

THE SWEATER
WORK / SHOP



This book is
handbound



and printed on
recycled paper

THE SWEATER WORK / SHOP

*a small mobile kiosk to
show, make and sell*

TS /
WS

Master's Thesis for
MASTER OF ARTS

AALTO UNIVERSITY
School of Arts, Design and Architecture
Product and Spatial Design
Applied Art and Design

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ABSTRACT

The *Sweater Work / Shop* is a project focusing on the utilization of DIY, crafts and making techniques in a design context. Setting out to develop a small-scale system, this Thesis explores the possibilities of working with textile waste in new and innovative ways through hands-on making while searching for an alternative to mass consumption.

Theoretical research provides relevant and contemporary knowledge about the key areas of DIY, crafts and making, as well as their suggested benefits for the environment, society, individual wellbeing and the human-object relationship. Added to this, an extensive practical research provides deeper insights into these themes, related businesses and local projects, together with applied knowledge about the DIY, crafts and making process in a series of experiments with techniques and materials. An in-depth analysis summarizes the most significant problems and opportunities learned by application of the previously mentioned research methods, resulting in the formulation of a design brief for the practical prototype.

The prototype itself is a small mobile kiosk to show, make and sell. It visualizes the process of un-knitting old garments, making recycled yarns and then knitting new products from these yarns. It serves both as a workstation and a small shop, therefore the title of this Thesis: *The Sweater Work / Shop*. This prototype is combined with an alternative pricing system, offering customized products for a lower price, and thereby creating value through engagement of the customer and the story of the making process instead of monetary investments. In the end, a real-life trial proved, that customized products offer a good balance of involvement; allowing even those who don't want to craft, DIY or make to participate and benefit from some of the positive aspects of DIY, crafts and making.

KEYWORDS:

design for sustainability – DIY – crafts – making – alternative economies – textile waste – design for customizability – mobile furniture

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INTRO

In fact there aren't many irreplaceable things. A sketchbook with my drawings would be, a sentimental item, like a gift, an inherited piece, a home-made unique piece I made myself would be. But everything bought from the store, any mass-produced, one-fits-all item certainly would be replaceable, most of it with exactly the same

and if every single thing that you own is your favorite, essential and necessary thing there would be no need to over-consume and over-waste, there would simply be the need to maintain these things well enough so that they continue to be your favorite, essential and necessary things.

WHY NOW?

These thoughts on the left stem from one of the first written texts in my Notebook for this Project. The conclusion I drew at this point was: A higher value of our belongings could lead to living in a more sustainable way.

Many of the reasons for starting a project around these ideas come from observations of and concerns about the way humans currently live on this planet. As much as mass production has made our lives more convenient and efficient, it has also caused a disconnection between producer and consumer. Items of daily use are affordable, accessible and average, which in turn can make them disposable, meaningless and insufficient. With the loss of a product's story and its sheer magical appearance (Thwaites 2011) in the store or at our front door, the big picture of how a product is made, where it came from and, in the end, where it will go after use, is lost at the same time.

Somewhere between the mountains of waste resulting from this disconnection and an attempt in re-connection through DIY, crafts and making, lies a core part of this project. One of the industries recently known to be responsible for a large portion of these waste mountains is the fashion industry. Low prices and low quality, together with short satisfaction periods fostered by advertisements and societal pressures result in a growing stream of textile waste, mostly entering landfills instead of recycling facilities or the second-hand market (Niinimäki 2011). In addition to this there are other problems, like working conditions in third world producer countries or environmental pollution through the dyeing and washing processes, that contribute to a growing negative image of the fashion industry. One aspect of this project is to address these mentioned issues by viewing textile waste as a valuable material resource, using and transforming it into meaningful products made with time and care.

Hand in hand with this idea of transformation through attention and time goes a counter-development to fast fashion. A growing DIY, crafting and making movement focuses in part on providing alternatives to mass culture and on reinstalling value in objects through handmaking. A good example are successful online businesses, selling knitting-kits or the growing number of FabLabs and Makerspaces around the world.

WHY DIY?

The reasons for the popularity of DIY, crafts and making in recent times are varied, some as simple as saving money or creating something special and unique that can't be found in the stores. It might also be some nostalgia or counteract to the all-digital environment we usually spend our days in. Nevertheless, most digital media is full of DIY-videos and tutorials, blogs or whole crafts-inspiration websites, like Pinterest. There are DIY-kits and sets, craft workshops and events, and small spaces in cities dedicated to making. DIY is visible everywhere and it is good.

The reasons why in my opinion the popularity of crafts, DIY and making is so good are their benefits. Making things yourself can have multiple positive effects for the environment, one of them being longer lifespans of products, through higher attachment and value, and therefore less waste. But communities can benefit from DIY, crafting and making activities, too, especially in shared spaces, be it physical or digital. The exchange of knowledge and skills, as well as support and encouragement can lead to healthier societies (Ratto und Boler 2014). In addition to that, there are a number of personal benefits, like empowerment and confidence through completing successful projects and improved mental health through focus, concentration and purpose (Pöllänen 2015). These benefits are just a small sample and will be explored more in depth in one of the following chapters of this writing.

WHY ME?

My personal interest in this crossing of DIY, crafts and making, the fashion industry and sustainable thinking is a result of influences from my own childhood and teenage years, as well as more recently influences from a change in thinking through the education at Aalto University.

Going back to the beginning, my childhood is the place where the DIY, crafting and making started for me. It was not a "thing", it was just one of the activities I enjoyed doing most in my free time after school. One could argue I was a bit obsessive at times, since I would focus on a particular technique, like making little animals from beads and wire, and then continue to develop a tiny manufacturing plant in my room, producing dozens.

Throughout most of my teenage years I kept a small DIY-blog, mostly about transforming or upcycling clothes or making room decorations. Inspired by other blogs and the internet in general, part of the reasons for starting and keeping the blog was the wish to be different but at the same time to keep up with all the newest trends, without having the monetary resources to afford them. By being creative and using clothes and items, I already owned, I found my own way of making something unique, even something better than what would be found in the stores.



One of the tutorials on the Blog: a cut, bleached and ripped old pair of jeans

This passion for making things eventually led me to study design, or a form of professional DIY, building models and prototypes and small pieces of furniture. Not until moving to Finland and learning more about design for sustainability did I realize the value of DIY beyond just being a fun free-time activity. Since my studies and projects done at the University were diverse and multidisciplinary, my interest in the borders of design and its related fields, for example installation art or crafts, DIY and making, increased.

One of my previous projects called “Super Synthetic Stones” explored working with waste materials and served as an in-depth case for a different way of designing products. The creation of a new material was in the focus of the research, which in the end informed the shape, aesthetics and function of the products. Most importantly this project demonstrated the value of waste materials, like in this case plastic, and the potential that lies in them. With some aspects of crafts involved in the process of making both materials and objects, this project provided a solid ground of experience and knowledge for this project.

Therefore, I currently find myself in a position of questioning my own role as a designer and the traditional ways of making and selling products. This Thesis strives to find an answer for the question of how I can work as a designer, who does not simply want to take part in the given mechanisms of consumerism and capitalism. How can I use my skills and insights to develop ideas and concepts beyond the stereotypical, and how can I contribute to a better, more sustainable future?



The surface of *Super Synthetic Stones*

OBJECTIVES

The following writing, as well as the physical and practical project of this Thesis set out to explore the main research question:

How can I make the process and benefits of DIY, crafts and making visible and impactful on a small scale?

This large question is divided into a set of smaller questions, each guiding a specific part of the research and informing the type of method used, as elaborated in the following chapter. In the final stage of this project, the answers to these sub-questions will inform the development and design of the physical prototype.

The aim of this Thesis is to prove the value of DIY, crafts and making regarding sustainability on a multitude of levels. Whether through working with waste materials in innovative and new ways, or through changing value systems of objects through the process of how they are made. Involvement in crafts and making processes can lead to better human-object-relationships and better consumer decisions, providing more knowledge about production processes. The goal of this project is to provide a visual and functional tool to show and educate and make these theoretical interconnections visible through the making process itself.

Additionally, by working with DIY and textile arts, the contemporary context of this project contributes to important discussions around textile waste and the fashion industry. Since the question is not only about visibility but also impact, one important aspect of this Thesis is the implementation of the result in a real-life situation on one hand to be able to measure and analyze the results, and on the other hand to get real people involved and to benefit from this outsider's perspective. In this way the developed prototype should be viewed as a research tool, rather than a finished product.

METHODS

In the following chapter, the methods used to answer the research questions and formulate a brief for the design project are presented. A combination of both quantitative and qualitative research is used in theory and practice, with the addition of applied research through hands-on experimentation. Each of the following methods was chosen, to answer a particular set of questions that occurred in each step of the research and design process, selecting from commonly used tools and methods, that are expected to achieve the best result. Gjoko Muratovskis book "*Research for Designers – A Guide to Methods and Practice*" was a helpful source of theoretical knowledge about the many different research methods and their application. The following writing of this chapter is informed by ideas and insights gained from the book, related to the different methods used in this Thesis.

LITERATURE REVIEW

Providing background information, a literature review helps to gain an overview of the existing knowledge in the field relevant to this Thesis. In this case this method is used to answer the following questions:

What is DIY, crafts and making?

Why is it relevant now?

What are the benefits of DIY, crafts and making?

This means defining frequently used terms, providing insights into the history, describing current issues related to the topic, as well as presenting known disadvantages and advantages of DIY, crafts and making. A literature review is the appropriate method here, because the above mentioned questions have been researched and answered before, whether it be in theoretical writing, studies, surveys or similar ways. There is an array of literature available, mostly from the field of design and its various sub-disciplines, but also from related fields, like psychology or anthropology.

The findings will be presented thematically, since many of the sources examined have common topics, providing different perspectives and details across similar ideas. This helps giving a structure and deep understanding of the existing background knowledge, important for the development of this Thesis.

SURVEY

Enabling deeper insight into specific questions, a survey is used in this thesis to expand upon and to verify some ideas and theories concluded from the literature review. The main objective of the survey used in this Thesis is to answer the question:

What makes people craft and what stops them from crafting?

The main reason for conducting a survey is to gain a general overview of some of the habits connected to crafts, DIY and making, as well as a rough outline of some of the problems related to the matter. More in depth, the

survey also provides information about how much people craft, what kind of things they make, where they find information and whether they hold on to the things they made. As a quantitative method, it helps measuring attitudes, behaviors and perceptions a certain group of the population has towards a specified topic.

INTERVIEWS

Providing more detailed insights into existing businesses working with crafts, DIY and making, as well as alternative models of product-user relationships, two written interviews are conducted to answer the questions:

How do crafts, DIY and making work in a business environment?

The interviews were conducted by choosing two competing businesses, both of which work with DIY-Kits related to textile crafts and who provide alternatives to fast fashion on an international level. Tailored but corresponding questions provide comparable information, serving as examples of “best practice”. The knowledge of how it can be done on a big scale can serve as a guide on how to start a project on a small scale.

OBSERVATIONS

Through participant observation and immersion in locally existing workshops, clubs and events around the topic of crafts, DIY and making, a more detailed understanding is gained of the question:

How do you communicate or teach crafts, DIY and making through actions?

Observations in structured and organizational settings, as well as of participants reactions and interactions can give valuable information, useful for developing ideas around teaching and engaging people in different ways with crafts, DIY and making. The observed events give both an overview on what exists within the local area and what kind of people and organizations

are involved in arranging these activities. They can serve as examples of “best practice”, and in addition as a tool to connect on a deeper level with like-minded people and organizations to make future events possible

EXPERIMENTS

Conducting Experiments with Techniques, Tools and Materials as a form of applied research is used in a comparable setup to explore differences in time, talent and resources required to complete a DIY, crafts or making project. The motivation behind this is to answer the questions:

How does the DIY, crafts or making process look like?

Since the focus of this Thesis is in the intersection of DIY, crafts, making and fashion, the aim of the experiment is the making of sweaters in as many as possible different ways, including making from scratch, updating, upcycling, or transforming. By creating the same object for each process, the different aspects of each project become comparable. Additionally, the experiments are done from a non-expert perspective and again, the idea is to immerse myself into the role of an amateur DIYer. ↪ This form of practice-based research gives insight into tangible processes and their potentials. These experiments also serve as a source of inspiration and an opportunity to compliment the previously conducted theoretical research with a practical part, to develop a comprehensive brief for the final design project.

RES

MASS PRODUCTION

Labour Conditions
Exploitations
Environmental
concerns
Throwaway
Society

Cheap
Fast
Low Quality

Machine
Perfect
Reproduction,
Imitation
Copy
"Canned"

One-Fits-All
Capitalism
Passive
Consume
Mainstream
Sameness

Anonymous

DIY

Custom
Mass Production

Half-Made
Products

IEEA

Manufacturing
Services

Kits

Instructional
Products

Modular
Repairable
Updatable

Tools
Talent
Time

Ugly
Laziness

disorderly
not function

Capitilised
"Death Star"
Maker's
Invasion

DIY
Consumerism

aspirational
projects

productive
leisure

active

peer-based
emergent
and informal
learning

Relevant

hacking

trans-disciplinary

Relevant

Downloadable
Design

MAKERS

Web 2.0

desktop
prod
digital
maker

Flexible

Micro-Brand

Niche
Market

Wickstrater
crowdfunding

Small
Batch

PLACE

anti-consume
no hierarchies

democracy
freedom
activism

happy
through
community
empowerment
purpose

social capital
is "happy glue"

cheap
save money

Repair
cafe

Urban

Co-working
spaces

Economic
intentions
making of cap
material +
machine sources
health and safety

Fab
Lab

craft
clubs

Social
Media

ETSY

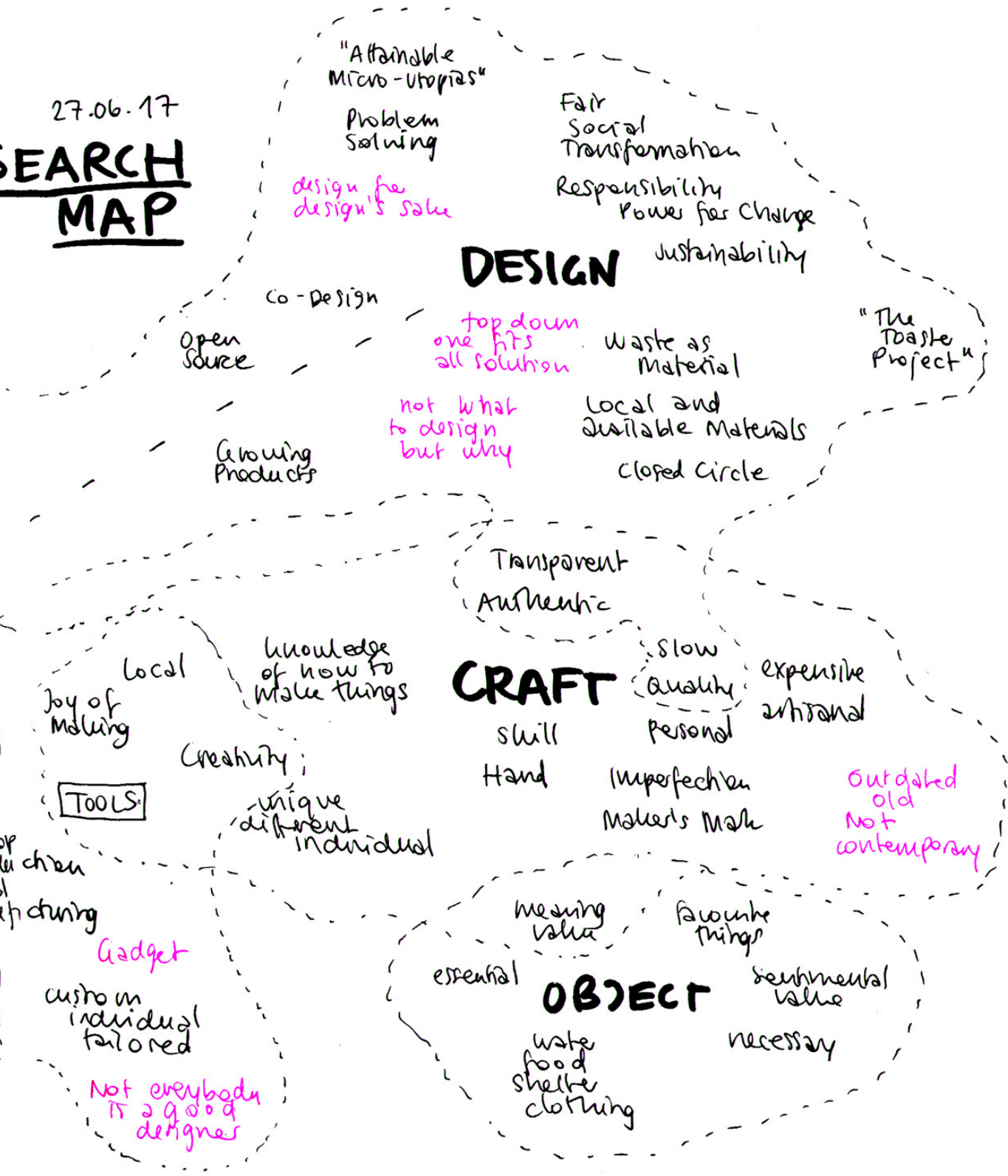
Sharing
network
connection
collaboration

Online
platforms

needing
not
owning

27.06.17

SEARCH MAP



THEORETICAL RESEARCH

WHAT IS CRAFT, DIY AND MAKING?

DEFINITIONS OF RELEVANT TERMS

CRAFT can be defined as “[...] *the application of skill and material-based knowledge to relatively small-scale production.*” (Adamson 2010, 2)

Craft resides in the field of applied arts (Gauntlett 2011), meaning craft produces objects to use, rather than objects to look at (Adamson 2010). Often this goes hand in hand with the idea that craft is second nature to fine art, involving less thinking and creativity and more making. Nevertheless, it can be argued that craft is a way of thinking through one’s hands and making objects exist through an interplay of craftsman or -woman, tool and material (Gauntlett 2011).

MAKING can be defined as “*What can be done in the physical world by regular people with extraordinary tools.*” (Anderson 2012, 13)

Making and the Maker-culture is a relatively new phenomenon, going hand in hand with technological innovations and the development of desktop-fabrication machines. Shared makerspaces, such as FabLabs, or fabrication laboratories, are a crucial element of the movement. Makers work with digital tools to invent and produce objects outside of mass production. (Kohtala 2016) Sharing, community and exchange of knowledge go hand in hand with both the maker-culture as well as Web 2.0, the current version of the internet, that is based on networks and platforms, participation and collective efforts. (Anderson 2012, Kohtala 2016, Ratto und Boler 2014)

DIY is an abbreviation for “*Do It Yourself*”

Central to the DIY-movement is the making and doing, working with your own hands. The DIY-er is the active opposite to the passive consumer, inventing, tinkering or hacking objects (Levine und Heimerl 2008, Ratto und Boler 2014). In contrast to craft, DIY can be seen as more affordable and in most cases more time efficient and less difficult. Web 2.0 also plays an

important role here, providing platforms and networks for instructions and tutorials, making DIY in theory attainable for almost everyone.

