

# Digital models in humanities research

## **Practises of practice Viking Age Textile production – between Crafts People and Digital Tools**

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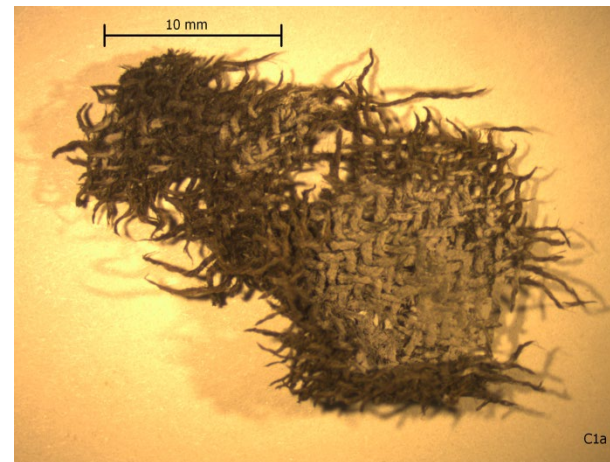
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# Archaeological *artefacts* are dynamic *objects* representing past *actions* and *processes*.



How can we illuminate how the body and mind are involved in the production processes behind ancient technology and the creation of objects?



# Craft and craft production

can, in a broad sense, be said to meet the social and psychological needs of human beings (Costin, 2007, p. 146).

However, the assumed dichotomies between technology (practice) and theoretical knowledge are being questioned. Theories of practice are being developed, and how professionals think in action and how their skills are transmitted are investigated

(e.g. Bourdieu, 1977; Schön, 1983; Latour, 1999; Ingold 2000; Bender Jørgensen 2012; Sutton, 2015).

# Combining theory and practice

permits us to understand, how we learn craft, how we record the differences of skills and abilities of craftspeople and how old traditions affect the possibility to learn new techniques and improve skills – questions pertinent to craft transmission and developments in past societies.

It is essential to develop methodologies through which tacit or embodied knowledge can be translated into a form that goes beyond mere textual analysis but which can also be observed and described from an anthropological perspective (Bender Jørgensen, 2012).

## *Practises of practise*

# Viking Age Textiles - between Crafts People and Digital Tools

*illuminate how the body, mind and environment are involved in the production processes behind ancient technology and the creation of textiles, by developing the use of **Experimental Archaeology**, **Motion Capture**, and **Cognitive Motor Neuroscience** for recording and understanding textiles and textile craft processes.*

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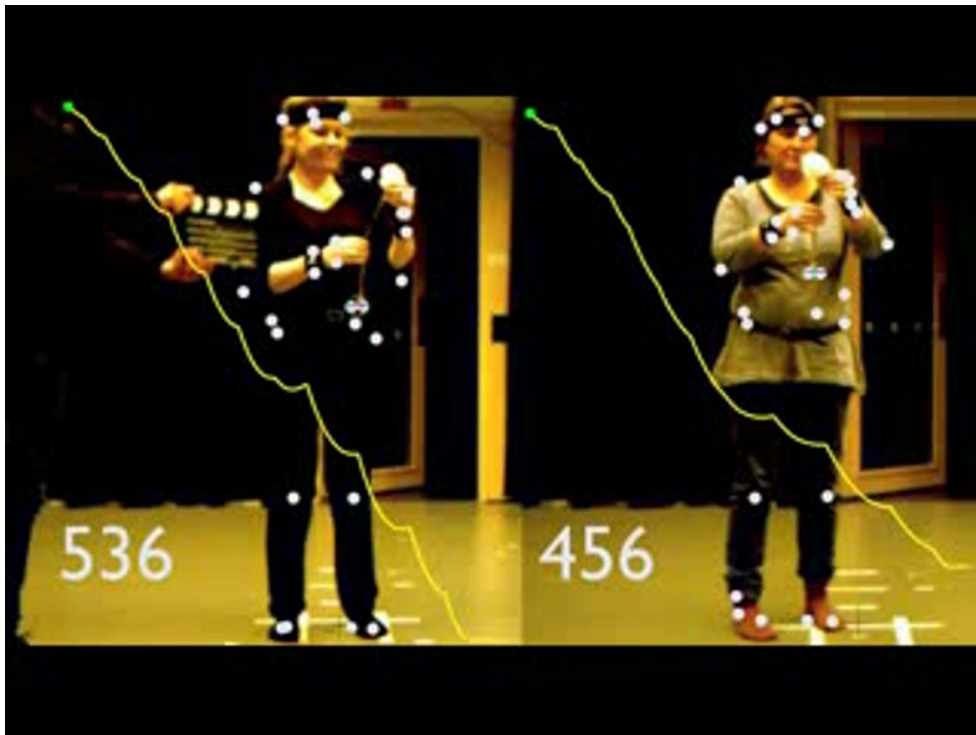


Collaboration between CTR/Archaeological department, SAXO institute, and Department for Neuroscience, Panum Institute, Copenhagen University and Lund University Humanities Lab Sweden.



