

THE PROBLEM OF COINCIDENCE OF ARCHAEOLOGICAL AND ANTHROPOLOGICAL SEX-DETERMINATIONS IN CASE OF PREHISTORIC FINDS IN THE SOUTHERN GREAT HUNGARIAN PLAIN

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Abstract

The author has investigated — from the Neolithic Age till the end of the Bronze Age inclusive — the supposition according to which the prehistoric dead, depending on which sex they belonged to, were laid on different body-sides in to the grave. It was shown by the result of a statistical test with 689 finds originating from the Southern Plain (in Southern Hungary and Vojvodina) that this supposition is still true at a safety level of $P=95$ per cent, at $P=97.5$ per cent, however, it is no more demonstrable. At the same time, coincidence was growing from the Neolithic Period up to the early Bronze Age, from that time on, however, it was diminishing.

Every digging up of a cemetery is started by the desire of knowledge and this effort during the work full of exciting hopes is characteristic both of archaeologists and anthropologists. In case of prehistoric finds where we endeavour to reconstruct the handiwork of people having lived several thousand years ago, together with the persons themselves, this effort is, of course, — if possible — still more intensive. The several small observations in details, anyway, after some time, necessarily offer a possibility for synthetizing.

As a result of this synthetizing, the Hungarian archaeologists and anthropologists are today already generally accepting the view that of the prehistoric skeletal cemeteries the “contracted” or “squatting” burial is primarily characteristic. (In Hungarian language, the latter term expresses, in my opinion, more the essence of the phenomenon). It is thought by many, too, that males and females were laid on their different (right, resp. left) sides in to the grave after their death.

Undoubtedly, it is true that we have found several examples of the burial practice mentioned and considered as characteristic of the prehistoric age in Hungary. For accepting however, without any reservations, as a regularity e. g. the assertion that the people of the Bodrogkeresztur culture buried females resp. males by laying them on their left, resp. right sides: a more exact analysis is needed. In short, it is to be examined whether the theoretical conclusion drawn from practical observations are grounded and to be proved in practice or not.

For that we need the simultaneous presence of several factors. Namely:

- grave-descriptions on the basis of detailed observations;
- some skeletons from cemeteries with graves in large numbers, originating from various periods of the prehistoric age;
- the protected investigational matter in a good state of preservation and evaluated by anthropological methods (sex-determination);

— as regards deciding on sex, the anthropologist should not be influenced by the standpoint of the archaeologist.

Apart from the mentioned ones, we could still enumerate other criteria, as well. Taking also this into consideration, there is but a very little possibility remaining for us to collect the material.

Materials and Methods

On the basis of the above-mentioned points of view from the region bordered by the rivers Tisza, Maros, Kőrös and Aranka there were taken into consideration only the finds the anthropological determination of which can be regarded as sure and also the description of the archaeologist is unambiguous in respect of the mode of burial.

The findspots belonging to the different cultures are as follows:

Kőrös group (b. o. e. 4000—3200): Hódmezővásárhely-Bodzáspart (bank Bodzás), 1 male (BANNER, 1939; 1954), Hódmezővásárhely-Kotacpart (bank Kotac), 2 males, 1 female (BANNER, 1932; 1935; 1957; TROGMAYER, 1964), Maroslele-Pana, 2 males (Trogmayer, 1964).

Tisza culture (b. o. e. 2900—2500): Békés-Povádzug (hole Povád), 3 males, 3 females (TROGMAYER, 1959; 1962; LIPTÁK—FARKAS, 1967), Hódmezővásárhely-Kökénydomb (mound Kökény), 1 female (BANNER, 1930; 1951), Vészto-Mágori halom (hill), 3 male, 3 female (HEGEDŰS, 1973; FARKAS, 1974).

Tiszapolgár culture (b. o. e. 2400—2300): Deszk-A, 2 males, 3 females (FOLTINY, 1941), Deszk-B, 4 males, 3 females (B. KUTZIÁN, 1963), Hódmezővásárhely-Kotacpart (bank Kotac), 4 males, 10 females (BANNER, 1933—1934; 1935), Hódmezővásárhely-Népkert (public gardens), 2 females (GAZDAPUSZTAI, 1964; B. KUTZIÁN, 1963), Lebő-Farkas tanya (farmstead Farkas), 2 males (B. KUTZIÁN, 1963; KOREK, 1958; TROGMAYER, 1957; 1958), Tiszapolgár-Basatanya, (farmstead Basa), 15 males, 2 females (B. KUTZIÁN, 1963).

Bodrogkeresztúr culture (b. o. e. 2200—2100): Magyarhomoróg-Könyadomb (hill Kónya), 17 males, 13 females (PATAY, 1966; FARKAS, in the press), Tiszapolgár-Basatanya (farmstead Basa), 30 males, 33 females (B. KUTZIÁN, 1963).