DESIGN is difficult to define, but “[...] *just about any activity which involves originality and forethought can, in theory, be described as design.*” (Rawsthorn 2013, 26)

Design focuses on the everyday experiences, materials and processes involved in the creation of objects in a broader sense, including digital objects and services. Its purpose is to infuse value into these objects beyond function and aesthetic (Fuad-Luke 2009). Design is a future-oriented discipline, solving problems and challenging the status quo.

CREATIVITY can be defined as “[...] *a process which brings together at least one active human mind and the material or digital world, in the activity of making something which is novel in that context, and is a process which evokes a feeling of joy.*” (Gauntlett 2011, 76)

A SMALL HISTORY ON DIY, CRAFTS AND MAKING

It can be argued that the history of crafts and DIY dates as far back as to the beginning of intelligent human life on this planet. Building shelter, making tools and clothes was necessary to survive. Jumping thousands of years into the future, we arrive at the first industrial revolution at the beginning of the 19th century. Replacing some of the handwork, machines allowed faster, better and more efficient production and the transition from an agricultural to an industrial society. Quality of life improved both through a shift in importance from physical strength to knowledge and an increase in leisure time for creativity and ideas, which is what defines society today. (Anderson 2012)

More things become more accessible to more people but on the other hand the mass production of cheaper and lower quality goods leads to repetitions, imitations and copies. Even in the crafts production, machine-like perfection in the aesthetic of handmade goods was desirable and no trace of human hands should be visible. (Adamson 2010)

The Spinning Jenny, the first industrial yarn spinning machine was one of

the most important inventions at the beginning of the industrial revolution, making textiles one of the first industrially produced products (Hirscher 2013). In a way it is a 'desktop' manufacturing machine of the cottage industry, which parallels present day development towards what some call the third industrial revolution. New digital manufacturing technologies allow distributed production in garages, workshops and on desktops, not by factories but by individuals or small groups (Anderson 2012). This new type of cottage industry could therefore lead to radical changes in the way things are made.



1 - Enzo Mari for Artek, *Autoprogettazione*

Going back, DIY as we understand it today had some of its beginnings in the 1960s. DIY education, for example in the form of home schooling, as a counterculture to institutional education and non-practical ways of learning went hand in hand with the spread of flatpack furniture and the popularity of home-repairs and renovations (Gauntlett 2011). IKEA especially pioneered in this sector, representing both mass culture as a global brand, providing well designed products for all classes through cheap prices, while also incorporating self-assembly not only to reduce costs but also to infuse furniture with a deeper, more personal and individual value (Rosenberg 2005). At the same time the invention of new materials, like plywood and the design of new tools allowed production processes to happen in the home (Van Abel, et al. 2011).

In 1974 the first design project around the idea of DIY emerged. Enzo Mari's "*Autoprogettazione*", translated as "self-design", was a booklet with instructions for a range of furniture, built from wooden boards and nails, that could be ordered via paid postage from the designer himself. His thought behind the project was that if people would build furniture themselves, they might become more capable to understand his ideas better (Mari 2002). In 2010 Finnish furniture brand Artek collaborated with Enzo Mari to bring the "*Sedia 1*" chair into production. The chair is sold as a kit with pre-cut pine-boards and nails, together with instructions (Turner 2010). This time the price tag is a little higher than just postage, currently over 250€. (See Fig.1, previous page)

Taking another small leap forward we have reached the present. DIY, making and crafts have experienced a new surge in popularity, this time in many forms, from knitting clubs to FabLabs, YouTube tutorials, platforms to sell handmade goods and many more varieties. The following section will explore the current situation more in depth.

CURRENT ISSUES

WHAT'S WRONG WITH THE WORLD?

Part of the reason why we are seeking crafts and DIY today is in the state of the world. Many have slowly come to the realization, that the way we chose to live on this planet collectively has led to some of the big issues, that we are concerned about today, in society, politics and the environment.

In a fast, digitally-centered consumer culture, crafts can provide a sort of refuge, a place outside the daily life and a chance to explore the process of making an object from start to finish (Gauntlett 2011, Levine und Heimerl 2008). Because of specialization, most people employed in the western world tend to work only with small parts of a bigger system, never having the chance to get involved in something whole. Hand in hand with this comes the general dissatisfaction with both work and products, the common one-fits-all solutions. DIY is one way to achieve more satisfaction, meaning and relevance in our belongings (Gauntlett 2011).

My Dad works in a company selling screws, trapped in a job he would not pick again, if he had a second chance. He is an avid and talented crafter, working with things as big as building houses and things as small and intricate as building remote-controlled miniature models of ships and planes. In one of our conversations about this topic and about making bread, he mentioned something:

“You go to work all day to make money to buy things, when you maybe could work a little less and have more time to make things yourself, and in doing so you would also need less money.” (Author’s translation, originally German)

It reflects the kind of cycle of non-satisfactory work and monetary compensation to buy satisfaction and happiness through consumer products, which a large part of society is currently struggling with (Hector 2016).

Included in this cycle is an aspect of passiveness and lack of choice inherent in the convenience of mass consumption (Gauntlett 2011), even though there is a seemingly endless amount of choices between products offered on the market. But looking at it closely, people rarely have the opportunity

to get exactly what they need, be it because of monetary restrictions or simply because there will always be a compromise with products designed for the average.

Like mentioned before, mass production is a way to make more things accessible to more people through cheap prices, but exactly that and the general lower quality of most products causes a lot of problems. For one, the low price can lead to impulse purchases and unsustainable consumer behavior (Hirscher 2013). With low price comes low quality and repairing is in most cases more expensive and time consuming than buying new products (Niinimäki 2011). This is part of another cycle and the idea of infinite growth and ever-increasing production for more profit (Hector 2016). The real cost of the products on the other hand, such as effects on the environment or society, which are non-physical goods without owners, are often not considered. In the end things should probably be more expensive, despite limiting accessibility, as it could lead to consumers considering which products are necessities, which they would hold onto for longer, and which they would repair instead of dispose of (Thwaites 2011).

Short lifespans of products are an important issue, which is expressed quite dramatically by John Thackara, stating that “[...] 90% of the resources taken out of the ground today become waste within three months [...]” (Van Abel, et al. 2011, 45). Given that there is a form of societal pressure to always keep up with the newest trends and gadgets, being judged by what type of things we own or what type of clothes we wear, it is no surprise, that a lot of things get thrown away quite quickly (Illich 1973).



2 - Thomas Thwaites, *The Toaster Project*

But there is another aspect to why we don't care about our physical belongings. Thomas Thwaites calls it "*Phantasmagoria*" of commodity culture, meaning products magically appear on the shelf of the shops, without a story and without any visible process behind it, which contributes to the detachment from exactly those objects. In most cases it is unclear or deliberately hidden where our things come from, who made them and how they even got here. (Thwaites 2011). Thwaites "*The Toaster Project*", an experiment to build a Toaster starting from mining the ingredients, is a beautiful example, which demonstrates the unrealistic price of goods and the absurdities of consumer culture. His toaster took 9 months to make and 1187,54 pounds, and resulted in a barely functional object. Compare that to a common toaster, which is instantly purchaseable from the store for just 3,94 pounds at that time. (See Fig. 2, on the left)

It is needless to say, that all of this has some concerning implications on the environment. Not only the waste generated through over-consumption, but also pollution through production and shipping and the depletion of resources are some of the major threats to our planet (Fuad-Luke 2009, Illich 1973).

WHAT'S WRONG WITH THE FASHION INDUSTRY?

The focus on the Fashion industry has multiple reasons. As Kirsi Niinimäki mentioned in her Dissertation "*From Disposable to Sustainable*", "[...] *clothing is very intimate, close to our body, but also very closely connected to our extended social roles and simultaneously our inner self, our identity.*" (Niinimäki 2011, 38) Clothing is not only a necessary group of objects that we interact with daily, but it is also a visual tool to reflect ourselves, our status, style and values to the outside (Hirscher 2013).

Nevertheless, there are some big issues with the way we consume clothing and textiles today. As mentioned in the last chapter, mass manufacturing has led to a radical drop in price and quality of clothes, resulting in short lifespans and an aspect of disposability. Combined with societal pressure to keep up with the latest trends, garments tend to reach aesthetic obsolescence quite fast. Since repairing is often not feasible, the low prices make it more convenient to buy new clothes and dispose of the old ones (Hirscher 2013).

Short periods of satisfaction and a lack of attachment are resulting in an ever growing stream of textile waste (Hirscher 2013), of which an estimated 70% end up in landfills, while most of the other 30% are resold on the second hand market or recycled. Recycled in most cases means downcycling, which results in lower quality fibers (Niinimäki 2011). UFF (U-landshjälp från Folk till Folk i Finland rf), one of the biggest second-hand clothing collectors in Finland, states they collected and recycled 14 million kilograms of clothes in the year 2016 (UFF 2017). According to an article in Talouselämä, as much as 71,5 million kilograms of textile waste are generated in Finland each year, most of which seems to end up in mixed waste instead of the clothing collection bins (Hakola 2017).

Even though the fashion industry might only use as much as 2% of the world's resources, as Kirsi Niinimäki mentioned in the Design for alternative Economies Seminar 13.10.2017, it is still the second biggest trade sector (Hirscher 2013). And the real question is not how much of the resources are used but how they are used. There have been numerous reports about environmentally and ethically questioning production processes (Hirscher 2013). From child labor to inhumane working conditions and the use of health endangering toxins concerning human wellbeing, as well as issues like high water usage, pollution, deforestation and animal abuse, concerning the environment, many threats have been recognized.

Sadly, most of these things happen on the other side of the planet, deliberately behind closed doors, and deliberately fostering the disconnection between the garment and the production process (Hirscher 2013).

WHAT'S WRONG WITH CRAFTS, DIY AND MAKING?

I am an advocate of the idea that craft, DIY and Making can help mitigate some of the aforementioned problems in both the world and the fashion industry. Before diving into the benefits, I want to mention the limitations of craft, DIY and making.

The "*How-to-Text*" is a literature genre very specific to crafts. Instructional products, like books, magazines, craft kits and supplies make up the most economic value of crafts. This means it includes unfinished objects and even objects that are not made at all; most of these instructional products simply serve as inspiration and are especially popular as potentially un-

wanted, unneeded or unused gifts (Adamson 2010).

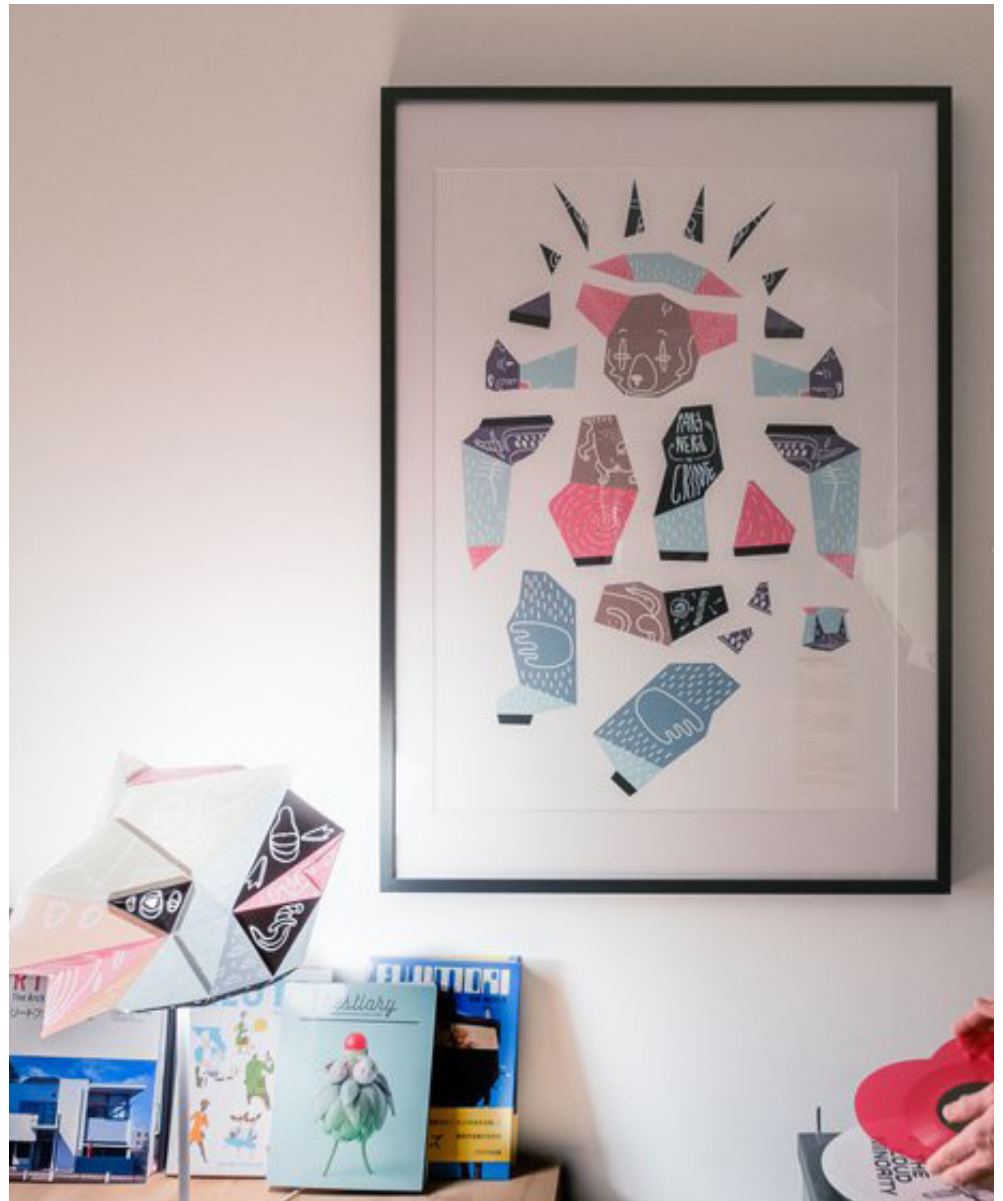
With the online Tutorial, in form of Videos, e-books or blog-posts, becoming more and more popular DIY has become more widespread. At the same time this also allows for many projects and objects that may not be much better than the equivalent ready-made product. The increasing popularity of FabLabs is another recent development, but as Cindy Kohtala remarked in her Dissertation, sustainability is not a central aspect of the movement. Even though things are made locally, materials and machines are often shipped from around the globe. In addition to that, there are issues with recycling failed 3D-prints, machines that are high in energy use and that sometimes pose health risks through their emissions (Kohtala 2016). Makerspaces and desktop manufacturing allow distributed production, but they might not change current consumption and waste patterns, just shifting it from big to small industries. In many cases there are not enough questions asked whether the production of a certain item is necessary, where the material used is coming from and how it will be recycled afterwards (Arieff 2014, Smith 2012).

There is another layer of problems with the accessibility and development of new tools. There are ethical problems for one, in cases like printing weapons or viruses (Van Abel, et al. 2011). There are still issues in gender and race. Stereotypically females, people of color and people of the LGBTQ community are underrepresented in male-dominated hacker- and maker-spaces (Toupin 2014). At the same time, crafts and DIY around soft materials, like knitting, sewing or crocheting is still a very female dominated area.

The new digital technologies enable everybody to be a designer in a way, but not everybody is necessarily a good designer. This can especially become problematic in combination with other new tools like crowdfunding, where anybody can bring anything to the market, leading to a number of products, that might be low in functionality or reliability (Van Abel, et al. 2011). As Allison Arieff expressed it in her article *“Yes we can. But should we?”*, *“there’s a role for designers and makers (and yes, even entrepreneurs) of stuff – a really important one – but there’s a responsibility in acquiring and applying the skills required to make things, and it is worth recognizing that just because you can design something doesn’t mean you should.”* (Arieff 2014)

At the same time, many people do not want to be designers. Seeing a real object or trying on clothes before buying makes for example online services

for customizable items difficult. Completely open-ended products might simply be too difficult or time consuming for a lot of people to make, and even with half-finished or customizable products, people might lack confidence to make modifications, partly not to decrease the resale value (Van Abel, et al. 2011). One good example for such a barrier in a product are the “DIY lampshades” by design studio Mostlikely, which are shipped in form of a flat poster, that has all the parts and instructions on how to cut and fold it into a lampshade. The problem I see there, is that the poster itself is nice enough, that it poses an obstacle for people to “destroy” it in order to make the intended product. (See Fig. 3, below)



3 - Studio Mostlikely, *DIY Lampshades*

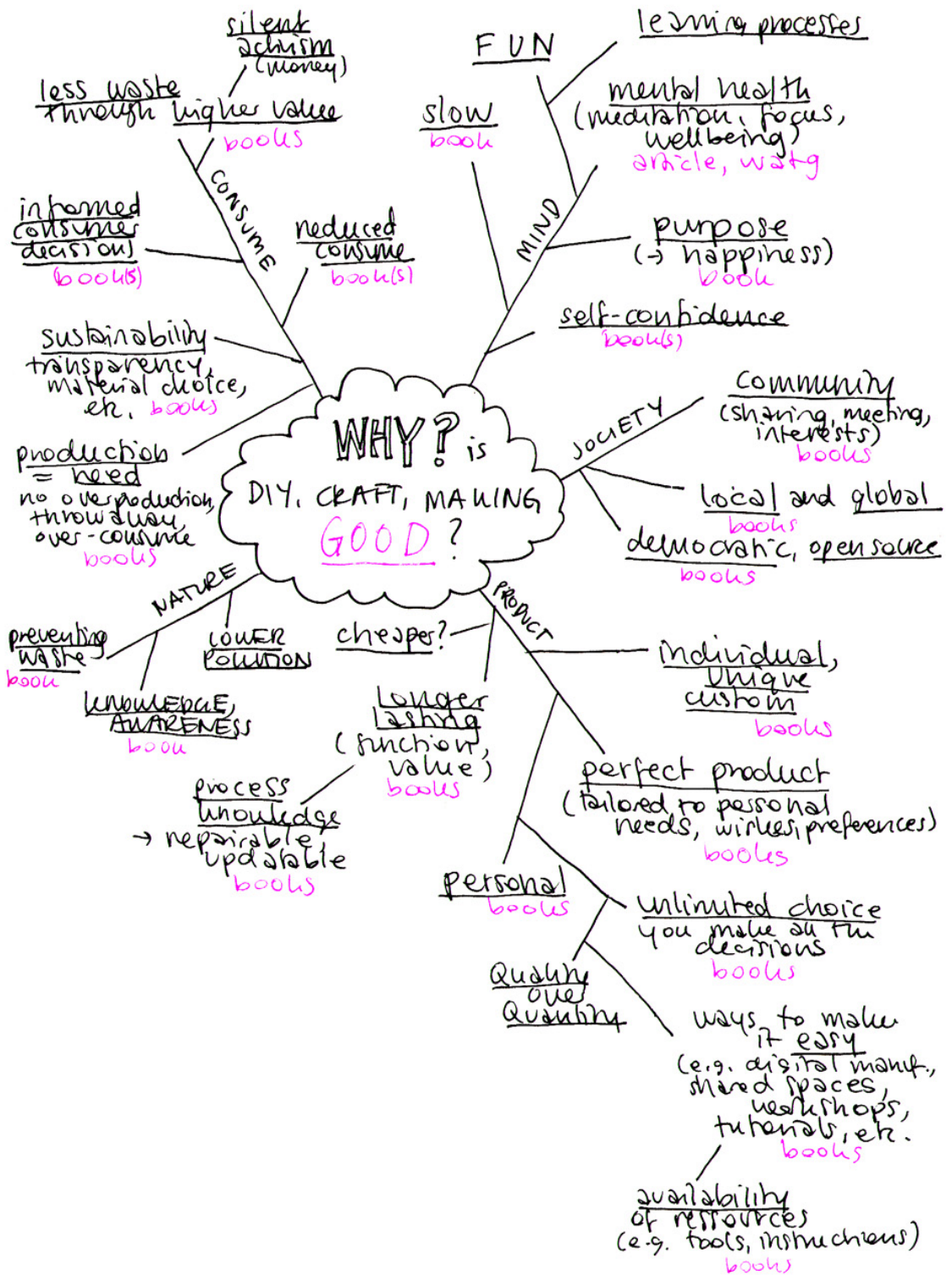
WHY IS DIY, CRAFT AND MAKING GOOD?

