

9TH ANNUAL MEETING OF THE

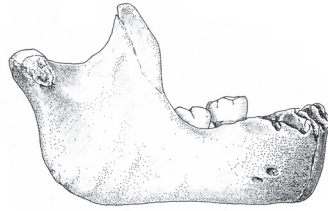
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Cover image: Scladina mandible (Scla 4A-1 & 9): External view from the right side showing the receding symphyseal region (drawing S. Lambermont, AWEM)

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Diverse means to an end: domestic tool hafting in the European Upper Palaeolithic

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Human technologies have traditionally been assumed to become more and more complex over time. In the recent years, this fundamental assumption has been called into question because of the absence of sufficient supportive data and straightforward ways of measuring complexity, and other concepts, such as diversity or adaptivity, have been proposed as alternatives for approaching technology and its evolution [1]. While the theoretical and conceptual debate is ongoing, it is evident that we lack concrete and detailed data on the design and use of various types of tools in the past. For the Palaeolithic, a wealth of research has been devoted to the development of stone tool knapping. Yet, our knowledge of tool hafting and overall tool design remains limited, especially for the Upper Palaeolithic. This means that it is difficult to estimate how much skill or time the manufacturing of a given tool took in its entirety, or how varied the strategies of coping with a particular task were. It also means that linking technological change to twists and turns in human biological evolution and examining potential causalities between the two is, in many cases, impossible. In this contribution, we provide a set of such missing data on technology, focusing on the younger part of the European Upper Palaeolithic. We build on earlier work on Middle Palaeolithic assemblages, which bear evidence that stone tool hafting developed early, at latest by c. 250 kya, and was quickly applied also to tools for which hafting is not a prerequisite of use (e.g., butchering knives vs projectiles) [2]. If hafting was an innovation that gradually spread and became more frequent over time, we could assume that by the time period under study here (beginning c. 30 kya), it would have been a dominant practice for various tool categories. Our dataset, which includes c. 580 scrapers and burins from the Gravettian and Magdalenian occupations of three Upper Palaeolithic sites, Hohle Fels (Germany), Abri Pataud (France), and Maisières-Canal (Belgium), shows that this is not the case. While hafting of domestic tools, particularly scrapers, was a well-established and wide-spread practice at latest by the time of the oldest occupations examined here, nothing in our dataset suggests that the frequency of hafted domestic tools would have systematically increased over time even though the necessary know-how was clearly available. The assemblages include considerable numbers of hand-held tools. Whereas hafting of scrapers is frequent, hafting of burins is an anomaly that, interestingly enough, occurs in our study only in an assemblage that is among the oldest ones analysed. The whole dataset witnesses the use of hand-held and hafted domestic tools side by side. On the basis of these observations, we argue that in the Upper Palaeolithic, hafting was a choice that was made flexibly and depending on the situation, and the variability within and between the assemblages is best explained by a combination of factors, including raw material economy and task-specific requirements. Our results imply that to be understood in meaningful evolutionary terms, stone tool hafting needs to be considered in the context of other technological strategies, site use, environmental factors, and social organisation, including the division of labour. The variability we observe calls for studies that build on solid functional results and avoid oversimplifications in understanding the evolution of tool design and technology. To fully understand the diversity and flexibility our dataset suggests, future studies should preferably aim at collaborations between different specialists so that tool manufacture and use can be examined in relation to patterns in biological and cultural evolution as well as changing environmental and social settings.

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