ANTROPOLOŠKE ANALIZE – UVOD

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Antropološke analize, ki so del pričujoče monografije, so potekale dlje časa, saj so bile odvisne od razpoložljivosti tako strokovnjakov kot finančnih projektnih sredstev. Velik del analiz, predvsem žganih skeletnih ostankov iz planih grobov iz časa kulture žarnih grobišč, je v sklopu svoje disertacije na Univerzi v Edinburgu izvedla Jayne-Leigh Thomas.[1] Nekatere dodatne analize skeletnih ostankov, odkritih v zadnjem desetletju, je opravila soavtorica tega uvoda.[2]

V dodatku k monografiji prinašamo tudi rezultate raziskav skeletnih ostankov inhumiranih oseb iz gomile na Brezju pod Brinjevo goro iz srednje bronaste dobe, ki sta jih revizijsko izvedli J.-L. Thomas[3] in predhodno tudi Tatjana Tomazo Ravnik, pred njima pa že kmalu po odkritju več drugih raziskovalcev in sicer Vida Brodar ter Vlado Wolf.[4] Ker se kljub uporabi strokovnih standardov ocene starosti in spola nekoliko razlikujejo (*sl. 1*), prinašamo v publikaciji obe študiji, ki ju z natančno analizo zob in čeljusti dopolnjuje Iztok Štamfelj[5].

ANALIZE ŽGANIH SKELETNIH OSTANKOV IZ PLANIH GROBOV IZ ČASA KULTURE ŽARNIH GROBIŠČ IN STAREJŠE ŽELEZNE DOBE

Pri predstavitvi rezultatov analiz žganih skeletnih ostankov velja opozoriti, da so bile raziskave J.-L. Thomas in T. Leskovar opravljene v razmaku skoraj 10 let, kar je botrovalo uporabi različnih metodoloških pristopov. V zadnjih letih je namreč prišlo do metodološkega razvoja in dostopnejših tehnoloških orodij za natančnejše ocene starosti ob smrti s pomočjo histološke analize ter temperature žganja s pomočjo spektroskopske analize. Izpostaviti velja predvsem slednje, saj so pred njihovo vpeljavo v arheološke raziskave ocene temperature žganja večinoma temeljile na obarvanosti kosti. Slednja je odvisna od več dejavnikov. Že prepoznavanje barv je

1 Glej tu Thomas, Sežgani človeški ostanki.
2 Glej tu Leskovar.
3 Glej tu Thomas, Brezje.
4 Glej tu Tomazo Ravnik.
5 Glej tu Štamfelj.

ANTHROPOLOGICAL ANALYSES – INTRODUCTION

Tamara Leskovar, Matija Črešnar

The anthropological analyses presented in this monograph were, due to the constraints associated with the availability of both experts and project funds, conducted over an extended period of time. A significant portion of the research, most notably the analysis of cremated skeletal remains from the flat graves of the Urnfield Culture, was carried out by Jayne-Leigh Thomas as part of her doctoral research at the University of Edinburgh.[1] Some additional analyses of skeletal remains discovered in the last decade have also been undertaken by one of the authors of this introduction.[2]

In the addendum of the monograph, we also present results of the analyses carried out on the skeletal remains of inhumed individuals from the Middle Bronze Age burial mound at Brezje below Brinjeva gora. Whilst most recently revised by Thomas[3], the bone assemblage from the mound was initially studied by Vida Brodar and Vlado Wolf, and then reassessed by Tatjana Tomazo Ravnik.[4] Given that, despite their adherence to the standard analytical protocols, their age and sex estimates differ slightly (*fig. 1*), we present both Thomas' and Tomazo Ravnik's studies in this publication, and supplement them with a detailed analysis of teeth and jaws by Iztok Štamfelj[5].

