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Traditional Craft and Cultural Design

Combining Hmong Handicraft and Finnish Design

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Many traditional crafts that define cultures are disappearing because of social change. In making them commercial they can be kept alive. The graduation project focuses on combining traditional crafts with design, taking Vietnamese Hmong craft as a starting-point.

The project is based on process and study on materials and production ways, based on research on the social environment of the producer. It concludes in a concept and examples of its application.

Keywords: Craft, Design, Bamboo, Indigo, Vietnam
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Introduction

Topic and Background
Research Format
Since centuries people have been practicing different crafts all over the world. Craftsmen have gained a very deep knowledge of different materials and production techniques through generations. Mostly they have focused on one craft and often there is no link to between the technique to nowadays needs. For these reasons many traditionally practiced crafts are dwindling.

My bachelor project focuses on the integration of traditional crafts into design.

I focused on features of Vietnamese Hmong craft and Finnish design and combined them into different objects.

For many generations people from the Vietnamese Hmong minority have been practicing bamboo weaving and indigo dying. They have never practiced it for commercial purposes, but only for their own demands. Because of their need for an income and the time-consuming process of their crafts, the expertise is decreasing.

I am aiming to transfer some of the cultural features of Hmong craft to a shape that would make it possible to give the people an income without destroying their culture and way of life. At the same time I intend to connect traditional Hmong craft to Finnish woodwork, to give a wide range of application methods.

The project consists of three parts:

Research, collaboration and product development.

I went to Vietnam to get to know the minority culture and their crafts. In the first part I did some general research on serial production of bamboo-products in Vietnam. After that I concentrated my research on crafts of the minorities in Northern Vietnam.

In the second part I actually worked together with a Hmong specialist bamboo craftsman, exploring material possibilities and cross-cultural communication. Concluding from the observation of cultural factors I will chose the most suited materials that could be produced in serial manufacture in a domestic environment in traditional production.

The third part consists of developing examples of Hmong material use taking into account the collaboration results, combining it with materials and aspects that are traditional for Finnish design.

I documented the research and collaboration process with pictures to explain my personal research. A large part of my research developed within conversations and observation.
2

Culture and Design

Crafts and Design
Concepts of Crafts and Design
Finnish Design
Crafts and Design

Before industrialisation, crafts were the usual production procedure. All production of goods used to happen in small-scale production. Because of less machinery, many goods require a high level of skills for their manufacture. These skills were past from one generation to the next and improved within time.

After the second industrialisation craftsmanship lost its significance. The production developed to be more or less automatic and goods started to be mass-produced. Influenced by new production techniques and material possibilities production processes were accelerated and shapes simplified. With the new methods of production modern design as we know it started to develop.

The result is a lot of products that neither refer to their culture of origin nor have any emotional value to the person owning it. In times when mass-production made products available for everybody at a very low price, people are starting to change their minds. They start to look at quality instead of quantity and long for added emotional value in their possessions through craftsmanship. "In a culture with a surfeit of branding and cheap mass-produced goods, we romanticise the handmade because we yearn for quality, not quantity." (Justin McGuirk, The Guardian, 2011.)

Cultural design combines traditional crafts and serial production in transferring traditional elements such as patterns, materials and production techniques to modern design objects. The process is happening as well aesthetically as technically transforming the production process for commercial production. Cultural product design is a process of rethinking or reviewing cultural features and then redefining the process in order to design a new product to fit into society and satisfy consumers with via culture and aesthetic. (Rungtai Lin, 2009, 4)

Local craft is a reflection of the relationship between humans and their environment within their historical, cultural, and social contexts.

(Fang-Wu Tung, 2012, Weaving with rush: Exploring craft-design collaborations in revitalizing a local craft)
Concepts of Crafts and Design

Many examples of supporting traditional crafts and combining them to nowadays needs work as certified fair trade companies.

There are many fair trade companies that produce in areas like Asia and Africa. Mostly the producers are from the same social background, supported by associations or people who have an interest in providing better living standards for people with less means. Many projects support people that are somehow disadvantaged.

Through the fair trade certification fair treatment of employees and environmental sustainability is granted.

1

Nisolo produces high quality leather shoes in Peru. It was founded by Patrick Woodyard who discovered remarkable shoemakers in the city Trujillo. He realized that the greatest challenge for skilled craftsmen was to enter the global market and decided to support them.

2

The Anchal Project was founded by graduates of the Rhode Island School of Design. They produce home-ware from vintage Saris and employ former sex-workers from India.

3

Mifuko that was founded by two Finnish designers who collaborate with Kenyan artisans making jewellery and baskets combining traditional crafts and Finnish design.

Since 2000, fair trade sales and consumer awareness have increased tremendously, as the range of fair trade organizations has also expanded.

(www.fairtradefederation.org)
Finnish Design

Finnish design has many faces. It can appear as the combination of functionality and the conscious use of materials. Craftsmanship and the connection to nature is an important part especially of Finnish furniture design. Finland has moved from being a country of self-sufficient farmers to an industrial society only two generations ago. The influence of these times is still very visible in the valuation of craftsmanship. Although a lot of products are focusing on functionality, aesthetics and material expertise are very important.
(Ahtisaari, 2014)

Applied crafts are also a significant part of the design spectrum. Designers Oiva Toikka and Kaj Franck combined crafts and design. Not all products are only functional, but also focused on visual appearance and material qualities.

"Building art is a synthesis of life in materialised form. We should try to bring in under the same hat not a splintered way of thinking, but all in harmony together."
-Alvar Aalto (www.foundationsakc.com).

There are some who think they know what Finnish design is, but it is not that way. It is a mix of things.
-Oiva Toikka (Ahtisaari, 2014).

"The potential of each material has always been my starting point."

People need to maintain the ability to feel and work with their hands, and not just with their minds."
The Hmong Minority

Background
Minority Hmong Crafts
The Hmong minority is one of the ten largest minorities that live in Vietnam. There are many subgroups, that are usually named referring to their traditional clothing. Most Vietnamese Hmong people immigrated about 300 years ago from China. Because the lowlands were already populated at that time, they had to settle in the Northern mountains in the Lao Cai and Bac Ha region. Traditionally Hmong people live as farmers, growing rice and corn and farming animals like chicken, water buffaloes and pigs. Thereby they are living an almost self-contained life. 98 % live in household enterprises 1.3 % of Hmong population is in state service and only 0.2 % have own business. 96 % of Hmong population are rated as very poor. Hmong people are only poorly provided with housing, electricity, necessary medicine and hygiene. Due to a very low literacy rate (37.7 %) it is very hard for Hmong people to find employment.

(http://hmongstudies.org, 03.2016)
(www.un.org 03.2016)

Not looking at the statistics but speaking to people, they appear to live a very fulfilling life. The family is the centre of attention and people live closely together supporting each other in their communities. Everybody works together and everything belongs together. There is not a clear dividing line between work-life and family-life like in Europe. While people work, they carry their children on their back. Animals are everywhere and a part of daily life. Nevertheless people are desperate for an income to provide for materials or medical treatment. Many Hmong women try to sell vintage clothes or hand-crafted things to tourists.
For centuries crafts were a substantial part of life in Vietnamese minority communities. In their self-contained way of living they have been producing clothes, furniture, tools, houses etc. themselves. Thus people from Vietnamese minorities have gained a deep understanding of the materials in their use such as wood, hemp, bamboo and indigo and other natural dyes.

