



By the Rivers of Bilate – Twisted Bifaces from Ethiopia

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CRC 806 – Our Way to Europe

Introduction

The **Bilate** and its tributaries like the Bizare flow along the **Main Ethiopian Rift** through the Western Highlands. Their catchment encompasses important palaeolithic sites, e.g. Mochena Borago. Also it adjoins the upper **Omo Basin**, another well known research area.

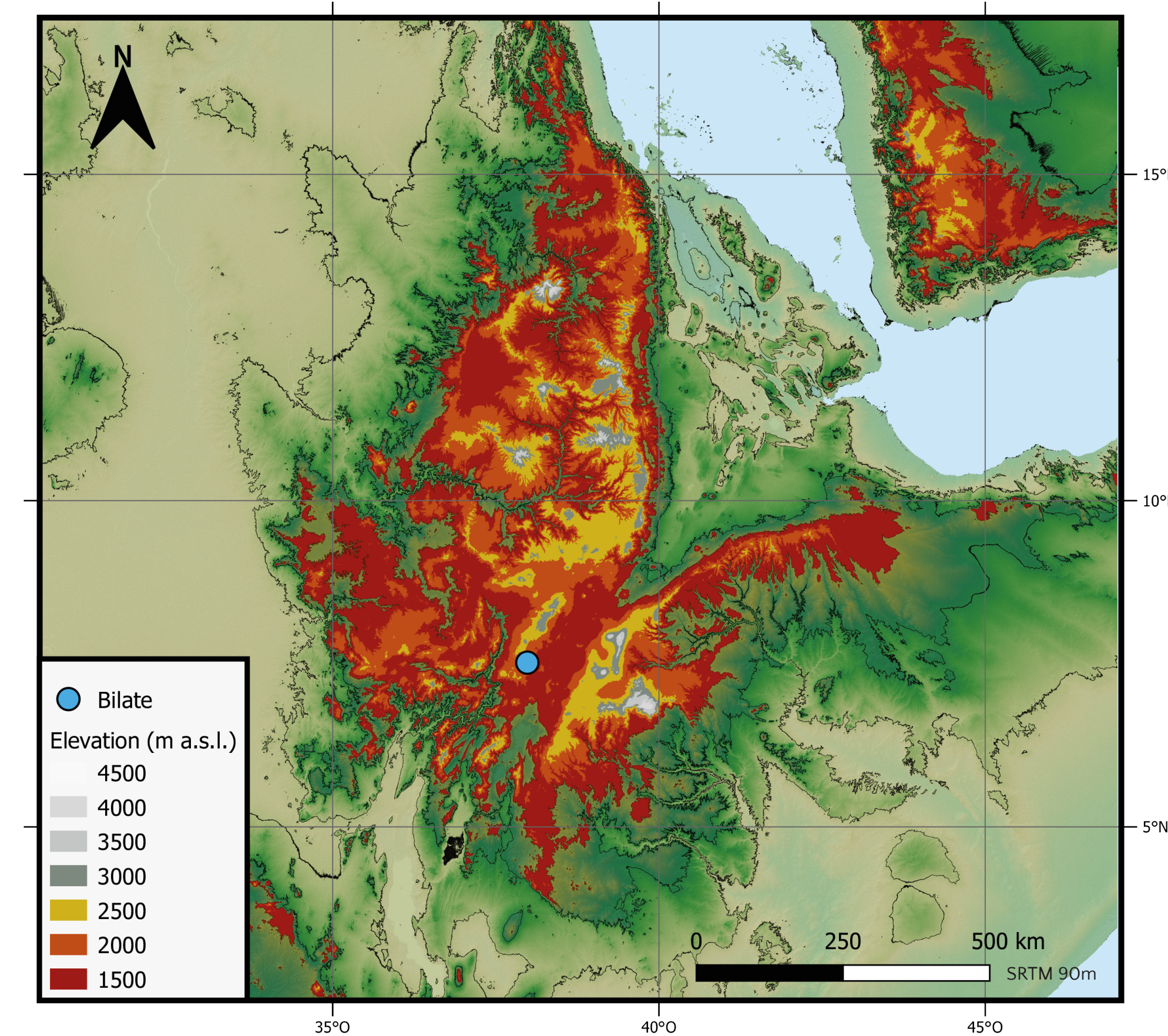
Tools were collected at two find spots in the **Bilate** catchment. Their **typology** is **comparable** to contemporaneous artifacts in **East Africa**. **Technological** analysis shows a **unique** concept. It results in **twisted** objects. The **twist** is intentional and focus of the manufacturing.

The technology of facially retouched lithics in **Ethiopia** exhibits clear differences. It reveals a higher **variability** within the **Acheulean**.

The **Acheulean** isn't a monolithic phenomenon. It isn't possible to grasp it just by the presence of handaxes and cleavers.

