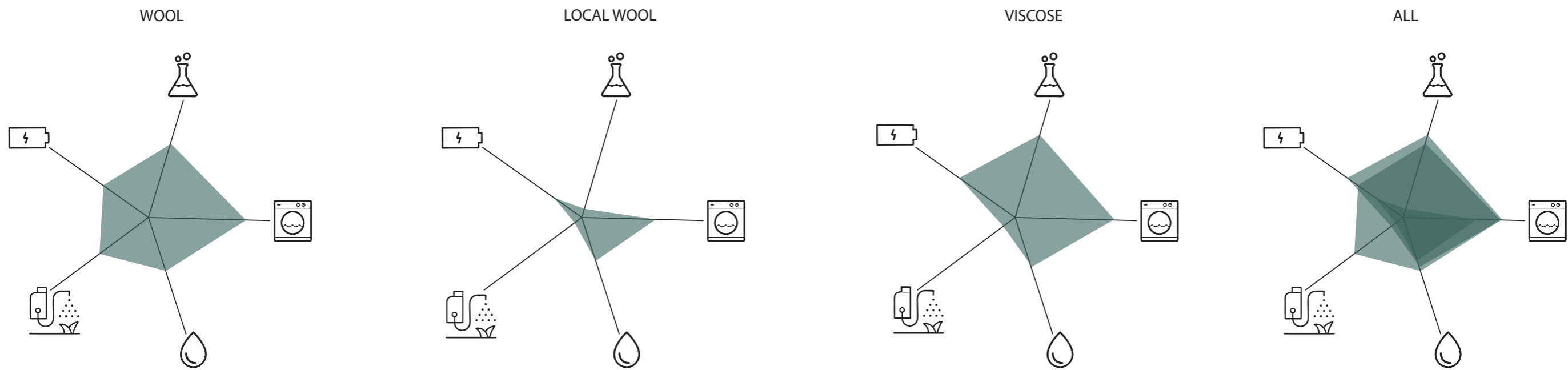
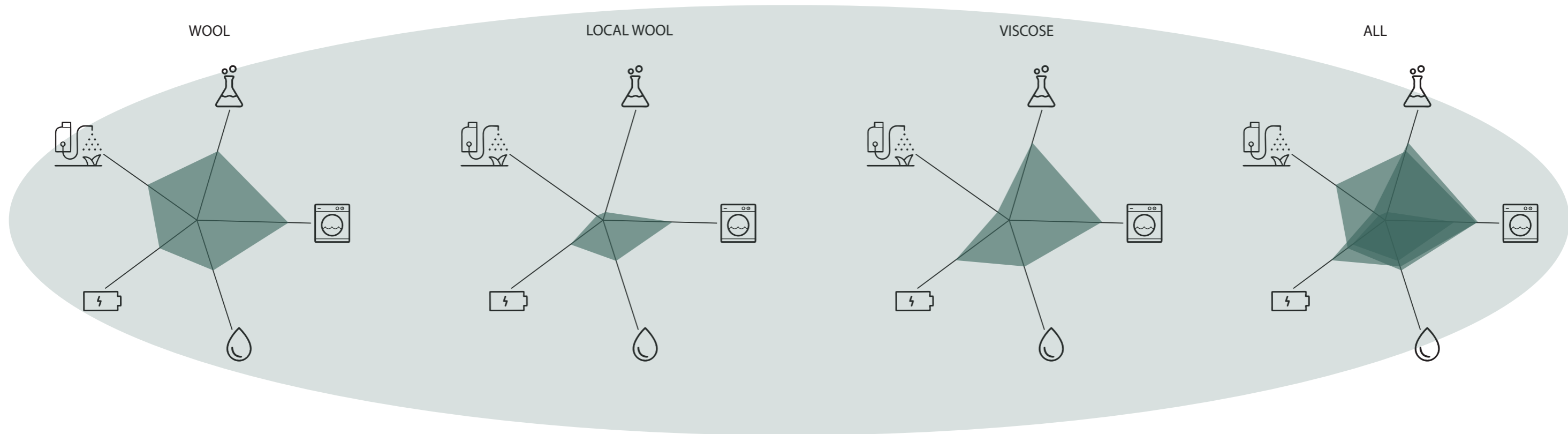
*What shape has a sheep really?*





*Spiderwebb-diagram - carpets with a hidden message, the environmental impact of the fibre.*