ENVIRONMENTAL BENEFITS

In many ways there has to be “[...] *a place for the commissioned one-off handmade object in our future because, as we know, the future has to be green.*” (Adamson 2010, 553)

The focus here is not on the commissioned necessarily, but on the one-off and handmade, or maybe homemade, since the use of digital technologies does not necessary involve making by hands, but still means making on a small scale. Working in this realm often means that production only happens by need, meaning that there is no excess in stock, materials or parts. On-demand is another term used to describe this, mostly in context with 3D-printing and the trade of digital files instead of physical products. Especially here, local production reduces transportation, including fuel consumption and related pollution (Van Abel, et al. 2011, Kohtala 2016). Local production offers opportunities for using local materials and connecting local communities.

In addition to this, “*increasing focus on repair (or fixing) is an important part of ‘closing material loops’ and is a key element in moving towards local sustainable consumption and production models.*” (Charter und Keiller 2014). Objects of daily use and especially electronic devices are getting increasingly complex and hard to understand. Glued connections, specialty parts and tools, together with inbuilt obsolescence are some of the reasons why so many of these products are too difficult for most people to maintain properly. The consequences are landfills piling up with devices that could still be used, if repaired, and increasing exports of hard to deal with electronic waste into third world countries, where they pose an immense risk both for human health and the environment. Making objects yourself eliminates the planned obsolescence and because you know how the object was made and how it works, repairing it becomes easier (Kohtala 2016, Van Abel, et al. 2011). Repair cafés are a recent movement, where volunteers help people in communities repair their electronics, clothes and other belongings and therefore help to elongate the life span of these items. Even if the product is still functioning, modifications and customizations, as well



as upcycling of completely unfunctional items are ways to extend products lifespans (Charter und Keiller 2014).

The equation is therefore simple: Making, crafting, DIY and repairing helps to keep products longer in our possession and longer out of the landfill. It also means the cycle of buying and throwing gets longer, ultimately resulting in less waste.

INVOLVING COMMUNITIES

DIY, crafts and making can have multiple benefits on communities, both online and offline. Online in this case means digital platforms for sharing and connecting, things like YouTube, blogs, social media and many more, that bridge boundaries of geography and time and that enable participation and collaboration between individuals sharing similar interests (Ratto und Boler 2014).

Staying in the digital world, the so-called web 2.0, being a form of the internet that works on platforms and through links and connections, rather than individual sites, fosters the work of communities rather than individuals. Platforms pose frames for participation, where the content is not made by the owners but by the users. Most of the time this content is not professional and through its amateurism and roughness it makes it feel attainable for anyone to participate, share, comment and discuss. Ideally this means passion, engagement and support for members of the community, above any goals for profit (Anderson 2012, Gauntlett 2011).

Technological progress not only made desktop size versions of new industrial machines available but also enabled new forms of design, distribution and production (Kohtala 2016, Van Abel, et al. 2011). One of these new forms is open source, which means that companies use amateur communities to do faster, better and cheaper research and design of their products and services, supporting people with passion and knowledge, rather than professional education. It creates a community of engaged consumers on a global scale, where both parties can benefit (Anderson 2012).

One example of a project, rather than a company, that uses open source and works with the community on a global scale, is Dave Hakkens "*Precious Plastic*". The core of the project is a set of four different machines

that can be used to recycle plastic. But more important than that is a large online community of passionate plastic recyclers that have access to plans and instructions of how to build these machines and how to set up a functioning plastic recycling workshop. (Tucker 2016) This community is also able to contribute and share potential improvements, processes and ideas about any part of the project. Using the knowledge and skills from people all over the world, as well as a nicely set up online presence, this project is a true community project. It is only possible through the effort of many, contributing with either donations or ideas, while continuously evolving the project towards the next better stage. *“This, in essence, is the age of Adhocracy, when it is no longer the budget of companies and states, but the curiosity and passion of small groups of people that will achieve great things.”* (Sacchetti , Rajagopal und Shafrir 2012, 50) (See Fig. 4, on the right)

“Precious Plastic” works on a very interesting crossing of online and offline, connecting real world micro-interventions together to form a movement on a more macro scale. This way of bottom-up working, on either a locally or globally connected scale, is a way to democratize production and consumption through crafts, DIY and making (Anderson 2012, Ratto und Boler 2014). Forming an opposite to mass manufacturing, small scale manufacturing, either by individuals or groups, is an opportunity to integrate customizability and uniqueness into products, offering a more direct connection between maker and user. One reason why this is possible, is partly because the internet allows for low risk, small businesses to act globally, while at the same time providing new tools, like crowdfunding, that lower costs and risks and therefore allow more people to join in, creating a more diverse market (Anderson 2012). Technology and knowledge, in theory, becomes available and accessible to everybody.

In addition to that, offline Makerspaces, FabLabs and Hackerspaces, or especially in Finland, Libraries, offer a place for community activities and a meeting point for people. According to a survey from Charter and Keiller in 2014, the most prevalent reasons for people to volunteer in repair cafes are to inspire others in living more sustainably and to contribute to the community with their services, while participation in hackerspaces is mostly to learn new skills and meet people with similar interests, as well as access to tools (Charter und Keiller 2014). Sharing skills, learning from others and working together can form healthy communities and active citizens, providing a stable foundation for the way we live together as a society.



4 - Dave Hakkens, *Precious Plastic*

VALUE AND ATTACHMENT

In an interview for the online design magazine Dezeen about one of his projects using traditional crafts techniques, British designer Sebastian Cox mentioned that *“many of the environmental problems we face come from the fact that people dispose of things sooner than they should. Anything that can engage people with the things they own more, and postpone that disposal is important.”* (Winston 2014)

There are many reasons why people tend to dispose their belongings so frequently. Low prices and quality, as well as lacking time and skills to repair were mentioned before, but the focus of this chapter is the human-object relationship. Attachment and value are important characteristics of objects that lead to the extension of their lives. Speaking about clothing especially, attachment to garments often happens through the notion that the item was made with care or love, that it has personality or that it awakens memories in the user (Niinimäki 2011).

This shows that there is indeed a link between crafts, DIY and making and the increased value of objects. Going back to the history of DIY, there is something called the *“IKEA Effect”*, meaning that *“consumers tend to value more highly products in which they feel they have had a hand in their creation, whether assembling a kit or just encouraging the creators themselves online.”* (Anderson 2012, 70) Any level of involvement or participation creates a closer connection and an emotional bond between human and object through infusing it with parts of oneself and one’s own identity or personality. In addition to that the products become a symbol for the story of how it was made and a carrier for memories of the process of the making (Hirscher 2013). *“Everyone can become aware of how and why things work, how and why things become the way they are. Regaining this personal connection with objects, the user can become an agent, and tools can become instruments of power.”* (Sacchetti , Rajagopal und Shafir 2012, 50)

Handmade and especially self-made means slow production and high effort, therefore it could be argued that it might lead to the highest value of any object (Niinimäki 2011), especially in contrast to the cheap, fast and ubiquitous mass-produced object. Additionally, through experiencing the process of making things oneself, the knowledge of materials and techniques might help to appreciate high quality, crafted items more and in the end, make more informed consumer choices. It is no surprise that artisanal

and crafted items, even things like craft beer or artisanal cheese, are popular right now, since these products communicate a higher value through being different from the standardized, made traditionally and with special skills in a limited quantity (Adamson 2010). These things appeal to us, maybe because of nostalgia, but also because we feel more connected to them, since the mark of the maker remains somewhat visible (Niinimäki 2011), not being overtaken by machine perfection, allowing a human to human relationship through the object. This is very much in contrast to the earlier image of craftsmanship in the 2nd industrial revolution, where exactly this machine-like preciseness was desirable.

Customized products, either handmade or even machine-made is another way to increase the value of an object. If a “[...] *product is custom-made just for you, you’re more likely to value it and keep it longer. Personalized products are less disposable; you simply care about them more.*” (Anderson 2012, 86) Be it a mass-customized item, like the sports brand Nike offers through an online service, where you can pick your own colors and materials for your shoe, or a bespoke item created by a craftsman for you, both of them are uniquely tailored to your needs.

INDIVIDUAL WELLBEING

Craft, DIY and making not only has good effects on the environment, society and the value of physical objects, but also has some benefits for individual wellbeing. For some, it can pose an excuse to escape from the fast and digital world, focusing on exercising of ephemeral skills (Adamson 2010, Niinimäki 2011). Productive, active and purposeful use of leisure time for personal development in process-oriented forms of learning can go hand in hand with social engagement and sharing of skills in both online and offline settings (Gauntlett 2011, Ratto und Boler 2014). Identification as a maker can be an important aspect in order to create a sense of belonging to a community and engage in meaningful activities (Ratto und Boler 2014).

In many of these cases, the process of making is more important than the outcome. Like mentioned before, in a very specialized working environment, most people never get a chance to experience a project from start to finish, so crafts and DIY can be an opportunity to exercise creativity and have control over each and every step in the process (Adamson 2010, Gauntlett 2011). One stunning example, illustrating the importance of the

process is Christien Meindertsma's book "*Het verzameld Breiwerk van Loes Veenstra*", where she presents the over 500 sweaters, that Loes Veenstra knitted since 1955. These sweaters were never worn by anybody, merely stored in cardboard boxes. The joy of knitting in this case led Loes to keep making, even though the sweaters were not used, but nor were they ever thrown away. (See Fig. 5, below)



5 - Christien Meindertsma, *Het verzameld Breiwerk van Loes Veenstra*

This joy of making can also be valuable for mental health. Having a goal, project or purpose can lead to higher happiness and satisfaction, especially when we are part of a social network. Craft is a way to connect both with materials and other humans in a gentle and quiet way, giving room for experimentation and personal expression without judgement (Gauntlett 2011). In a study by Sinikka Hannele Pöllänen, participants described many positive effects of crafts and making, helping to cope with physical or mental illness. On one hand, the calm nature of crafts can help to slow down and concentrate on an activity without pressure, while creating distance to negative feelings. The repetitiveness of, for example, knitting can have a meditative effect. Rewards and feelings of achievement can give a sense of optimism and especially through sharing with communities, relationships and support can have positive effects on self-esteem. (Pöllänen 2015)

In general, crafts, DIY and making can help gain a sense of empowerment and self-confidence, through the ability to design and shape your own world (Gauntlett 2011). There is this feeling of joy when a project is finished or when you try it for the first time, that evokes proudness and confidence, enough to have a desire to share it with other people. This positivity can inspire and encourage others to join in.

NEW ROLES FOR DESIGNERS

“[...] Design must accept some of the responsibilities for creating many of the worlds current problems. More importantly, it can play a key role in fixing them.” (Van Abel, et al. 2011, 126)

There is this old and maybe partly still prevalent image of the designer, a single creative mastermind creating solutions to fit for all. There are multiple problems with this approach, like the heterogeneity of people and the plain impossibility to come up with a solution that suits everybody (Van Abel, et al. 2011). In recent times there has been a lot of criticism towards design as a discipline for being mostly western, white and male and mostly designing things for other designers, not for the users (Rawsthorn 2013). Design is difficult, and sometimes regulations, conservative corporate culture or general mistakes within the long process can lead to less than ideal outcomes. Nevertheless, *“it is estimated that the product design and development phase carry approximately 80% or even more of the environmental and*

social impacts of the product [...]." (Niinimäki 2011, 26) This means there is a big responsibility for designers to think about the implications of what they are doing and what they are putting out into the world. Why are we designing and who does it benefit, should always be questions in the focus of any design process (Adamson 2010).

On the other hand, this proves that designers also have a certain power for change through the decisions they make within the design process (Hirscher 2013). New types of design, like human-centered design or participatory design are examples for changes within the discipline that are working towards a more inclusive way of creating products or services. With it come new strategies to change the traditional model of products designed by designers and consumed and disposed by consumers, many of which are supported by digital technologies. For example there are services to share products instead of owning them, like Airbnb, Uber or open source design (Fuad-Luke 2009).

At the same time there are strategies on how to design products themselves. Either in the choice of the material, for example using waste materials or growing products, or in the way products are made, for example designing half-way made products, that are intentionally unfinished and to be completed by the user. There is numerous more strategies, like modular, repairable, customized, ethical, returnable or local (Fuad-Luke 2009, Hirscher 2013, Niinimäki 2011). All these strategies together allow a better use of resources and higher values of products through more involvement of the users, which in turn leads again to more attachment and therefore longer lifespans of products and less waste.

A lot of aspects of DIY, crafts and making can be found in these strategies. This shows that maybe *"the designer of the future has to become [...] a meta-designer, not designing objects, but shaping a design space in which unskilled users can access user friendly environments in which they can design their own objects."* (Van Abel, et al. 2011, 36)

PRACTICAL RESEARCH

SURVEY

What makes people craft and what stops them from crafting?

Since this question is related to people's opinions and experiences, one suitable way to find an answer is through conducting a survey. Especially since common problems and difficulties with DIY, crafts and making are one of the main points to research further.

The survey conducted for this Thesis was created using an online service and spread using my personal Facebook network. It consists of approximately half designers and half non-designers, most of whom are between twenty and thirty years old. Since this survey served mostly for inspirational purposes and a very rough and quick overview of opinions of people in a similar population group as myself, the chosen way of working seemed suitable. The limit of a free "Typeform" survey is ten questions, which in turn made it possible to answer by the participants in on average under 5 minutes. It also allowed me to create two different language surveys, since a large amount of my Facebook network are native German speakers and most certainly prefer to answer in their own language. The goal was that the questions would have a balanced level of difficulty, not too easy or too hard. Therefore the participants would feel engaged but not demotivated. The questions are roughly covering three themes or bigger questions:

What do people craft, DIY and make?

How do people craft, DIY and make?

How do people feel about crafting, DIYing and making?

These large topics are then split into smaller sets of questions to achieve a higher level of detail. The full set of questions and results can be found in Appendix 1. Of the total 19 participants of the survey, 14 answered the English language version and the remaining 5 responded to the German language version. Since the questions are literal translations, the results can be combined for evaluation.

Starting with the statistical facts, most of the participants are under 30 (13/19), female (15/19) and either designers, design students or students (12/19), with about half of them crafting a few times per year (10/19) and most of the others more frequent than that.

[description]

Age: Gender: M / F Nationality: Occupation:

Do you craft/DIY/make things on a regular basis?

- never few times/year monthly weekly daily

Did you craft when you were a kid?

- never occasionally frequently

⇒ if yes, can you elaborate on the context? → ...

Did your education include teaching of crafts?

- yes no don't remember

What kind of craft/DIY projects have you done recently?

...

What is your favourite project you ever made?

...

⇒ do you still use it? yes no

What is your favourite tool? why?

...

Where do you find inspiration and instructions?

- Book magazine course/class online, e.g. ...

What motivates you to craft/DIY/make things?

...

What stops you from crafting/DIYing/making things?

...

What would make it easier for you to start crafting/craft more?

...

Was there a specific moment when you started crafting?

- No, i don't craft No, i've always crafted Yes: →

How does craft/DIY/making affect your emotions?

...

...

Answers in the What? -category revealed, that most of the projects made were in the field of clothing and accessories, gardening or home and decoration, with some gifts as well. The point of asking about favorite projects is more in the follow-up, whether people still use these favorite projects frequently or occasionally. In deed most participants (14/19) continue using self-made items, demonstrating the personal value of homemade objects.

Questions in the How? -category are designed to explore some details about the making process. The first question in this group is asking about people's favorite tools. Most of the mentioned types of tools in the received answers were non-powered hand-tools (10/15). Hand in hand with the tools go instructions for projects, most of which were found online, predominantly on Pinterest and YouTube (both 10/19) as well as Instagram (6/19). But also a surprising number of participants find inspiration and instruction in magazines (9/19). Courses and books were among the least favored sources.

The last group contained questions about subjective opinions on the benefits and negative aspects of crafting, making and DIYing. The aim was to find out reasons why participants craft, what stops them from making and what would make DIYing easier. Most noticeably, time and money was mentioned twice. More time and money, as well as a better crafting community and better access to materials were ideas to make crafting easier. A lack of time and money, as well as the potential of failure or bad results were negative aspects ascribed to DIYing. Opposing this, a good result was one of the most mentioned positive aspects of crafting (7/19), which underlines the importance of success. Nevertheless, focus and concentration, as well as the fun in the process turned out as almost equally valuable to the participants.



6 - Wool and the Gang, Knitting Kit

INTERVIEWS

To add a second perspective to the first insights gained through the survey, two written interviews were conducted with representatives of two different businesses selling knitting and crocheting kits online. The idea here is to understand more in detail, how a business focused on crafts and DIY works in practice.

Wool and the Gang is a UK-based business providing DIY-kits for making mostly clothing and accessories using different textile arts techniques, like knitting, crocheting or embroidery. The founders Aurelie Popper and Jade Harwood both come from a fashion design background and aim to combine design and sustainability through DIY, with an additional focus on the benefits of crafting for individual mental health.

We are Knitters is a Spain-based business working in the same field, providing DIY-kits to knit and crochet different garments yourself. The company is focusing on sustainable materials and sources, providing natural or recycled yarns, recyclable bags and wooden tools.

