Invisible Clothing? Complex Clothing Manufacture in the Middle Paleolithic

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Abstract
In our efforts to distance ourselves from our closest hominin relatives, Neanderthals, many paleoanthropologists have constructed a suite of behaviors purportedly only possessed by modern humans: the production of complex clothing is one of these. Arguments against Neanderthals use of complex, or tailored, clothing range from Neanderthal biological cold adaptation to a lack of archeological evidence of tools purportedly associated with Homo sapiens clothing production. However, based on energy use estimates and the variety of environments in which Neanderthals lived, it seems unlikely that they could have survived without the protection afforded by complex clothing. In an attempt to refute the assertion that bone needles, awls and lithic blades are the technological prerequisites for clothing manufacture (Gilligan 2007), I looked to the ethnographic record for historical peoples who have used needles made of wood, thorns and other non-durable materials to construct clothing. I produced seams in leather and sinew using needles produced via these methods to satisfactory effect. Though this does not by demonstrate that Neanderthals did produce complex clothing via these methods, it reinforces the fact that we cannot make arguments based solely on the absence of evidence.

Methods

- Species of hardwoods indigenous to Eurasia were identified and wood blanks were procured
- Thorns of deciduous thorny trees were procured from the environs surrounding Kenyon. Honey Locust (Gleditsia triacanthos) serves as a reasonable analog for Eurasian Cretagus species and Osage Orange (Maclura pomifera) for other temperate citrus trees.
- Thorns were fashioned into needles by the cutting of eyes and needles were carved with stone flakes from hardwood blanks (Figures 2 and 3)
- All stone tools were knapped by the author in flint and several large cow bones were shattered to create the unmodified bone splinters occasionally used as punches (Fig. 7)
- Leather sheets were procured and cut to size using a stone flake
- Lengths of sinew or leather thongs were cut to the appropriate length for each seam and threaded through the needle
- Leather pieces were lined up and holes for the needles were punched through with either a bone or stone punch and the antler hammer (Center Fig. 1)
- The needle and sinew was passed through these holes and the seam was completed using a simple blanket stitch
- A testing rig was built with a fan of known speed on one side of the seams and an anemometer behind
- Each seam was tested for its ability to block wind

Discussion
All of the seams tested were able to block wind during our tests. More precise data collection is necessary to tell how effective the sewing methods are vis-a-vis one another. All of the wood needles proved effective with the aid of a stone punch as well as the thorn-based needles. Tailored clothing can be manufactured using the methods outlined in this study.

Acknowledgements
Thanks first and foremost to the Summer Science program at Kenyon College for the opportunity to conduct this research project. Special thanks to advisor Professor Bruce Hardy, PhD, for research topic, assisting with methods, and all other help and mentorship along the way. Thanks to the EHRAP database at Yale for our ethnographic research.

References

Figures

Fig. 1: Cutting leather into sample-sized pieces using a simple flake, no blade necessary.
Fig. 2: Needle carved from Red Oak, eye cut laterally in from either side using flake.
Fig. 3: Needle made from honey Locust thorn, eye drilled in from either side using small flake.
Fig. 4: The author punching holes in leather pieces in preparation for sewing. One of the unmodified bone splinters is being used as a punch.
Fig. 5: Unmodified bone splinters.