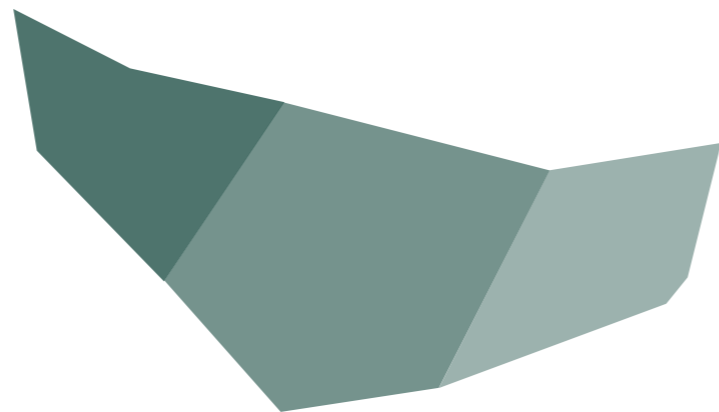
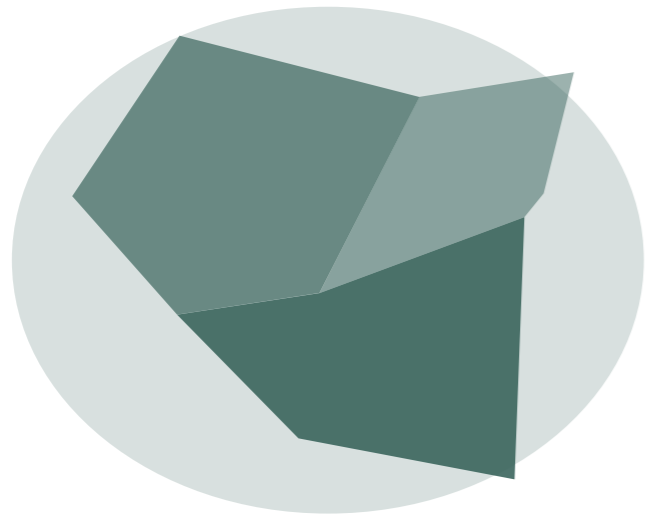
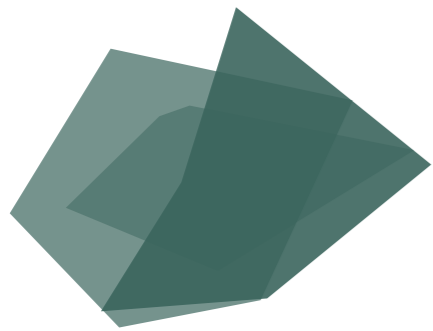