To summarize, both businesses are similar and therefore competing on the same market. Most of the questions are therefore equal or similarly worded, as to provide a base for comparison. The only difference being an added question in the case of *Wool and the Gang*, that is specific to their business. The full transcript of the e-mail interviews can be found in Appendix 2.

Regarding the target group, both businesses focus on the young professionals under 35, offering kits for different levels of experience with textile arts, from beginner to advanced. Not mentioned in the interview, but easily observable from the range of products offered on both websites, the focus lies also mostly in female customers, which goes hand in hand with the predominant stereotype of textile arts being reserved to women. Sophie from *Wool and the Gang* mentioned the gift market as a second important target group, showing the popularity of homemade or DIY-related presents. Social Media is a very important tool for both businesses to allow direct contact to the customer, as well as to create a community and share pictures of finished, self-made garments. This is also the only way to get a rough feeling for how many of the sold kits are in the end made into the designated products.

Regarding Sustainability, both businesses mention the importance of their suppliers, providing both quality and environmentally friendly yarns. Slowness and longevity through higher valued products are some more aspects in the focus of both companies. In the interview with *Wool and the Gang*, mindfulness and the benefits of DIY for reducing stress and anxiety are mentioned, contributing to the positive implication of crafts.

The additional question regarded *Wool and the Gangs* shift from selling both kits and more expensive finished products to exclusively selling kits and no finished products. The answer provided explained the evolution from a previously fashion-focused business to one focused on crafts and handmaking, mostly fueled by the demand of customers. Now the most important factors are time and care, customizability and the value of each individual piece through it's making process.

To sum up, both businesses hit a sweet spot in the current demand for alternatives to mainstream consume and mainstream fashion, combining design and DIY to offer a new kind of involvement of consumers as producers and at the same time contributing more sustainable ways of working to the fashion industry.

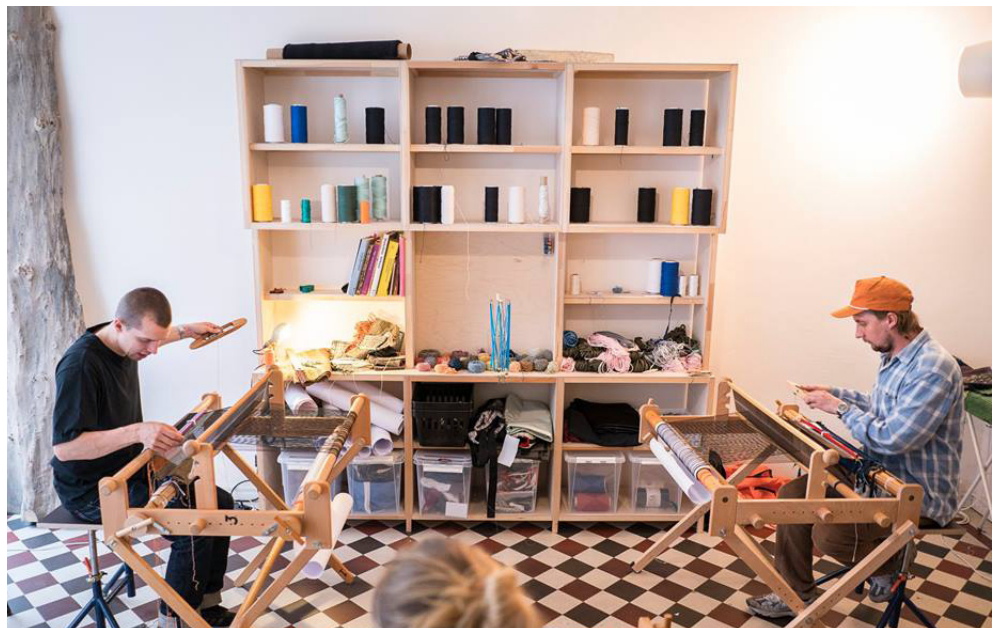
OBSERVATIONS

Local events and groups around the topic of crafts, DIY and making are the next area of interest. Through observation and participation in organized happenings around Helsinki, the following question was explored:

How do you communicate or teach crafts, DIY and making through actions?

Taking the role of the beginner, the curious or the student, as opposed to the teacher, the goal is to collect insights from a different perspective. At the same time, getting involved in different but related projects helps to exchange thoughts with people of similar interests and discover new information and inspiration.

The Weaving Kiosk is a project by Rosa Tolnov Clausen, aiming to bring the traditional technique of weaving back into a contemporary context. Like any other kiosk, the *Weaving Kiosk* is setup to be available and open for passersby, offering weaving looms and materials instead of convenience goods. Every participant can weave a small piece of fabric of their own design, which is then included in a product, finished by Rosa herself. (See Fig. 7, below)



7 - Rosa Tolnov Clausen, *Weaving Kiosk*

In this case, the *Weaving Kiosk* was part of the *Helsinki Design Week 2017* and the suggested product was a drawstring backpack. The woven piece of fabric was included to make pockets on the front of the bag. Each bag is therefore similar, yet unique and customized to the weaver him- or herself. The kiosk is equipped with three weaving looms, already set up with the basic yarn, and a shelf full of different types and colors of yarn that can be used for weaving. After a short introduction on the basics, each participant is set to start weaving their piece. Due to the popularity of the Kiosk and because of the long duration of weaving one piece, spaces had to be booked in advance, therefore in reality it was a little bit less like a walk-in kiosk. Nevertheless, the idea of providing a ready-made product, where one or more parts can be customized, proved as an excellent idea – and the bag is currently one of my favorites to use.

Helsinki Drawing Club is a small get-together of drawing-enthusiasts in the Helsinki area. Inspired by Illustrators online, Mia and Sasha founded their own club locally. Organized through social media platforms like Facebook and Instagram, the club meets approximately every month in different locations to draw together. The simple idea is to support each other to draw more and meet like-minded people in the area.

In addition to participating in a few of their regular events, I also participated in a special event called „*drawing is for everyone*“. The event was organized by the *Helsinki Drawing Club* together with the *Aalto A:Space*, and participants could create a Tote-Bag with their own drawings. The workshop was divided in a drawing session with a few fun warm-up exercises and then a session to transfer the final illustrations onto bags. The first half was held around big tables, which evoked a similar sense of community as the regular drawing sessions, while the second part included a lot of waiting, since only one bag could be made at a time. Slight changes in the structure could have helped here, but observing most participants in the end, they were very satisfied and proud with their creations, even those who had previous experiences with drawing and DIYing – including myself!

Another club-like event is the *Knitting and Language Café* organized by the Finnish home economics organization Martat and the Pasila Library. The idea behind this project is to provide a space to practice speaking Finnish, while keeping busy with your hands and learning new textile arts techniques, like knitting or crocheting. Attending multiple of the biweekly events allowed me to gain a certain level of confidence in both speaking and interacting with the other participants, all of which had a more advanced level of

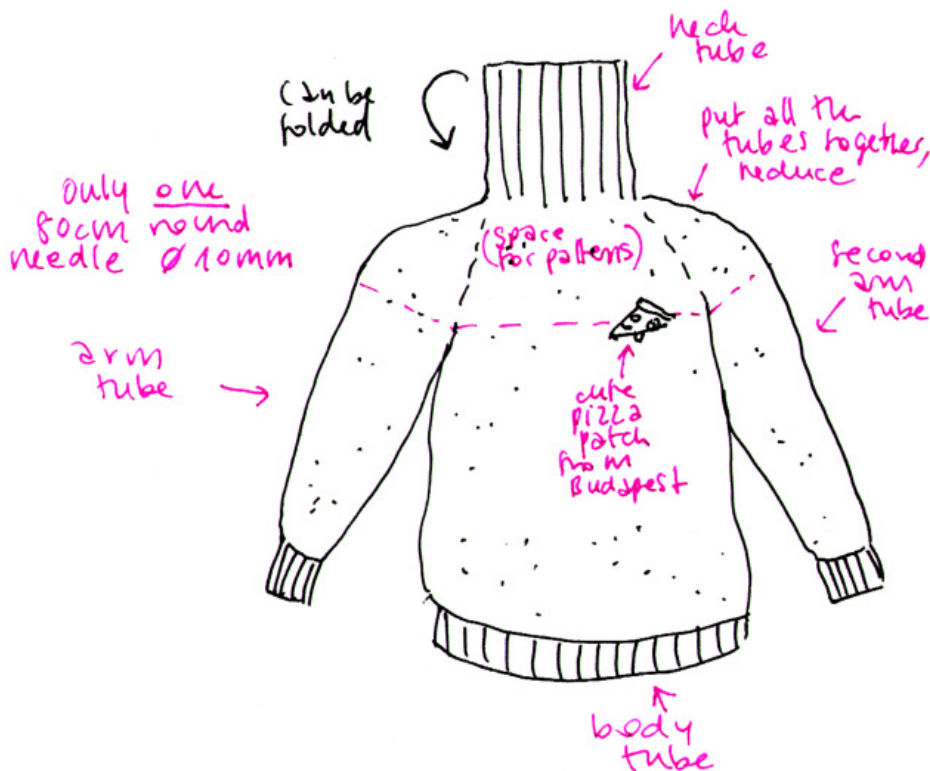
Finnish knowledge than my own. The organizers from Martat usually took the role of teachers for participants wanting to learn, while others simply worked on their own project. The opportunity to speak the language you are trying to learn, but also the option to focus and not be forced to speak, is what made the café a great combination.

EXPERIMENTS

Stepping even further into the practical part of this Thesis, this chapter explores different textile arts techniques used, from knitting to crocheting, weaving, sewing and embroidery. The aim is to provide a comprehensive and comparable practical study of different DIY, crafting and making processes. The starting point of these experiments is the search of ten different ways to make a sweater. The sweater, sweatshirt, pullover, jumper or hoodie, all interchangeable terms in this case, is one of the clothing archetypes and associated with warmth and comfort. A relatable object, arguably found in almost any closet of the western world. The full documentation of the Experiments can be found in the Appendix 3, since the following writing will focus on providing a short description together with the most significant learnings of the different experiments and a description of the experiment process as a whole.

- 1) Tutorial + knit → Icelandic sweater
- 2) Kit + knit → ~~wool and the gang~~ weareknitters.com ✓
- 3) Book (or mag) + Sew → check the library / Thrift store (CUT mag!)
- 4) Tutorial + upcycle → check pinterest + my closet (Kimono idea)
- 5) 2nd Hand + customize → check UFF
- A) vinyl cut sticker (Library 10)
- B) 3D printed stamp (Fablab) (or even polako stamp)
- C) embroidery, screen print etc. depends what i find in Helsinki
- D) unwrap wool sweater and re-knit into new shape
- 6) Sweater from scratch? or: professional/machine made...
- 7) Buying a sweater (not 2nd hand) - my favourite sweater i own but from an ethical, fair, ecological brand?
- 8) Getting a sweater tailored (do i know somebody?)
- 9) Making a sweater in a workshop / together with other people
- 10) Sweater printing services (online)

The first point of reference in this series of experiments is a previous and first experience of knitting a sweater from scratch. While living abroad on an exchange semester in Reykjavík, Iceland, I knitted a big woolen sweater, following a tutorial on a Norwegian blog, which I found via Pinterest. The idea was to make my own Icelandic sweater, as a cheaper alternative to the popular souvenir, as a custom and simpler version, and as a way to pass time in the dark months. Due to using big needles and wool, the process was relatively fast and easy and the instructions on the blog were a good guide for a beginner. There are a lot of memories attached to this sweater, through the place, time and the other circumstances it was made in, and therefore it is very valuable to me. Nevertheless, it is not perfect. It is scratchy and difficult to clean, and the fit is a little too boxy.



The second experiment, not making a sweater from scratch, but rather upgrading a sweater through modification, was done during the work on this Thesis. The sweater used in this experiment is one found in my personal closet and one that usually rested on the bottom of the stack. By embroidering over the existing print, which was the reason why I was not wearing the garment much anymore, the sweater was both customized and recovered. Using the facilities of the A:Space, the embroidery was done with a machine, leaving only the design work and preparation of files, instead of

the meticulous stitching, to me. Nevertheless, the process of learning how to use the machine was long and complicated. The same as with any other machine, the more repetitions of the same pattern, the more time efficient it becomes. The result in the end is professional and durable, but hardly accessible to most people.



To counter the previous experiment, I selected another old printed sweater from the bottom of my stack and repeated the same process, this time by hand. This way of working is more accessible, since few tools are needed and can be found in local stores. Choosing to simply use the previous print as a stencil, therefore following the shapes with different colors of yarn, the result is quite like the machine-made version. The difference between the two is that this embroidery could be un-done due to the bigger yarn. The embroidering process itself has a meditative, slow and focused quality, that is considerably more relaxing than fighting to get a machine to work. In the end, both sweaters tend to be at the top of my stack in the closet now, being worn more frequently and with confidence to show my own craft work, making no difference between the machine-made and hand-made.



Returning to knitting as a technique, the fourth experiment in this series is a trial of a DIY-kit, ordered online from *We Are Knitters*. Providing all the tools, materials and instructions needed to make a sweater from scratch, this kit serves as a convenient package for beginners, as well as advanced knitters. Against my own expectations, the process was a little more complicated than anticipated. Choosing the option to use my already owned needles, whose size slightly varied from the ones, that would have been



provided. Not realizing this in the beginning meant I had to re-do some parts of the sweater, as well as adjust the pattern to a smaller number of rows, to keep the final garment from getting too long. Similar to the first knitted sweater, this one does not fit very well either. The shape is a little bit odd and the shoulders keep sliding off. In addition to that, the washing process is very difficult, since it must be done by hand and the garment becomes very heavy and takes multiple days to dry. Working on this piece for a good portion of time spread over a month, this result is in fact disappointing, meaning that in the end I might have to un-do the whole work to make something new and better fitting.



Moving on to the technique of sewing, the next experiment truly tested my skills. Picking up a project I started a few years ago, the project was to make a sweater-jacket following a tutorial with pictures in a German DIY-magazine, called “*CUT*”. With the pieces already cut to shape following the pattern, all left to do was the sewing part itself. Involving over sixty steps, this jacket was more complicated than anything else I have made before, using a sewing machine. Breaking down the project step by step, the result turned out better than expected and after putting it through the ultimate test of machine washing, only a few seams had to be repaired by hand. In addition to that, multiple people have reacted surprised when I told them the jacket was made by myself by hand.



Again, returning to knitting, or rather un-knitting, the following experiment evolves around reversing the process. Picking a used sweater from the secondhand store, the idea was to unwrap the finished garment to reverse it back to its state of yarn, which was similar to what I had to do in order to fix the sweater made using the DIY-kit. Repeated multiple times, this process gives many insights into how mass-produced sweaters are constructed. The first garment I frogged, which is the professional term for un-doing knitted work, was a large vest. During the process it turned out that the fabric was knit in rectangular shape and then cut to fit the pattern of the vest around the neckline of the garment. Therefore the un-wrapping resulted in a lot of short strings, since all knitting is usually done with continuous yarn. Careful selection and attention towards how a sweater is made, is therefore very important regarding how successful in return the un-making of a garment is.

A fusion of knitting and embroidery was the main technique used in the next experiment. By over-knitting, meaning stitching over the existing knitted stitches in the same pattern to change their color, a completed sweater can be transformed through overwriting it's design. In this case another sweater found from the secondhand store was used as a base, while leftover yarns and scraps were utilized to make the patterns. It is a very time-intensive process, especially when working on the whole sweater, but at the same time, the garments might also be worn during the process, showing the different steps and stages like an organism slowly evolving.



At this point two more experiments were conducted, but neither of the following ones will concern the making of a sweater, mostly due to lack of knowledge of the techniques and lack of time. The previously introduced seven ways to make a sweater will be analyzed and compared in the next chapter, additionally using the detailed facts and numbers found in the descriptions in the appendix, and summarizing the learnings about the different processes, as well as the problems and potentials identified for the further progress of this Thesis.



The two remaining techniques of crocheting and weaving were explored in some smaller scale projects. Since I had almost no previous experience in crocheting, the project of choice was a DIY-magazine including a small kit to crochet a cactus toy. Claiming to be a one-evening project for beginners, the kit promised an easy start to the technique. Not including the needle needed or a pattern in an easily understandable language, the project turned out a little more complicated than hoped for. Nevertheless, after learning the different stitches required and a little practice, the project proceeded to turn out well. Since there was no stuffing included in the kit, all the yarn scraps and cut-offs left from the un-knitting project turned out to be a useful alternative to store-bought synthetic stuffing. Over the course of the Thesis this small project led me to making a lot more of these small toys in different shapes, finding ways to use up all the smallest bits and waste materials on the insides of these little creatures.





To again explore the technique of weaving, I built a small loom from an old shoebox, following a tutorial found online. The process was very simple and provided the tools to make small pieces of experimental fabrics, mostly constructed from yarn scraps and leftovers. The loom itself is a good temporary solution and a nice way to try out weaving without any costs. In the end the whole experiment was made entirely from waste materials but still provided a decent quality piece of fabric, that was later used to make a small pouch.

Even though these last two experiments are not directly related to making sweaters, they did give me valuable insights for thinking a bigger picture. The un-knitting resulting from mistakes in constructing a sweater, the use of even the smallest waste materials as stuffing for toys and the making of tools from waste materials for weaving, provided the groundwork for developing my own project. Being a vital part of this Thesis, the experiments provided me with a set of physical and mental tools, materials and experience or DIY-expertise in a field, that was previously a little outside my personal comfort zone.







PRACTICAL RESEARCH





ANALYSIS

THEORETICAL INSIGHTS

The aim of this section is to build a conceptual bridge between the previous writing and the development of the design brief for the practical component of this Thesis. Revisiting the theoretical foundation of this Thesis, the starting point was a set of questions trying to define crafts, DIY and making, as well as demonstrating its necessity, relevance and benefits in contrast to and context of current issues. What defines crafts, making and DIY commonly is a strong focus on thinking by doing and the active creation of things and objects outside of mass manufacturing, often with the help of specialized tools.

One of the most important aspects is the doing itself or the process. Here lies also one of the greatest benefits of DIY, crafts and making in my opinion. Participating in the creation of an object from start to end, or even partly, will result in greater knowledge and appreciation of the material, quality and amount of work. This in turn might lead to a greater appreciation of well-made products in general and more informed consumer decision on the base of this knowledge and experience. In addition to that, the inherent story of the object in question becomes transparent, which can then lead to a tighter connection of product and user and therefore higher attachment and value.

In contrast to the disposability and short lifespans of mass produced commodities, the objects tend to last longer, be it because of their value or quality or the ability of the maker to repair them, ultimately resulting in less waste. This type of small-scale production, for example by a local maker, usually means production by need or on demand, meaning products can be customized and unique, forming a close relationship between user and producer. In addition to this, waste can be used in creative and innovative ways to craft new products, viewing it as a valuable material resource, rather than an unpleasant side-effect.