- **Late Acheulean**
 - **Twisted Facially Retouched**
 - **Rotationally Symmetric Tools**
- } Unique Concept

➔ **Acheulean: Higher variability, more than just e.g. presence/absence of handaxes and cleaver**



Method

1. same edge, same direction, same purpose ➔ **reduction step**
2. Assigning codes to reduction steps:
 - O = Upper Face
 - U = Lower Face
 - 1st # = Edge (1 = terminal, 2 = right, 3 = basal, 4 = left)
 - 2nd # = ID of specific reduction step
3. Chronology of reduction steps:
 - > older than
 - < younger than
4. Harris-Matrix of reduction steps (Richter 2013)

Chaîne Opératoire

Locality 1:
 Core Preparation → Cores on Large obsidian nodules → Off-axis and/or Kombewa flakes

Locality 2:
 Shaping → Use, Maintenance → Further Shaping: Change of Function (e.g. change of shape or used as core) → Discard

Other Sites with Twisted Bifaces

Ethiopia: Gombore II (Galotti et al. 2010), Lake Langano
 United Kingdom: Broom, The Folley, Swanscombe, Hoxne (Davies 2011; White 1998)

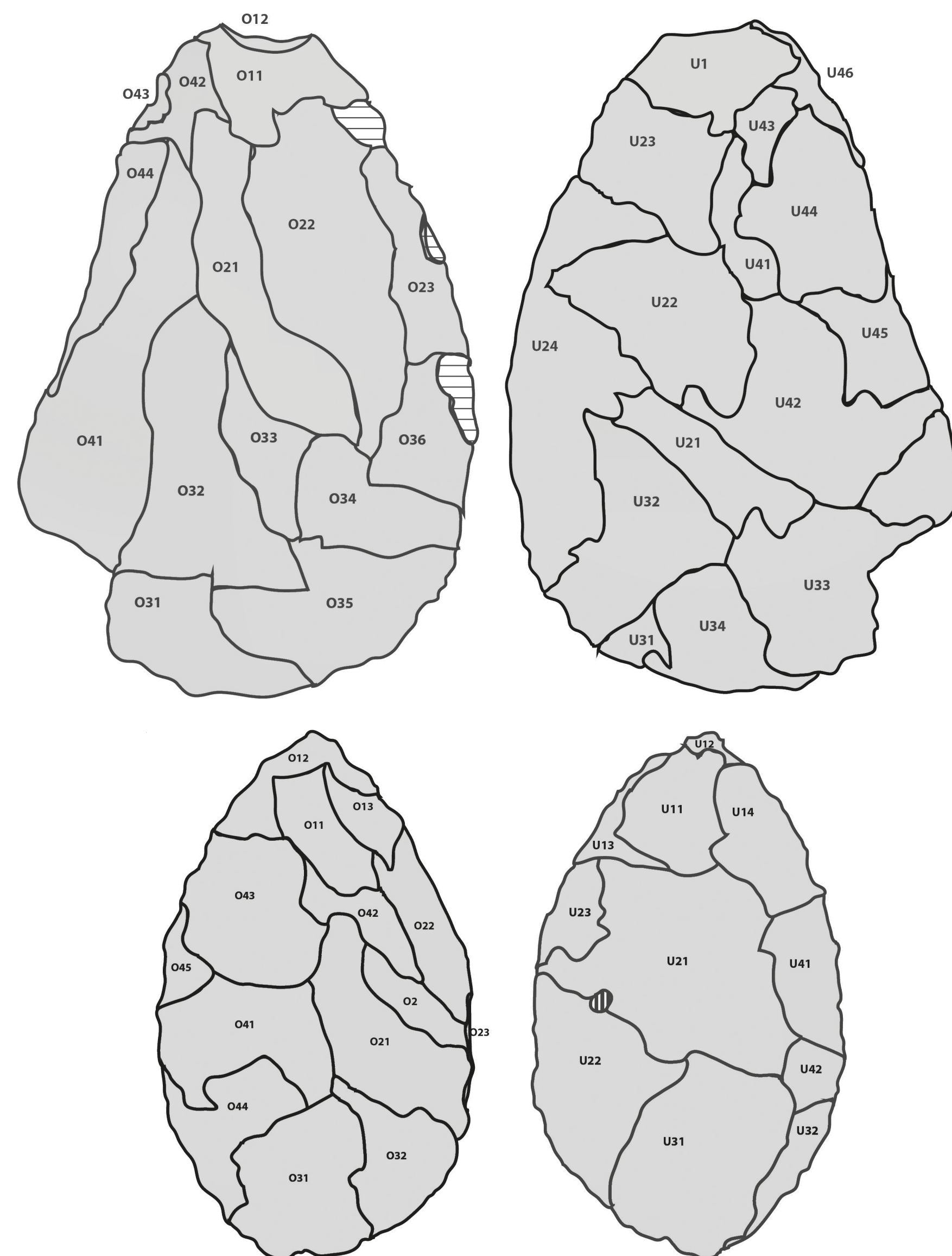
Bilate and the East African Acheulean

Early Acheulean, e.g. Kokiselei 4, Kenya & Konso-Gardula, Ethiopia 1.75 – 0.8 Ma (Beyene et al. 2015, 2013; Lepre et al. 2011)
 → no technological or typological resemblance

Middle Acheulean, e.g. Gombore II, Ethiopia: 790±6 ka (Galotti et al. 2010, Chavaillon & Berthelet 2004)
 → similar morphology; different raw material, percussion technique, tool composition; no discoid technology?