Clothing is a very central part in Hmong culture. Each subgroup has their own tradition and style of dressing. Traditionally Hmong people made their new clothing for the of the New Year festival in February. Making a whole garment takes about one year. Because of this time-consuming process, many subgroups have already given up on producing traditional clothing themselves and buy copied polyester versions made in China. The result is that the amount of skilled people who know traditional crafts is decreasing. Most rapidly this happens in clothing manufacturing, but also other crafts like bamboo basketry suffer of lacking practice.

“Household based handicrafts such as cloth dyeing with indigo, cotton weaving, silver jewellery making, forging and carpentry, etc. are only pursued at idle times of the agricultural cycle principally to serve daily needs and sometimes for trade (Tran, 1996, 2006).”
(http://hmongstudies.org, 03.2016)

Hmong people don’t usually practice their crafts for commercial purposes. Thereby they don’t profit financially from their skills.
Polyester threads that Flower Hmong people use nowadays for their embroidery

Polyester replications of Hmong skirts

Flower Hmong people

Naturally dyed sleeve of a jacket from the Black Hmong Minority

Indigo dyed hand-spun cotton drying in the sun.

A little girl from the La Chi minority wearing a hat that was dyed with natural colours
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The Bamboo Plant

Bamboo is one major non forest products that grows in different tropical, subtropical and mild climate areas of the world. Mainly it is found in Asia, Africa, Central- and North-America. It is a flowering perennial evergreen plant. Botanically it belongs to the grass family Poaceae as the subfamily Bambusideae. It is known as “the wood of the poor” and the “the friend of the People ”and is mentioned in many tales and legends. (David Farrely, 1984,3) (Huu Ngoc, Lady Borton, 2011, 13)

Worldwide there are about 1200 species in some 90 genera. Bamboo flowers in long irregular cycles which are still not fully understood by science, it can live up to a hundred years and flowers only once before it dies. It is a very diverse plant, there are species that only grow up to a few centimetres and giants that grow up to 50 m high with a diameter of 30 cm. Different kinds have their own properties and favoured growing conditions, but are also able to adapt to different climates and to recover from natural catastrophes. As one of the most efficient cellulose producers, bamboo can originate up to a six times as much cellulose per acre as pine. That makes bamboo a very sustainable material source. (David Farrely, 1984, p. 3)

Bamboo columns are grown from rhizomes or seeds. There are two general patterns, "clumping" (sympodial) and "running" (monopodial) within the bamboo species. "Clumping" bamboo species expand their rhizomes gradually, so they spread slowly. "Running" bamboo has potential for aggressive behaviour because the rhizomes spread widely underground and can send up new columns to the surface. The column growth is depended on soil and climate. Bamboo in the same genera can behave differently due to different growing conditions. When cutting bamboo columns, the rhizomes can regenerate when not taken out of the ground and produce new column growth. (David Farrely, 1984, p. 139–140)

Unlike other plants bamboo columns reaches full height and diameter in one growing season of three to four months. When the majority of the full height is reaches the column starts branching. The branches emerge from the nodes and leaving out occurs. In second and third growing season the fibres of the column harden and the shoot is considered a full column. The column is ready to harvest for 3–7 years and depending on the species decay. Because of fungal growth in the sclerenchymatous column it finally most likely collapses. (David Farrely, 1984, p. 140)

The property of bamboo as a material is entirely different from timber. Because it is a glass-like plant, the fibres are differently assembled. The stem is divided by nodes in an even frequency. The fibres are densest on the outer layer loosening towards the centre. It is coated by the "enamel layer", that is about ¼ mm wide, the hardest part column. The layer contains a high rate of silica that protects the plant. Approximately, a bamboo column has 40 % fibres, 10 % vessels and 50 % parenchyma. The vessels transport liquids during growth and the cellulose fibres strengthen the columns. Because of the higher density of the cellulose fibres on right underneath the enamel layer this is the strongest and most valuable part of the column, that is used for weaving and for composites. The columns are split and the enamel layer is removed. Then the material is treated in a green state with different procedures. (David Farrely, 1984, 142) http://humanitarianlibrary.org, Designing and Building with Bamboo, Jules J.A. Janssen)
1. Cut bamboo poles with different diameters.

2. The bamboo pole cut at an intersection node.

3. A bamboo forest.

4. Running bamboo structure.

5. A bamboo pole cut in the middle. The intersection nodes are increasing towards the start of the visible column.
Bamboo in Design and Architecture

Because of its quick growth, bamboo is starting to be in the focus of different sustainable design solutions. Several bamboo projects have won important awards and got a lot of recognition. Designers like Constantin Gricic and companies like Artek and Alessi have recognized the great opportunities the material provides. Being a sustainable and formable material at the same time, bamboo has become an interesting material for the furniture industry.

Bamboo is used in traditional and new ways which are derived from traditional production techniques. In the 19th century bamboo was already used for woven furniture imported from colonial countries. Since then bamboo has undergone a transformation because of the growing possibilities of manufacturing techniques.

“I think bamboo and laminated bamboo will replace other materials and become the 'green steel' of the 21st century.”

-Vo Trong Nghia
(www.dezeen.com, 03.16)

“This has the potential to revolutionise our building industry and finally provide an alternative to the monopoly of reinforced concrete.”

-Dirk Hebel,
(dezeen.com, 03.2016)

“Bamboo is kosher. It’s green, 100 %, and that’s a good starting point.”

-Jair Straschnow
(www.dezeen.com, 03.16)
1
A house by the Swiss-Filipino studio Atelier Sacha Cotture

2+3
The “Wind and Water” Pavilion by Vietnamese Architect Vo Trong Nghia. Inspired by traditional Vietnamese baskets, he designed a Bamboo structure that forms a dome.

4

5
Jair Straschnow’s chair from the project „Graswork“, that won the UK Museum Award. He says: “Bamboo is kosher. It’s green, 100 %, and that’s a good starting point.”
Bamboo in Asia

Bamboo holds a significant role in different Asian cultures and becomes an increasing economic factor. Because of the suitable tropical or subtropical climate, there is a wide range of different species.

Traditionally bamboo is used for many different purposes such as food, housing and tools. Because it is a material that can be both strong and hard and soft and flexible depending on its application, it is durable for usage in almost any way. That makes bamboo an essential material used in its plantation areas.

The plant has developed from a building material available even to the poorest to a substance of innovative high tech possibilities. Conscience for sustainable foresting is growing all over the world and at the same time bamboo has been discovered as a suitable substitute for wood. It is used in the industry for composite panels, textiles and paper pulp and, based on new innovations the possibilities of use are increasing.

Because bamboo is comparably simple to grow and doesn’t need expensive fertilizers, the rise of bamboo in industry is promising to have a great impact on decreasing poverty. Right now already around 600 million people are working in the bamboo industry.

(www.bamboonetwork.org, 02.2016)

The downside on current bamboo use is that there is no comprehensive data available on bamboo resources. Although bamboo is unlike timber an annually regenerating material, no sustainable harvesting method is granted yet. Because of the large natural resources there was no conscience of possibly limited capacity until now. The transportation costs are rising because the remaining natural sources are often in remote rural areas.