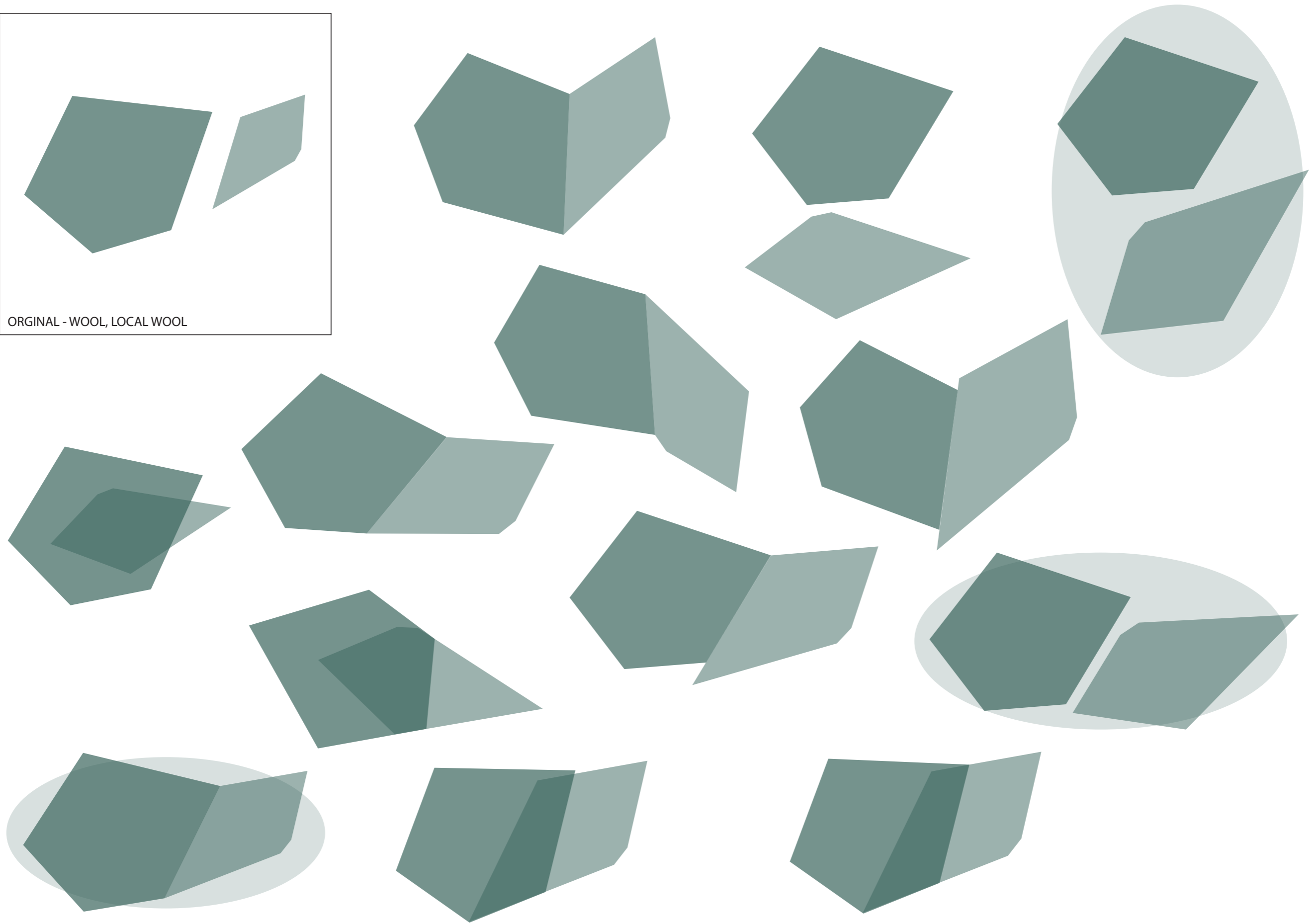
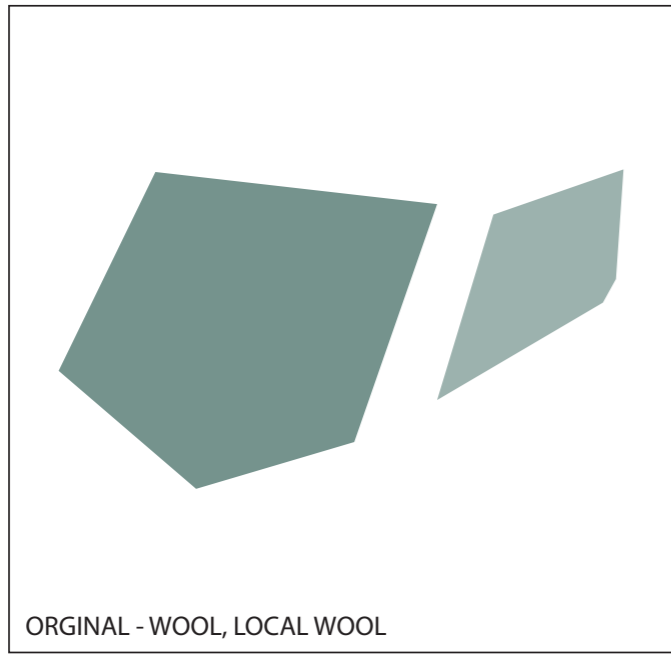
ORIGINAL - VISCOSE, WOOL, LOCAL WOOL