Design as a discipline has the responsibility but also the power to foster change in this regard, through the decisions made during the design process itself. *“Design can empower or disempower us in every other aspect of our lives. [...] Are you comfortable with the ethical and environmental implications of the things you buy, or anxious about the consequences?”* (Rawsthorn 2013, 7).

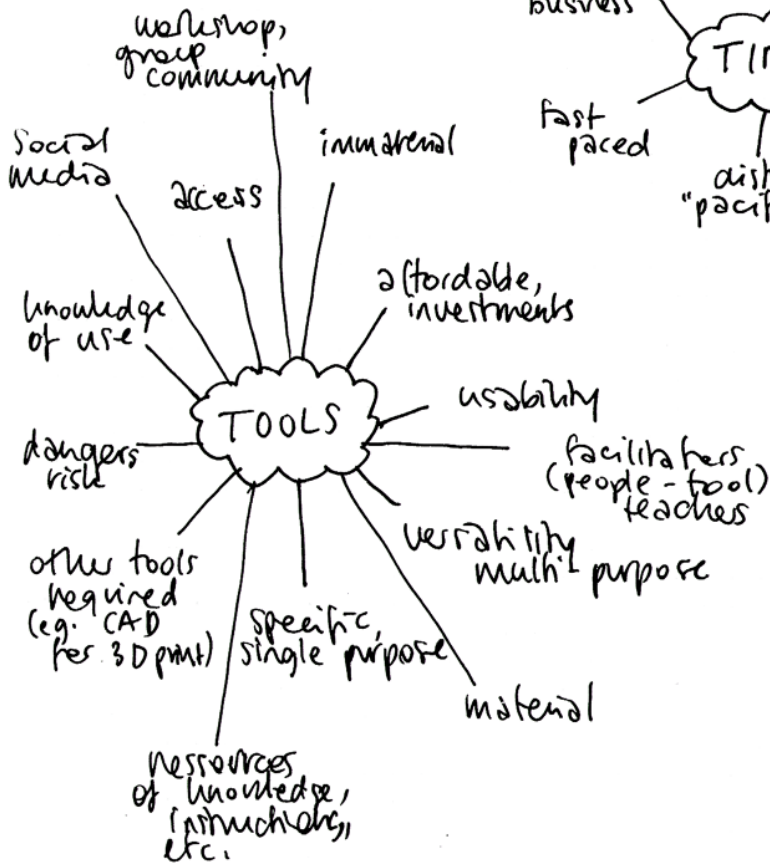
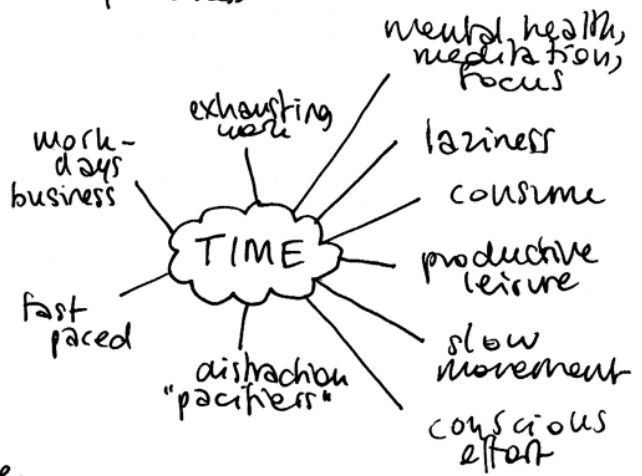
TOOLS - TALENT - TIME

One of the concepts manifesting quite early in the research process was the relationship between tools, talent and time and their influences on whether people craft, DIY and make. Tools in this case can be anything from physical tools and space to digital tools to instructions and monetary tools, which are all found outside oneself. Talent means things like interest, knowledge, confidence, skills and practice, which are all found inside oneself. Finally, Time means available time, but also concerns the speed of life and the speed of making, which is an underlying pace. In the end, tools, talent and time must exist in one form or another within somebody's personal environment, for them to be interested or to get involved in DIYing, crafting or making.

Some of these ideas can be read in the theory, but the survey especially demonstrated, how important these factors are. Time, Money and access to materials, which can be categorized as tools, were the most mentioned resources that would make crafting easier for the participants. And yet again, the amount of time and money necessary, were counted as the most negative aspects of making, DIY and crafting. In addition to that, bad results were mentioned multiple times in the same question, hinting at a fear of failure and therefore a lack in the Talent-resource. These three factors or resources correlate in an interesting way and provide a conceptual grid for this project to be placed in, especially concerning the question: Why do people craft, DIY or make and why don't they?

PRACTICAL INSIGHTS

Providing the whole package of tools, the two interviewed online businesses *Wool and the Gang* and *We Are Knitters* both specialize in offering one of the needed resources in order to craft your own garments. The idea of the Kit as a product works because for three reasons. First, it provides an alternative to mainstream fast-fashion. Second it works smoothly with the current popularity of DIY, crafts and making. Thirdly it makes high quality handmade clothing more affordable and accessible through enabling customers to make it themselves and therefore pay less. This aspect, of a reduced price due to higher customer involvement, provides enough in-



THE
-TOOLS-
-TALENT-
-TIME-
QUESTION

centive for most people to get involved. Additionally, it provides the basic background for the economic model developed later in context with the practical component of this thesis. Since it was already mentioned multiple times in the survey and the previous writing, money is a powerful tool, not to be underrated for the success of this project.



ANALYSIS

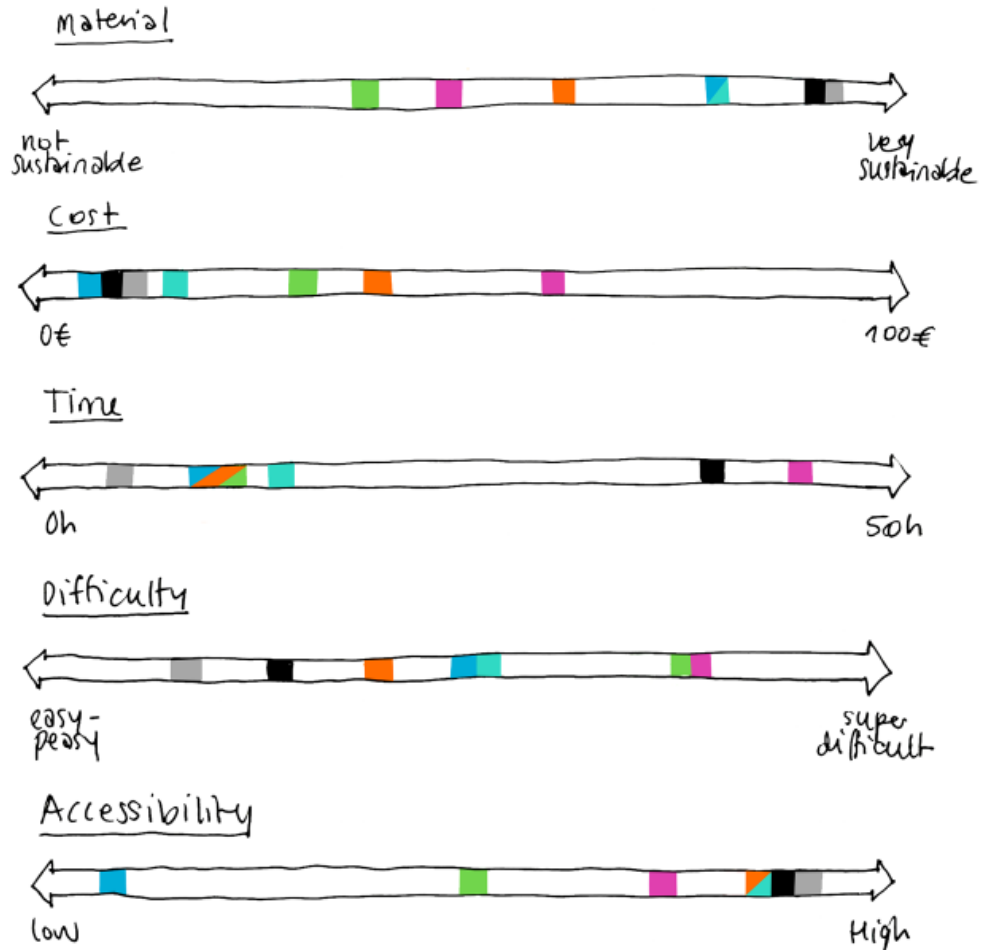
Maker's Happiness, as I like to call it, is one of the most rewarding feelings, which can be achieved by completing a project, which you have been part of or made entirely yourself. A sense of proudness and confidence, sometimes surprise, when seeing the result of patience and hard work, are characteristics of this feeling. During the participation in the Weaving Kiosk and Drawing is for everyone! – workshop, I both got to experience this feeling, as well as observe it in others. Especially through the observation in others, the theory of how DIY, crafts and making can help with individual wellbeing through giving purpose and especially self-confidence through success and positive achievement, became evident. In addition to that, the resulting emotional connection and value of the product created will be emphasized by these positive experiences of the making process itself. This is also where the story of an object comes into play, fostering this attachment, as well as the spreading of positive impressions about DIYing, making and crafting, through showing off the self-made items and sharing this Maker's Happiness with others, hopefully inspiring them to start making.

During the Sweater-Experiments I did experience a large amount of Maker's Happiness, but also incredible frustration. And sometimes this frustration and disappointment stayed. But being part of any DIY process, it is also an important step to learn new skills and practice. And in any case, the excitement of making something usually beat out the frustration. Since seven of the experiments evolved around Sweaters, they are all comparable on the base of some of the basic statistical factors, such as time needed for completion, difficulty, price, as well as things like sustainability of materials or accessibility.

Surprisingly within this comparison, the knitting-kit was the project with the highest cost, time and difficulty to complete, while the reverse project, the un-knitting of a sweater was among the lowest cost, time and difficulty. Obviously, these projects are biased by the selection of techniques and materials, as well as previous experience. The sweater knitted from scratch was a lot easier and faster because of the bulkier yarn and simpler construction, while the sewn jacket a lot higher in difficulty than choosing to sew a basic sweater would have been. In the end, by intuition and the analysis of the experiments, the techniques used in the further process of this project, are a combination of two of the previously tested ones, positively influencing each other.

Since the "un-knitting" of used sweaters provides easy access to a very sustainable material in the form of recycled yarn, this technique is used together with knitting of bulky yarn, achieved through taking multiple recycled yarns together to form a bigger string. One interesting aspect in the process of disassembling a finished garment and reversing it back to its original state, is the almost accidental learning of different ways to construct items of clothing, and of beneficial or disadvantageous production methods for taking them apart in a later stage of their lifecycle. This can in turn lead to both knowledge how to design knitted garments to be recyclable in a better way, and to the appreciation of well-made and high-quality items, whose design allows deconstruction in the future. In theory this process of un-knitting and re-knitting could be infinite, meaning that on a large scale there must be only a certain amount of material, that can be transformed repeatedly. In practice, disassembly always includes a small amount of waste materials from the seams or labels, and with every re-knit the yarns tend to become shorter and shorter. But even then, as the crocheting-experiment proved, these small soft and fluffy waste materials can be used as fillers and stuffing.

EXPERIMENT GRAPHICS



ANALYSIS

Another aspect, not previously mentioned about the experiments, is the analysis of different tools used. The only tool needed for all the experiments is a pair of scissors. Used for cutting yarns or fabrics, this tool is a vital element, but also a very basic one that can be found in almost any home. While a pair of small scissors is sufficient to use alone for un-knitting a sweater, the more specialized seam ripper makes the work a little bit easier. Sewing needles, either small or big were the second most used tools in the experiments, and together with big circular knitting needles, and scissors, those are the tools needed to make almost anything with the recycled yarns. Even the sweater knitted previously in Iceland was done with just one pair of knitting needles and a little bit of inventiveness. The more specialized a tool, the more specific is the process that it is used for and since a large amount of time is necessary for the un-wrapping of a garment to get the raw material needed for knitting, it makes sense to think about acquiring

some tools to make this process faster and more efficient. A quick research showed that there are indeed ready-made devices to wrap yarn onto a spool or even automated machines, but most of them are either mass produced from plastic or unattainable. This gap in the making process and the need for a very specific system was the starting point for developing *The Sweater Work / Shop*.

TOOLS I USED FOR THE EXPERIMENTS: Have share Buy

Tool	Color Key	Have	Share	Buy
- Computer	Orange	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Knitting Needles Ø10mm	Orange	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Scissors	Orange, Blue, Green, Pink, Grey, Black	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Big sewing Needle for wool	Orange, Pink, Grey, Black	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
- Small sewing needle	Orange, Blue, Green	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Tweezers	Blue	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
- Small Wrench	Blue	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
- Embroidery Machine	Blue	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
- Embroidery Hoop	Blue	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
- Embroidery Needle	Blue	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Knitting Needles Ø 5.5mm	Pink	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Ruler	Pink	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Crochet Needle Ø 3mm	Pink	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
- Exactor Knife	Pink	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Sewing Machine	Green	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
- Pins	Green	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
- Tape	Green	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Pens	Pink, Green	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Seam Ripper	Black	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

COLOR KEY

- Icelandic Sweater
- Machine Embroidery
- Hand Embroidery
- Knitting Kit
- Sewing a Jacket
- Un-knitting
- Over-Knitting

DEFINING THE PROJECT

Although this whole project started with the idea to develop a toolbox before defining the prototype, there were several ideas around tools and sweaters and directions this project could have taken, each of them contributing to narrowing it down further and further. From an analogue toolbox, to a digital one, to numerous contemplations about sweaters and the context around them, these small explorations formed mind maps, which helped with the clarification and definition of the idea.

A few things mentioned earlier in this chapter defined the outlines and final brief for this project and served as starting points for developing the physical piece. The first aspect is the focus on and interest in alternative economic models. As mentioned before, the idea of the more you do, the less you pay is inspired in part from the business model used by the online DIY-kit retailers *Wool and the Gang* and *We Are Knitters*.

This is also where a second aspect came into play, defining the concrete purpose of the project. With the annual *Tokyo Christmas Sales* at Aalto University, a market where design students can present and sell some of the products they crafted during the school year, the ideal opportunity to test the system to be developed on a small scale presented itself. Each student may purchase a certain amount of space in the three-day long market event. The size restriction, as well as the timing in the year sets a certain frame for the products to sell, as well as the way they are presented. Since one of the aims of this Thesis is a small real-life impact, the idea formed to develop a prototype tailored to be used in a market-scenario, while still aiming for an open enough design to be used in other settings as well, or to be easily adaptable. The idea was to test a reversed business model at the *Tokyo Christmas Sales*, where ready-made products would be the most expensive and custom ordered products would be cheaper. Therefore the involvement of the customer in the creation of the product is given value, rather than only their monetary input.

Another aspect informing the design of the prototype is the chosen material and technique used to create the products for sale. The combination of un-knitting sweaters and then using those recycled yarns to re-knit different items with a bulky yarn combined from different colored strings distilled itself as the preferred method. Since the market itself is set in Winter, the idea to knit Hats and Headbands follows quite naturally, not only because it

seems fitting, but also because these smaller items can be made relatively fast while using less yarn. This allows for an efficient one-person manufacturing process, as well as appropriate pricing for the context of the sales.



ANALYSIS

The first prototypes of a hat; A different pattern was used later

The making process can be divided into three stages, each with specific requirements in spatial terms for the market stand or piece of furniture itself. Since the story is a central point regarding the value of an object, the visual aspect of the prototype as a tool to explain and show how these products are made and where the material comes from, becomes an important factor for designing the sales furniture. In addition to being a visual tool, the prototype can be seen as a research tool in order to test the aforementioned production system and small scale alternative economic model. This is, in essence, the return to the beginning of the project, designing a toolbox in the form of a small mobile kiosk, informed by a DIY, crafts or making process and a larger system, working from inside out to create a very specific solution for the use of textile waste.

The un-knitting process is central to the recycling of the textile waste and one of the most time-intensive components. Therefore the prototype needs to include a special machine that enables the speeding up of the yarn-making process. In addition to that, this machine serves as a characteristic point of interest, drawing potential customers in through its movement and evoking curiosity. The prototype or kiosk is therefore set in the contemporary context of what could be called “*Design-Machines*”, meaning designer-made low-tech, mechanical or analogue apparatuses assisting in the creation of products. (ÉCAL 2013)



9 - Imogen Hedges, *pedal powered un-knitting machine*



8 - Damien Ludi and Colin Peillex, *Rocking Knit*

A “*Design-Machine*” in the context of knitting is for example Damien Ludi and Colin Peillex’s “*Rocking Knit*” (Fig. 8, above), a low-tech factory in the form of a rocking chair, where through the rocking motion itself a hat is being knitted (ÉCAL 2013). Opposite to this, Imogen Hedges developed an “*Un-knitting machine*” (Fig. 9, left), where sweaters are being unraveled with the help of a bicycle mechanism and the yarn straightened via the steam of a kettle (Caula 2012). What many of these machines have in common is the use of ready-made parts and simple wooden structures, while depicting the production mechanisms in an exaggerated way, for example using extra-large gears.

With these “*Design-Machines*” as a visual and conceptual reference, the kiosk functions a combination of workstation and shop, hence the name Work / Shop. Together with the frames and requirements defined in this chapter, the conceptual base for the development of the piece of furniture is set. Inspired by the idea of “*At Your Place Production*” coined by Swedish designer Jenny Nordberg (Fig. 10, below), who is predominantly working with low tech industrial processes, appropriated for small scale production, another requirement for the Work / Shop became mobility. “*At Your Place Production*” is the concept of performing production at the consumer’s place and therefore eliminating the need for transportation and factories, while also giving the consumer a tighter connection to the object through witnessing how the object was made and who it was made by. In the same way as “*At Your Place Production*”, The Sweater Work / Shop aims to make the recycling process visible and connecting the products directly to the maker, who is operating the kiosk, and therefore in the same way allows for transparency and a higher value of the objects through the connection of producer and consumer.



10 - Jenny Nordberg, *At Your Place Production*

THE SWEATER WORK / SHOP

This chapter focusses on the detailed planning and execution of the practical component included in this Thesis. As elaborated in the previous chapter, the design of the prototype is defined by:

1 – the material and making process of the products:

Hats and headbands knitted from recycled yarns harvested from old knitted clothes.

2 – the context of the “*Design Machine*”:

A visual research tool, to show, make and sell, a mobile work/shop.

3 – the alternative economic model:

The more you are involved, the less you pay.

THE PRODUCTS

Starting with the materials, tools and products needed to fill the work/shop, the general requirements for the proportions and form of it will be developed based on these items. The problems to solve and questions to answer in this step are:

Where do I get material?

Which products am I making and what pattern am I using?

How much time and yarn does it take?

