

## Bronze Age textiles

### Bronze Age textiles and strontium isotopic analyses

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Textiles are rare finds in archaeological contexts. One exception is the collection of oak coffin graves from Bronze Age Denmark. They display a rich and varied selection of garments in animal skin and wool textiles. This study aims at establishing the provenience of Bronze Age textiles and skins from the well-preserved oak coffin burials in the Danish National Museum. Were wool and textiles an object of trade, or were they locally produced?

Identifying provenance of archaeological artifacts in absolute terms is often difficult if not impossible. This is especially true of archaeological textiles, which made with widespread and long-lasting techniques and materials often defy typological classification. Strontium (Sr) isotope ratios have recently been shown to be a unique indicator for wool fiber provenance.

Strontium isotopic signatures are conveyed from eroding geological materials via soils through the food chain into the human and animal soft tissues, where strontium substitutes for calcium. In archaeology, strontium isotopes have been widely applied, mainly for the purpose of reconstructing human and animal migration routes in antiquity. Since the path of the strontium isotopic ratio through the food chain is unfractionated, it is possible to apply the method also to animals and hence to their products, in this case fiber, and consequently, textiles.

The unique opportunity of analyzing the Danish Bronze Age textiles with the novel geochemical method for provenance studies and compare their results with the new geological and archaeological strontium maps will give us the necessary tools to pinpoint geographical origin of the textiles raw material.

### Bronze Age textiles: production, use and exchange

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The aim of this study is to investigate the evidence for textile production, use and exchange in the Bronze Age. The study will analyze textile-related material culture, which can be divided into four broad categories: 1) tools for textile manufacture, 2) spin combinations and the development of tabby, twill etc., 3) the spread of knowledge concerning the function of textile-related tools and their use, 4) the relationship between textile development and changes in fashion.

The contribution to the project will be to significantly enhance the picture of textile production in northern Europe and its connection with other parts of the continent. Where textile remains are absent, other textile-related objects will be considered to provide the missing links. In other words, objects that witnessed manufacturing techniques and clothing traditions will be used to better understand textile production and exchange patterns. The project will distinguish similarities and differences between textile production chaîne opératoire in the various regions and their possible socio-cultural implications.

Piecing together all the available archaeological evidence, the project aims to build a comprehensive picture of textile production and use in Northern Europe, including its relationship with the rest of the continent. Textile-related material from areas outside northern Europe will be included in the study not only to trace possible connections and trade, but also in order to make technical comparisons in production techniques and use. The hypothesis is that the very well-developed textile industry and trade existing in the central and eastern Mediterranean during the local Bronze Age affected production and exchange patterns both in the immediate regions as well as other parts of continental Europe.