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The emergence of the Middle Palaeolithic in north-western Europe and its southern fringes

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A B S T R A C T

The nature of the Lower–Middle Palaeolithic transition has been one of the most debated questions in early Prehistory since the mid-20th century. The root of these debates lies primarily in how early prehistorians constructed chronological models, relying heavily upon index fossils. Such models have "artificial boundaries designed to provide structure to a complex record and, rather than being conceived of as permanent or real, should be frequently examined and revised (Corbey and Roebroeks, 2001)" (Monnier, 2006). In this paper, we will not focus our efforts on issues relating to nomenclature and systems of classification. Instead, we will focus on a time frame within which rapid behavioural and technological changes have been documented: the period between MIS 9 to 6.

Working on a large scale, and taking account of all of north-western Europe and its southern fringes, a group of researchers working on the main sites from this period propose an assessment of current research on the emergence of the "Middle Palaeolithic". Using a rich corpus of archaeological sites, we discuss how humans occupied north-western Europe and its southern margins between MIS 9 to 6, focusing particularly on questions of taphonomy, conservation, chronology and environment, as well as reviewing the pattern of technological change within lithic assemblages. This overview of current

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research into the emergence of the Middle Palaeolithic will help to define future research paths and advance our understanding of this key period of human evolution.

1. Introduction

"The work on understanding [the Early Middle Palaeolithic] and its significance in the evolution of archaic European hominids can begin". These words of conclusion written by White et al. (2006) reveal that our knowledge of this period remains embryonic. However, they also emphasize that the Western European record has developed considerably these past years and now opens new research prospects. This paper is part of this double approach.

First of all, it aims to establish a critical overview of the currently available record for north-western Europe (the United Kingdom, the Netherlands, Belgium, Germany, the northern half of France) and its southern margins (the southern half of France), for a chronological period ranging from the end of the Lower Palaeolithic to the beginning of the Middle Palaeolithic, from MIS 9 to 6, or 337 to 130 ka (after Lisiecki and Raymo, 2005). Over the past decades, most researchers have come to agree that the transition between the Lower and Middle Palaeolithic marks a major change in the history of human evolution (Gamble, 1999; White and Ashton, 2003). It was first of all defined from a material point of view by a technological change involving a shift in production aims from bifaces to Levallois flakes (Bordes, 1950). This obvious material bipartition is still present in most minds, but the available archaeological data for north-western Europe and the studies undertaken up until now enable us to establish a renewed portrait of lithic technologies during the second half of the Saalian (Corbey and Roebroeks, 2001). This technological overview reveals here another side to this transition between the Lower and Middle Palaeolithic, going beyond the traditional dichotomies assert and reinforced by analytical approaches to Levallois technology, on one hand, and bifaces, on the other (Monnier, 2006).

The transition between the Lower and Middle Palaeolithic is currently perceived as a period of human history marked by profound behavioural transformations involving cognitive, social and adaptive changes (Gamble, 1999; White and Ashton, 2003), which are revealed by the lithic industries. The general representation of lithic industries will enable us, in a second phase, to bring to light spatio-temporal disparities, which will be assessed through an anthropological and behavioural approach, which is now paramount for research into this period (Monnier, 2006; Brenet, 2011; Scott, 2011; Hérisson, 2012; Van Baelen, 2014).

2. Background

In order to understand how this division between the Lower and Middle Palaeolithic originated, and the impact of this historiographic legacy within current debates focused on the transition between these two periods, we must first briefly review over one hundred and fifty years of prehistoric studies.

From the beginning of the 19th century onwards, multiple discoveries of lithic artefacts were made in brick quarries in the north of France, the United Kingdom and Belgium. Members of scholarly societies and academic institutions rapidly proved the anthropogenic status of these artefacts. After heated debates, the notion of the "very early antiquity of Man" gained ground throughout the 19th century among the scientific community. The evidence for the age of these lithic industries was based on geological work on stratigraphy and fluvial deposits on one hand, and on typologies of lithic artefacts on the other. This double approach was the key to the success of the pioneering prehistorians who demonstrated the "Antiquity of Man"; including Laurent Traullé, Casimir Picard and Jacques Boucher Crèvecoeur de Perthes in France, Joseph Prestwich, John Evans and Charles Lyell in England, as well as Philippe-Charles Schmerling and Edouard Dupont (Hurel and Coye dir., 2011). In 1872, following the work of Thomsen (1836), Gabriel de Mortillet proposed a relative chronology, defining periods based on "the easiest to discern and the most precise" lithic industry (De Mortillet, 1873, 1883). This marked the beginning of the division of the Palaeolithic where the two oldest periods (the Chellean and Acheulean) were followed by the Mousterian period (see Monnier, 2006 and Hurel and Coye dir., 2011, for further details).

At the end of the 19th century and the beginning of the 20th century, research was directed towards tethering this loose chronology of cultures to specific geological eras. The fluvial terraces of the large sedimentary basins of northwest Europe were fundamental to constructing a chrono-climatic framework for Palaeolithic lithic industries. In northern France, for example, the work of Henri Breuil, Victor Commont, Franck Bourdier and François Bordes led to successive interpretative models, aiming to correlate the terraces with known Glacial-Interglacial cycles, and by extension to date the industries discovered within them (Tuffreau et al., 1981). The chronological limits and the characteristics of the types of industries fluctuate in the works of Commont and Breuil, but significantly, Bordes established a clear division between the Acheulean and the Mousterian, marked by the Eemian Interglacial (Riss-Würm). Taking a techno-typological perspective, he observed that "we know no pure *in situ* Levallois site in a clearly Rissian or Pre-Rissian layer" (Bordes, 1950). "Typologically, the main division between the Lower and Middle Palaeolithic is the presence or absence of bifaces. Technically, it is the presence of facets […] and the Levallois or non-Levallois debitage of these flakes…" (Bordes, 1950).

The chrono-cultural framework defined by Bordes in the 1950s was progressively eroded by a series of sites discovered in the 1970s and 1980s, and the development of the first radiometric dating methods for the Pleistocene (Ronened., 1982). The simple equations that Lower Palaeolithic = Acheulean = biface industries without Levallois flakes without butt faceting = Riss or pre-Riss and Middle Palaeolithic = Mousterian = industries without bifaces with Levallois flakes with butt faceting = Riss-Würm and Würm were shown to be obsolete. A new interpretative framework was constructed for these assemblages, based initially on typo-technology, and then on lithic technology for the material culture, whilst the development of thermoluminescence dating tightened chronological control. In 1976, at Biache-Saint-Vaast, lithic industries with numerous Levallois flakes and lacking bifaces were discovered. These dated from before the Last Interglacial, and were technologically and typologically similar to certain Mousterian industries from the Last Glacial period, raising the question of their links with the Acheulean, as well as how the Middle Palaeolithic began (Tuffreau et al., 1981, p. 296). The new data from Biache-Saint-Vaast further undermined the Eemian partition, which definitively crumbled after the discovery of sites attributed to the Mousterian and correlated to the Saalian (Maastricht-Belvédère: Roebroeks, 1982, 1988; lower level of Rheindahlen: Bosinski, 1976) or to the Riss (Grotte Vauffrey: Rigaud dir., 1988). At the beginning of the 1980s, this important "chronological overhaul" (Jaubert, 1999, p. 40) opened the way to new interpretations of ante-Weichselian

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