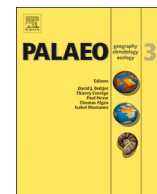




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# The Gravettian and the Epigravettian chronology in eastern central Europe: A comment on Böskén et al. (2017)

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## ABSTRACT

Böskén et al. (2017) aimed at contributing to the environmental variability of the Gravettian population in 'southeastern' Europe during the Last Glacial Maximum (LGM) with an interdisciplinary study at the Upper Palaeolithic site Ságvár Lyukas Hill (Hungary). However, the classification of the site as Gravettian is erroneous because the LGM archaeological record of eastern central Europe is composed of findings of another culture, the Epigravettian. This short comment on the paper of Böskén et al. (2017) presents the archaeological chronology between 34 and 16 kyr BP with a focus on the Gravettian–Epigravettian dichotomy.

Böskén et al. (2017) published the results of the detailed geological and malacological investigations of the Upper Palaeolithic site Ságvár Lyukas Hill in western Hungary, dated to the Last Glacial Maximum (LGM) (Lengyel 2008–2009, 2010). Besides the specific aims of their paper, the results are an important contribution to reconstructions of the palaeoenvironment of hunter-gatherer societies during the LGM in the Carpathian Basin. While the natural science results in Böskén et al. (2017) are soundly presented, the archaeological classification of the site is misunderstood and thus the consequent implications to archaeological research are inaccurate. Böskén et al. (2017: 4) state that Ságvár Lyukas Hill is a Gravettian site and represents one of few dated to the LGM in southeastern Europe. However, the archaeological literature directly contradicts this statement; there are no Gravettian sites dated to the LGM in this region (Kozłowski, 2007; Svoboda, 2007), which is often mentioned as central Europe, or eastern central Europe (ECE – roughly the Western Carpathians and the Carpathian Basin) (e.g. Verpoorte, 2004). The last Gravettian hunter-gatherer camps in the chronology of the Upper Palaeolithic in ECE predate 24 kyr BP, which is the time of the greatest extent of the Fennoscandian ice sheet (FIS) (Marks, 2012; Stroeve et al., 2015).

The Upper Palaeolithic human record in ECE consists of three ar-

chaeological cultures representing three hunter-gatherer populations: Gravettian ~34–24 kyr BP, Epigravettian ~24–16 kyr BP, and Magdalénian ~18–13 kyr BP (Maier, 2015; Svoboda, 2007). The Gravettian archaeological record is further classified into three sequential clusters. The earliest is the Early Gravettian, dated to ~34–30 kyr BP (Moreau, 2009). The next is the Pavlovian, dated to ~31–28 kyr BP (Svoboda, 2016). The last member of the Gravettian culture is the Late Gravettian, also called Willendorf–Kostenkian or shouldered points horizon (Grigorev, 1993; Kozłowski, 1996a; Svoboda, 2007), which occupied ECE between ~28–24 kyr BP (Wilczyński, 2016). At the onset of the maximal extent of the FIS, ~24 kyr BP, there is a significant change in the archaeological record, and the sites dated to between ~24 and 16 kyr BP are classified into another culture, the Epigravettian (Dobosi, 2004; Kaminská, 2016; Kozłowski, 1996b; Svoboda and Novák, 2004). The Epigravettian also can be divided into two chronological phases (Anghelincu et al., 2012; Cárcimaru et al. 2007–2008; Dobosi, 2004; Lengyel, 2014a; Svoboda and Novák, 2004). The early phase is contemporaneous with the FIS maximum extent roughly between 24 and 20 kyr BP, and the later phase dates to the time of FIS retreat. While Epigravettian sites are documented all over ECE, the third hunter-gatherer culture of this re-

