

# Leptolithic technology as cultural marker in Early European Anatomically Modern Humans dispersal and its counterpart in Neanderthals: a further look to South-East Europe.

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The **Middle-to-Upper Palaeolithic Transition** is the name given to the **cultural and biological change following the dispersal of Anatomically Modern Humans (AMHs) in Eurasia**, during the 50-40 ka cal BP timespan.

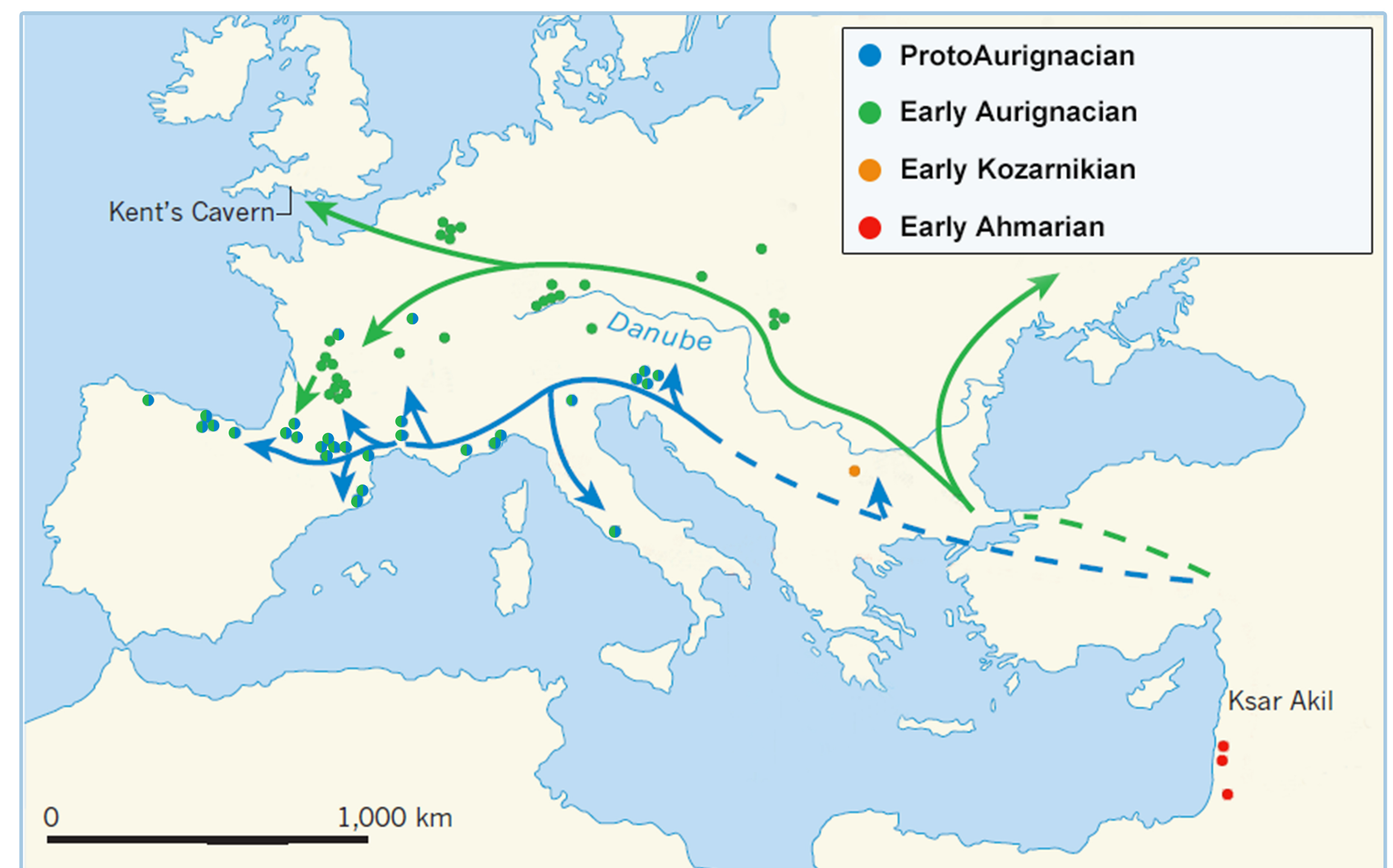
**Bladelets, small and regular stone artefacts** thought to be used as implements for wooden projectiles, are the major difference between **Early Upper Palaeolithic (EUP) technocomplexes** and the previous Middle Palaeolithic and Transitional ones.

**Aurignacian** is the only **EUP Western European technocomplex directly associated with AMHs**. The situation in the **Eastern Balkans** is less clear with a patch of EUP technocomplexes, among them the **Early Kozarnikian**. In the **Levant**, roughly contemporaneous, the **Early Ahmarian technocomplex is directly associated with AMHs**. These **three technocomplexes are often linked together**, due to the AMHs association and the similarities between bladelets.

The framework is further complicated by the **division**, based on bladelets production, **of the Aurignacian first manifestations** in the **ProtoAurignacian**, mostly **Mediterranean bound**, and the **Early Aurignacian**, found alone in **Central Europe** and in **stratigraphical succession, overlying the ProtoAurignacian, in the Mediterranean area**. **New dating in Central Europe suggests a parallel development** in two different geographical settings and not a sequence as portrayed in the Mediterranean sites.

An interpreting model formulated on the archaeological occurrence is the **Danube Corridor model**. Stating that **AMHs with Aurignacian technology spread rapidly into Europe following the Danube course**. As a corollary, **their origin lies in the Levantine Ahmarian**. This is displayed by the Mellars (2011) Aurignacian dispersal map, with the Early Aurignacian (green) and ProtoAurignacian (blue) envisioned routes.

