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Timescales, space and culture during the Middle Palaeolithic in northwestern France

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ABSTRACT

Northwestern France is characterized by the presence of many Middle Palaeolithic sites, covering the entire period. The Saalian phase is less documented, partly for taphonomic reasons. The lithic industries indicate mastery of all production systems for flakes, blades, points and to a lesser extent, bifaces. During the Upper Pleistocene, occupation of this territory by Neandertal groups is important. The vast majority of these lithic series cannot be attributed to cultural facies of Mousterian defined by Bordes, due to the low number of retouched tools. Aside from some typical Mousterian of Acheulean tradition bifaces and blade production characteristic of the Early Weichselian, which are stylistic and cultural markers, there is nothing to differentiate Mousterian groups. In an attempt to identify their cultural identities, lithic assemblages were apprehended globally, using the operative sequence concept from the acquisition of raw material to the final objectives of the different production systems, and abandonment of tools. The situation is considered from each chronostratigraphic phase to try to distinguish the settlement patterns of this region. This renewed approach to technical studies points to a wide diversity of Neandertal adaptive faculties, which can be interpreted in terms of cultural diversity.

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1. Introduction

In northwestern France, the Middle Palaeolithic spans the period from 300 to 40 ka. For over 250,000 years, Mousterian cultures were characterized by high technical, cultural, and stylistic variability in an extensive temporal and spatial framework (Otte, 2000; Delagnes et al., 2007). In spite of 150 years of research, it is still difficult to establish the cultural identity of these human groups in western and northern France. The Bordes typological system cannot be applied to these regions due to the low number of retouched tools (generally less than 5%) in the lithic assemblages (Locht, 2004; Depaepe and Goval, 2011). Therefore, the lithic assemblages cannot be classified among the cultural facies

traditionally used in southwestern France and appear to be quite different to those from Central Europe (Jaubert, 2011). Apart from bifaces typical of the Mousterian of Acheulean Tradition (Saint-Amand-les-Eaux: Deschodt et al., 2006; Plaisy: Locht et al., 2013a,b) and blade production characteristic of the early Weichselian, which are strong technical, stylistic, and cultural markers, no element leads to clear differentiation of the different Mousterian groups according to satisfactory criteria. In order to attempt to identify these groups, we adopted a global approach to lithic assemblages by applying the operative sequence concept, from raw material acquisition until the final aim and abandon of the different production systems. This renewed approach to technical studies points to a wide diversity of Neandertal adaptive faculties, which can be interpreted in terms of cultural diversity.

This approach is based on the study of each chronoclimatic phase in order to attempt to identify settlement patterns in the region (Antoine et al., 2003, 2014; Antoine and Locht, 2015).

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However, it is clear that different biases exist in data interpretation. The first of these is linked to taphonomy. Well-preserved Saalian and Eemian sites are much less frequent than Weichselian sites. The second is the notion of the timespan of each phase, which can spread over several thousand years, or several tens of thousands of years, and must be taken into consideration to avoid data distortion. For example, for the Weichselian Lower and Middle Pleniglacial (MISs 4 and 3), spanning a period of nearly 40,000 years, only 22 sites are recorded in this article in northwestern France. However, it is probable that they are not contemporaneous and that they only very partially represent the archaeological reality.

Abundant sites are mentioned in the literature. However, for the purposes of this article, only well-preserved sites in primary position with clearly established radiometric dates or clear identification within a palaeosol, where the chronostratigraphic position is known, have been retained. The chronological division corresponds to MIS, as chronostratigraphic correlations are not always possible between the different regions of the zone concerned by this study.

2. Geographic location

The zone studied covers northwestern France (Fig. 1) and includes the regions Nord-Pas-de-Calais, Picardy, Upper and Lower Normandy, as well as Brittany. Recent data for Ile-de-France are still incomplete. The sites from the Vanne Valley (north Burgundy) have been included as they comprise clearly interpretable chronostratigraphic data and the lithic complexes present marked similarities with those from northwestern France. These territories cover a total surface of over 90,000 km². From a geomorphological perspective, they belong to two different regions: the loessic Paris Basin and the granitic Armorican Massif. The Middle Palaeolithic occupations are thus located in very variable coastal, karst, loessic, or fluvial contexts. Karst contexts correspond to dolines developed in the chalk.