The first problem is easy to solve. There are numerous secondhand stores in the Helsinki area to provide old knitted garments and accessories. Especially the *Fida Wholesale*, where second class items, as well as items not sold and returned from the *Fida* secondhand stores, can be bought in bulk, proved as an excellent source. Not only are the clothes affordable, but they are also the ones, that are of insufficient condition to be sold and therefore most likely to end up as waste without any potential of being reused. Another good source of materials and even tools is *Kierrätyskeskus* Helsinki, the local recycling center, which includes a craft supply section, where used DIY materials can be purchased. These items include for example knitting needles, balls of yarn and other things useful for many crafts, DIY or making projects.

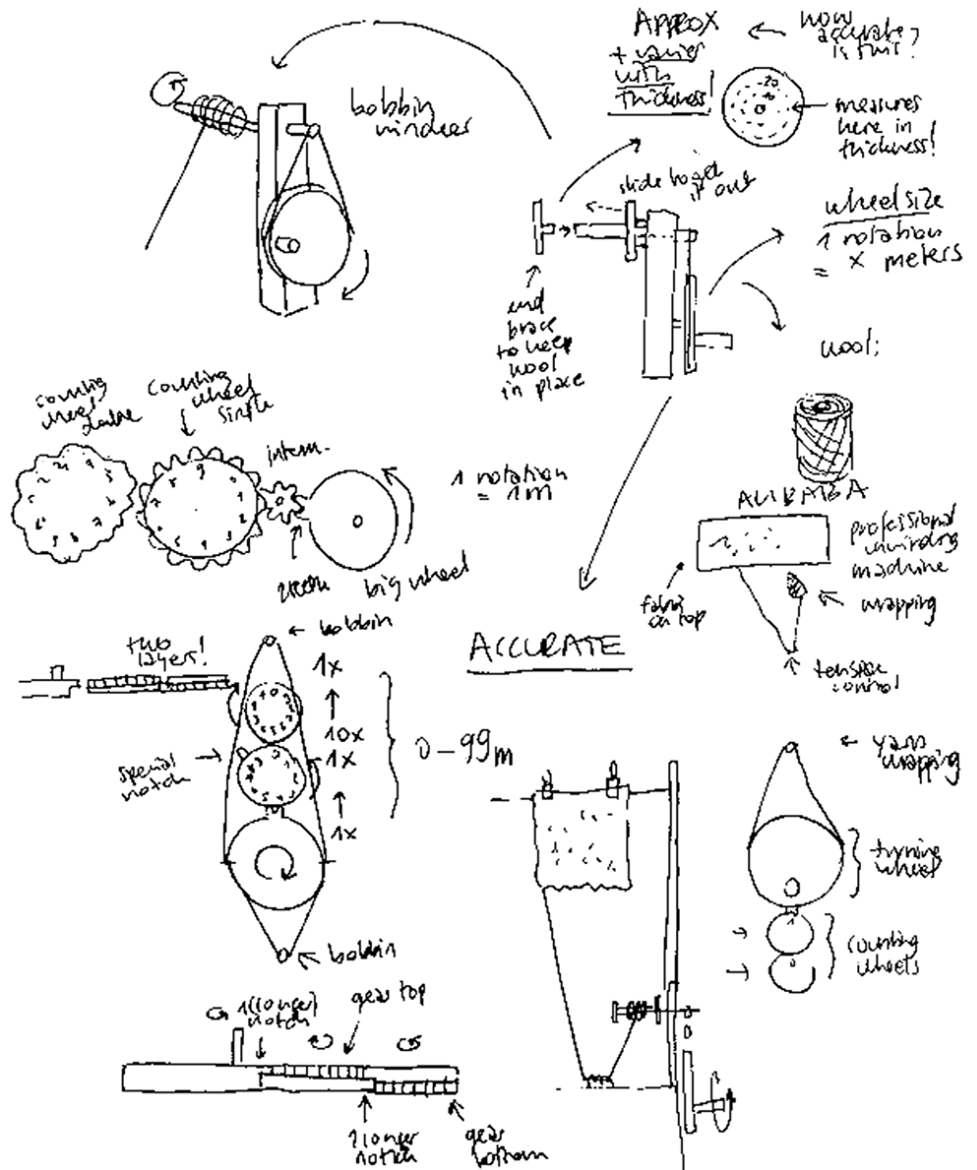




Like mentioned before, the decision about the type of the products to knit with the recycled yarns followed quite naturally as well. Since the sales event takes place in December each year, the idea to knit hats seems fitting. In addition to that, knitting with bulky yarn compiled from multiple strands makes the process quite fast. After some trials and tests, the right pattern was found, and the range extended by a smaller size kid's hat derived from the same pattern, and a headband, to provide a faster to knit and therefore more affordable option.



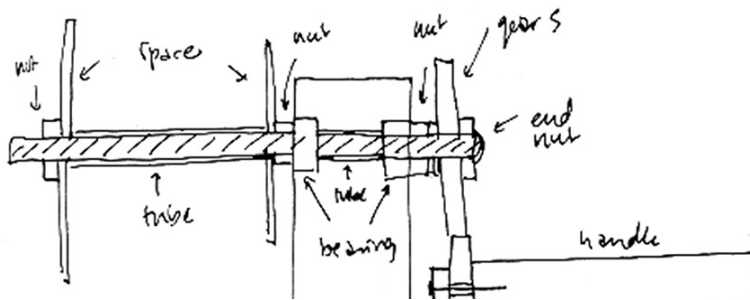
In order to calculate the appropriate pricing for the sales-event, the time and amount of yarn needed for each type of product had to be measured. The first attempt was to fabricate a small L-shaped ruler folded from a piece of cardboard in the length of 50 cm for easy handling. Step by step 10 m of the yarns combined were wrapped around the ruler and then knit, while the progress was noted. This was repeated until the finishing of the hat, which resulted in a quite precise measurement of 70 m of yarn needed, and an additional 5 m for the pompom. From there, with the help of the pattern and number of stitches, the kid's hat could be calculated to 60% of the yarn, which are about 45 m, with the same addition for the pompom. The head-band, being made in a different pattern, was measured separately with the same method as the hat, demanding only 30 m of yarn.



THE UN-KNITTING MACHINE

In need of a way to make the un-wrapping process more efficient, and with the numbers measured in the previous chapter in mind, the aim is to develop a mechanism to spin the yarn directly from the old sweater onto a spool and at the same time measure the length to calculate, how many products can be made from each spool.

The last part of counting the yarn length turns out to be too complex to be solved by an analogue mechanism without large amounts of time. This idea was abandoned quite quickly, since the yarn-wrapping mechanism itself turned out to be complex enough. The basic idea is simple. A big gear with a handle, turned by the operator, transforms its rotation in a 1:5 ratio onto a smaller gear, on which the spool for the yarn can be mounted. The end of the yarn from the sweater is then fixed on the spool and wound up.

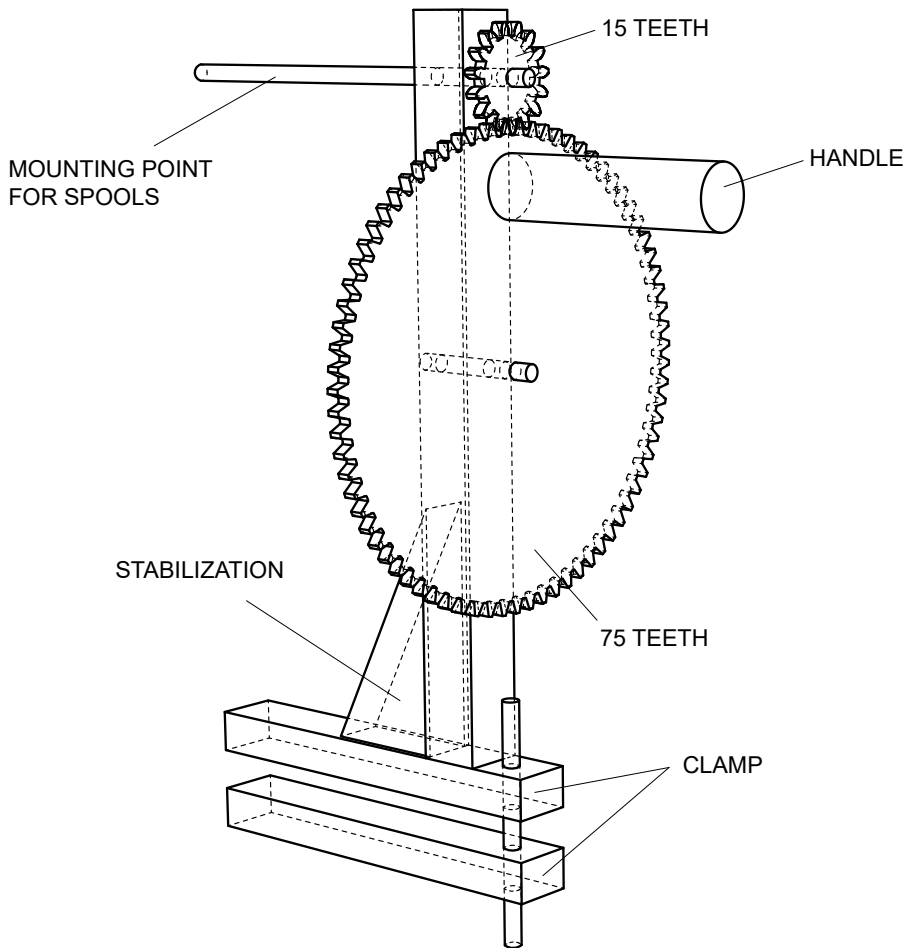
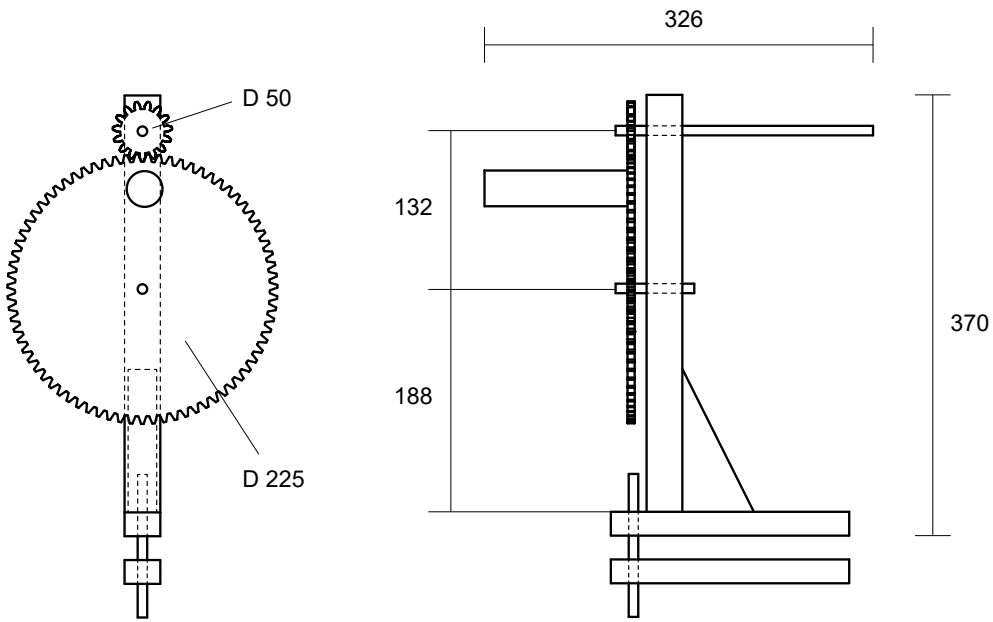


Designing and laser-cutting the gears and combining them with some ready-made parts, like threaded rods and nuts, as well as a small stand made in the wood workshop, the basic shape of the machine is defined quite quickly. Nevertheless, it doesn't run. Precision, tightening and un-tightening nuts, as well as a general wobbliness are some of the problems with the first prototype. A week-long process of fiddling, resulting in the addition of bearings to the gears, as well as multiple iterations of different parts, finally lead to a working machine. The spools, first only a small piece of plastic tube, treaded onto the rod connected to the small gear, had to be upgraded with some lids on both sides, since the first wrapping-tests resulted in exploding yarn-balls, with the yarn spilling over the sides and later tangling. The lids were laser-cut from leftover transparent acrylic. They fit precisely onto the little plastic tubes and turned out to be a useful addition to the yarn display system of the work/shop.



The aforementioned abandoned counting-system was replaced by a rougher system of estimation. Since I had the opportunity to knit with yarn from the wrapped spools, I could get a sense for how many spools were needed for each type of product, always depending on the thickness of each yarn. In the end the making process is led by intuition and informed by experience, as well as simply managing creatively in case a color of yarn runs out and taking the freedom to experiment.

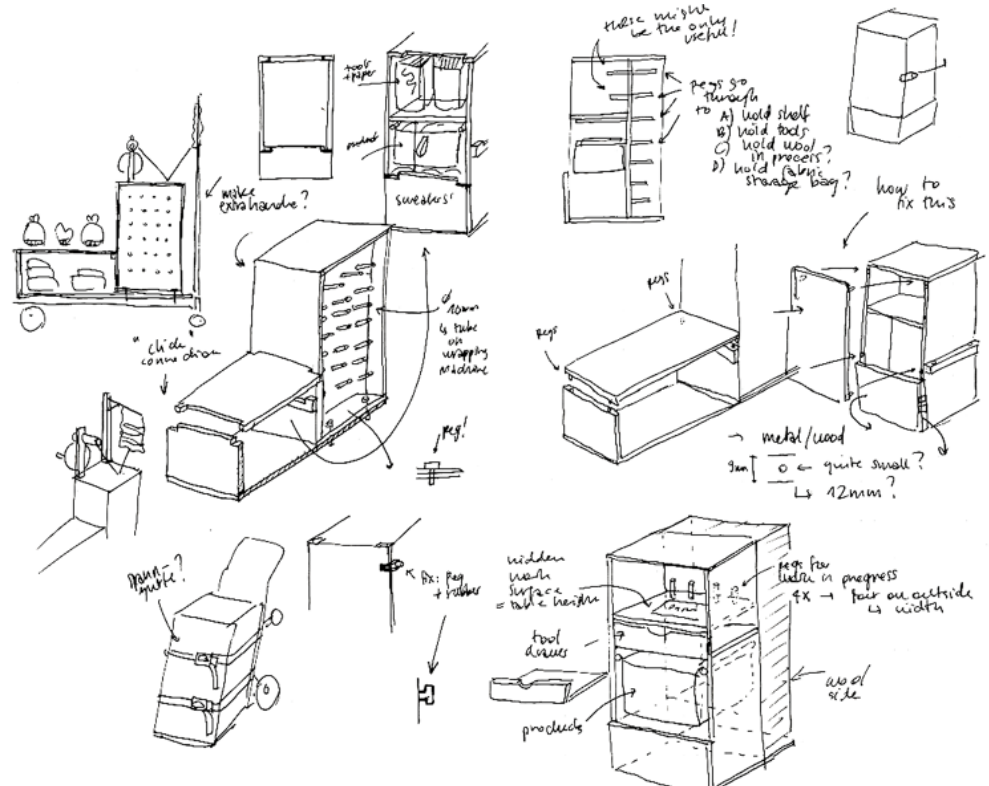
The un-knitting machine is a vital part of *The Sweater Work/Shop*, the way it operates and the shape and form of the spools of yarn made with it, have a big influence on the design of the small kiosk in the further process. The spool itself becomes a standard part and exactly this aspect makes the recycled material itself already feel more valuable, through the way it is presented.



THE WORK/SHOP

The main component of the prototype or practical part of this Thesis is the work/shop itself. A small mobile Kiosk, that includes space to store materials and tools, to display yarns, to make products and to display products for sale. All these different aspects add to the visual demonstration of the recycling and making process.

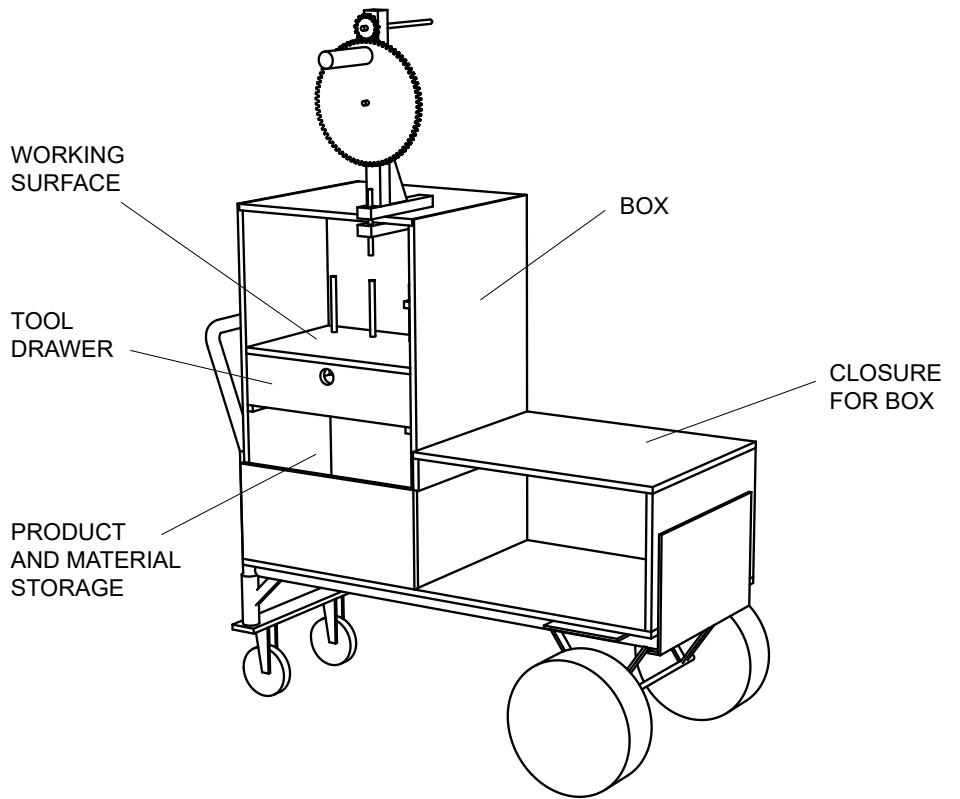
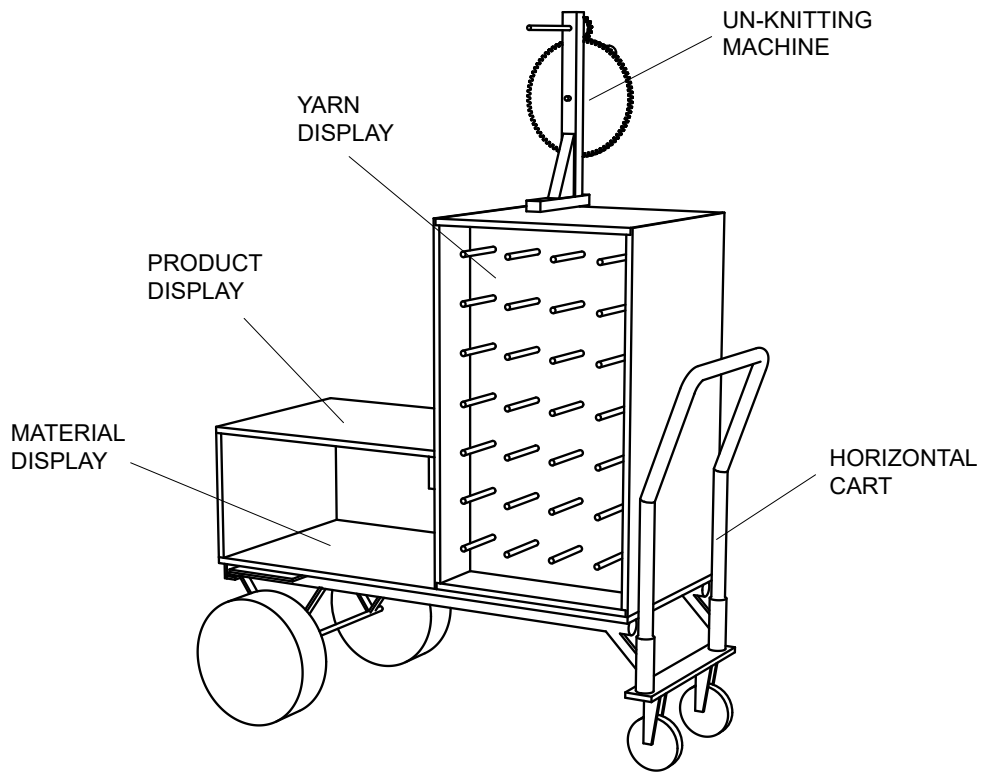
After some first sketches of ideas around the size and shape of the furniture, a lucky find on the Finnish second-hand online market *Tori.fi*, provided the base for the work/shop in the form of a bright yellow transformable cart. Equipped with wheels and working in both a vertical and horizontal position, the moving trolley proved as an excellent foundation to build on, as well as using the two different orientations for easier transport. The piece of furniture is a compact but expandable box, fully closable for transport in a vertical position and opening up for use in the horizontal position. The design of the box was developed primarily according to the given measures of the cart and the yarn spools, searching for a simple way to include the characteristic transformability.