Nevertheless, **to date, an extensive and direct techno-typological comparison, proving the connection between the Levant/Balkans area with Central and Western Europe, is missing.**



## RESEARCH GOALS

This **PhD research is intended to provide a stone artefacts direct comparison** to address the following questions:

- **Is the Eastern trajectory model supported by techno-typological affinities between technocomplexes?**
- **Are Western European technocomplexes rooted in the Eastern ones?**
- **Is the Early Ahmarian a good candidate for the (Proto)Aurignacian origin?**

For answering it has been chosen to analyse **promising assemblages, representative of each technocomplex, chrono-stratigraphically safe, typologically compared** in the literature and **positioned on the putative Eastern trajectory**.

## METHODOLOGY

The analysis is conducted with the **reduction sequence approach**. This **allows** placing the single artefact in the entire production wider context and **reconstructing the various production stages**. Artefacts are divided into cores, the exploited remnants of the original raw material piece, and débitage, the products either flakes or blades. Débitage products are subdivided into technical and target ones. Technical products inform about methods used to shape the cores and obtain the target products.

Observation of negatives left by previous removals on cores and débitage surfaces are informative of techniques and methods used.



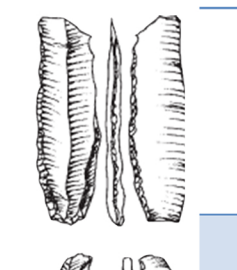

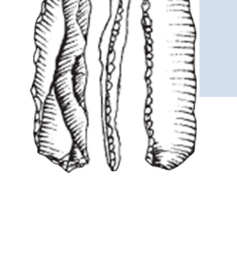

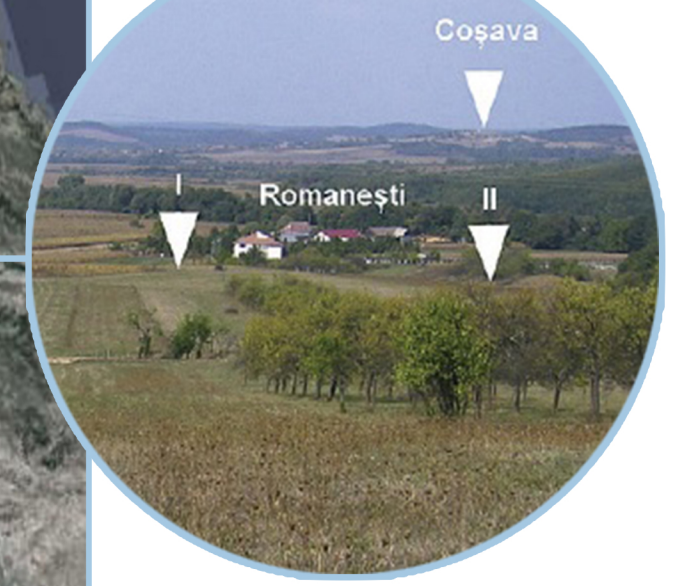


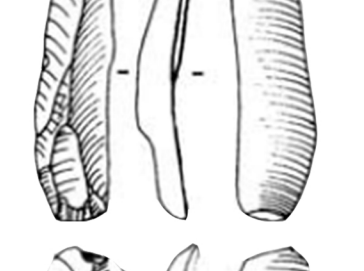
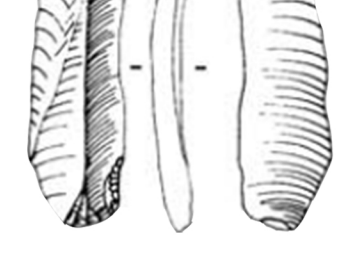
The analysis will be focused on **bladelets (blade débitage <12 mm wide)**.

They will be investigated by means of **morpho-metrical and technological attributes, listed here, to achieve the most objective determination**.

The approach has been already proved fruitful in distinguishing technical traditions between Western ProtoAurignacian sites.

LAMINAR DÉBITAGE ATTRIBUTES		
Cortex surface	Entirety	Length
Width	Thickness	Elongation
Flaking angle	Butt Type	Bulb Morphology
Lipping	Overhang abrasion	Outline
Profile	Cross Section Morphology	Distal End Profile Morphology
Category	Negatives	Negatives Number
	Orientation	
Length Last Complete Negative	Width Last Complete Negative	Elongation Last Complete Negative
Retouched	R. Position	R. Localisation
R. Distribution	R. Delineation	R. Extent
R. Angle	R. Morphology	

## SITES

Site	Fumane Cave		3 cm			Românești-Dumbrăvița I	Site
Layer	A1-A2					GH3	Layer
Dating	≈35 ka BP (40,4-41,2 ka cal BP)					≈40,5 ka BP	Dating
Technocomplex	Proto Aurignacian					Krems Aurignacian	Technocomplex
Study Assemblage	7866					2603	Study Assemblage
Site	Kozarnika Cave					Al-Ansab	Site
Layer	VII				1	Layer	
Dating	36-39 ka BP					30-40 ka BP	Dating
Technocomplex	Early Kozarnikian					Early Ahmarian	Technocomplex
Study Assemblage	1149		3 cm			2509	Study Assemblage

**Sites chosen for the comparison (red), other major EUP locations in the area (yellow).** On the sides: pictures showing the **sites' setting**, brief **summary of sites available data** and **examples of bladelets**.