*Work together and  
separated.*



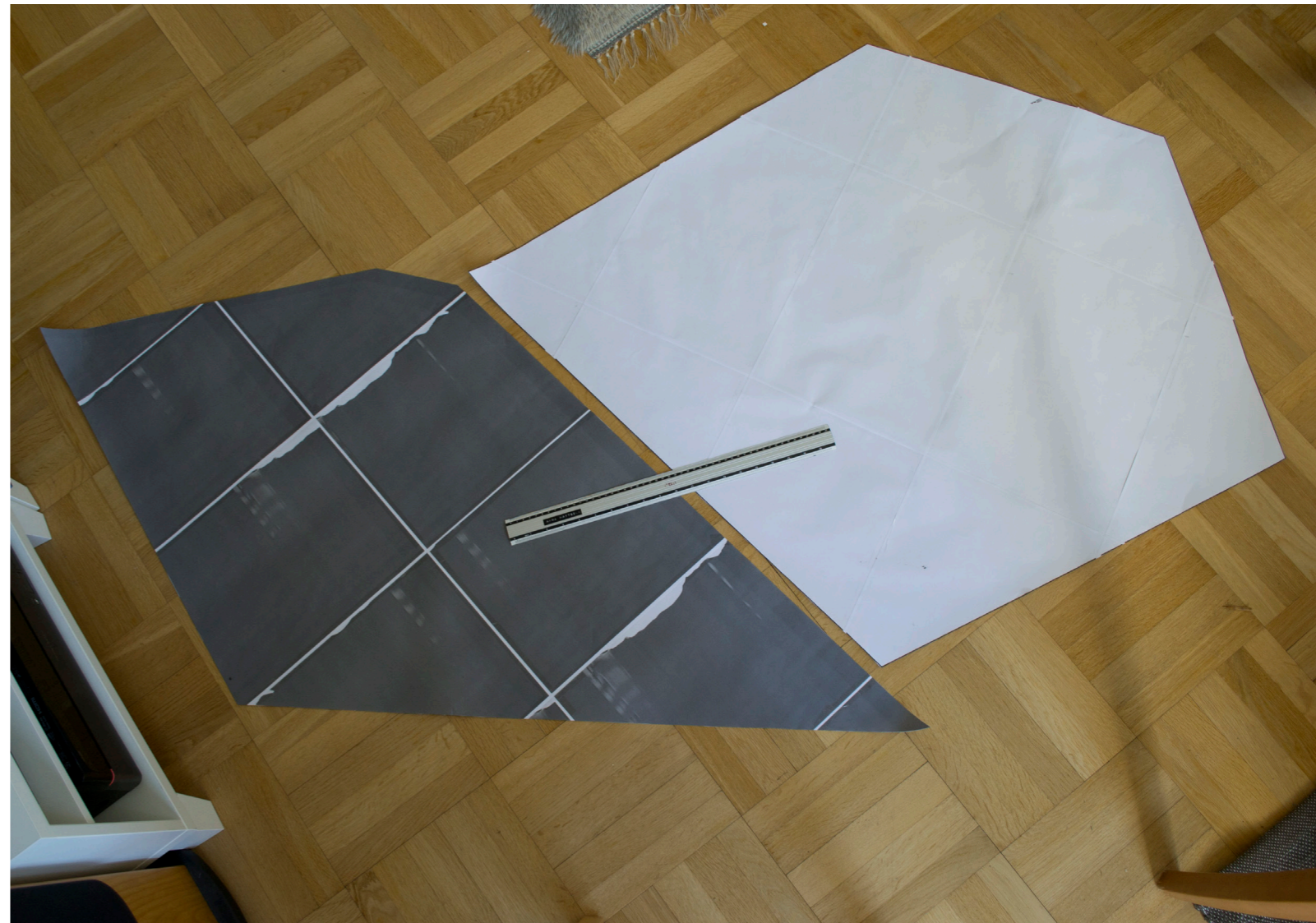
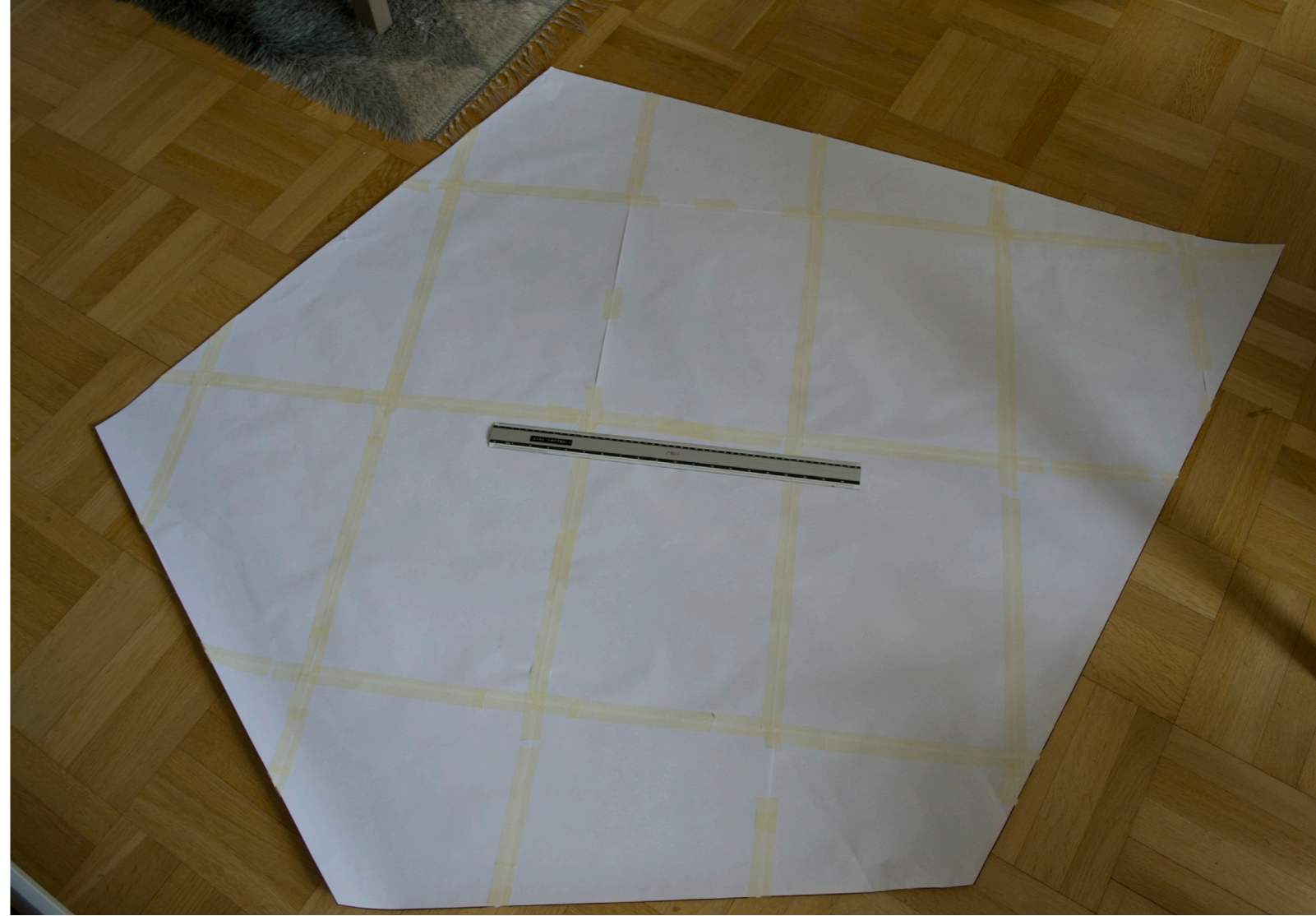