Early Bronze Age (b. o. e. 2000—1800): Deszk-A, 1 male (FOLTINY, 1941), Hódmezővásárhely-Kökénydomb (mound Kökény), 1 female (BANNER—FOLTINY, 1945; BANNER—KOREK, 1949), Mokrin—Lalina humka (hill), 73 males, 90 females (GIRIC, 1971; FARKAS—LIPTÁK, 1971; LENGYEL—FARKAS, 1972), Ószentiván III, 1 female (BANNER—PÁRDUZ, 1946—1948), Pitvaros, 3 males, 5 females (PATAY, 1938; B. KUTZIÁN, 1958; Bóna, 1965; BANNER, 1932a; FARKAS, 1971), Szőreg-C, 6 males, 9 females (FOLTINY, 1941a).

Middle Bronze Age (b. o. e. 1800—1350): Deszk-A, 5 males, 4 females (FOLTINY, 1941), Deszk-F, 14 males, 9 females (FOLTINY, 1942), Hódmezővásárhely-Lelik tanya (farmstead Lelik), 1 male (PÁRDUZ, 1941), Szőreg-C, 20 males, 15 females (FOLTINY, 1941a).

Late period of the Middle Bronze Age: Szőreg-C, 8 males, 14 females (FOLTINY, 1941a).

Tumulus culture (culture of tumulus burial, late Bronze Age): Tápé-Széntégláégető (coal-brick baking), 125 males, 126 females (TROGMAYER, 1975; FARKAS—LIPTÁK, 1957).

It is to be seen from the above enumeration that — in order to get due number of elements — we drew a few cemeteries from the material outside the region of the Southern Plain, as well, into the investigation (Tiszapolgár-Basatanya (farmstead Basa), Magyarhomoróg-Könyadomb (hill Kónya), etc.).

After due deliberation we have chosen to evaluate with two alternatives (laying on right and left sides, resp. male and female) as in the majority of cases the "burial practices" differing from these (burial in a prone position, in half-contracted position) may be ascribed to secondary causes (drop in the ground, despoiling of a grave, agricultural work, superficial observation, etc.).

For a method of evaluation, we have chosen the contingency table with 2×2 fields. By applying χ^2 test, we wanted to get an answer to the question if the two variables — burial practice (Y) and sex (X) — are in connection with each other. At calculating the contingency coefficient:

$$r = \sqrt{\frac{\chi^2}{n}}$$

we strived to express the closeness of the connection in an exact way. At doing this, we have used the following degrees: is the value of r below 0.4, then the connection is loose; between 0.4 and 0.7 it is medium close, between 0.7 and 0.9 it is close and above 0.9 we may speak of a very close connection (SVÁB, 1973).

All the finds taken into consideration are 689 in number. The number of the neolithic skeletons (19) are very low, and at later establishments that must needs be kept in view.

In the Table annexed hereto the data concerning the frequencies (F) used for the calculations were fit together according to archaeological ages and periods. We are giving here the numbers of elements (n), the values obtained of χ^2 and r , as well as the degree of critical level. We have compared the χ^2 -values obtained on the basis of all the finds taken into consideration to the table-values belonging to the degree of freedom $DF=k-1$ (in our example $k=2$, *i. e.*, laying on the right resp. left side). For the critical level of our statistical decision we have chosen $P=95$ per cent.

Results of the investigations

After these preliminary discussions, we may summarize the results of our investigations as follows:

In respect of the Neolithic Period there cannot be proved any connection between the burial rite and sex. *E. g.*, at the people of Kőrös group that is very loose ($r=0.019$).

In the Copper Age, in case of the cemeteries investigated, males were laid into the grave on their right, females on their left sides. This burial practice may have been connected to sex and at safety level $P=99$ per cent it is proved in high degree.

That is characteristic of the Tiszapolgár and Bodrogkeresztur cultures, as well. In the latter case, the connection is more express: at the people of the Tiszapolgár culture it is of medium strength ($r=0.658$), but in case of the Bodrogkeresztur culture ($r=0.694$) — in the same way as concerning the whole Copper Age ($r=0.691$) — it is close. It is interesting, therefore, that in the early Copper Age (Tiszapolgár culture) the connection between the two phenomena is weaker than in the Middle Copper Age (Bodrogkeresztur culture). For the late Copper Age (Baden or Pécel culture) we have no data.

At the finds in the early period of the Bronze Age the connection between sex and burial practice is still closer and at a safety level $P=99$ per cent it is proved in a high degree. The same can be said according to the contingency coefficient, as well ($r=0.740$), that is referring to a close connection. It is highly remarkable, anyway, that — in contradistinction to the Copper Age — males were buried in this time laid on their left and females on their right sides. It seems to me that in the early Bronze Age the way of laying (primarily in case of females) had the characteristic of determining sex. The significant deviation from the practice of the Copper Age may render probable the appearance of a new ethnic group.