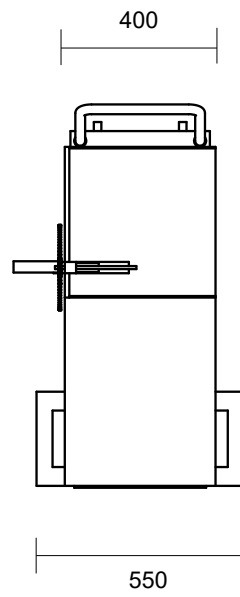
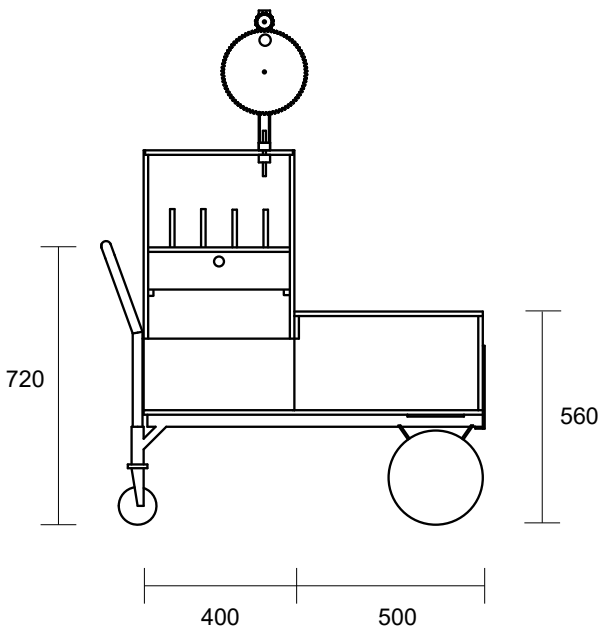
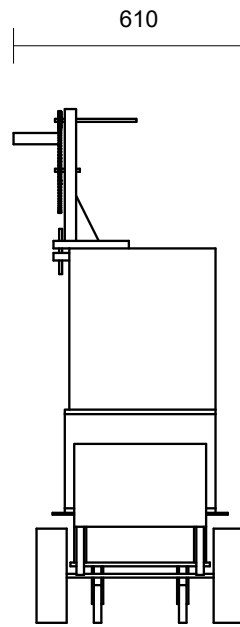
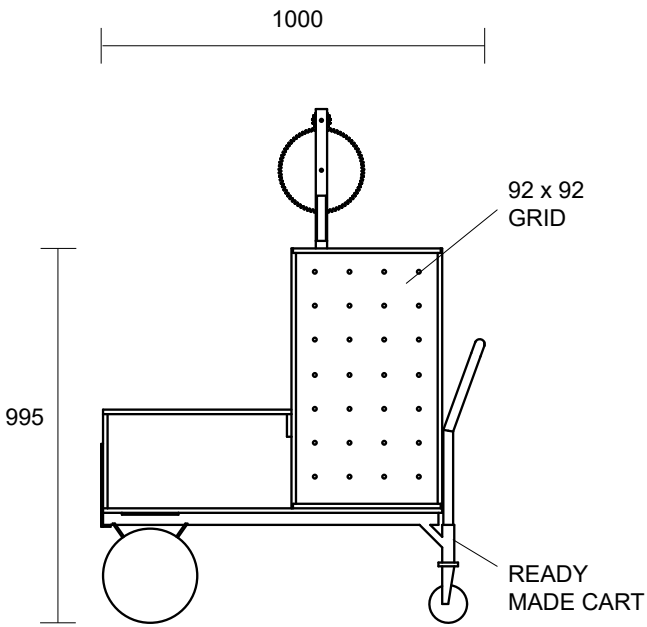


The building process itself turned out to be relatively simple. After consulting with the master of the wood workshop, some of the details concerning connections were solved and the exact plan for executing the build could be made. With only one sheet of 12 mm plywood, some screws and other hardware, the whole work/shop can be built. Conveniently the cart-base served as a helpful tool to transport the plywood from the construction store to the workshop at the University.



Connected with rabbet joints on the corners and held together by screws, the furniture is built entirely without using glue. This construction method allows for future disassembly and easier re-use of the materials. The perforated sheet for the yarn display sits in grooves and therefore additionally stabilizes the box. The display shelf for the products also serves as the lid for the box in transport and is held in place by four strong neodymium magnets in either position. The inside of the box includes a space in the bottom for storage, a small tool drawer, also constructed with rabbet joints and sitting on simple plywood rails, as well as a small work surface including some mounting points for the yarn spools to work at location. The spools themselves are fixed on standard M10, 120 mm long bolts, held in place with the corresponding nuts and washers.















THE SWEATER
WORK / SHOP

THE SWEATER
WORK / SHOP



THE SALES EVENT

With *The Sweater Work / Shop* ready, meaning the kiosk prototype, the products and materials, there are only a few details left to design before the sales event. The first and most important is the alternative pricing model. After discarding the idea of providing knitting-kits due to overcomplication of the system, three options for the customers to choose from remain. There are ready-made hats, which will be most expensive, there is a possibility to order a custom product with 20% discount, or to choose to participate in a workshop to learn how to make your own yarns for free.

While the ready-made items do not require additional organizational effort, there has to be a way of keeping track of orders and especially the type and colors of yarn available. In the same way as the participants signing up for the workshop, the orders are kept in a simple list, noting name and contact, as well as the model and colors chosen. The yarn stock is kept on a separate list with the number of spools available per color and a space to mark the used-up ones. At the same time, the yarn display can be arranged to eliminate colors already reserved. In addition to these lists, there was a need to provide some simple business cards for interested customers to take and a small invitation for the workshop participants with all the relevant information. All this printed material, together with the poster, providing information about the aforementioned prices and options required branding the project, first by giving it a name finally and developing a simple logo. This is where *The Sweater Work / Shop* comes from.

At the day of the annual *Tokyo Christmas Sales*, the work/shop had to be transported from my home, where it was stocked with the products, tools and materials to the University Campus. Even though the cart with the furniture is quite big, it is generally allowed into all forms of public transport, including the bus taken that day. This was a first successful test. The following set-up at the market itself turns out to be easy. Having all the components within reach, except a chair, the kiosk is opened in a very short time. All the other students at the sales are provided with a table, often shared between multiple people, meaning that *The Sweater Work / Shop* is already visually very different from the rest of the market. The market is a very popular event, especially for buying unique Christmas gifts, but since there are no statistics to my knowledge, the exact number of visitors can't be pinpointed exactly.

The sales event is open on three days, Friday evening until Sunday evening. While the first day was rather quiet, the weekend was very busy. In total 50 different people have stopped by The Sweater Work / Shop, not buying anything but interacting and showing curiosity, especially for the un-knitting machine, 10 of which have taken a business card with them. Since I was unwrapping some pre-prepared pieces of sweaters from time to time, the movement and mechanism of the machine attracted visitors to the stand. The comments were mostly positive, and many people liked the kiosk as a whole and found the system behind it very smart. There were some surprised reactions as well, either when understanding the making process or the model for the pricing. On the other hand, many of the passers-by had a questioning look on their face and many did not read the sign. This was also the reason, why in the end only one person signed up for the DIY-workshop. In addition to that, most of the visitors of the market are looking to buy physical objects and not necessarily interested in engaging in an activity.



The ready-made products did not sell so well either. Only one hat and one headband were bought during the three days. A total of 18 people tried or touched the products, as well as asking questions or interacting, but not many of them made the decision to buy or order. There could be a number of reasons for that. Maybe the prices were too high, the colors and shape wrong, or they were simply not a good gift to purchase. In addition to that, the majority of sellers was offering prints or ceramic objects with very little textile items, which in turn might have led to a level of uncertainty or distrust with the items.

Twice as many as the ready-made products were ordered, which shows a small inclination towards the custom option. This might be because of the lower price or because of the appreciation of the concept and the opportunity to choose the colors. The ordering process went quite smoothly, even though it usually took a few minutes, since there were many colors to choose from. I could give some guidance, as to which combinations might work and look good, and therefore this part of the sales was amongst the most rewarding, since it allowed for the formation of a small relationship between myself and the person I was going to knit for in the future. The ordering process might be one of the points, why the custom option lacked success. The payment at the spot involved a bit of a risk and at the same time, the product wasn't in their possession immediately. Like mentioned before, a lack of similar products or system might have led to additional distrust.



One of the products made to order; A christmas gift for the customer's niece

Interesting was also the change of attitude towards the knitting process, I could observe in myself. Unlike before, when I was knitting the ready-made products, I now had a real person in mind who I was making something for. This led to a higher sense of purpose and also a higher attention to detail, as to make the ordered product the best it could possibly be. Of course, seeing the appreciation and happiness of the customers with their finished orders upon delivering them, made the project feel even more valuable to me.

THE UN-KNITTING WORKSHOP

The last element of *The Sweater Work / Shop* is the aforementioned DIY-workshop. With only one person signing up at the Christmas Sales, there was a need to attract more participants through different channels. Since the event was set to take place in the Pasila Library, partly possible through meeting one of the employers through taking part in the language and knitting café there, the suitable option seemed to spread the word inside the Helsinki libraries by putting up some printed posters. Since a few members of the knitting café, as well as potentially a few students were expected to join the event in any case, at this point further advertisement through social media or within the University was deemed unnecessary, in order to keep the number of participants manageable.

The workshop was set on a Saturday afternoon in January for a duration of four hours. The main focus of the workshop was the making of yarn from old clothes, preferably brought by the participants themselves. The plan was to introduce the Thesis project, as well as basic knowledge of sweater construction and knitting with the help of some drawings first, then to move on to the actual working phase, choosing the appropriate methods and tools for each brought sweater. The wrap-up consisted of suggestions for what to make with the yarn, and encouragement to share and swap the recycled yarns, in order for the participants to take multiple color yarns back home with them.

With some experience teaching workshops in the past, as well as participating in them, the planned afternoon should have been a fun way to extend the impact *The Sweater Work / Shop* in another way of working and communicating. The sad reality was, that nobody came to participate. The

reasons for the failure of the event could have been manifold, some within and some outside my control.

The lack of advertisement and especially reminding for potential participants was surely one of the biggest factors. In addition to that, the poster could have been misunderstood, leading people to think, only those who can bring old knitted garments and the tools required are allowed to participate, while I was planning for exactly those instances of people joining in spontaneously or without bringing anything. All these things can be solved and improved in case of a future trial, but some other factors influencing the rate of participation, are harder to control.

It might have been, that people are just not interested. Making and DIY-ing means effort and an investment of time, and in this case, it also means interacting with strangers and going a little bit outside one's own comfort zone. Of course, this result is a little bit unexpected and disappointing, but at the same time it does not make the whole project irrelevant. If anything, in combination with the experience of the market, it shows that the custom option is probably somewhere in the right balance between involvement and non-involvement. There is just enough commitment and connection to give an extra value to the product ordered, without requiring excess amounts of time and money at the same time. The realm of decisions to make is small enough, since picking some colors is a lot easier than creating a hat from scratch. In addition to that, the pre-determined products help visualize the personalized result, both in aesthetics, touch and fit, and at the same time, success is guaranteed and proven by the existence of those ready-made items.

CONCLUSION

The Sweater Work / Shop is a prototype, serving as one example for a greater idea of ways to combat waste problems through combining aspects of DIY, crafts and making with aspects of design. The prototype is a first step and by no means perfect. During the execution of this Thesis several ideas on how to improve the work/shop in the future started to form already.

But before exploring these future ideas, I would like to elaborate on the main conclusions drawn from this research project. At this point it is worth returning to Allison Arieffs article “*Yes we can. But should we?*”, where she mentioned something related to the key points why this project was successful in some respects and unsuccessful in others. Her statement “[...] *just because you can design something doesn’t mean you should*” is related to the idea, that anybody can make products and even bring them to market nowadays, especially supported by the Web 2.0 and platforms like Kickstarter. In the context of this Thesis this quote must be slightly modified to: Just because you can design something doesn’t mean you *want to*. Even though presented with the opportunity, not everybody wants to design, DIY, craft or make, and because of that I, as a designer, have an opportunity and challenge at the same time to develop ways to get those people engaged anyways in order to unlock some of the benefits of these practices, for society, the environment, as well as individuals. Subsequently, one of the most important conclusions drawn from this project is around the success of guided design and customization. The option to order a customized hat provided a way of getting engaged with minimal effort, while saving money and still contributing to a project with a good cause. Here we also return to the Tools – Talent – Time concept, where this option allows participation in a DIY, crafts and making process without physical tools and a low amount of “*monetary tools*”, without talent or practice required and with only a small amount of time necessary. This balance is ideal to get someone involved or inspired as a starting point, hopefully leading to further engagement in the future. Contrary to this, the ready-made option did not convince enough, creating an image of just another kind-of expensive hat, whereas the workshop option demanded too much tools, talent and time from the participants.

The key is to create a sense of individualism without full commitment. Again, here is a point where I want to return to something I wrote while just starting out, when I was thinking about the relationship between consuming, owning and wasting objects:

If every single thing that you own is your favorite, essential and necessary thing, there would be no need to over-consume and over-waste, there would simply be the need to maintain these things well enough so that they continue to be your favorite, essential and necessary things.

This represents the aim of *The Sweater Work / Shop* to provide the opportunity to acquire favorite things, through choosing favorite colors, textures and shapes, while at the same time contributing to the transformation and maintenance of previously favorite things. Because of this, a logical step for the future development of this concept, would be to allow people to bring their old, less favorite items of clothing as a source of material, in order to be transformed into new favorite items, maintained in this case through the slow act of un-knitting and re-knitting. In this way the focus of the project could shift solely to orders, while any ready-made items would simply serve as examples to be customized. This would work very well in connection with an online version of the small mobile kiosk, allowing for a further distribution of the idea.

Not spreading the word far enough definitely proved as one of the shortcomings of this project, resulting in the lack of participants in the proposed “Make your own Yarn” workshop. In addition to that, *The Sweater Work / Shop* was only tested in one market-setting, closely connected to the University. In that way there was no comparable data available, hinting on the influence of circumstances. In addition to that, there was only one test with one kind of product, leaving again a gap in the influence of the type of things sold. This is one aspect to be improved for the future of the project, continuously modifying and testing it, until it evolves from a research project into a fully functioning, self-sufficient project. The methods used to define the theoretical framework for this thesis, like experimenting with different DIY processes were also used in the construction of the physical prototype itself, allowing a certain proficiency and at the same time freedom to constantly change, tinker and take it to the next step.

Being self-sufficient might also require the application for funding and grants, or the expansion of *The Sweater Work / Shop* as a tool, to include more workshop-like scenarios, for example activities in elderly homes, to expand its service system. In the end, the kiosk itself is partly a tool to show and make, and therefore ideal to teach. Since some of the benefits of taking part in DIY, making and crafting processes, lie in the realm of creating a healthy society through collaboration, sharing of ideas and engagement, it makes sense to use this tool for those purposes as well. Plans for the kiosk

could even be shared openly online, in order to create a bigger community of un-knitters, each having the opportunity to work with their local material sources and engage with their local groups.

Another aspect contributing to the inclination towards creating a more socially oriented project, is the fact, that the creation of a viable business, selling products made from recycled yarns in the way it is done at this point, is difficult. While the material is cheap, the working hours necessary to un-wrap and then re-knit garments, would lead to very high prices, regardless if ready-made or customized. This in turn can limit accessibility and impact of *The Sweater Work / Shop*. One solution would of course be to either purchase or develop an automated machine to un-wrap, as well as to use knitting-machines to aid the speed of the otherwise slow hand-knitting process. This could lead to an increase in impact, but could also pose a danger to push the project further and further back towards mass-production, resulting in something that is only slightly better than buying a hat from one of the fast fashion stores. Developing a feasible business is definitely possible, but must be done with great care in respect to the original aims and purposes of the project, and maybe engaging as a volunteer would therefore be of higher value in this context.

One last thing I want to mention, is in regarding my personal development and the result of my quest to find my own role as a designer. This project allowed me in some ways to combine my previous experience, passion and strengths in DIY, crafts and making, with the things I have learned over the past two years in Aalto University. Elements of sustainable thinking, service design, entrepreneurship and social design were new to me, when I arrived, but very quickly became integral to my own way of working. I have mentioned before, I like to wander around the edges of what might be viewed as design traditionally and this project provided an opportunity to do so. Concerning my role as a designer, I have learned to accept my own multidisciplinary and see it as a strength, rather than a weakness. I had to be a craftswoman, a systems thinker, a researcher, a furniture designer and everything in between to make *The Sweater Work / Shop* work, and I must say, I did enjoy all of these roles and especially walking between them.