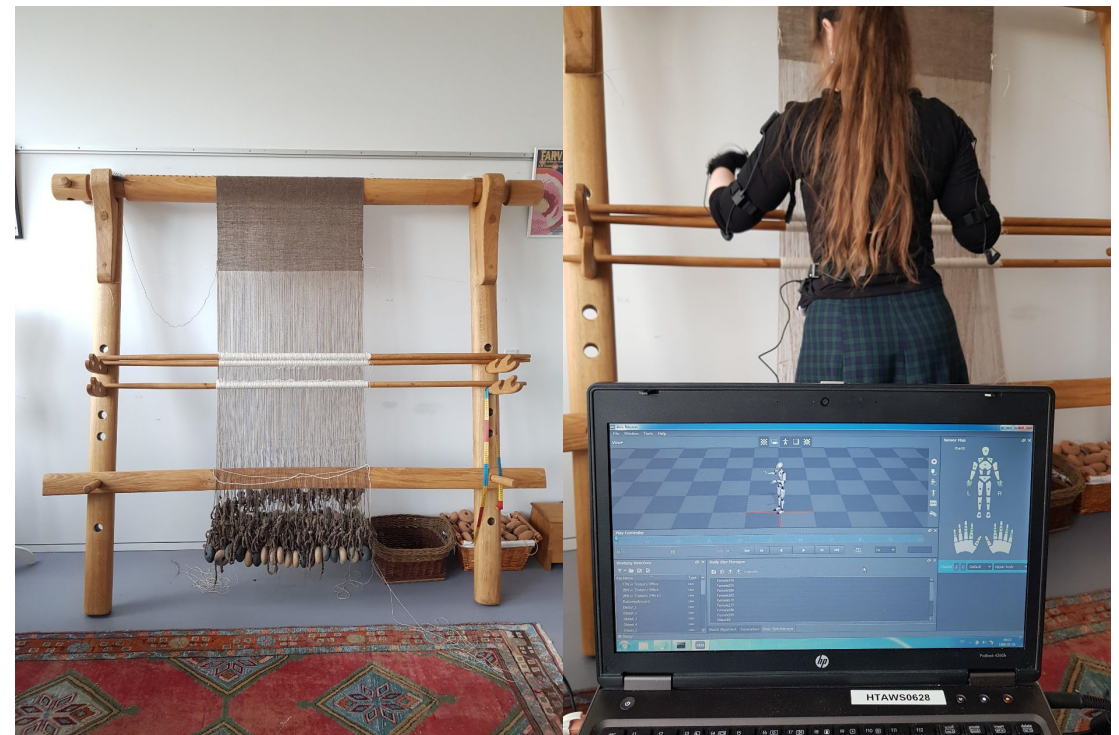
# 2 tests

## Spinning



Eva Andersson Strand and Ida Demant

## Weaving



Sofie Louise Andersen and Maria Wallenberg:  
warp-weighted loom

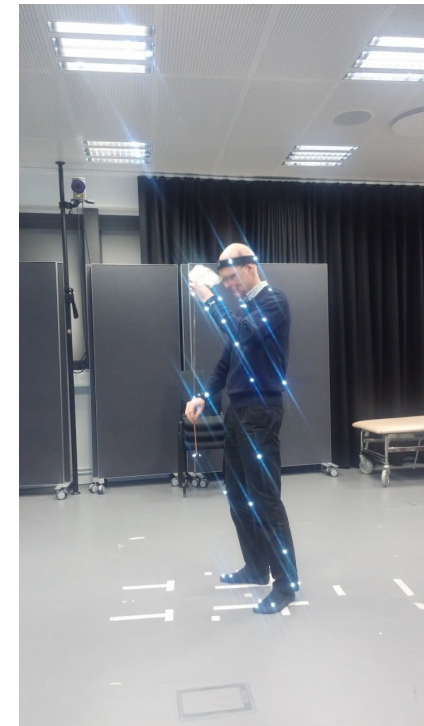
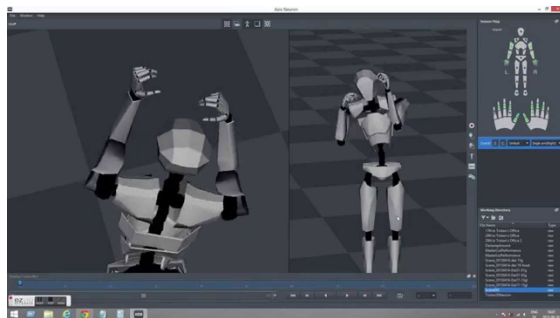
# Equipment og software