Bamboo is not only a plant or a material, it also has an important symbolic meaning and overall it represents the diversity of Asian culture and positive spirits.
Bamboo in Vietnam

Two baskets made from bamboo, pending from a bamboo pole is a almost stereotypical image of Vietnamese work culture. The bamboo pole is taken as a metaphor for the working life of a Vietnamese peasant. Bamboo hedges have shaped the Vietnamese countryside for centuries and thereby formed the culture and villages around. Traditional stories like "The Bamboo with a Hundred Nodes" in which bamboo is the joining link between families demonstrate the importance of bamboo just as well as the musical instruments made out of bamboo played by minority people on important festivals. Bamboo is literally a metaphorically part of Vietnamese people life from the "cradle to the grave". (Huu Ngoc, Lady Borton, 2011)

The bamboo plant is one of the most prominent features of the countryside. The country is covered by all in all about 1.3 million hectares of bamboo growth. There are 67 species that naturally occur in the country. (www.deutsche-digitale-bibliothek.de, 02.2016)

As in other Asian countries it takes a important part in daily life and mythology. Although Vietnam has a high amount of bamboo growth, the Vietnamese bamboo industry is compared to the Chinese industry behind present standard. The reason is that the development of Vietnamese bamboo industry is much slower than the one in China and more focused on the domestic market. Technology as well as education are underdeveloped in many places. (www.capacity.org 02.2016)

Bamboo plantation does not provide income until the first crops are harvested. That leaves poor farmers without any income, so they rather concentrate on quicker growing crops. Another lack of development is the fact that there is no governmental support. As a result bamboo resources are exploited by small companies. Because a consistent quality of the material can't be granted, international companies don't count on Vietnamese material suppliers and Vietnamese bamboo is mostly used for up-value products. Those products are produced mainly in the area around Hanoi with very low salaries and then sold to richer provinces of the country. Whatsoever there are two different categories of production. Companies focusing on the domestic market making brushes, baskets etc. in comparably low quality and companies focusing on export, that produce entirely different products. Products for the domestic market are mostly made in manufactures with a high rate of handicraft. Products like brushes, baskets for different purposes and pipes are produced in villages that focus their economy on artisan bamboo production. (www.capacity.org 02.2016)

The material supply comes from around the villages and is centred to one spot of the village. The bamboo is harvested, the columns are cut and then brought to the place of manufacture. The working process is divided into different working steps and shared between the craftsmen. One person usually focuses on one step of work the whole time. The production takes place either in domestic workshops or little factory places. Products for export are usually produced in more automated production. The material supply comes from another place and the bamboo arrives prepared for production. Working steps like cutting, splitting and dyeing the bamboo are done at another location. At the factory the material is manufactured into the export product, packed and labelled and sent to the final destination.
When traveling through Vietnam, bamboo is present everywhere. It is used for many different purposes as a low tech material.

1
Bamboo quarters used for fencing. It’s very typical to see that kind of fencing around houses and vegetable gardens.

2+3
Bamboo baskets used for presenting goods at the markets

4
A bamboo wall sealed with clay

5
Bamboo straps are used for packaging

6
Bamboo sprouts in the market that are used for cooking
This chapter is based on my research in Vietnam. First I will tell about my personal experience, showing examples and concluding on positive and negative factors. Then I will try to provide an idea about what I could consider to apply in the production way of the final concept.

Although with my work I am focusing on Hmong crafts, I wanted to get to know the bigger picture to consider the positive and negative factors and find out what I wanted to include in my product as a production technique. I started to do some research about how bamboo objects are usually produced in Vietnam. We went to the village Bac Giang that was promised to be a beautiful little town with bamboo production everywhere. When we got there it was empty and no bamboo was to be seen anywhere. Our driver didn’t speak a word of English and we tried to explain to him with pictures from our phones what we were looking for. He didn’t have any clue. As a woman was walking by, he asked her in Vietnamese about it. She told us to follow her. We walked through narrow streets and got in to a backyard, that seemed to be her own. She brought us little stools and indicated us to sit down. As we sat down she brought different bamboo baskets. We were not sure weather she had understood what we were actually looking for. Apparently she was making the baskets herself. We walked around in the yard and saw bamboo baskets in different stages. The Vietnamese lady finally figured out that we were interested in the making of bamboo baskets and indicated us to follow her again.

After a short walk we went into the courtyard of a large, new house. Here we saw differently coloured sticks of bamboo, thread and a few weaving looms. The place was very quiet, only one person was working on a weaving loom. We went inside the building. The whole place was filled up with weaving looms, but nobody was working. Apparently people were weaving bamboo mats from coloured bamboo sticks. In a little room we saw the finished mats packaged for shipping. Concluding from the labels on the packages they were produced for some Swiss company.

When we came outside people had gathered in front of the building. There was one lady who spoke English quite fluently. We told her that we were interested in people making things from bamboo and she said that she could show us around. The village that had seemed so empty before suddenly appeared to be a busy bamboo factory. Bamboo was everywhere, drying on the streets, in the front-yards and on the balcony’s. Everyone was very welcoming and happy to show us their work. Most people were making bamboo baskets in their front yards or in little sheds. We found our way to the bamboo market of the village, where everyone bought their material. Apparently they were using mainly one kind of bamboo. We also got to see different factories that produced traditional Vietnamese products like brushes and smoking pipes.

People were very excited about us Europeans visiting them. Apparently that was quite a rare occasion. We were invited for tea at least five times and everyone wanted to show us the bamboo products that they produced.
At a square at the edge of the village we found the central bamboo market. Most people and companies bought their bamboo from there.

1. Large stored bamboo poles on a pile

2. Women sawing bamboo poles at the ends of the sections

3. A woman piling the cut bamboo sections

4. A women tying the cut bamboo sections together

5. A women tying the cut bamboo sections together

6. Horses are still used for transporting goods
Many people were producing bamboo baskets in their own yards, using traditional methods of production. The finished pieces are sold to resellers.

1. Bamboo straps prepared for production
2. Baskets and bamboo straps drying in the sun in a yard of a house
3. The finished baskets stacked for storing
4. The bamboo straps are smoked to protect the material
5. Two stages of woven bamboo baskets
6. A woman weaving bamboo baskets
We visited a pipe factory that produced typical Vietnamese tobacco pipes. The whole production was based on low tech manufacture.

1. Bamboo poles piled up and an oven for drying

2. A lady placing metal mountings on the edge of the pipes to protect the bamboo pole

3. A worker fixing the mountings with a bottle to the pipes

4. Almost finished pipes stacked

5. The complete pipes ready for transport

6. A man smoking a bamboo pipe.
The next place was a factory for making brooms. People were working very physically and with almost no tools.

1. Brush pieces
2. Bamboo straps drying in the sun
3. A trailer filled with bamboo straps.
4. A woman using her feet for spreading the bamboo straps
5. A lady splitting bamboo with a machine
6. The splitting machine
The next factory we visited made bamboo table mats for exporting to Europe. Although the process was simple, there was more machinery.

1. A woman weaving bamboo-mats on a loom

2. The weaving process. With quick movements the weaver throws the straps between the threads.

3. Cutting of the uneven edges

4. The roled up threds on the other side of the loom

5. Bamboo straps drying in the sun

6. Chemically dyed bamboo straps
Like in other parts of Vietnam Hmong people use bamboo for building and eat the shoots.

Still there are some things made from bamboo that are special for one particular Hmong use. One example are the baskets with backstraps that Hmong people use to carry goods from charcoal to rice sacks up the mountains. The traditional headbands Black Hmong people wear are also traditionally made from bamboo and wrapped with shiny indigo dyed hemp fabric. Whatasoever bamboo in minority communities has never been used for commercial purposes, but for own domestic use. This makes the way of production, processing and practical use entirely different from current Vietnamese production.

