



Contents lists available at ScienceDirect

Quaternary International

journal homepage: www.elsevier.com/locate/quaint

Building models of Neanderthal territories from raw material transports in the Aquitaine Basin (southwestern France)

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ARTICLE INFO

Article history:

Available online xxx

Keywords:

Raw material
Mobility patterns
Middle Palaeolithic
Petroarcheology
Southwestern France
Techno-economy

ABSTRACT

The Middle Palaeolithic of southwestern France has long been a testing ground for models of Neanderthal lithic assemblage variability and mobility strategies. Advances in our understanding of the lithological structure of the northern Aquitaine Basin combined with numerous raw material studies allows connections between different areas of the region to be revealed based on the movement of particular 'tracer' materials. By comparing technological data with raw material transport patterns elements of Late Neanderthal techno-economic behaviour emerge. Raw materials were transferred over longer distances in both the Levallois and Quina techno-complexes compared to the Discoid techno-complexes, where evidence for similar movements are almost entirely absent. Comparing these patterns of raw material provisioning and transfer against the distribution of key Middle Palaeolithic sites forms the basis of a new model for the territorial organisation of Late Neanderthal groups in the Aquitaine Basin to be built.

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1. Introduction

The northeast of the Aquitaine Basin has produced numerous Middle Palaeolithic sites and presents considerable diversity in terms of ecosystems and varieties of lithic raw materials. Several recent studies focusing on the relationship between raw materials and stone tool technology have shed new light on the territorial organisation of Neanderthal groups (e.g. Turq et al., 2013a,b). Additionally, the last thirty years have seen the growth of a naturalist approach to the geological and geographical characterisation of raw materials from across southwestern France (Demars, 1980; Morala, 1980, 1983; Rigaud, 1982; Geneste, 1985) with the aim of better understanding the organisation of Palaeolithic hunter–gatherer groups within the territories they exploited. This data moves interpretations of Neanderthal mobility patterns beyond traditional definitions of subsistence territories connected to particular occupation types, allowing both relationships within and between territories to be explored. This type of analysis requires defining specific lithological zones (hereafter LZ) whose geological

formations contain specific raw materials. Any given territory includes one or several LZ that contain evidence for the movement of raw materials in all stages of the *chaîne opératoire*, including blank production, bifacial shaping as well as tool manufacture and use.

This techno-economic approach is based not only on the continued revision of Mousterian lithic techno-complexes (e.g. Delagnes et al., 2007; Turq et al., 2011; Jaubert, 2011; Faivre, 2011, 2014, in press; Gravina and Discmaps, 2015) but also traditional models of hunter–gatherer mobility systems (e.g. Binford and Binford, 1969; Binford, 1979; Kuhn, 1992, 1995; Andrefsky, 2009). Raw material analysis combined with a consideration of techno-economic patterns builds upon and refines previous models of Neanderthal mobility strategies based on blank production systems and bifacial shaping (e.g. Delagnes, 2010; Delagnes and Rendu, 2011). The development of rescue archaeology over the last two decades has produced an important number of open-air sites, which, when coupled with the revision of key sequences from both rock shelter and cave sites and methodological advances in absolute dating techniques (Guibert et al., 2008; Vieilleveigne et al., 2008), provide important contextual data for reconstructing patterns of Neanderthal land-use and raw material transport patterns.