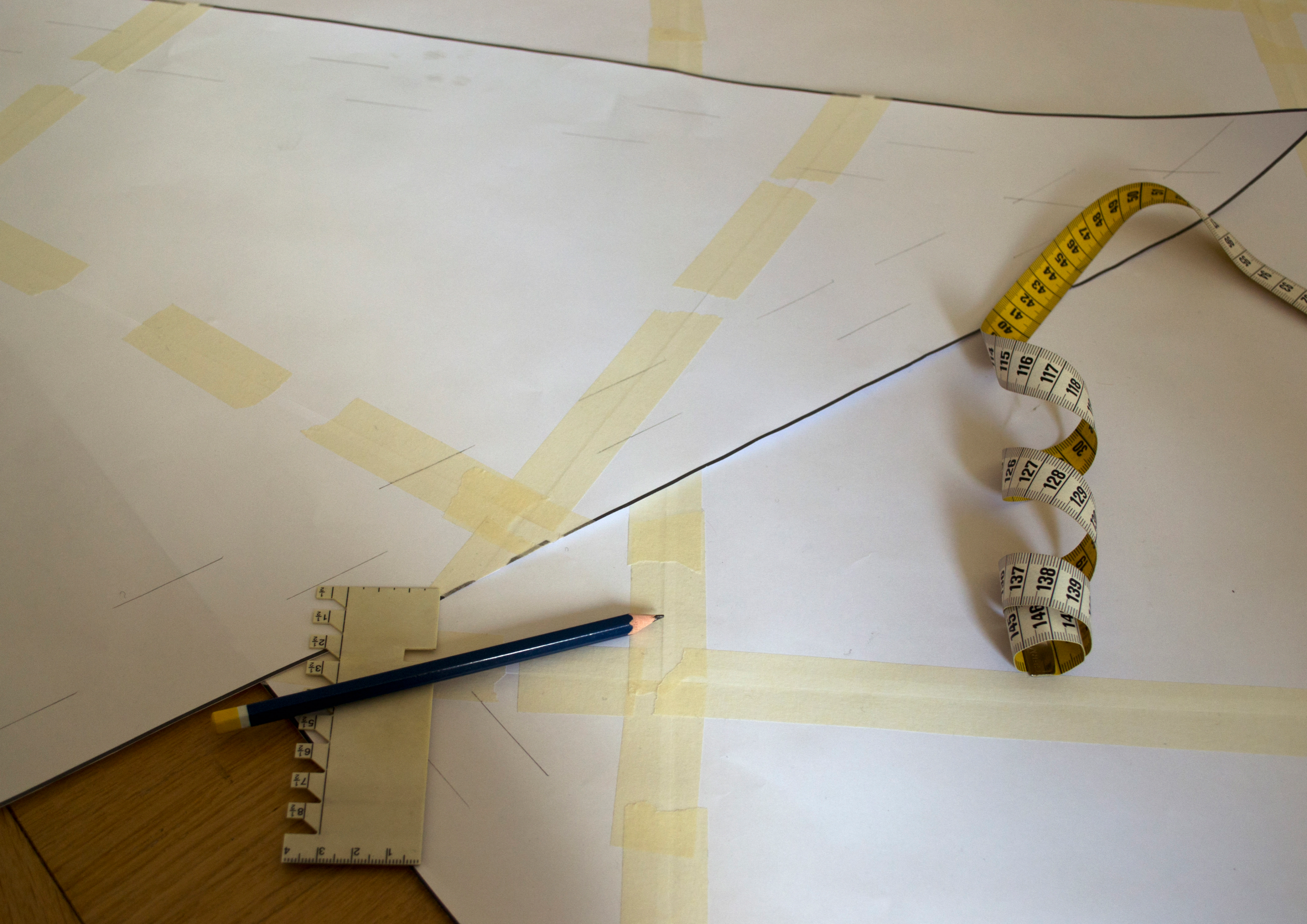


## SIZE

When taking decisions regarding the sizes of the carpet, it needed to be tried out. This is quickly done with paper mock-ups. Full-scale paper models were printed out and placed on the floor in an interior environment. During this step changes were done directly on the models and final paper model is later on used as a pattern for the tufting.