Bamboo traditionally is a men's craft. While women made the complicated clothes men crafted tool and objects from bamboo. Nowadays bamboo craft is not practiced as much as in former days. On the markets it is easy to find the things that would be traditionally homemade, but now are mass-produced. Because of their low price and the little effort, people tend to buy their bamboo objects instead of making them themselves. The consequence is that the number of skilled bamboo craftsmen is decreasing. Only few people are conscious of the fact, that they are loosing a piece of their traditional culture by not performing traditional crafts, because they have to focus on providing an income for their families.

Still there is a high knowledge about bamboo within the culture. Different kinds of bamboo have their own quality and naturally grow in different areas within the mountains. Once a year they are harvested with help of the whole community and shared for different purposes.

Finding out about the different kinds of bamboo that Black Hmong people use was surprisingly challenging. The subject hasn’t been brought up in neither literature nor in research formats yet. Farmers have their knowledge about bamboo cultivation rather from own experience that from systematic studies. The variety can be narrowed down only to the species that are domesticated in Hoàng Liên National Park.

People who have the largest knowledge are usually old people and men, who don’t speak English. Because most people can’t read and write I could neither find out how the Hmong names for bamboo are spelled correctly nor the botanical names of the plants (see next chapter).
Bamboo in Hmong language

I asked a local Hmong woman what she knew about the variety. She could think of ten kinds of bamboo that are used in daily life in their community.

Choung (xyoob) – bamboo

Choung long chu – white bamboo
The white big bamboo. It has a white dusty layer on it to protect the plants. The shoots are also used for cuisine, but it is not one of the favoured kind. When eating the shoots, they can have a narcotic influence.

Choung long chu – green bamboo
The big green bamboo is compared to the white Choung long chu and the shoots are not used for eating.

Houng gan schi – sweet bamboo
It has tasty shoots and is also used because of its

strength for construction purpose.

Choung da nein – the bamboo for bows
Because it is flexible and strong it has been used for making bows and also baskets

Choung jein zah – bamboo to smoke
It is a middle sized species with shiny columns. It is used because of its strength for roofs and fences.

Choung ku mou – stinging bamboo
It is used for making spears an arrows.

Choung ah: – bitter bamboo
It is mainly used for eating. When the shoots are still small they are sweet in taste. When they grow big they lose their sweetness. People eat them in both variations.

Choung zah – dwarf bamboo.
It grows high up in the mountains.

Choung bo chû – fire bamboo
Grows only up in the mountain. Why the name is related to fire no one could explain.

Choung dio – hinge bamboo
The name comes from its cross-sections that are significantly developed.

Choung lo kein – forest bamboo
It grows only naturally and is not domesticated.

Choung shi bo tschû – smooth bamboo
It has a shiny skin and is used for flat baskets (Ha Van) or rice screens. It has wide columns and grows in the valley.

Choung o keen – music bamboo
The species is used for making the traditional music instrument of Hmong people, that is used at festivals and funerals.
1 Bamboo is used for many kitchen tools like screens and rice-shovels

2 The houses of Hmong people are often made from bamboo, either the whole pole is used or the bamboo is flattened into boards and woven together.

3 My host Su wearing a traditional Black Hmong hat.

4 Bamboo is also used for transporting and as firewood

5 The traditional Hmong instrument made from Bamboo

6 The traditional baskets that Hmong people use to transport goods to the mountains.
Material

Bamboo is a material that gives many possibilities. In Vietnam it is a major part of the culture and used mainly in traditional ways. Modern ways of applying bamboo are not often used by local people. They rather follow traditional production ways.

Positive factors

People have a deep knowledge of the bamboo plant.

It is easy to grow and no hard machinery is needed for traditional production.

Growing bamboo is simple and the plant does not need a lot of care. It grows fast and can cope with various climate conditions.

Negative factors

The material is mostly not used with contemporary production techniques, so many possibilities of the material are not taken as a benefit.

The bamboo is rarely combined with other materials, that narrows the range of application ways.

Methods

Concluding from my readings and personal research Vietnamese bamboo production is divided into the following three categories:

Production in domestic environment

People can produce in their own houses using their own equipment. It might not be the most advanced technology, but it makes it possible, that the production takes place in circles according to people’s natural life routines.

Production in little factories

The production takes place in factory spaces. Similarly the products are produced in manufacturing processes. More machinery is used. The production is not as concentrated on the village as in other factories, the parts come from different places.

Production and production for export products:

The production takes place in factory spaces. Similarly the products are produced in manufacturing processes. More machinery is used. The production is not as concentrated on the village as in other factories, the parts come from different places.

Conclusion

From my research I concluded that the domestic production would be most suitable for production with Hmong crafts. People would be able to keep their traditional way of living, producing in their homes. Machinery would be avoided and the traditional crafts would be kept as they are, giving the possibility to financially benefit from it.
5 Indigo

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Indigo Production
Indigo in Black Hmong Culture
It was not until the 19th century that chemical production of colours was discovered. Before all colours, from pigment to dyestuff, were made from natural ingredients. Colours were obtained from different plants. There is a large range of plants that has been used for extracting yellow, brown, red and black shades. Producing blue as a colour has always been a far more complex process and can only be obtained from Indigo. Because blue seems to be a very appealing colour for people all over the world, different ways of making indigo dyestuff have been discovered independently. All of them are obtaining the same chemical ingredients. (Jenny Belfour-Paul, 2011:1-2)

The plants that produce the highest amount of indigo are tropical plants like "Indigoferas" and "Strobilanthes cusia". Most widely used is the plant "Indigoferas". It has been used for making dyestuff in different areas, such as South America, Africa, South-West Asia, India, China and Vietnam.
There is only one plant used for making indigo that grows in Europe: woads (Isatis Tinctoria). It is not as efficient as the indigo plant Indigoferas. To get the same colour result 30 times as much plant material is needed compared to using the tropical plant. Hence indigo has been an important trading product already in Greek and Roman times until synthetic production process of indigo was invented. Indigo had been widely used for uniforms and work clothing, also the first jeans were coloured using natural indigo dye. Because the demand for indigo was very high the discovery of synthetic indigo in 1870 changed the whole trading market and textile industry.

(Jenny Belfour-Paul, 2011)
Indigo Production

Indigo itself is not a component of a plant. The different indigo species only contain indicants which have to be changed through fermentation to indoxyl. Different fermentation processes are used in order to extract the blue colour from the plant’s branches or leaves. They need to be soaked in water to convert the glycoside indicant into dyestuff. The colour is extracted with different fermentation processes. After the plant reached fermentation the solution is mixed with strong alkaline ingredient. Afterwards the indigo paste is pressed into cakes, ground into powder or kept as it is.

