

The population history of Central Europe in the Early Bronze Age (2200/2100–1600/1500 BC) - A craniometric approach

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Supplementary Table 1. List of craniometric measurements applied in the study

Measurement	Howells	Martin
Maximum vault length	GOL	M1
Maximum vault breadth	XCB	M8
Minimum frontal breadth	XFB	M9
Basion-bregma height	BBH	M17
Bizygomatic breadth	ZYB	M45
Upper facial height	NPH	M48
Orbital breadth (maxillofrontale-ektokonchion)	-	M51
Orbital height	OBH	M52
Nasal breadth	NLB	M54
Nasal height	NLH	M55

Supplementary Table 2. List of the Late Neolithic (LN) burial sites analysed in the study (separate .xlsx file). Abbreviations: (i) Country: CZ=Czechia, D=Germany, H=Hungary, PL=Poland, SB=Serbia; (ii) Culture/Group: BB-E=Bell Beaker East, BB-M=Bell Beaker Moravia, EM=Early Maros, CWC=Cord Ware Complex,

Supplementary Table 3. Mean and standard error of the cranial measurements of the Late Neolithic cultures/groups (separate .xlsx file).

Supplementary Table 4. List of the Early Bronze Age (EBA) burial sites analysed in the study (separate .xlsx file). Abbreviations: (i) Country: A=Austria; GW=Gáta–Wieselburg, MV=Mad'arovce–Věteřov, MP=Maros–Perjámos, NIT=Nitra, UNE=Únětice, UNE-SE=Únětice Southeast, UNT=Unterwölbling, VAT=Vatya.

Supplementary Table 5. Mean and standard error of the cranial measurements of the Early Bronze Age cultures/groups (separate .xlsx file).

Supplementary Table 6. Main characteristics of the archaeological cultures analysed in the study (separate .pdf file)

Supplementary Table 7. Values in the upper triangle are the D (d_{ij}) values for females, values in the lower triangle are for males

	GW	MV	MP	NIT	UNE	UNE SE	UNT	VAT
GW		0.466	0.402	0.515	0.548	0.440	0.306	0.341
MV	0.628		0.537	0.032	0.324	0.312	0.478	0.688
MP	0.529	0.282		0.623	0.499	0.329	0.302	0.575
NIT	0.625	0.409	0.531		0.397	0.380	0.539	0.733
UNE	0.698	0.415	0.580	0.248		0.241	0.468	0.693
UNE-SE	0.571	0.206	0.390	0.334	0.317		0.295	0.547
UNT	0.595	0.380	0.361	0.474	0.383	0.386		0.359
VAT	0.343	0.450	0.363	0.537	0.489	0.413	0.245	

Supplementary Table 8. The percentage of a given edge was preserved across 1000 bootstraps. Values of the upper triangle for females, values in the lower triangle for males. Bold values indicate significant result on 95% confidence level.

	GW	MV	MP	NIT	UNE	UNE SE	UNT	VAT
GW		0	0.780	0	0	0	0.841	0.981
MV	0		0	0.999	0.685	0.531	0	0
MP	0.699	0.922		0	0	0.822	0.910	0
NIT	0.613	0	0		0	0	0	0
UNE	0	0	0.338	0.993		0.905	0	0
UNE-SE	0	0.884	0	0.658	0.762		0.767	0
UNT	0.122	0	0.775	0	0.837	0		0.895
VAT	0.994	0	0.545	0	0	0	0.947	

Supplementary Table 9. Mean and 95% CI (in paranthesis) of degree centrality metrics by sex of EBA sample following 100 bootstrap replicates.

FEMALES			MALES	
Degree centrality				
GW	3.920	(3.770-4.070)	2.910	(2.740-3.080)
MP	3.570	(3.390-3.750)	3.890	(3.710-4.070)
MV	3.180	(3.000-3.360)	3.580	(3.420-3.740)
Nyitra	2.730	(2.560-2.900)	3.420	(3.250-3.590)
Unetice	3.130	(2.980-3.280)	3.590	(3.440-3.740)
Unetice_SE	3.940	(3.800-4.090)	3.660	(3.440-3.790)
Unter	3.920	(3.780-4.060)	3.590	(3.460-3.720)
Vatya	2.870	(2.720-3.020)	3.580	(3.410-3.750)
Closeness centrality				
GW	0.232	(0.227-0.237)	0.178	(0.174-0.181)
MP	0.222	(0.217-0.226)	0.225	(0.221-0.230)
MV	0.220	(0.214-0.225)	0.223	(0.217-0.228)
Nyitra	0.204	(0.200-0.208)	0.209	(0.204-0.214)
Unetice	0.216	(0.211-0.222)	0.218	(0.214-0.223)
Unetice_SE	0.254	(0.249-0.259)	0.230	(0.225-0.235)
Unter	0.241	(0.236-0.245)	0.235	(0.231-0.239)
Vatya	0.181	(0.177-0.185)	0.216	(0.211-0.221)

Supplementary Table 10. Tested spatial models on female and male datasets. The resulting R2 was adjusted using the `vegan::RsquareAdj` function.

FEMALES

	NW	M	SE	F	D.f	p _{adj}	R ² _{adj}	F	p
Model 1	+	+	+	1.158	2	0.999			
Model 2	-	-	-	3.637	3	0.113			
Model 3	+	-	-	5.453	3	0.031	0.604		0.011
Model 4	-	+	-	3.1593	2	0.477			
Model 5	-	-	+	5.028	2	0.203			
Model 6	+	+	-	0.720	2	0.997			
Model 7	+	-	+	4.358	2	0.176			
Model 8	-	+	+	2.774	2	0.278			

MALES

	NW	M	SE	F	D.f	p _{adj}	R ² _{adj}	F	p
Model 1	+	+	+	1.383	2	0.999			
Model 2	-	-	-	3.847	2	0.031	0.429		0.001
Model 3	+	-	-	2.970	3	0.149			
Model 4	-	+	-	3.534	2	0.092			
Model 5	-	-	+	5.778	2	0.241			
Model 6	+	+	-	1.546	2	0.818			
Model 7	+	-	+	3.363	2	0.135			
Model 8	-	+	+	3.063	2	0.135			