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Studying Traditional Crafts: Goals and Methods in Higher Education

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Making wadmål

In this lecture I will describe the practical and instrumental work involved in making wadmål, the process of how we are doing it, and why we are doing it, and also very short about my own research.

Practical work with handcraft is a part of our studies at the University of South-Eastern Norway, Campus Rauland. Students learn how to work with traditional handcraft, traditional techniques, materials, and they learn how to use old technologies, but also new technology - in their work. One of the tasks in the Textile Department is to make wadmål. In this task students complete the entire process, from the planning phase to creating their own fabric. They dress the loom themselves, and for some students this is the first time they have worked on a loom. During the course of three weeks students weave until 5 meters of “unfinished” wool fabric. The next step is the fulling process. To full the fabric we use an old mill with wooden logs driven by water power. The logs stamp and beat the fabric for 4–5 hours until it becomes smooth and is wind- and waterproof. In our department we have seen that the embodied experience of making wadmål is useful for understanding the importance of mastering a handcraft. The experience also helps students to acquire knowledge about how the material, the instrument, and the technique work together.

Embodied experience, Material agency

One of the goals of the Textile Folk Arts program in our department is that the student should acquire knowledge about and experience with materials, tools, and textile techniques, in order to render and produce their own textiles. Knowledge about the characteristics of the material and the processing of woven textiles is also implicit in this learning process.

Tacit knowledge is the knowledge that sits in the hands and the body without us needing to think about the action. This is a well-known term we use with regard to handcraft, and a term we use in our department.

Making wadmål is about the interplay between material and technique, the interaction between body and tool, and the fact that the student gets to try being a part of the tool. This is important in the process of making wadmål. As we gain more experience, we can have greater control over the result, but in the process from thread to finished wadmål there are still many variables that we, through *Embodied making*, can only control to a certain extent.

From tread to woven fabric

Working with wadmal can provide insight into the different qualities of wool, yarn, weaving as a technique, and how we can construct material using different weaving patterns (draft). The student dress their own loom and they weave a fabric, 4 – 5 m, 1 m wide.

Of course, we could also spin the yarn ourselves, using wool from sheep we have raised, but in our department we purchase spun yarn.

When we have the raw, finished woven fabric, we must process it so that it obtains the qualities we desire for a specific purpose:

- It could be that the material should be water repellent and windproof for outdoor use. This requires 15–20% shrinkage or more.
- We must be able to cut the fabric without it unraveling.
- The material should be pliable so that we can use it to make clothing, this requires 5–10% shrinkage

Stamping/ waulking / fulling:

Stamping/ waulking / fulling are old techniques used to process wool material in order to make it warm, windproof, and water repellent. Wool can be felted/fulled through mechanical processing in combination with water. The wool fibre has scales that get stuck together when they are set in motion. If the water is lukewarm, the scales open more easily than if the water is cold, and the felting/fuling process is faster.

There are different ways to process wool fabric in order to get it to felt/full. In different traditions and areas, fulling has been performed in different ways, based on geographical and topographical circumstances:

- The material is worked by several hands around a table, or on a rough board, and the material rotates between them in rhythmical movements. Women have their waulking songs (Shetland)
- Stamp with one's feet in a stamping tub or a container,
- Fasten the material to a rock at the seashore and let the tide and the waves do the mechanical work,
- Place the material in a large basin near a waterfall and let the water set the material in motion
- Mechanical stamping with heavy wood logs, such as a wadmal stamping mill.
- Wash the wool fabric in a washing machine (not on the gentle wool program), because it is the mechanical movement we want in order for the material to felt/full. This process can result in a compact, yet airy fabric.

There is a difference between wool material that is felted in a washing machine and wool material that is mechanically processed with wood logs - stamping. In the washing machine the material becomes fluffy, and the fibres can wander out of the fabric. When it is stamped in a wadmal stamping mill, the material is pounded, and the fibres creep into the fabric. The fabric becomes firmer and smoother.

In our department, we work with a wadmal stamping mill.

Stretching the wadmäl

When the fabric is finished being stamped, it must be stretched in order to straighten out folds and unevenness. Wool is quite stretchable when it is wet. We roll the fabric – the wadmäl - up around 2 semicircular logs. By driving wedges between the half logs, we are able to stretch the material. We sew a coarse stitching along the edge of the fabric in order to hold the fabric in place and to get a good stretch. The fabric dries on the roll for 3–4 days, but must be re-rolled once per day in order to get the moisture out. As long as there is moisture in the material, it is relatively malleable, and we can remove any un-even-ness in the fabric.

We use the finished material – the wadmäl – to sew a garment. The amount of fabric we felt/full depends, of course, on what type of garment we plan to sew.

We cannot gain knowledge about practical subjects strictly by studying texts, but other people's experiences can be of good help along the way.

Nor can we only be spectators in the performance of a handcraft, even if we can learn a great deal from how other people do it. A great deal can be learned by copying a bodily action (embodied experience?), and in order to learn we must perform the action ourselves and perform the handcraft in order to develop our own handcraft skills.