Indigo is different to many other dyestuffs. When dying it coats the textile with a thin layer of the colour. The dye does not soak into the fibre of the textile. The indigo dye reacts to oxygen and that binds the colour to the fabric and turns the indoxyl to indigo. When dying with indigo the textile has to be dipped into the dye and then taken out and exposed to air. To get a strong colour result, the fabric has to be dipped several times into the dye. With this process colours from light blue to almost black are possible to obtain. It is also possible to obtain different shades of colour, like purple and shades of green in sabotaging the chemical process. (Jenny Belfour-Paul, 2011)
Indigo in Black Hmong Culture

Indigo is a significant part of black Hmong culture. Their traditional clothing is mostly made from indigo dyed hemp fabric. Because of the dark colour result they want to achieve, Hmong women have to dye their fabrics about 300 times until the cloth can be sown into clothes. The fabric is dyed enough when no light colour can be spotted between the fibres any more.

Black Hmong people have developed different ways of treating indigo fabrics to get a different colour result. When only dying with the fresh leaves of the plant different shades of turquoise can be obtained.

Another compelling technique they use is calendering to make the fabric strong and shiny. The colour then turns almost into a metallic purple. For calendering Hmong people use beeswax and two wooden polished beams. One of the wooden beams lies on the ground and the fabric is placed on top. The second beam is placed above the fabric. Now a person stands on the second beam, sliding backwards and forwards – so eventually the calendering takes place.

Another technique that is used for making Black Hmong clothing is batik. With the help of a drawing instrument and melted beeswax traditional patterns are drawn to the fabrics. The fabric is dyed and the wax cooked off the textile. Batik is used mostly for the pleated skirts of Hmong women, that contain many meters of fabric. The traditional patterns all have a special meaning to them. They used to be comparable to writing, telling stories. Hmong script was developed only recently, so the patterns were really important.

Because the indigo dying and especially the further development of the fabrics is very time-consuming, many Hmong people don’t make their clothes themselves anymore. Some who have enough money buy them, others use chemical dyes or a mixture of them. Nevertheless my impression was that Black Hmong still value all handmade clothing. But less and less people are using and preparing the indigo dye themselves anymore.
1 Su wearing traditional Black Hmong indigo clothes

2 Su’s mother doing batik

3 Indigo vat in a large bucket and a bamboo screen

4 Su cooking the beeswax out of the indigo fabric

5 Indigo dyed textiles drying in the sun
6

Basketry/Weaving

Traditional Basketry
Weaving in Furniture Design
Traditional Basketry

Basketry has a tradition in all different parts of the world. It is a very old craft technique for making strong containers or surfaces. Many different materials and techniques are used for binding baskets or making woven structures. Depending on the area of its origin, local plants are used for weaving. Grasses, palms, splits and tree-barks are traditional materials for basketry.

The different methods that are used are for example plaiting, coiling, wicker and twining. (http://learnbasketry.com/basket-weaving-techniques)

1. Plaiting: Beginning of Malacan “mad weave”
2. Plaiting: Hexaconal Pattern
3. Plaiting: Twilled two, check
4. Twilling: Twinned and wrapped, twinned, wrapped
5+6. Coiling: Different coiling patterns
Weaving has traditionally been used in furniture design. It provides a large range of material possibilities because of its flexibility and convertibility depending on different material combinations.

Traditionally mainly rattan is used in furniture. The rattan furniture are mostly twinned, woven or plaited and have been popular for many decades.

In contemporary furniture design designers have explored the possibilities of weaving techniques combining different materials and taking influences from other traditional handicrafts. Patterns of textile weaving are combined with different materials like metal, wood and textile.
Marking and Aims

Ethical and Ideological Aims
Functional Aims
Style and Feel
Target Group
Combining Hmong crafts and Finnish design was my starting idea for my graduation project. My aim was to cooperate with talented Hmong craftsmen and create a link between their crafts and design. One important part of my project was to create ideas for possible design objects, that would be quality-wise and in their aesthetics comparable to Finnish design approaches. I intended to create a collection on a conceptual basis that would go in further development possibly to the European market. Thereby the objects would have to be able to be reproduced instead of each being unique crafted piece.

My intent in this project is to support Hmong people financially and to preserve their way of living. I am aiming to create an interior appliance that is fully transparent in its production and combines Finnish design and Hmong handicraft.

I am interested in cultural differences that are visible in material use, the way of creating and in living standards. I intend to combine two very different cultures into objects to bring them into another context and thereby find new material combinations preserving the cultural background.

Instead of only taking inspiration from traditional crafts I wanted to actually get to know the producers and techniques properly on a non-theoretical basis in order to preserve the cultural surrounding.

The production ways and the products produced should be developed according to the living standards of the producers, neither interfering with their cultural values nor clashing with their traditional way of life. I am taking my research on production in Vietnam into account analysing positive and negative factors.

I am aiming to create a way of production that makes it possible to keep the way of as self-sufficient farmers in order not to push western ways of life to their culture. I am creating a concept for a transparent production process that includes the stories of two cultures.

Using the material and technical knowledge I am aiming to create a cooperation of designers and craftsmen, that would be of a benefit for both sides. Theoretically the cooperation should make it possible to combine craftsmanship and design on a level of cross-cultural design, preparing an income for Hmong people and providing interesting furniture pieces for the European market that combine craftsmanship and design in new ways.

Considering the environment, the product should reflect responsibility on a material level. I am aiming to design a process that has life-cycle taking into account environmental aspects from production process until disposal.

Ethical and Ideological Aims
Functional Aims

The function of the product should match the material properties of the collaboration results and their further development. After investigating the possibilities of the material the product mirrors the particular material properties. The function is a consequence of the application studies.

Style and Feel

The shape will serve the function according to Finnish design principles. The visual appearance combines properties of different materials. The material structure of bamboo waving surfaces is the main focus as a visual element. Other materials as well as the shape of the object, should frame and support the characteristics of the material. Thereby I intend to create a design furniture that combines minimalism with the graphical appearance of woven surfaces.
The products should work for different purposes in home surroundings suitable for the design furniture market.

Focusing on sustainable and ethical design and production the target group is interested in these factors. The products are targeting people that have a special interest in sustainable living. The target group has an interest in design and may follow design trends on social media. Also, people with an interest in different cultures and an appreciation of craftsmanship are targeted.
Cooperation Process

The People
The Starting Point
About Hu
Hu’s Working Method
Learning to Communicate
Finding the Shape
Material Research on Indigo
Evaluation of the Cooperation
My focus of the cooperation was on Vietnamese Black Hmong traditional craft. In order to apply traditional Hmong craft to my designs I went to northern Vietnam to a village called Ta Wan close to Sapa in the Vietnamese mountains to learn about their crafts. I was going to focus mainly on bamboo basketry and indigo dyeing, both techniques that Hmong people have been practicing for centuries.

The group of Black Hmong people that I visited still practice the traditional crafts actively. They have realized that they form a central part of their culture that is worth preserving. They don’t practice it for commercial purposes.

I worked together mainly with Hu, a local craftsman that was skilled in bamboo use and Su the lady at whose place I was staying, she taught me to use indigo and helped me with communicating.

The People

1+2
Hu the craftsman and Du his wife

3
Su, who was my host and taught me to use indigo
The Starting Point

When I went to Vietnam I kept an open-minded attitude towards what was expecting me. My plan was to experience the culture trying to understand the way of life of Hmong people and their talents first, before I would narrow down design ideas. In order to narrow the project down I had decided to start with making lampshades, but intended to create a product family.

I took a lot of material with me that I could possibly make use of: Drawing utensils, cutting knives, scissors, different tapes and glues, cables, lightbulbs and some other tools. When I prepared myself for leaving to Vietnam I realized, that I had no idea, what I would need there.

