

# Variability in stone tool hafting and use in the Upper Palaeolithic of Western and Central Europe

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PhD research project

## What and why?

Lithic assemblages from European Upper Palaeolithic sites have largely been described in typological and technological terms. Extensive functional analyses have been few so far, and they have generally focused on solving issues related to specific tool types or site function. Yet, functional analysis also has the potential to contribute to our understanding of large-scale patterns and long-term changes in stone tool technologies.

My work concentrates on the Gravettian and Magdalenian of Western and Central Europe. Focus will be especially on hafting wear, since tool hafting can be considered one of major technological innovations relevant for our understanding of human evolution.

My research takes place in the framework of a larger project, “Evolution of stone tool hafting in the Palaeolithic”, led by Dr. Veerle Rots.

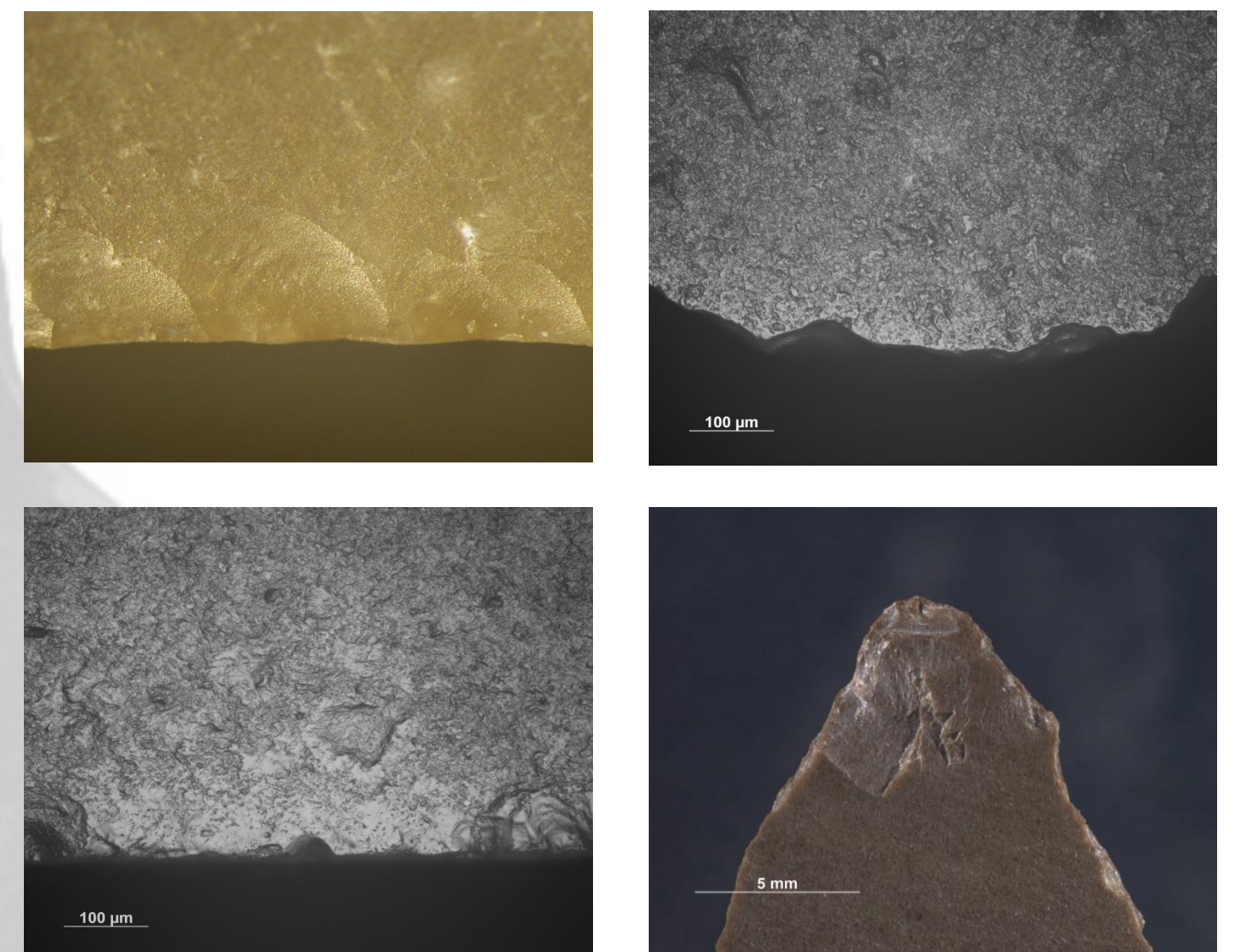
Research questions central to my study can be listed as follows:

- Which kinds of tools were hafted at the sites under study, and how?
- Does tool use influence the choice to haft a tool?
- Are there major differences in tool use and hafting strategies among the sites, and/or across time?
- How are these patterns reflected in tool morphologies and assemblage composition?

## Methods

For microwear observations, a variety of magnifications is used, and I combine them with macroscopic observations and relevant technological data. The general goal is to reconstruct stone tool life cycles as completely as possible. When these life cycles and their impact on assemblage variability are understood, we can start to evaluate the role of different typological and technological markers as reflectors of more profound behavioural changes.

The interpretation of the archaeological material is always based on comparison with an extensive reference collection. This collection is constantly being expanded to address specific research questions as they rise, and to cover the variability observed in the assemblages.



Use-related wear seen through the microscope. Top left: scarring caused by the haft on an experimental wood scraper; top right: use polish on an experimental wood scraper; bottom left: polish on a burin from Hohle Fels; bottom right: scarring on a perforator fragment from Hohle Fels.



## Material

Five European key sites with well-dated sequences have been selected for the study: Maisières-Canal (Belgium), Hohle Fels, Geißenklösterle, Vogelherd (SW Germany), and Abri Pataud (SW France). These assemblages cover the classic tool types of the Gravettian and the Magdalenian. My goal is to examine whether the differences observed on the level of tool morphologies, frequencies and production methods reflect significant differences in the logic of stone tool hafting and use. This kind of information is crucial to our understanding of technological evolution and the role of contact networks in the Palaeolithic.



Gravettian tools from the sites included in the study. Left: tanged burin, Obourg flint, Maisieres-Canal; middle, top row: burin, Jurassic chert, Hohle Fels; middle, bottom row: Noailles burin, Senonian flint, Abri Pataud; right: endscraper, Senonian flint, Abri Pataud.



Sites with Gravettian and Magdalenian material to be analysed in the study. 1: Maisières-Canal, 2, 3, 4: Hohle Fels, Geißenklösterle, Vogelherd, 5: Abri Pataud.