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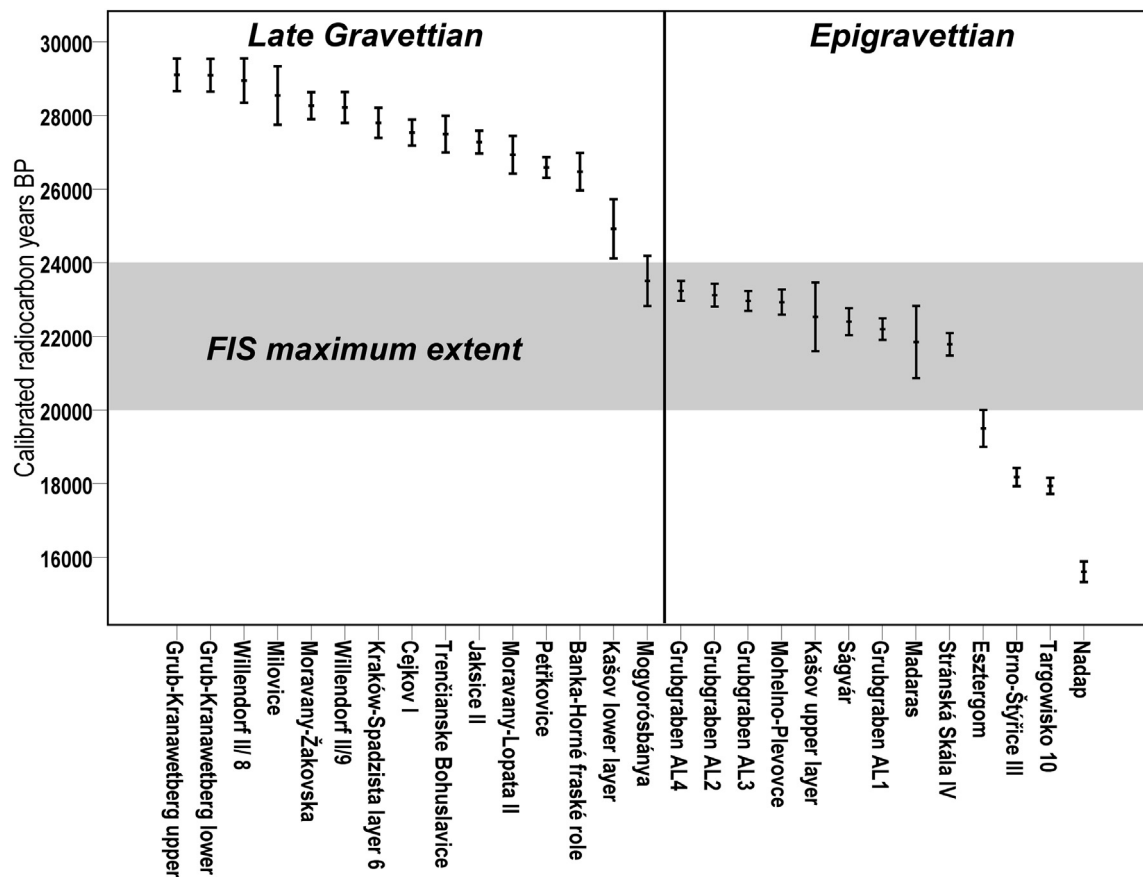


Fig. 1. Mean ranges of calibrated radiocarbon dates of Late Gravettian and Epigravettian sites and layers of the Western Carpathians and the Middle Danube basin, calibrated using OxCal (Reimer et al., 2013), showing 95.4% probability (after: Antl-Weiser et al., 2010; Demidenko et al., 2017; Haesaerts et al., 1996, 2016; Kaminská, 2016; Lengyel 2008–2009; Oliva, 2009; Svoboda, 1991, 2008; Škrdlá et al., 2016; Verpoorte, 2002; Vlačický et al., 2013; Wilczyński, 2009; Wilczyński et al., 2012, 2015).

gion, the Magdalénian, arrived from western Europe, left abundant occupational remains only north of the Carpathians, and a few sites in Moravia, and none in the Carpathian Basin (Maier, 2015). The Magdalénian seems to have been partly coeval with the later Epigravettian phase.

To support that Gravettian sites are not dated to the maximum extent of FIS, Fig. 1 presents calibrated radiocarbon dates from ECE. These derive from a database which includes only those dates with standard deviation less than 600 radiocarbon years. Fig. 1 shows the mean values of OxCal calibrated radiocarbon dates (Reimer et al., 2013) by layers of sites, and indicates the 95.4% probability. The sole overlap involves Mogyorósbánya (Hungary) and the lower layer of Kašov (Slovakia) (for site location see Fig. 2), at 100 years. Fig. 1 thus shows that the latest Gravettian occupations are not associated with the peak of the LGM, which in turn is highly correlated with the Epigravettian.

The striking difference between the Epigravettian and the

Gravettian in ECE, as we know today, is that Gravettian lithic hunting weapon tool types are absent in Epigravettian, such as the shouldered point, microgravette or Gravette point, Late Gravettian rectangle (ventrally bi-truncated and backed or steeply retouched bladelet), fléchette, and the bifacial leaf point (Fig. 3) (Kozłowski, 2013; Lengyel et al., 2016; Wilczyński, 2016). The Epigravettian during the FIS maximum has a low proportion of lithic armatures, which most often are simple backed bladelets (Lengyel, 2014a; Maier, 2015). However, after FIS started retreating, the later Epigravettian lithic inventories were again abundant in armatures, but without the style of the Gravettian weaponry (Lengyel, 2014a). The lithic assemblage of Ságvár entirely lacks the Gravettian armature types and has a decreased frequency of armature compared to the previous periods (Lengyel, 2014b). Only backed bladelets and retouched points were found in the armature.

In the Hungarian Upper Palaeolithic chronology the “Gravettian

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