When I was researching on bamboo and minority cultures I documented it in pictures and with notes, so I could benefit from them while working in the cooperation. I tried to get as much material as possible that might have been helping later.

Before I started working with Hu, I already got to know his family. I visited his house and brought gifts for the children. That gave me a base on what I could build up. It was important to me that I would not be a total stranger to their house, but be already a familiar face when our cooperation started.
About Hu

Hu lives with his wife and four children in a wooden house in the Hmong part of Ta Wan, closely from where I stayed. His house is a typical Hmong house, only a little bit more beautifully built. When visiting him one can see immediately that he is a craftsman. The house is comparably old, it was build about 40 years ago and is mainly built from wood and bamboo. Hu’s wife Du explained proudly that her husband enlarged the house.

The kitchen and “living-room” is one space. A large room with a fireplace and a lightbulb and a mud-floor. The middle of the room is dominated by a fireplace that is always burning and aside there is a single lightbulb. Around the fireplace there are a few tiny stools. When people come to visit, everyone sits around the fireplace. All matters are discussed around it and in the evening people sit together and talk.

When you visit Hu, the water-buffalo will greet you when you walk towards the house through the bamboo fences. Next to the house there are two sheds placed adjacent to the vegetable garden where the animals live. Hu’s family has many chicken, a dog, a cat, some pigs, two goats and two porcupines. In the garden the family grows their vegetables. Because they are quite poor they usually eat rice with a bit of cabbage. Very rarely they have meat on the table.

Hu’s children are very polite and shy. His oldest son is with 18 already in the age that he could get married, but Hu wants to teach him different crafts first, so in future he will be able to give the tradition to the next generation.
Hu’s Working Method

Hu works usually in front of his house, sitting on a little stool. He starts with getting the bamboo he needs from his own little forest or from the mountains. For the whole process he only uses his knife and a wooden board. It is a very simple way of using the materials.

He works surrounded by animals and whoever is around. Work and life are not separated like in our culture, everything belongs together. While he is working he prepares food and looks after his animals, whatever is required in that moment.
Before starting the actual design process I had to learn the possibilities of bamboo and indigo. With Hu I decided to start from a seemingly simple technique developing different shapes. Because I did not know the properties of bamboo and the possibilities and challenges of the technique, it was challenging to decide where to start. I chose a birdcage as a start and tried to develop a lampshade with Hu.

Quickly I noticed, that we were missing a way to communicate. So I decided to start with learning the material properties and developing some kind of communication base. The objects that were created within the first days rather reflect our communication process instead of actual designs. Nevertheless some of these objects are beautiful in itself, but not designed to be a functioning product. My influence on the pieces was very little and Hu worked very independently. Until I was confident enough to change the subject many days went by and many shapes were created. When I was positive that we could understand each other in the process of making something different I asked him to focus on different ideas. I did not want to interrupt him straight away, when I had decided, that I wanted to rather concentrate on another technique, because I feared to confuse the slowly build up communication base.

Learning to Communicate
In the first part of the cooperation I observed several things that made me rethink the process:

When I asked for one of the shapes to have a certain scale, or the weaving distance to be about a particular height, it usually didn’t show in the object, also angles and shape did usually not match. I assumed that the reason was not always only the communication, but also the fact that Hu had never worked in that way. He did not know the role of a designer and the importance of scale and proportion.

Also I noticed within the process, that I had made a major mistake in narrowing down on one kind of product before knowing the culture. On the way I noticed that lampshades the subject that I had started with did not have any connection to Hmong daily life. No one used lampshades in the Hmong Village. They had only recently started using electricity in their village, so it was precious to them. It would have felt like a waste of light for Hmong people to cover the light bulb.

This experience made me think that I had to connect what I was doing to their way of life in order to make them understand. In practice that meant not taking for granted, that one word or object meant the same to me as to Hu.
When I was confident that we had developed some kind of mutual communication level, I started influencing the actual objects and material uses, trying out new ways of use. Slowly explaining through sign language and with the help of some translating we went further, using different techniques and concentrating on plaiting techniques instead of weaving. I had noticed that plaiting gives visually and structurally new possibilities. Also it is more precise than weaving, because it is a geometrical pattern. Plaiting would make communicating much more simple.

I decided to go away from saying I would like to design a lamp or a actual object, but asked him to create materials with a certain purpose. For an example I showed him the rice screen (second picture on the left) and pushed it in order to show how strong it was and explained with body language that I wanted the same, but to sit on.

I concluded, that with sign language communicating was much easier than with drawings. We see in drawings always more than only the lines, a great part of what we see is our imagination. I assume that our experience and culture influences our imagination, so he did see something entirely different in my drawings. I had underestimated the influence of our very different cultural backgrounds.

When developing a concept I also decided to form a stronger cultural connection between Finnish design and Hmong handicraft. Until this point, the objects were only pure craft, the weaving structure as well as the shape was disconnected to Finnish design and pure handicraft. I decided to only create material surfaces, that could be used for further development in Finland combined with Finnish materials.
We continued with plaiting techniques. I had in mind to combine them with other materials into different products.

I had seen plaited baskets with a hexagonal pattern for different purposes. Because the pattern was very interesting to me due to its graphic appearance, I asked Hu to make a little basket and a surface from it. Because I did not know the weaving technique and its properties, I had to ask him to make different tries, so I could decide, if I could use them for further product development.

After the tries turned out to be quite fragile and the bamboo bulky and hard to process I looked for other ways. I explained to Hu that I was looking for a plaited surface, that would be strong enough to sit on and showed him as an example his rice-screen. He understood what I meant and showed me an example. He had to get a different kind of bamboo for making that kind of strong matt.

When we were making the mats communication was not a problem anymore and we managed to communicate on a non verbal basis.

When making the fist mats Hu hemmed the edges. I explained to him that he did not have to do that, so it would be easier for me to process them, also it saved him a lot of time.

I showed him that I wanted to combine indigo to the mats and did different tries. When I had developed a way of dyeing I brought the bamboo straps and we developed a pattern together. It was a long way to get there, but finally we worked together.

I decided to take the last results of our collaboration as a base to design a concept for different products.
The bamboo Hu used for making the surface. He used solid bamboo, that was, as he said, very strong.

Hu’s tools and starting process of cutting the bamboo poles.

Splitting the bamboo into thin straps.

Starting the plaiting from the centre of the matt.

Half plaited matt.

Finishing the ends.
Material Research on Indigo

While I was working with Hu in the daytime, I learned how to use indigo in the evenings and did material experiments.

First I wanted to get to know indigo dyeing. Because it reacts not just like an ordinary colour I needed to do a lot of practice to get a feeling for the colour.

After I knew how indigo dyeing in a traditional way worked, I started doing different experiments with bamboo and indigo.

I started with dyeing handwoven hemp fabric that Hmong people traditionally for their clothes and dyed that many times. I thought it would be a good base to know how hemp, a material that has been dyed for many generations, reacts to indigo, before experimenting with bamboo. On hemp, indigo builds each time when dyeing a layer of blue. The more layers the darker the result.

1 Indigo colour chart with 17 different steps.
2 Dyed cotton threat with gradient.
3 Indigo fabric right after dying, turning from yellow to blue.
4 Indigo dyed hemp after taking out of the dye.
5 Dyed cotton threat after taking out of the dye.
Indigo reacts differently on bamboo than on hemp. Results depend a lot on the kind of bamboo that is used and how it is prepared.