It is important for me to update continuously the practical experiences

I am part of a Research group at our Department:

Practice, tradition and technology

Our group researches into traditional art and related areas with a focus on how traditions are shaped by and shaping the use of technology.

My own research

My research consists of investigating my own practice by describing, analysing, and assessing it, using old and new technology. I have woven several lengths of fabric in different qualities for my research. One of my experiments is a chequered fabric in black and white, single-strand Z twist warps and S twists in the white weft. A combination of Z twist warps and S twist wefts causes the fabric to felt more because of the direction of the fibres in a twill. In one of my experiments, the weaving pattern is a diamond twill, which provided a wave effect in the fabric on the loom. The effect disappeared during the stamping and when the stretching-process.

My plan was to try using wave power to process the chequered fabric.

I fastened the fabric to two stakes on the shore of the lake where I live. One day when a good wind was blowing from the east, I thought that the waves could do the job of hitting the fabric against the beach in order to felt the fabric. The temperature was between 6 and 8 degrees. Very little happened with the fabric on that day, the wind decreased and was no longer strong enough. The waves washed the fabric ashore, but nevertheless: there must be potential in testing wave power further.

During the rest of the Summer there were too few waves in my lake to complete the wave power project, so my chequered fabric was stamped in the traditional way in the wadmäl stamping mill.

The fabric was removed from the stamp after one hour and had shrunken by approximately 10%. I had thought to use my fabric as dress material, and the fabric should therefore not be water resistant or windproof. The fabric was stretched and dried on two semicircular logs.

The next step was to create a pattern, and cut and sew a dress as part of the research into my own practice. I constructed a pattern to fit my own body, fastened the pattern sections to the fabric and was about to start cutting.

At that point it was *the squares* in the fabric – not me - that took over and controlled the pattern and the sewing process.

In this phase of a process, we gain experience with our own skill related to the handcraft, the use of tools, and whether the material and the technique are compatible.

Hand-weaving requires a good, steady rhythm in the weaving process, the same density in each weft every day. In chequered fabric it is very visible if one has beaten the weft harder or looser. Even a 1 mm difference in each 3 cm square has a big impact on the whole fabric.

Stamping and stretching: The fabric must rotate evenly in the stamping basin, must be inspected at regular intervals, stable water temperature in the stamping basin, and one must stretch the fabric carefully and thoroughly. /*Thorouli*/

Stamping – fulling – 2019

There is a wadmal stamping mill that was reconstructed based on older models about 45 minutes by car from our department. The stamping mill is driven by a waterwheel, but also by an electronic motor when the water flow in the river is not high enough. We rent the mill once a year in order to stamp our wadmal. We make a bonfire and have a large pot of water in order to control the temperature of the water in the stamping basin.

The same procedure, the same technique, and the same yarn supplier have been used for several years in a row. These are all nearby similar to what is practiced in the local tradition. The stamping has occurred during the fall, for practical reasons related to the academic schedule, but according to older practices and traditions it was best to use the spring runoff for stamping. In our experience, the stamping normally takes 4–5 hours, and we usually check after 30 minutes and after an hour to see how the fabric is felting or contracting.

This fall we changed the procedure; the technique was the same, but the yarn quality was different from what was used previously. After the first inspection at 30 minutes, everything looked normal, that is to say that little had happened. But after one hour the fabric had felted 10–15%. Why did it take such a short amount of time this time? There are many factors that come into play, of course: the quality of the yarn, the yarn twist, thinner and looser quality perhaps...and it is incidents like this that give room for further exploration, and that make this exciting to be doing. Another factor that may have come into play was the rhythm of the stamping logs. During the spring and summer of 2019 the floodwater had destroyed the mill's water channel, and the channel was not yet repaired when we came in September 2019.

We used an electric motor to drive the wheel and the stamping logs. Perhaps the logs pounded more quickly, and the time was shortened because of this?

Another discovery we discussed was that we did not need the waterwheel, the river, or the water at all to be able to drive the mill. We needed a minimal amount of water for the stamping basin and to dampen the raw material. It is practical to be near a river, but a water faucet or a canister of water would have also worked. What is important is that we have enough power to drive the waterwheel or the mill that controls the stamping logs. We then discussed the possibility of setting up a stamping mill at our department – without a waterwheel, but with electric power – since we do not have a river nearby.

Would we achieve the same result from the learning process when the context is changed, when the sound of the water in the river is gone and the waterwheel isn't there? No actually not. The context the action occurs in is also part of the learning process. The cultural-historical aspect disappears by removing the waterwheel, even if the result – the wadmäl – is the same whether the stamping mill is indoors or by a river.

What about The *material agency, product or process?*

One result of making wadmäl is the finished fabric. The process, on the other hand, is not visible, but is experienced by each individual, experiential knowledge. In this case the process is the product. To study a handcraft is to learn a cultural, social, and cultural-historical form of expression that we are better able to understand if we are *in* such a process like making wadmäl.

Thank You!