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## The coexistence of Acheulean and Ancient Middle Palaeolithic techno-complexes in the Middle Pleistocene of the Iberian Peninsula

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### ABSTRACT

Two clearly differentiated techno-complexes can be recognised in the Iberian Peninsula during the second half of the Middle Pleistocene: the Acheulean and the Middle Palaeolithic. In this paper we present the current state of research on both technological entities, and propose that they represent two different industrial traditions. The Acheulean, a techno-complex that originated and developed in Africa, is considered to have reached Western Europe via Gibraltar, and developed only to a limited extent. In contrast, relict populations with a different technological tradition would have been present on the European continent since the late Early Pleistocene and developed a technological tradition was based on the development of *chaînes opératoire* of *débitage*. From MIS 10 on these industries had reached a high degree of complexity and diversity.

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### 1. Introduction

The Iberian Peninsula has only lately begun to play a leading role in the most recent debates about the evolution of the European Ancient Palaeolithic (i.e. Otte, 1996; Jaubert, 1999; Roebroeks, 2006; Delagnes et al., 2007; Hopkinson, 2007; Sharon, 2007; Rolland, 2010). The historical development of the discipline throughout the 19th and 20th centuries traditionally took place in France, where the concepts of the Acheulean and Mousterian were born (Sackett, 1981; Monnier, 2006; Groenen, 2008). Although investigations in Africa have dramatically altered our notion of the Acheulean techno-complex in recent decades (Isaac, 1969, 1972; Gowlett, 1986; Clark, 1994; Lycett and Gowlett, 2008; Diez-Martín and Eren, 2012), we believe that previous schemes underpin many hypothesis regarding the technological traditions documented in the Early and Middle Pleistocene of Southern Europe (Tuffreau, 2004; Nicoud, 2013).

Sites of this period currently known in Spain (Fig. 1) are very numerous in the fluvial formations of the Atlantic basins and have well-established chronologies (Bridgland et al., 2006; Santonja and

Villa, 2006; Santonja and Pérez-González, 2010). This is based both on a detailed knowledge of the morphostratigraphic sequences of the valleys in which they occur, and on a significant number of numerical dates (Santonja and Pérez González, 2002; Falguères et al., 2006; Cunha et al., 2008; Martins et al., 2009, 2010; Panera et al., 2011; Moreno et al., 2012; López-Recio et al., 2013; Pérez-González et al., 2013; Santonja et al., 2014a,b). The present synthesis regarding the Acheulean and Ancient Middle Palaeolithic is focused on these chronological aspects.

The concept of technocomplex that we adopt here is based on the assessment of the *chaînes opératoires* (Geneste, 1985; Perlès, 1991; Soressi and Geneste, 2011) and on the distinction between *débitage* processes focused on the production of flakes from the systematic exploitation of blanks and shaping processes, whose aim was the production of unique tools through the implementation of well defined knapping schemes (Boëda et al., 1990; Boëda, 1991; Inizan et al., 1992; Boëda, 2001). Through making use of these concepts, we believe it is possible to distinguish two clearly-differentiated techno-complexes in the SW European Pleistocene: the Acheulean and Industries of cores and flakes that ultimately evolved into what is commonly known as the Middle Palaeolithic and Mousterian. The Acheulean techno-complex is characterised by the predominance of *chaînes opératoires* (c.o.) of *façonnage*, often lacking exclusive characters, together with independent or

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