1. Woven Bamboo surface including top layer

2. Top layer dyed with Indigo. The surface is uneven, the indigo does not stick to it.

3. Indigo dyed bamboo without top layer.

4. The straps that were used for the indigo mats.

5. The objects after dying.

6. The final mats treated with wax to prevent the indigo from rubbing off and to achieve a brilliant colour result.
Evaluation of the Cooperation

Working with Hu was very challenging. Not only the fact that we did not speak a common language, but cultural differences influenced the work immensely. At the start of the process I felt like it was not leading anywhere. It was hard to keep an aim in mind, because the surrounding was extremely different from my usual working environment.

At the start I neither knew what to expect, nor where to start. I did have a lot of different ideas and decided to start from one technique trying different ones every day. When I noticed that we first had to develop a basis for communicating, I had to give up trying to control and plan the process in every detail and had to see where it lead me.

It was not possible for me to change my mind and change things right away. Because of the language barrier it took many days to communicate my wishes. That was extremely challenging for me. The first week working with Hu was extremely frustrating and exhausting. I felt like he was trying his best to make objects according to my wishes, but they did not match my expectations. Partly the reason was that I did not yet know what exactly I was aiming for, but still I had to give something to Hu that he could continue working. At that point it was not important what he was making, but that we were working together and that we could improve our communication.

When I had built up some kind of concept in my head how I wanted to continue after the first part of our collaboration, it became much more satisfying and we were starting to get further on a visible base.

I concluded that I had been in a conflicting situation. Neither could I design something clearly before I knew Hu and how he worked with bamboo, nor could I tell him exactly what to do before I had a design in mind.

After I had got to know Hu and the possibilities of bamboo, I could think of a certain direction and bring the weaving in context to my design process.

The cooperation was a totally new experience to me. It was interesting to actively experience Hmong culture, learning Hmong crafts living together with Hmong people. I learned a lot about natural materials, that were unknown to me before and about cultural barriers and the possibilities of overcoming them.
Choosing Plaited Mats as a Starting Point
Material Properties
Possibilities and Challenges
The Concept
First Product Ideas

Construction Design
Material Choices
Choosing the Product
Design Process - Stool
Design Process - Box
Choosing Plaited Mats as a Starting Point

In order to create a product that could be produced in serial production I chose to take the Bamboo mats, which were produced in the last days of the collaboration, as a starting point. Because of their convertibility, it was possible to combine them to different products with different functions. I saw a large potential in the material.

I chose to combine the bamboo mats with other materials that would integrate the bamboo material. Still I aimed to keep the bamboo as the centre of attention in the products, functionally and visually. The other materials should only support the bamboo surfaces in their function.

I took the three bamboo mats that Hu had made and analysed their properties. Because of the indigo dye which was applied differently all were visually different and reacted in their own way to outer influences. According to their properties I would develop different products.
The three bamboo mats that were created in collaboration with Hu were treated differently.

1
The first one was dyed and waxed after it was plaited. The edges are hemmed.

2
The second one is made from partly dyed and natural straps. The pattern creates a geometrical structure. The straps were treated with wax after dyeing. Because indigo dye usually rubs off, I had looked for a way to seal the surface.

3
Indigo dyed bamboo without top layer.
Before starting the designing process I examined the bamboo mats and their properties.

1

The single bamboo straps are very flexible, especially when fresh or soaked in water.

2

When the bamboo straps are plaited into mats the material stays flexible, but returns into the same shape when released.

3

The indigo only attaches to the bamboo straps on the surface. When taking the edges off the hemmed matt natural coloured indigo comes to the surface.

4

The non dyed indigo mat is translucent when held against light.

5

The indigo dyed mat has lost its translucency through the dying process. The indigo layer covers the straps densely.
Possibilities and Challenges

The bamboo mat provides many application possibilities. The material is very flexible. The plaiting techniques give the possibility to easily apply different patterns, that have different properties. For example a dense pattern serves for a strong surface and a loose pattern is more translucent. The materials are similar, but have different properties. This makes the material especially suited for designing a product family.

The challenge with the bamboo mats is how to connect them to another material and how to fix the loose edges. Due to the very slippery surface of the bamboo straps, the pattern can be easily destroyed while processing it. Another challenge is the fact that I am bound to the given size of the material when designing the objects. To get a strong surface there must not be intersections in the straps and they have to be even. That limit is the amount of material I can get in scale to about 60 cm.
The bamboo material is grown in the personal bamboo forests of Hmong people. The bamboo mats are produced by Hmong people in Vietnam in their domestic environment. The materials are produced in with traditional Hmong patterns combined with indigo. The shape is simple and transformable. The materials are produced in the periods of the year when Hmong people don’t have to focus on farm work. The production is not interfering with their traditional way of life.

Finnish small companies are producing the wooden parts for the product, combining it with the woven mats. The pieces are made from sustainable wood.

The products are sold in different shops as fair design, telling the stories of the makers.
When I was still working with Hu in Vietnam, I started sketching first ideas how to apply the bamboo mats to different surfaces.

Because of the strength of the material, I thought it would be suitable as a sitting surface. I started with the idea of applying the mats in the same way as in traditional furniture with rattan surfaces.

Shapewise I was thinking of using basic shapes and simple building structures, so I would not take the attention away from the bamboo material.

The basic idea was to make some kind of frame construction to combine the mat with the furniture.
I wanted to combine the mats with another material in order to support the function. When designing the first object, I thought about ways of framing the mats to fix them to another material, keeping it in shape.

First I took examples of already used ways of connecting the mats to a wooden frame (S. 42) and then transformed them according to my own needs.

I decided to clamp the edges of the mats between two frames, that would keep the mats in place. Additional parts, could be added to the frame, to give the product its function.

To give the bamboo mats the most attention and to connect them most efficiently to the frames I decided to use

1

First I considered to use a round frame using a similar way to connect the plaited mats as in Thonet’s “Chair no. 14” (S. 42)

2+5

I decided for a square shape because the direction of the bamboo straps goes horizontally and vertically. To simplify the bending of the bamboo straps I decided to round the edges of the square. It would also protect the wooden edges.

3+4

To connect the plaited bamboo to the frame I decided to cover the edges and squeeze the straps between the outer frame and an inner frame that would keep the mats in place.
I intended to combine the mats with another material in order to support the function. The product should be produced as sustainably as possible, using natural materials.

I decided to choose wood, because it can be strong and at the same time flexible. For the frames a certain flexibility is important to clamp the different layers of material together. I explicitly chose birch wood because it is available in Finland from sustainable foresting. It is also and very traditional for Finnish furniture design and strong as a wood material.

I decided to start with making a stool. The parts for keeping the whole piece together are made from wood. The surface is made from an indigo dyed bamboo mat, that is clamped with two frames to the construction. The bamboo part thereby has the function of being a elastic surface that is visually interesting as well as functional.

The second object is a storing box. I chose to take the flexibility as a benefit in another way. The box is covered by a bamboo mat with two frames, that connected to the box. To use the flexibility of the bamboo material linked to its function, my aim was to avoid hinges.