Final Acheulean, e.g. Garba I, Ethiopia & Kapthurin Formation, Kenya (Tryon & McBrearty 2002)
 → Levallois or „novel flaking methods“, 4–6 cm facial tools

Schematic Figure of Reduction Steps



Twisted Facially Retouched Tools from Bilate



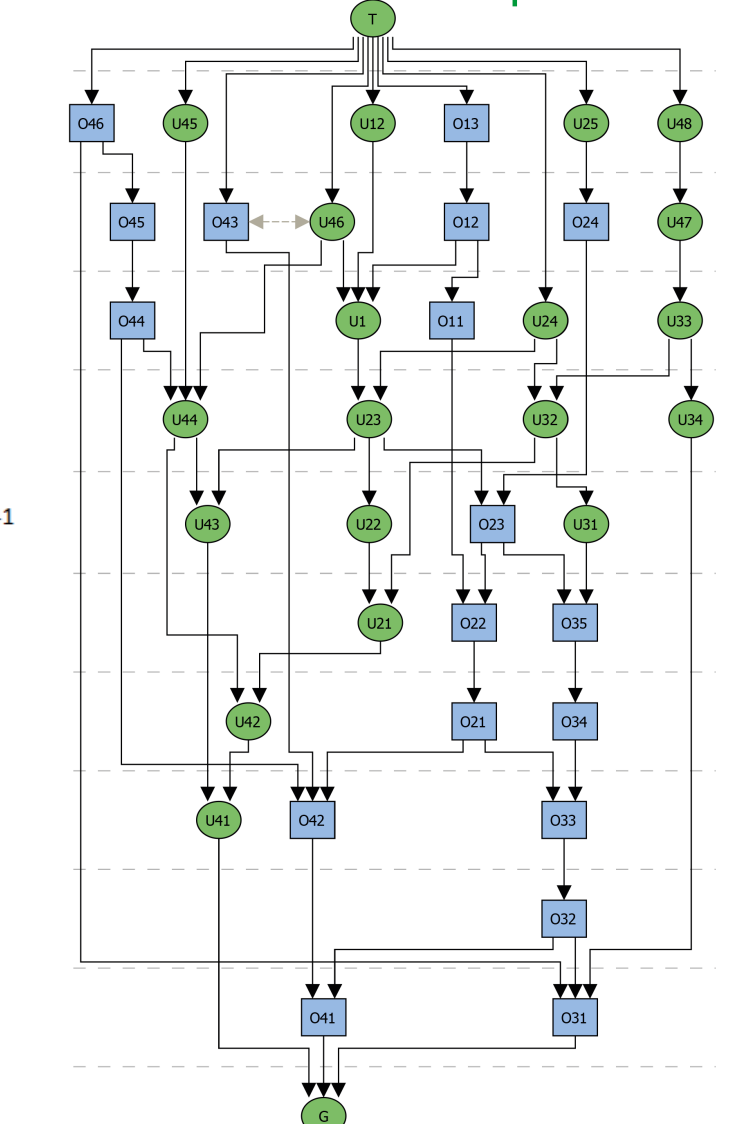
Different shapes and sizes



Table with reduction steps and their chronology

Adresse	Modifikation/Code	Kontur/Code	Ordnung/Code	Zustand/Code	Rang
O11	22	0	2	0 <O42; <O22;	
O12	31	4	2	2 >O43; <O11; <U1	
O13	52	3,5	4	2 <O11; <O12	
O14	71	0	0		
O2	22	3	4	3 >O21; >O22;	
O21	22	3	4	3 >O42; >O43; >O22	
O22	22	3,5	4	2 >O42; >O13; >U23	
O23	82	3	4	3	
O31	61	4	4	2 <O41; <U31	
O32	31	4	1	2 <O31; <O21;	
O33	71	0	0		
O41	22	3,5	4	2 <O21; >O45	
O42	0	0	2	0 <O21; <O41	
O43	22	3,5	2	2 <O41; <O11; <U14; <U41	
O44	31	4	1	2 <O31; <O41; <U32?	
O45	31	3,5	2	2 <O43; >O44	
O46	71	0	0		
U11	22	4	2	2 <U21; >U14	
U12	71	4	3	2 >U14; >U12	
U13	31	4	2	2 <U11; <U12	
U14	31	4	2	2 <U41;	
U21	22	0	2	0 <U13; <U41;	
U22	31	4	2	2 <U21; <U23; <O32	
U23	31	4	2	2 <U21; <U13?	
U24	71	0	0		
U25					
U31	61	4	4	2 <U22; >U32	
U32	31	4	2	2 <U42	
U33	71	0	0		
U41	22	4	4	2 >U42	
U42	31	3,5	2	2 >U21	
U43	72	3	3	2	

Harris-Matrix with reduction steps



Rotationally Symmetric Shaping of a Tool