## Perception Neuron System

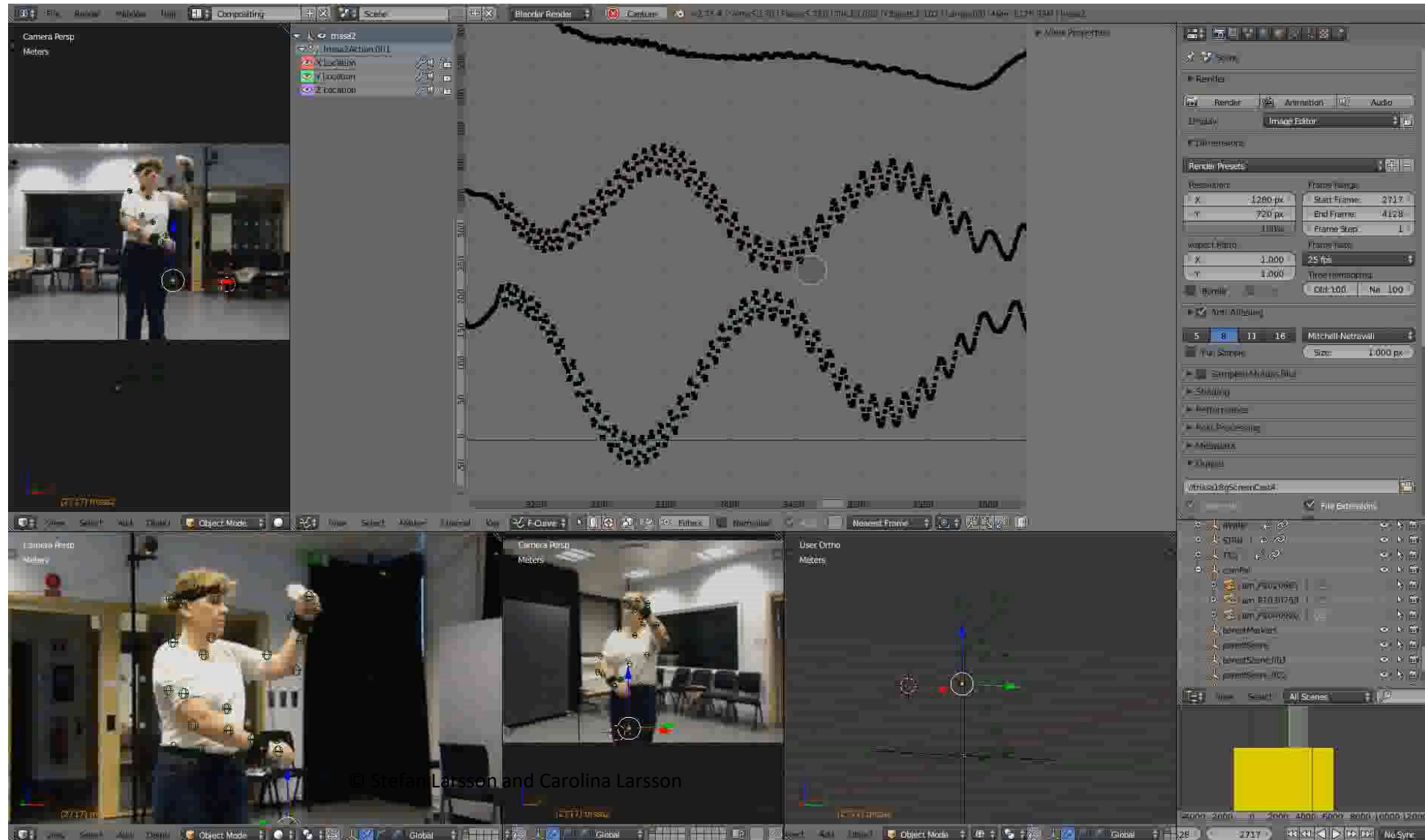


- Qualisys System – a infra red optical, marker-based tracking-system
- Software Blender