In the Bronze Age, in the middle period of that, this connection is no more so express although it can still be proved in statistical way (at a safety level of 99 per cent). The connection between the two variables may however be considered as only loose ($r=0.354$). The way of laying the dead into the grave was showing the same tendency at the both sexes as in the early Bronze Age.

From the late period of the Middle Bronze Age we have but few finds, their total number being 22. These do not prove any connection between the two variables; the value $r=0.228$, too, is referring but to a loose connection.

Taking into consideration the different periods of the Bronze Age in their totality, we must nevertheless hold (first of all because of the high number of finds

Table 1

Archaeological Period	1.		2.		3.		4.		1+2		3+4		1+3		2+4		1+2+3+4		χ^2	F	Significance
	F _{Aa}	F _{Ab}	F _{Ba}	F _{Bb}	n _A	n _B	n _a	n _b	n _A	n _B	n _a	n _b	n	n							
Körös Culture	1	—	4	1	1	5	5	1	6										0,88	0,382	$\chi^2 < \chi^2_{0,5\%}$ $\chi^2 > \chi^2_{0,5\%}$
	4	3	2	4	7	6	6	7	13										0,09	0,083	
I. Neolithic Period	5	3	6	5	8	11	11	8	19										0,07	0,019	$\chi^2 < \chi^2_{0,5\%}$
	25	5	2	15	30	17	27	20	47										20,35	0,658	
Tiszapolgár Culture	35	2	12	44	37	56	47	46	93										44,81	0,694	$\chi^2 > \chi^2_{0,5\%}$ $\chi^2 > \chi^2_{0,5\%}$
	60	7	14	59	67	73	74	66	140										66,5	0,691	
II. Copper Age	14	97	69	9	111	78	83	106	189										103,5	0,740	$\chi^2 > \chi^2_{0,5\%}$ $\chi^2 > \chi^2_{0,5\%}$
	16	22	24	6	38	30	40	28	68										8,55	0,354	
Middle Bronze Age I.	3	10	5	4	13	9	8	14	22										1,15	0,228	$\chi^2 < \chi^2_{0,5\%}$
	33	129	98	19	162	117	131	148	279										106,73	0,618	
Late Bronze Age	80	70	45	56	150	101	125	126	251										1,44	0,075	$\chi^2 < \chi^2_{0,5\%}$
	178	209	163	139	387	302	341	348	689										3,97	0,075	
Prehistoric Age altogether:																					$\chi^2_{0,5\%} < \chi^2 < \chi^2_{0,1\%}$

belonging to the early Bronze Age) the connection between the way of laying the dead into the grave (males on their left, females on their right sides) and sex for characteristic that was showing in that period a relation of medium strength ($r=0.618$).

Dealing separately with the people of tumulus culture, we must notice that in that time the way of burial is no more consequent, the connection between the two phenomena is very loose ($r=0.075$). In this time, therefore, the sex of skeleton is no more determined unambiguously by its being laid into the grave on its right or left side. This fact must always be kept in view at digging up cemeteries that can be classified into the tumulus culture.

The strength of connection between the two variables is increasing from the Neolithic Period ($r=0.619$) up to the Early Bronze Age ($r=0.740$) but later, at the tumulus builders ($r=0.075$), it decreases very much again. It seems to us, therefore, that in this case we have to reckon with an increase in the rigidity of burial rites and later on with a decrease in that what obviously is a problem connected to the folk customs. That seems to confirm the suppositions, too, concerning some major migration that took place in the region bordered by the rivers Tisza, Maros, and Körös, in the Copper and Bronze Ages.

But at evaluating all these connections, we must go far to keep to the fore that our sampling could have been influenced by a great many factors and that evaluating statistically we could only work with a sample of a given number of elements. The establishments may be regarded as proved primarily for the early Bronze and the Copper Ages. The Neolithic Period demands further researches from this point of view.

The whole problem is particularly important for the palaeodemographical evaluation when we are striving to establish the ratio of males and females. In this case, namely, we may obtain quite strange ratios if we accept without any further criticism the archaeological statements, the sex supposed alone on the basis of the way of laying the dead into the grave.

Laying the dead according to their sexes is referring in all likelihood to some customs the investigation of which — just on the basis of the experiences of the Copper and Early Bronze Ages — cannot be solved, as yet, in a satisfying way. It is to be expected from the excavations in the future, paying greater attention to phenomena of such aspects, too, that they provide an opportunity for us to interpret and elucidate this rite in an exact way.

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