## YARN

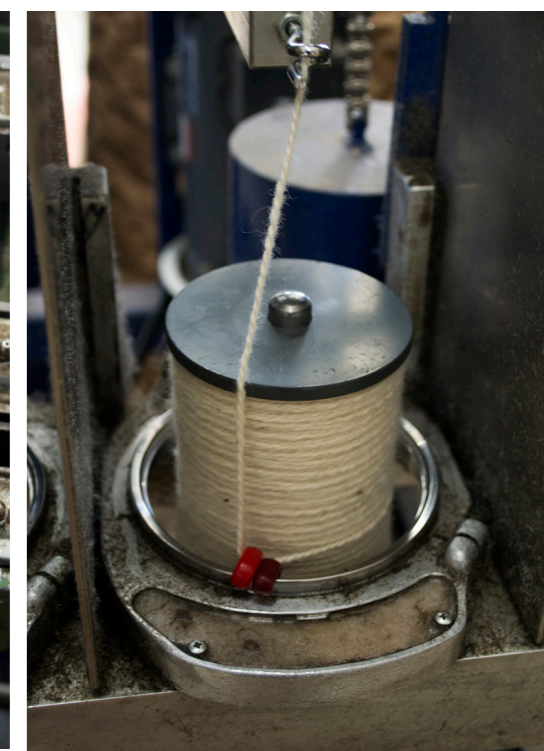
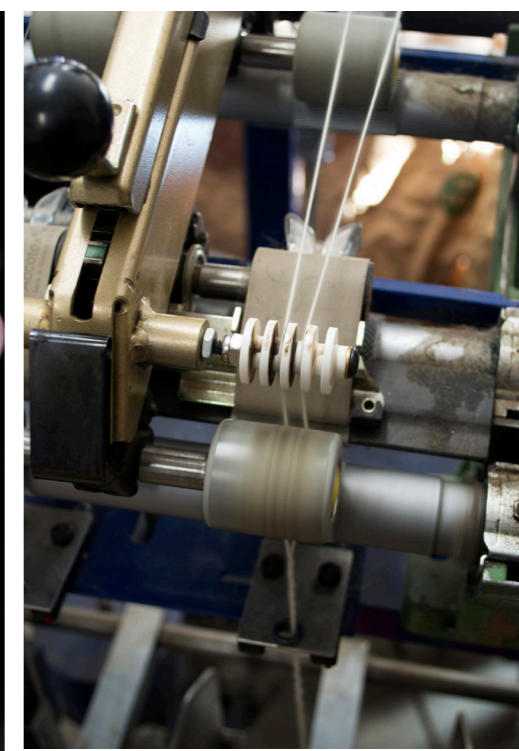
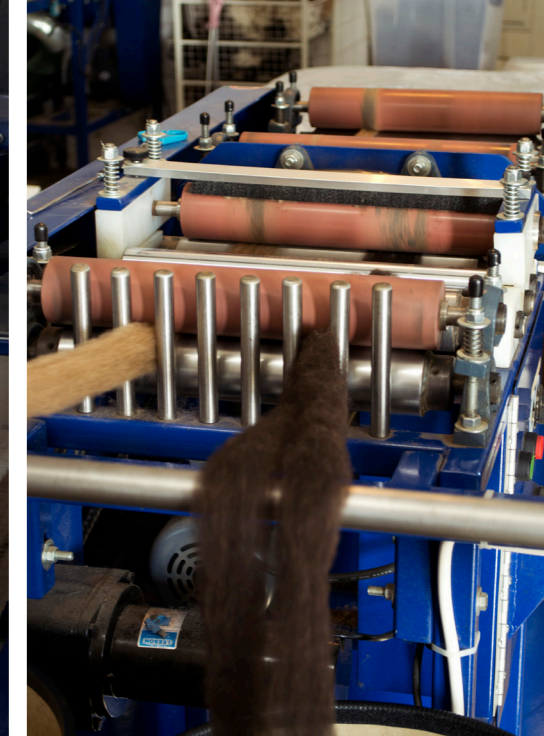
During this project two types of yarns has been used. First we have the local wool spun at Alpaca of Sweden, and second there is the yarn from Hilesvåg. These yarns are rest yarns that R. Brenner had in stock and I could use during this project.

In this part of the text I will shortly write about the yarn making process at Alpaca of Sweden. After talking to R. Brenner and L. Runeman I knew that I needed a strong yarn because of the forces it is exposed to, but not too hard due it should be possible for the air to transport it through the machine.

Making the yarn is a process of it is own. Before the wool becomes a thread it goes through several steps. Quickly explained out from the steps at Alpaca of Sweden the wool is first sorted, dirty wool is thrown away, and then it is washed. When dried the wool goes true two different steps where it is fluffed up and more dirt is removed. After this it goes into the first carding machine, which is there for putting the fibres in the same direction, next step is the second carding machine this step is done twice. Now the fluffed wool as turned into something that looks like a thick, loose yarn, however time has come to twist it. So the fluff turns into one thread, which in my case is spun together with another one. This gives a finished two threaded yarn. Last the yarn is steamed to prevent it from untwist itself. (M. Merits, personal communication, 2017)

Resulted in a two treated yarn, that has a rather strong twist, and is loser spun. It is made for the technique it should be just in, were a yarn is needed that can take the power off the compressed air without breaking and be loose enough to be blown thru the backing. Thru e-mail communication with the company I have told them what colour and kind of wool I wanted. So at my arrival the wool was already sorted, washed and dried, something that takes avail.

Comparing this wool to the wool from Hilesvåg the biggest difference is the shine and that is still the smell of sheep's if you stick your nose into. Probably this comes from that the wool at Alpaca of Sweden is not washed as hard as the other one.





## COLOURS

When it comes to colours I began with the local wool, because here I had the limitation of natural colour this due to the fact that Alpaca of Sweden do not dye their yarns. Sheep wool do have a lot of different hues of natural colour, however I wanted to enhance the material so in the end I choose to work with a natural white. Hence I believe this colour is most connected to sheep's. Dyeing is also a big part of where allot of chemicals comes from that are used in the textile processes. From this I thought of the other carpet, which direction should I go? Knowing that I was working with rest material, I did not know what would be available at the tufting studio, so I liked to stay open-minded. What I did know was that I would like to work with a contrasting darker colour, this dissipate the fact of environmental issues with colouring.