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APPENDIX

1 - SURVEYS

ENGLISH VERSION

Crafts, DIY and making	14
1) Do you craft / DIY / make things on a regular basis? (one answer)	
Never	
A few times per year	7
Monthly	3
Weekly	4
Daily	
2) What kind of craft / DIY projects have you done recently?	
A leather bag and a pair of wool socks	
growing plants from seeds I get from my food waste	
knitting, fixing clothes, little furniture	
Knitting, Home repair/decorating	
Calenders, photo album, a lamp	
random construction at a new cabin/fixing sports equipment	
-	
A lamp. Fixing table. Upholstering couch	
Woodworking	
Flowernd	
Table, Chair, clothes	
raised garden bed	
Interior wall decoration	
ZINE	
3)Where do you find inspiration and instructions? (multiple answers)	
Books	2
Magazines	6
Courses, Workshops	3
YouTube	7
Pinterest	6
Instagram	6
Other	2
4) What is your favourite project you've ever made?	
My popsicle bike	

-

scarf

Matching Viking hats and sweaters for a family of 7 children

My lamp

dock, new cabin interior work

Painting on plates

Doing my curtains

Making furniture/ stools

Kitchen island

Table

a wardrobe

Sofa covers

Saku Magazine

5) Do you still use it? (one answer)

Yes	10
Occasionally	2
No	2

6) What is your favourite tool? why?

Scissor, because it feels satisfying to cut stuff and it makes nice noises.

Precision knife. I like detailing and not a fan of scissors
 plyers, because you can fix really little thing

Knitting needles - can be used anywhere around the house,
 or on vacation

I don't have any specific

I don't know. I enjoy some tools that feel totally empowering,
 but only for a little while. Couldnt do much without my laptop
 not my brain... But they are not my favorite

-

Sewing machine. Because you can create a universe out of
 nothing.

Axe. Just a versatile and fun tool to use

Japanese saw

Rose Gold lack

electric drill. feels and is powerful.

Staple gun, very versatile and strong.

Film. Tangent

7) What would make it easier for you to start crafting / DIYing / making or do more of it?

Self discipline

Having the space to do it, maybe in my building?

having the tools (i would like to learn how to sew with machine but expensive to buy if u dont know the basics)

I enjoy making things that others need or would like to have.

That gives me my motivation. Working and sharing with friends also makes it more meaningful.

More time, more money

if it was cheaper to experiment and somehow easier to learn.

I think i could easily learn many house construction work but it feels impossible to test and learn

A shop where I can buy everything

Having more money. Besides, having more time.

Maybe an introduction or guidance from a professional. Also, having a community that is actively doing crafts

Have access to organized space with tools

Free time

material available for free

Space and organization of material. A workshop:)

Easy access to materials

8) What are your favourite things about crafting / DIYing / making?

Becoming completely caught up and focused on creating something, and just being in your own bubble doing stuff.

It is empowering and fun, and it keeps my mind active.

ownership of the design

Sense of purpose, Good use of spare time, Sense of personal achievement

The process of doing, the product itself, decide how it look like

When you get that feeling: "holy shit its working and it looks really nice and I made it!"

Relaxing, great when you can see what you've done

The satisfaction of knowing that you made something. And that it is unique

The joy of making and working with my hands

Being focused on the doing

Clothes

satisfaction of doing something by hand

You can make an idea materialize. The creative process is fun. The actual making of it can be meditative.

Uniqueness

9) What don't you like about crafting / DIYing / making things?

Cleaning up, having lots of half made projects, when you fuck up and it makes you feel bad.

I am a bit impatient

it's expensive to buy tools to start and you dont know if you will succed at first time

If the product has no purpose, making something to fit some one else's idea, repetition

Coasts money and time

expenses, people commenting or criticising

It takes long

That sometimes the look "Crafty"

When I get stuck / don't have access to the things I need.

-

Not always the expected results

nothing

The clean up. Or if it doesn't come out right :/

Takes more time

10) What is your age, gender and occupation?

25, female, design student

I'm in my late 20s, male, I am a university student.

26, female, student

53 Female Homemaker and volunteer

23, female, student

designer, 30, female

23, female, HR

27. I don't see gender (Male). And design student friend of Valentina <3

24, male, student

41, female, designer

22, female, student

28, m, MA Design

33, female...mom/emergency room technician/group fitness instructor/aftercare educator for laser tattoo removal

25. F. Graphic Designer

Other statistics about the survey:

24 visits

Average 4:46 min to complete

Most responses on Smartphone

GERMAN VERSION

Handarbeit, Basteln, Dinge selbst machen	5
1) Handarbeitest / Bastelst / Machst du Dinge regelmäßig selbst? (eine Antwort)	
Nie	1
Ein paar mal im Jahr	3
Monatlich	1
Wöchentlich	
Täglich	
2) Welche Art von Dingen hast du in der letzten Zeit gebastelt / ge handarbeitet / selbst gemacht oder gebaut?	
Regal aus Paletten gebaut,	
Salzgebäck, Weihnachtsdekoration	
Geschenke aus Papier, gemalt, stricken, häkeln	
eine Landkarte aus Geldscheinen für meine Kollegin zur Hochzeit	
Geburtskarten, Hamster Käfig + Zubehör aus Holz	
3) Wo findest du Inspirationen und Anleitungen? (mehrere Antworten)	
Bücher	1
Zeitschriften	3
Kurse, Workshops	
YouTube	3
Pinterest	4
Instagram	
Andere	2
4) Was ist dein liebstes Projekt von all den Dingen, die du schon selbst gemacht hast?	
Adventskalender	
Häkeln	
Zeichnung, Planung und bauen mit Holz	

Meine Schürze die ich in der Schule selbst genäht habe
Hamster Käfig mit Zubehör , Haus etc

5) Benutzt du es immer noch? (eine Antwort)

Ja	1
Manchmal	1
Nein	3

6) Was ist dein Lieblingswerkzeug? Warum?

Bohrmaschine, weil es die Arbeit erleichtert

Schere, viele Möglichkeiten

Säge, Pinsel; man ist flexibel

Nähmaschine, weil ich das gut kann und man schnell und einfach Kleidung komplett verändern kann

Elektrische Säge zum Holz sägen, weil sie sehr genau sägt ohne schiefe Kanten

7) Was würde es einfacher für dich machen, mehr zu basteln / handarbeiten / Dinge selbst zu machen oder bauen?

Wenn ich eine bessere Ausrüstung besitzen würde.

Basteltreffen

Mehr Freizeit zu haben / weniger arbeiten

Wenn jemand mit mir bastelt

Mehr Zeit, bastelshop näher, verschiedene materialien billiger

8) Was gefällt dir am Dinge selbst machen / Basteln / Handarbeiten?

Es macht Spaß konzentriert an etwas zu arbeiten und am Ende ein fertiges Resultat zu sehen.

Machen

Der Weg. Ich bin geduldig und liebe es vor mich hin zu werkeln

Man ist stolz wenn man es geschafft hat und es gut gelungen ist

Die Planung wie ich was machen werde, Pläne zeichnen etc.

Das Endergebnis, wenn man was schönes selbst gemacht hat und damit zufrieden ist

9) Was magst du nicht am Handarbeiten / Basteln / Dinge selbst

machen oder bauen?

-

Kleben

Aufräumen

Es ist aufwendig und zeitintensiv

Wenn etwas nicht so funktioniert wie es sollte, zb der Kleber nicht hält

10) Was ist dein Alter, Geschlecht und Beruf?

27, weiblich, Student

34, weiblich, Angestellt

35, w, Spediteur

22, weiblich, Kauffrau für Spedition und Logistik

23 Jahre, weiblich, Operationstechnische Assistentin (OP Schwester)

Other statistics about the survey:

14 visits

Average 4:57 min to complete

Most responses on Smartphone

2 - INTERVIEWS

WOOL AND THE GANG

Hello Valentina,

Thanks for your email.

Sure! Your thesis sounds very interesting :) I have provided some short answers to your questions below:

1) *What is your target group? Do you see more beginners or more experienced knitters among your customers?*

We have a range of 'customer profiles' that we target. Mainly the young professional 18-35 who wants to try something new, or already has a taste for craft. Our other main target is the gifting market.

2) *Do you have any way of knowing how many of the Kits actually get knitted into a finished garment?*

We have no measurable way at present, however we have an Instagram account called @shareyourknits, and also our main Instagram channel where our customers will tag us in photos of their finished items, which proves a fantastic response.

3) What is the role of social media for your business, especially instagram and youtube?

Social media plays a key role, especially Instagram as this is our main platform used by our target audience. This allows direct contact between the brand and our customers with scope for inspirational images and discussion. Youtube is key for our instructional videos, which are hugely popular with the 'beginner knitter' community – we list these in our patterns so those who are unsure or are learning something new can learn visually too.

4) Mindfulness and Sustainability is a core part of your philosophy. What distincts your products from others in this sense?

Our sourcing and production team have a huge amount of experience in sourcing sustainable and unique yarn & products. All of our yarn products have a story to them – making each one special and unique! We believe this is really important, and we love encouraging a 'slow' approach to fashion, and love of the handmade. Mindfulness is a popular topic at the moment, and knitting and crochet have been shown to be hugely beneficial in terms of reducing stress and anxiety – creating another benefit to making your own garments and accessories!

5) How can you measure the sustainability of your products?

We work closely with our suppliers and are very involved in the production and sampling process. We also visit our suppliers to ensure a close working relationship and have built trust with those who produce for us, making sure they share our core values.

6) I remember you used to sell finished garments for a higher price. What made you change towards just selling kits?

Initially we were a predominantly 'fashion-led' business, and wanted to make our designs available to all, whether the customer was a knitter or otherwise. However over time it was clear that the kit side of the business was the preferred amongst our customers. With the increasing popularity of craft and handmade items, this was a clear business decision to focus more on this side of the business, turning more towards design led knitwear and crochet (with the ability to tailor the colour and kit contents to the needs of the customer). We want our customers to value their creations in a sense

of the care and time taken to create it, bringing the awareness of the value of each piece :)

I hope this helps you! Best of luck with your thesis.

Best wishes,

Sophie

Wool and the Gang

18. 07. 2017

WE ARE KNITTERS

Hi Valentina,

I hope this email finds you well.

Please find enclosed our answers for your questions:

1) *What is your target group? Do you see more beginners or more experienced knitters among your customers?*

Our main target are young women between 25-35 y.o. We have kits for all levels but we are known as specialists in beginners.

2) *Do you have any way of knowing how many of the Kits actually get knitted into a finished sweater?*

No.

3) *What is the role of social media for your business, especially instagram?*

Social media are very important for us. They help us to create an incredible community of knitters where everyone can feel included. Each day we repost photos of our clients' projects.

4) *Quality and Sustainability is a core part of your philosophy. What distinguishes your products from others in this sense?*

We pay very close attention to each and every ingredient of our kit. Our handmade needles are 100% beechwood, our wool and cotton are 100% natural, our bags are recycled and reusable and our fabric yarn comes from leftover fabric.

5) *How can you measure the sustainability of your products?*

We visit periodically all our suppliers to assure that their production cycle supports long-term ecological balance. Considering that our yarn 100% natural will not harm environment in long-term perspective. This and other

points mentioned in question 4 are our main focus in terms of sustainability. Moreover, by encouraging people to DIY project we assure that those models will stay in their wardrobes longer than fast fashion seasonal purchases. First, because of the special link that you create with thing that you make, and secondly thanks to high quality of our yarns that when correctly treated will serve you for years.

Hope they help you!

Let me know if you need anything else.

Best regards,

Martyna

We are Knitters

03. 08. 2017

3 - EXPERIMENTS

KNITTED SWEATER WITH BLOG-TUTORIAL

Material source:	10 Balls of Icelandic sheep wool from a supermarket in Iceland
Instructions:	Pinterest-search lead to 3-movies-sweater by Norwegian handcrafts blog
Cost:	Approximately 40€ for Wool, while I owned needles
Reason:	To challenge my rusty knitting skills, to fill time in a long-distance relationship, to make a simple Icelandic sweater for a cheaper price
Previous experience:	Small projects like a scarf, headband, hat and gloves
Time:	Around 9h in total, spread over a month
Process:	1 - Finding patterns on Pinterest, required to be easy and fast and doable with one set of needles. Finding a good beginners tutorial with pictures. 2 - Buying first balls of wool at the supermarket and later more as needed. Combining two similar colors of yarn to get the right thickness. 3 - Knitting during a few weeks in evenings and weekends, while artificially slowing down the process to not finish too quickly 4 - Adding a pizza-patch found on a trip to Budapest to make it even more personal and memory-heavy

MACHINE EMBROIDERY AT A:SPACE

Material source:	An old sweater with printed logo
Instruction:	Manuel, an employee at A:Space
Cost:	About 0,70€ for using the Machine
Reason:	Don't like the logo anymore, but still like the sweater
Previous experience:	None in machine embroidery, but some using graphic programs
Time:	a total of 9h
Process:	1 - Visiting A:Space and starting with a short intro into the machines and how the graphic has to be formatted from my friend Manuel 2 - Drawing and sketching some ideas 3 - Making the graphic with an example image and overdrawing in Illustrator 4 - Set-up of the Machine with the right colors of thread and the right position. Doing a test piece (which failed due to complexity and miss-assigning colors) and trying the proper one the next day with a simplified and cleaned up pattern

HAND EMBROIDERY AT HOME

Material:	An old sweater with printed logo
Instruction:	Intuition?
Cost:	7€ for the hoop and 6€ for yarn, purchased at a wool store Oulunkylä
Reason:	The logo has the wrong colors and has already been embroidered once, but did not look great either
Previous Experience:	Embroidery on small scale and hand sewing
Time:	A total of 13,5h
Process:	1 – Buying the hoop and yarn from the local wool store 2 - Starting with the embroidery, basically just filling in the areas of the print

KNIT A KIT

Material source:	Kit ordered online from <i>wearknitters.com</i>
Instructions:	Provided with Kit
Cost:	66€ without knitting needles and including shipping

Reason:	Mostly curiosity about the kit and a sale on the web site
Previous experience:	Sweater knitted in Iceland
Time:	About 45h of knitting spread over a month
Process:	<p>1 - Unpacking Kit and reading instructions. Taking measurements to determine whether to knit Small or Medium</p> <p>2 - Some questions remained after reading the pattern, but could be answered with a quick YouTube search</p> <p>3 - Knitting the gauge for tension</p> <p>4 - Starting to knit the sweater and finishing the front piece after 9 hours. Tension was wrong, so I had to un-do it in the end.</p> <p>5 - Continuing with knitting the back piece in about 11,5h. I had to do the string multiple times due to unclear instructions</p> <p>6 - Starting the front piece again and re-doing part of it because of mistakes, taking 12,5h in total</p> <p>7 - Knitting the first sleeve in 4,5h. When trying to attach to garment the armhole became too tight, so I had to redo the cast off and sewing again for an additional 2h</p> <p>8 - The second sleeve went much faster in just 4h</p> <p>9 - Finally the Sewing the whole sweater took another 1,5h</p>

SEWING A PATTERN FROM A MAGAZINE

Material source:	Fabric from a department store in Munich
Instructions:	German DIY magazine with pattern and instructions in pictures
Cost:	10€ for the Magazine, approximately 20€ for Fabric, Zipper and Elastic
Reason:	I found the jacket appealing in the magazine about 3 years ago. Fabric was on sale in the store and I wanted to try one of the tutorials in the magazine.
Previous Experience:	Hand sewing and sewing pillow cases and totes with a sewing machine, as well as upholstering a sofa
Time:	9h
Process:	1 - (about 3 years ago) Cutting the pieces of fabric

according to the pattern, following the instructions of the tutorial

2 - Jacket never got sewn since I did not own my own machine. The pieces ended up in a box in the cupboard and I moved to Finland

3 - Back in Germany on holidays, I used my mother's sewing machine, which I roughly know how to use. Process is very slow and I don't manage to finish.

4 - Working on the rest in A:Space, using the industrial sewing machine. Some final touches had to be done by hand, since it is easier for me than using the sewing machine.

UNWRAPPING A SWEATER

Material source:	Black large sweater-vest from Fida secondhand
Instructions:	Common sense?
Cost:	6,80€
Reason:	Curiosity about reversing the process to gain material from a finished object to see how long and difficult the process is
Previous Experience:	none
Time:	4h
Process:	1 – Finding the seams and undoing them carefully, especially on the sides of the vest, as to not cut into the knitted fabric 2 - The front piece was knit in a square and then cut, which resulted in a lot of short small threads 3 - Wrapping the thread around little cardboard pieces to make it easier

OVER-KNITTING

Material source:	A 2nd-hand grandma-sweater from UFF and some recycled and leftover yarns
Instructions:	None
Cost:	2€
Reason:	I like the shape and pattern of the sweater, just not the yellow color
Previous experience:	Embroidery and knitting
Time:	Already 4h and it is to this date still in process

Process: Simply tracing after the existing stitches with different colors, following the pattern of the sweater

CROCHETING A CACTUS TOY FROM A MAGAZINE

Material: A magazine containing a starter kit from Akateeminen Kirjakauppa and a crocheting needle from the local wool store, as well as some leftover yarn scraps for stuffing

Instructions: Pattern and some stitch explanations are included in the magazine

Cost: 10,90€ for Magazine, 3,90€ for crocheting needle

Reason: Last time I crocheted was in elementary school and I am curious to rediscover the technique. The project came as kit and looked easy.

Previous experience: Nothing except one project in elementary school

Time: Around 6h

Process: 1 - Buying the magazine from a bookstore. The kit claims to be doable in one evening for beginners, but the needle is not included
2 - Buying the crocheting needle from the local wool shop
3 – Learning the stitches from the glossary and then starting, while having difficulty with counting the numbers of stitches. Undoing and restarting, while the second attempt works out a lot better

WEAVING ON A SHOEBOX

Material source: Old shoebox and recycled yarns

Instructions: Tutorial on Pinterest in Italian but with good pictures

Cost: Free

Reason: Inspired by the weaving kiosk and trying to make a DIY-version

Previous experience: A tiny children's loom and the weaving kiosk

Time: 1h to make the loom, 45min to thread, 2h to weave and 30min to take out of the loom, so 4:15 in total

Process: 1 - Following the Italian tutorial with google translate and the pictures
2 - Threading yarn into the box, but realizing I made too many and an uneven number of holes. Still works

3 - Weaving with a random pattern while trying different thicknesses of yarns. Pulling the comb up is difficult, since the whole box pulls up.

4 - Taking the finished piece out by undoing knots on one side and cutting on the other side is really difficult and takes a long time, but could be made easier with a more permanent and improved loom!

5 - Tying up loose end and weaving in yarn ends. Later making a small purse with the piece of fabric to use as a wallet for the sales

TS / WS