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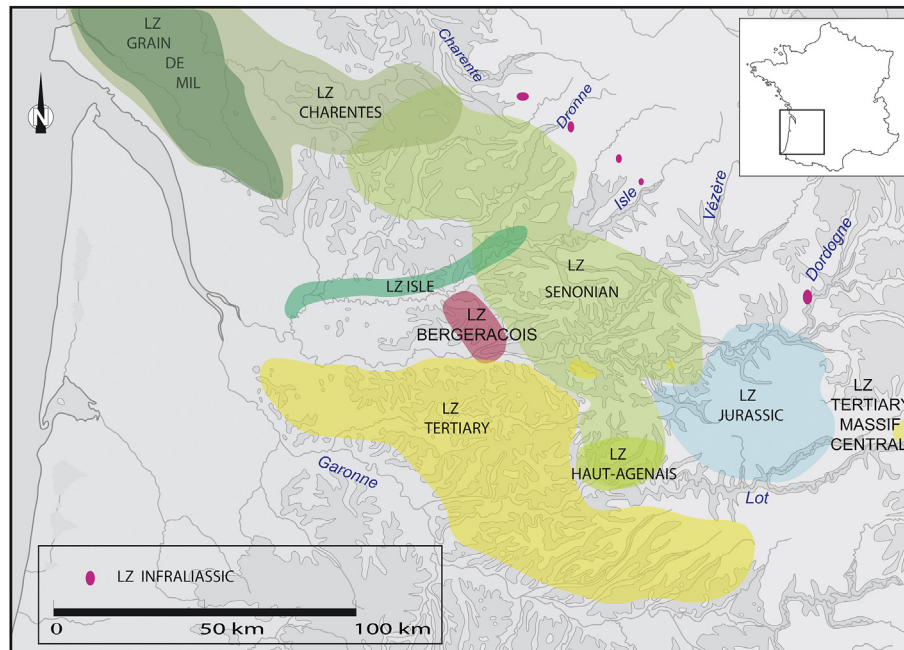


Fig. 1. Different lithological zones (LZ).

2. Material and methods

2.1. Study area and definition of lithological zones (LZ)

Here we focus on the Middle Palaeolithic occupation of the northern Aquitaine Basin from the Garonne Valley in the south to the limits of Poitou in the north (Fig. 1). The region's concentric geological structure creates a mosaic of different ecosystems containing diverse lithological zones cut by the drainage basins of the

Garonne (right bank), Lot, Dordogne, Isle and Charente Rivers. We applied well-established lithological methods (Demars, 1980; Morala, 1980, 1983; Séronie-Vivien, 1987; Turq, 1992a,b) to define raw materials characteristic of each LZ, including the morphology of the blocks (e.g. irregular nodules, lenses, small slabs), macro- (e.g. texture, cortex, couleur, granulometry) and microscopic observations (e.g. microfossils). The depositional context and post-genetic patterns of alteration (Fernandes, 2012) were equally taken into account for these 'tracer' materials.

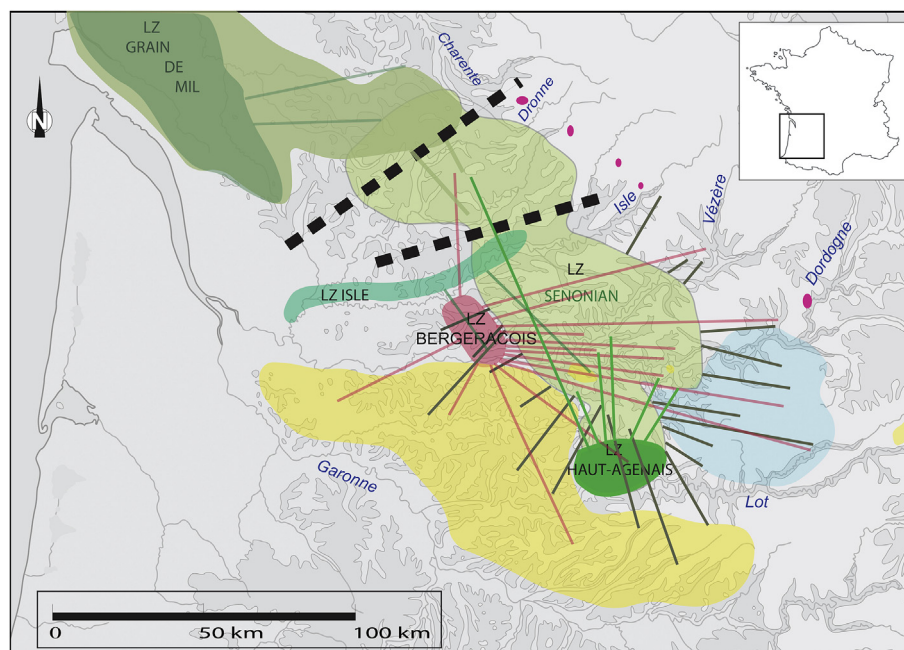


Fig. 2. Connections between different lithological zones. The red lines indicate an intermediary region where raw material from the south and north has been recovered. This region separates the Charentes from the study area to the south, where connections between different lithological zone are numerous. (For interpretation of the references to colour in this figure, the reader is referred to the web version of this article.)

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