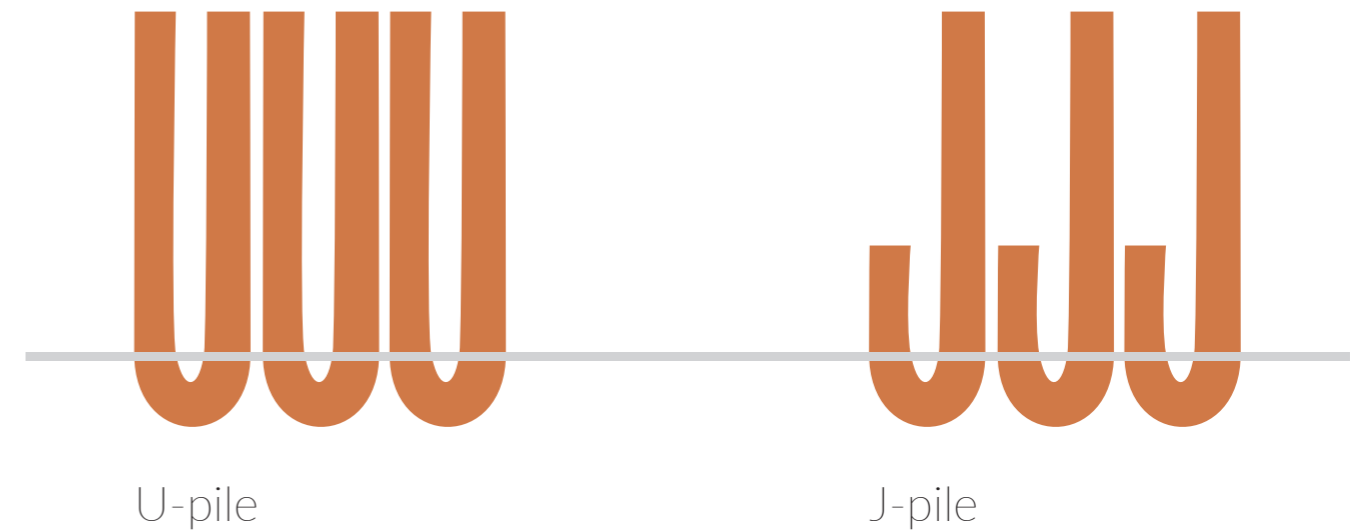
One interesting feature with tufting is that you can use more than one yarn at the time. This makes it possible to mix different colours, and compare to weaving they blend together in totally different way. So from the rest materials a mixture of 5 different yarns in the hue of blue, grey and green was chosen. To find the right combination pom-poms of every colour combination was made. This is important do otherwise it impossible to know how the colour would look like. In a carpet the colour is seen from above, from the cut end of the yarn instead of from the side as in weaving, so it is first then the colour really visible.

## PRODUCTION

The tufting process has been explained earlier on in this report, in this part I will write more about my chose and how the work was done.

I tried to work out from the principle 2 stitches every 1 centimetre and 2 row each centimetre in height. This was sometimes not the easiest thing, which can be seen on the backside. All the tufting was done from left to right, då I tried to get a flow in the production. Before starting some decisions need to be taken; length of the pile, u-pile or j-pile, size, form and colour.

In tufting you can work with either a u-pile or a j-pile. This means if the lengths of the pile are even or if one side is longer/ shorter, see illustrations. U-pile gives a uniform surface while j-pile gives an uneven and more sprettig. I wanted an even and smooth surface which made me go for the u-pile.















RESULT



# PRICE VS. VALUE

First the physical result, two tufted carpets designed from the spider web diagram comparing the environmental impact of different textile materials. One made by natural coloured yarn, produced in Sweden from Swedish wool. The other one in dyed rest yarns from a Norwegian company, with wool from both Norway and New Zealand.

Final size:

Dark blue - 1300 x 1700 mm

Nature - 750 x 1550 mm

Both have a u-pile that is 20 mm high, the distance between treads creates a soft and compact standing surface.

I do not believe that local production is as simple as only the distance to the consumer. For me a lot of it comes down to the eyes of the viewer; where am I and how am I. Am I a consumer, designer or producer. These people have different points of view what local could be. If we look at a production chain can it be just as local on the other side of the world, the only difference is that we are not there. The problem I see lies in the speed of mass production and poor working conditions.

So what does it cost? For my calculation I have been using calculation tool on Verksam.se, ([www.verksam.se](http://www.verksam.se)). The prices are what I would need to sell the carpets including design, production, material, workshop rent and so on.

