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Territorial exploitation in the Tyrrhenian Gravettian Italy: The case-study of Bilancino (Tuscany)

Biancamaria Aranguren [a], Fabio Cavulli [b], Massimo D'Orazio [c], Stefano Grimaldi [b, *], Laura Longo [d], Anna Revedin [e], Fabio Santaniello [b]

[a] Soprintendenza per i Beni Archeologici della Toscana, Firenze, Italy
[b] Dipartimento di Lettere e Filosofia, Università degli studi di Trento, via Tommaso Gar 14, Trento 38122, Italy
[c] Dipartimento di Scienze della Terra, Università di Pisa, Pisa, Italy
[d] Musei Civici Fiorentini, Firenze, Italy
[e] Istituto Italiano di Preistoria e Protostoria, Firenze, Italy

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ABSTRACT

The open-air Bilancino site (Mugello basin, Florence, Italy) may be ascribed to the Noaillian facies of the Gravettian. The site is dated to 25,410 ± 150 BP. As no faunal remains have been preserved due to the local deposit conditions, attention has been paid to the procurement strategy of the inorganic raw material – i.e. lithics and minerals – as well as to the exceptional evidence of behavior strictly related to vegetal food processing. Bilancino was a summer seasonal camp for the harvesting and the processing of hygrophilous herbs, in particular *Typha latifolia* (cattail). The Noailles burins were the tools that Gravettian people used to produce fibers from cattail; vegetal residues (starch) found on pestle-grinders and grinding stones provide the earliest evidence of a technique used in the preparation of flour based on wild plants. Mineral residues (hematite) found on another grinding stone, as well as fragments of this mineral found on the living floor of the site, provide evidence for the coloring of vegetable fibers and possibly other materials. Analysis of the provenance of the lithic and mineral raw material allows us to define the territory within which the Bilancino inhabitants may have found the natural sources for collecting the raw materials useful for their daily activities.

1. Introduction

The Gravettian plays a very important role in human cultural evolution. It stands as the first truly European culture after the arrival and spread of the first anatomically modern *Homo sapiens* (i.e. Aurignacian). It precedes the post-LGM Upper Paleolithic adaptations which later faced Holocene climatic change, and developed adaptive strategies on a European scale in order to survive the harsh glacial climatic conditions. Therefore, it is quite surprising that such scanty information about the behavior of Gravettian human groups in Western Europe is available today, and this is particularly true when the Italian Gravettian evidence is observed.

Most of the Italian research focuses on lithic technology and/or functional analysis (Borgia and Wierer, 2005; Borgia, 2006; Wierer, 2013), or on an extremely specialized typological approach (Martini et al., 2001). Although attempts to reveal the seasonality of the occupations have been recently made in some key sites – for instance, at Riparo Mochi (Zeppieri, 2009) and Grotta Paglicci (Boscato, 2007) – none of these works provide an explanatory framework within which to understand the dynamics of Gravettian adaptations in a larger territory.

In this paper, our goal is to build up an exploitation model of a geographically well-defined territory: Tyrrhenian central Italy, roughly corresponding to the Tuscany region. Here, our approach is based on the two following assumptions:

1 The concept that transport costs affect assemblage variability is not a new one. However, even if most researchers agree that as distance for procurement sites increases, stone tools are expected to show a greater degree of processing (see Odell, 2000: 277–278 for a review), the results of their studies are different. While some stress the distance from the stone crop as a major factor in determining lithic assemblage variability (Ricklis and Cox, 1993; Newman, 1994; Smith, 1999; Blumenschine et al., 2008), others suggest only a weak or essentially nonexistent relationship between distance and assemblage variation (Close,

* Corresponding author.
E-mail address: stefano.grimaldi@unitn.it (S. Grimaldi).

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Fig. 1. Location of the site.

1999; Brantingham, 2003). In our opinion, such assemblages, at sites far from their natural sources, are definitely influenced by distance, while tool morphologies and assemblage variability are strongly influenced by other factors such as tool function and/or reuse.

2 The concept of long-distance logistic mobility (Binford, 1980, 2001) is adopted here. We assume that a Gravettian human group may represent a "collector" model based on settlement/mobility dynamics in which task groups move from centrally-located residential site/s to obtain resources from surrounding locations. Logistic mobility usually occurs when relevant foods may be found in different places (e.g. in locations distant from one another), or in different periods of time (e.g. seasonally). Binford (1980:14) suggests that logistic movements are structured according to the distribution of these resources within the environment, and not depending on whether they are particularly abundant.

The Bilancino open-air site (Mugello basin, Tuscany) provides strong evidence for our purpose. As no faunal remains have been preserved due to the local deposit conditions, attention has been paid to the procurement strategy of the inorganic raw material – i.e. lithics and minerals – as well as to the exceptional evidence of a behavior strictly related to vegetal food processing. Results allow us to define a territory where the Bilancino inhabitants may have found the natural sources for collecting the raw materials useful for their daily activities.

2. Regional environments and the site

The Tyrrhenian or western side of Italy is generally characterized by hills and mountain ranges which are often in close contact with the coastline. Coastal plains do not show any remarkable interruption from north (France–Italy border, western Liguria) to south (southern Calabria), but they can be very narrow, such as the coastline in Liguria and southern Italy. The widest plains are located in Tuscany (Arno valley), Latium (Tiber valley and other minor rivers) and Campania (several river valleys such as those of the Calore and Sarno). Tyrrhenian Italy is similar not only in its geographical landscape but also for other environmental features, such as the presence of caves all along the Italian peninsula, as well as climatic conditions, with some differences in rainfall and solar irradiance. This region, together with the Apulia peninsula, provides most of the Italian archaeological evidence as far as the Gravettian is concerned (synthesis in Palma di Cesnola, 1993; Gambassini, 2007). The open-air site of Bilancino (43° 58' 41.20" N, 11° 15' 47.46" E), is located at 238 m a.s.l. on a fluvial terrace in the Mugello area (northwest of Florence, Tuscany) (Fig. 1). It is close to