I considered to design also a lamp, but I decided, that it was not the best way of using the bamboo mats, because the weaving was very dense and not translucent enough. I did not want to change the traditional pattern, because that would have been not be congruent to my aim of using traditional plaiting.
Design Process – The Stool

For the stools design I aimed to use the flexibility of the bamboo mat, to create a comfortable, elastic sitting surface.

I started from a very basic, almost archetypical shape of a stool, to develop it further.

For connecting the legs to the frame I considered different ways. I ended up with choosing triangular corners, that are glued to the inner frame, so the seating surface would have space towards the middle. The legs are connected to the triangular shape in an angle towards the middle.

I chose round legs to support the stability of the construction and the angle to give the stool elegance and lightness. To protect the corners and apply the mat most efficient to the inner frame the edges of the outer frame are rounded.

1

A traditional shape of a stool as a starting point.

2

First draft of a version with round legs. The legs are connected to a wooden cross in the middle. Because the cross impedes with the seating surface, when sitting, I had to look for other solutions.

3

Final draft for the stool. It has round legs that are connected to triangular corner-pieces, in an angle. The pieces are glued to the inner frame and support it.
Design Process – The Box

I decided to design the box to explore possibilities of using the bamboo mat other than as a sitting surface. My aim was to use the flexible mat at the same time as a covering surface and a hinge. The measurements of the box were dependent on the material that was still available to me, so it had to be in a compact size.

I considered different ways of applying the material. At first I thought of a simple door and then changed the direction of the opening mechanism. I concluded that the mechanism in the middle of the surface would be most durable, because the mat would be kept in place and the content of the box would not fall out of the storage furniture when opening. After further tries I noticed, that the placement of the hinge had to be at the bottom, because otherwise the place of the openable part of the surface would be too small for comfortably taking things out of the box.

1. First sketch of the storage furniture with a side-wards opening door
2. Second sketch of the storing furniture with the hinge mechanism in the middle
3. Third sketch of the storage furniture with the hinge at the bottom of the box
To find the most efficient way of using the frames of the box to keep the bamboo mats and the door in place, I tried different experiments. I concluded that the round end towards a flat surface would serve best as a hinge mechanism (3).

1+2+3
The first part of designing the box. The bamboo material required many material tried until a working mechanism was discovered.

1.
Bending experiments of the bamboo mat combined with wood

2.
Wooden parts of the hinge mechanism

3.
Because of the small scale of the frames, connecting the pieces with pegs was not possible.

4.
Wooden parts for the frames.

5.
Wooden pieces for making the box before putting together

6.
Trying to connect the bamboo matt to the frame
The last step of glueing the lower part of the door to the box.

The bamboo matt used for the box. Because it has been dyed before weaving the pattern is unfortunately not evenly applied.

After I tested the frame construction I concluded, that it was not strong enough to keep the bamboo matt in place and I continued with solid material.

First try of using a solid door with the mechanism on the lower end.

The second try with the mechanism lifted up towards the middle.

The Pieced before putting together.

The last step of glueing the lower part of the door to the box.
The Result

The Result in General
Details/Scale
Development Suggestions
The result of my research is a concept for combining Vietnamese Hmong craft and Finnish materials. It resulted in two examples that suggest the material combination: One little stool and a box for storing things.

The stool is suitable for almost any home environment. The construction parts are made from solid birch wood, treated with light Osmo wax. The sitting surface is made from a indigo dyed matt with a geometrical pattern that is also treated with Osmo wax.

The box is suitable for storing little things, especially in a little apartment corridor, screwed to the wall. The top can be used as a surface for putting phones, keys. Clothes like hats and gloves that are in everyday use can be stored inside. The box is made from solid birch wood, treated with light Osmo wax and the surface is entirely indigo dyed with an uneven structure.
1. Plaited bamboo surface

2. Outer frame of the stool, which gives the seating surface stability

3. Inner frame of the stool that clamps the bamboo matt together with the outer frame

4. Triangular pieces to connect the round legs in an 8 degree angle with the inner frame

5. Round legs of the stool
1. Plaited bamboo surface

2. Moving “door” of the box. A magnets in the middle and on the sides keep the door closed.

3. The lower part of the door is connected to the box.

4. Inner framing boards clamp the plaited bamboo mat in place.

5. The box. In the middle of the upper edge is the counterpart for the magnets on the “door”.

6. The back of the box
To make an actual product from the prototypes, all details have to be finalized. The chosen material combination can be applied to a large range of products, to build a product family. In combining more mats with different plaiting styles, larger surfaces could be created. New plaiting techniques applied to the material can give new application possibilities and other patterns for visual variation.

A working collaboration that could combine Hu’s and other Hmong people’s bamboo plaiting skills with carpentry by Finnish carpenters should be developed. The transportation of the bamboo mats to Finland and the time-frame would have to be set. Also the possible marketing of the products should be decided (company/webshop etc.).
Evaluation
The Result

The result of my bachelor project is a combination of research conclusions and a concept of combining crafts and design.

I am content with the result especially with the research on culture and materials. It would have been nice to finalize the prototypes to a product state, but that would have required more time in Vietnam and further development.

I am content with the result of the research and concept development. I think I succeeded in creating a concept of sustainable design combined with traditional craft, that takes the background of the culture into account.

The Process

The Process was the main part of my project. It was a new way for me to start a design process, every step had to be well considered and carefully made.

I started with the idea of combining crafts and design, aiming for some kind of result that was not clear then. Neither I knew where I was heading, nor I wanted to limit my options of an outcome. Therefore it was exciting and challenging.

I had the chance to dig deep into a culture that was strange to me before, experiencing it from the inside. I had the unique possibility to work with talented craftsmen learning about exclusive materials and production ways.

I did not only study the materials by looking I involved in the process combining indigo and bamboo in ways that were new also for local people.

It was a very exciting process, that was not rectilinear at all. Doing everything at the same time: Learning a culture, exploring materials and techniques and living in a very simple surrounding it was not only mentally but also physically challenging.

It seemed wrong not to limit my aims before I went to Vietnam I chose lampshades as an focus object at the start. When I has started to work with Hu I noticed that it had been a mistake to limit my expectations at all in the beforehand, because my chosen theme was not connected to the culture of the craftsman and thereby the craft was ripped out of its cultural context. Until I realized my mistake the process was not going further. It was important to realize the role of cultural background to change my plans proceed to a result.

When returning to Finland I had to mark my aim again. It was demanding to stay with the same concept. The concept that I build in Vietnam limited my possibilities and the amount of material restrained the design of the prototypes. I was not only bound to the properties of the material options but also bound to its size limits.

After all the process went slowly and steadily further and I concluded in different options.
There are a lot of challenges when combining cultures from very different backgrounds. The communication was of all the most challenging part: In Vietnam, but also in Finland. It was not only the language that took a big part in these issues, but especially cultural differences.

When working together with people from different background many steps have to be simplified. The aim has to be connected to the culture of the maker in order to get the best result. That requires the designer to observe first, before setting a clear goal for the final product. The process is much slower than common design process, where the materials and the expectations are clear.

The combination of two cultures put into a different context give not yet seen possibilities of material combinations and applications. Also it tells a strong story that goes beyond the production techniques.

It includes the knowledge of generations transforming it to the requirements of nowadays needs. Thereby the crafts can be applied to different objects that align to certain cultural needs and requirements.

My project has a lot of potential, but is not at a commercial state yet. It demands time and organisation to finish the whole concept.

Conclusions
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