## Software - Axis Neuron, version: 3.6.23.3944

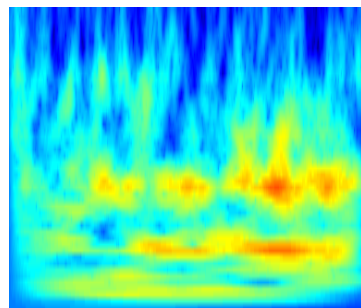
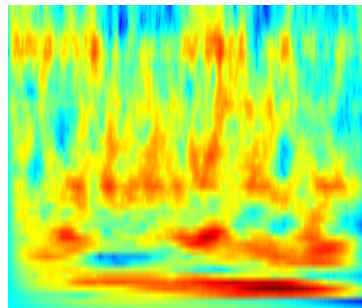
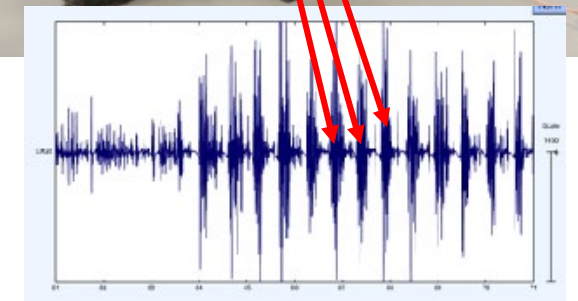


# MoCap Spinning





# Cognitive Motor Neuroscience



# Why is this important?

The information is applicable on the archaeological material and help us study the textiles, the tools and the processes with new eyes and give new information on craft and craft traditions.

## Different spinners



## Study different types of spinning techniques



Plate 14 — ABADE, KABUSHIYA, SUDAN.



## Test different types of raw materials

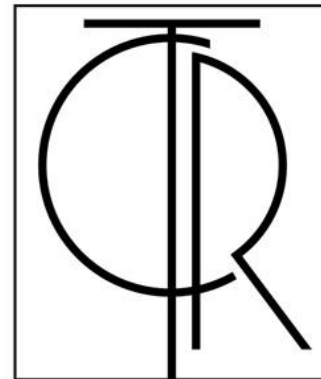


# The Past in Motion

Master's thesis

By Sofie Louise Grue Husted Andersen

Sub-project to Practices of Practice



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# Data processing



**What do we want to know?**

**Localize and isolate the relevant information**

**Patterns of recognition**

# Focus:

- Analyze movement of people with different skill level.
  - workflow
- Musculoskeletal Disorders (MSD's).
  - Joint disease and damage
  - Joint movement
  - Calculation of stress to the joint



# Results:

- Normal use of osteoarchaeology in archaeological research of movement is not enough.
- It has been possible to calculate potential stress on the body of traditional spinners and weavers in the Viking age.
- Clear differences in movement and work-flow of people with different skill level in tradition textile craft.
- Differences in what we *think* we know and what we *actually* know (teaching).

## Limitations:

- MoCap can not stand alone.

It is important to clarify that the used MoCap equipment and software in this research does not have the capacity to measure potential stress to the body. MoCap have only captured the movements made, which later have been calculated with the use of physic equations.



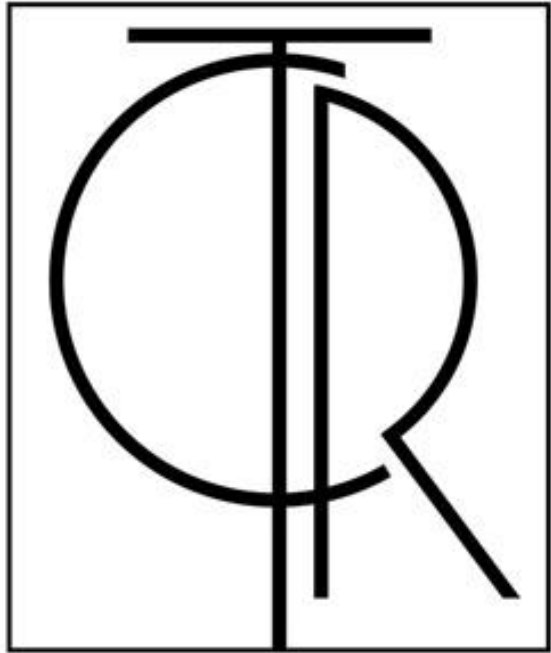
# Future avenue of research:

The combination of experimental archaeology and MoCap creates the foundation for a new way to investigate traditional crafts.

MoCap makes it possible to study how craftspeople used their body and knowledge and how that movement affected the person behind the finished product.







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Thank you for listening