3. Research progress

Middle Palaeolithic research dynamics are unequally distributed throughout the country. This is largely due to the presence of prehistory teaching nodes and researchers in specific areas. Since the early days of the discipline, Palaeolithic prehistory has been concentrated in two main regions in France, the north and the southwest. During the last thirty years, rescue archeology produced significant data about Middle Paleolithic industries and settlements. Two other regions are also characterized by the abundance of Middle Palaeolithic excavations, the southeast (the Rhone Valley and the Massif Central) and the west (Normandy and Brittany). Significant databases focusing on Middle Palaeolithic have been compiled for these geographical zones where abundant programmed and rescue excavations have been carried out. However, these four regions are separated by zones for which data are still lacking (Poitou, Limousine, Centre, Alsace, Lorraine...), due to the absence of teams in these areas (Fig. 2). In northwestern France, traditional excavations and rescue operations have been led by the same teams, since the works of A. Tuffreau at the end of the 1980s. The databases comprise 86 Middle Palaeolithic levels in primary position, including 22 with numerical dates, and the chronostratigraphic framework of Mousterian occupations is now well established (Fig. 3). The homogeneity of the loess cover and the preserved palaeosols also allow for inter-site correlations over long distances.

4. Demography

At present, it is difficult to estimate the number of Neandertals living in Europe. Some authors evaluate this population at less than

10,000 (Sørensen, 2011), whereas other demographic researchers point to numbers in the region of 250,000 (Biraben, 2003). Recordings of 0.005 inhabitants per km² have been suggested for Mousterian populations of Acheulean Tradition (Richter, 2006). The Neandertal population in northern Europe may also have been subjected to climatic contractions in relation to the different climatic crises (Hublin, 2011). It is important to take population density weakness into account in a vast continent where biomass must have increased during temperate phases. Northern France must thus only have hosted small numbers of human groups and it is difficult to identify their cultural identity. In this way, we can envisage vast territories (sometimes including the landscape of the southern North Sea basin: Roebroeks, 2014) with large troops of herbivores and small human groups. Considered from this perspective, the frequent discoveries of Middle Palaeolithic artefacts provide evidence of substantial but discontinuous frequentation of northern France over a very long lapse of time. This scenario is backed up by the many markers of Middle Palaeolithic occupation discovered during archaeological assessments (Locht et al., 2013b). They corroborate the impression of a real, but at times faintly perceptible occupation of the territory.

5. Access to raw materials

Flint was the main raw material used in northern France during the Middle Palaeolithic. It is almost ubiquitous in the chalky substratum, but contrary to popular belief, blocks of flint were not available everywhere during all climatic phases. During interglacial phases, considerable plant cover must have limited access to raw materials (Locht et al., 2014a,b) and it would have been easier to collect flint from alluvium or treefalls. The situation must have been similar at the beginning of glacial periods, in forest or steppe contexts. The chalky slopes would only have been easily accessible after erosive Pleniglacial phases, thereby providing access to good quality flint. Several Levallois flake workshops were located at the base of these slopes, at the very end of MIS 6 (Ailly-sur-Noye: Locht et al., 2013b), or at the end of MIS 4 (Fitz-James: Teheux, 2000), for example.

In the Armorican Massif to the west, flint in primary position is naturally absent. However, it is present as marine pebbles in ancient coastal bars and was the main raw material used during the Middle Palaeolithic. Nonetheless, during interglacial and interstadial periods, access to these bars was impossible and flint was replaced by local magmatic and metamorphic rocks (Eocene sandstone, quartz, dolerite, microgranite, volcano-sedimentary tufa...); particularly during the course of MIS 5a (Huet, 2007).

6. MIS 8 (Middle Pleistocene)

In northwestern Europe, the end of MIS 9 was marked by the last occurrences of the classical Acheulean (Cagny l'Épinette: Tuffreau et al., 2008; Etrécourt-Manancourt: Hérisson and Goval, 2013). This was followed by the Middle Palaeolithic at the very beginning of MIS 8, mainly made up of Mousterian industries in this region and marked by the appearance of Levallois debitage (Hérisson, 2012; Hérisson and Locht, 2014).

Stratigraphical and archaeological data are still fragmentary for this period in the northwestern of France (only two sites; Locht, 2005; Cliquet, 2013). The lithic industry of Salouel, in the Somme, was found in fluvial gravels attributed to MIS 8 or to the beginning of MIS 7 ("nappe d'Argoeuves": Antoine, 1990). The technological spectrum of this industry (abundant Levallois debitage) demonstrates that it is unquestionably a Middle Palaeolithic assemblage (Ameloot-Van der Heijden et al., 1996). A similar age was advanced for the lithic complex from Saint-Valéry-sur-Somme, characterized

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