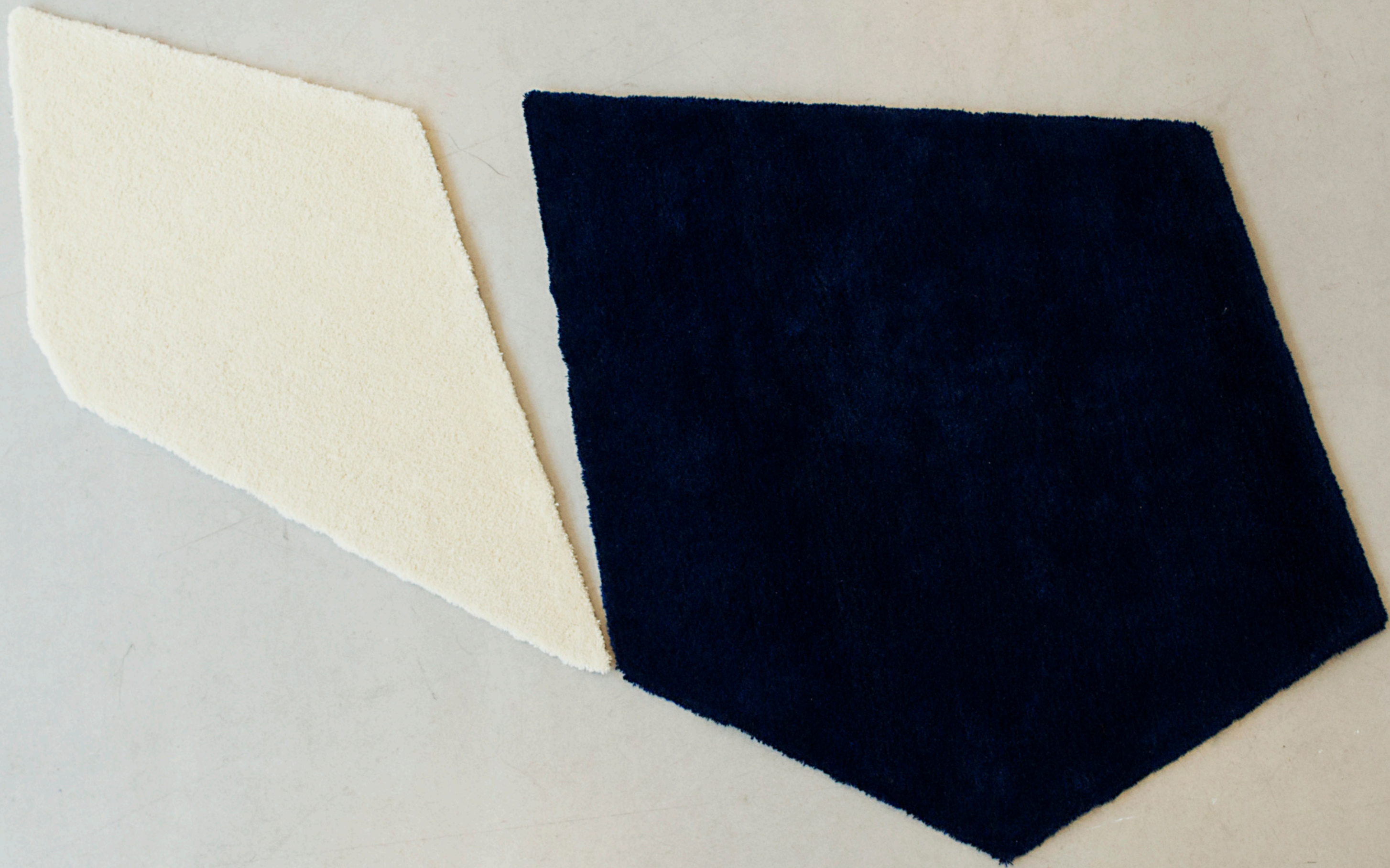
Dark blue would have the prices of 13 659 SEK and the Nature one 13 224 SEK. For selling this kind of items in a store the prices is way too high, I would say. What I find interesting is how close to each other the prices are, which only comes down to the materials. Adding a value/statement to a product for me makes it more durable and meaningful to pay a higher price.

A more reasonable price for the consumer would be given if I look at the prices from R. Brenner. However this can only be done on the Dark blue carpet, due to different material producer. According to this the prices should be 8 667 SEK. Realistic carpets should be done on-demand, just as Design Brenner and Kasthall do. This also speaks to a better production culture in terms of making what the consumer needs.

Designers having a control and understanding of over the production I believe are important, and working locally is a way to do this. So it is absolutely possible to design and produce items locally, a lot of designers do this today.

Furthermore I have learned the technique tufting and gain knowledge of how it works. A technique I find attractive and inspiring to continue working with. I have also learned more how I want to work in the future. To me it is important to know how and where an item is made, but I do not need to do it myself. Designing with reflection and a value is something that I would like to do more and push myself into doing.











# REFLECTION

First there is the question about the glue. During this project I used the glue that was available for me, due to the time and that this glue was tested for a long lasting item. However this glue is not so environmental friendly, and would have been interesting to look into the possibly to work something more sustainable.

Furthermore I think I should have considered made from a renewable resource and re-use as variable. These variables would not have make polyester seem so favourable.

Another thing that came up during my presentation was that I should have shown more of the values in the final result and not only the form. So that the consumer somehow could see what every corner stand for. As could be read under Concept I thought a bit about this, and came to the conclusion that I did not want a “in-your-face” statement, but this could have been solved by placing symbols on the backside of the carpet and working more around the overall package. Playing with the backside would still make the product subtle.

Overall I am satisfied with this project and the result. I know more of how I like to work, were I want to be as designer. At the moment the carpets will have a special place in my own home.



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## Thanks to

First of all to Rolf Brenner and Elisabeth Brenner, Design Brenner, for taking me in, answering all my questions and teaching me so much about tufting.

Madelene Merits, Alpaca of Sweden, for the help with the yarn and letting me visit your fabric.

Roger Högberg, Swedish School of Textiles, University of Borås  
Lasse Runeman, HiTex  
Jenny & Ola, Stoff Studio  
Petter Magnusson, Klippans Yllefabrik AB  
Hanna Bruce, Växbo Lin  
and all other interviewees for your time and for enthusiastically sharing your personal stories.

Anna and Olof for our interesting and inspiring discussions.

My opponents and dear friends Paulin Mitaka and Isis Flote for the support and feedback.

*Anna Mattsson  
Malmö, June 2017*





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