ANALYSES OF CREMATED SKELETAL REMAINS FROM FLAT GRAVES OF THE URNFIELD CULTURE AND THE EARLY IRON AGE

The analyses by Thomas and Leskovar of the cremated skeletal remains were conducted over a 10-year period, which led to the application of different methodological approaches as the field developed. Changes in the methodology and accessibility of analytical technologies include more accurate assessments of the age at death by histological analysis and cremation temperatures by spectroscopic analysis. The latter is of particular significance. Before its introduction into archaeological research, estimates of cremation temperature were usually based on the visual identification of bone colour, which is dependent on several factors. Colour recognition using the

1 See here Thomas, Cremated human remains.
2 See here Leskovar.
3 See here Thomas, Brezje.
4 See here Tomazo Ravnik.
5 See here Štamfelj.

subjektivno, kosti pa so po pokopu glede na okolje oz. zemljino dovzetne za spremembo barve. Zato so lahko tovrstne ocene zgolj okvirne.[6] Na drugi strani so spektroskopske analize za potrebe arheoloških raziskav še v razvoju, vendar nudijo določene objektivne kriterije, ki omogočajo natančnejšo in zanesljivejšo oceno temperature žganja.[7]

ANALIZE ČLOVEŠKIH SKELETNIH OSTANKOV IZ GOMILE SREDNJE BRONASTE DOBE Z BREZJA POD BRINJEVO GORO (DODATEK)[8]

Prve analize kostnih ostankov iz gomile z Brezja pod Brinjevo goro so bile izvedene že kmalu po izkopavanju gomile. Vida Brodar je takrat na podlagi spodnje čeljustnice z dvema zoboma in zaraslimi ostalimi zobnicami iz groba 1 predvidevala, da gre za odraslo osebo. Nekoliko boljša ohranjenost preostalih skeletov jo je vodila do zaključkov, da je bil v grobu 2 pokopan starejši moški, v grobu 3 starejša ženska, v grobu 4 mlajša ali odrasla ženska ter v grobu 5 odrasel moški (*sl. 1*). Vida Brodar je na podlagi lobanj skelete tudi rasno opredelila; moška naj bi pripadala kromanjonidom in ženski mediteranidom.[9] Vendar se danes antropološka stroka strinja, da so človeške rase bolj družben kot biološki konstrukt in da opredelitve lobanjskih tipov vodijo v prekomerno generalizacijo ter da klasifikacija v rasne skupine na podlagi morfologije skeleta ni ustrezna.[10] Četudi morfološke značilnosti skeleta do neke mere odražajo geografski izvor in tako nudijo omejena izhodišča za raziskovanje biološkega izvora, je opredelitev porekla oz. predništva (*ancestry*) prežeta z nerazumevanjem, zlorabo in polemiko.[11] Poleg tega raziskave kažejo, da je genetska raznolikost znotraj populacije veliko večja kot med populacijami ter da genetsko utemeljena izhodišča za razločevanje ljudi v rasne skupine ne obstajajo.[12]

Rezultati analiz posmrtnih ostankov iz grobov 2–5 Tatjane Tomazo-Ravnik se deloma ujemajo z rezultati, kot jih je podala Vida Brodar (*sl. 1*). Ocenjuje namreč, da gre v grobu 2 za pokop starejšega moškega (nad 50 let), v grobu 3 mlajše odrasle ženske (okoli 30 let), v grobu 4 zrele odrasle ženske (40–50 let) in v grobu 5 starejšega odraslega moškega

6 Shipman, Foster, Schoeninger 1984.
7 Npr. Thompson, Gauthier, Islam 2009; Thompson, Islam, Bonniere 2013; Snoeck, Lee-Thorp, Schulting 2014.
8 Glej tu Tomazo Ravnik; Thomas, Brezje; Štamfelj.
9 Pahič 1962–1963, 353.
10 Npr. Işcan, Steyn 2013, 195–197.
11 Sauer, Wankmiller 2009, 187.
12 Işcan, Steyn 2013, 195–197.

naked eye is subjective, and bones are, depending on the depositional environment and soil matrix, also susceptible to discolouration after their burial. Such colour estimates are therefore only suggestive.[6] Spectroscopic analyses for the needs of archaeological research are still under development; nevertheless, they already offer certain objective criteria which allow a more accurate and reliable assessment of the cremation temperature.[7]

ANALYSES OF HUMAN SKELETAL REMAINS FROM THE MIDDLE BRONZE AGE BURIAL MOUND AT BREZJE BELOW BRINJEVA GORA (ADDENDUM)[8]

The earliest analyses of skeletal remains from the burial mound at Brezje near Brinjeva gora were carried out shortly after its excavation. Based on a lower jaw with two teeth and fully developed alveolar bone discovered in Grave 1, Vida Brodar broadly identified the inhumed individual as an adult. Slightly better preservation of the remaining skeletons led her to the conclusion that an older male was buried in Grave 2; an older female in Grave 3; a young or mature adult female in Grave 4; and an adult male in Grave 5 (*fig. 1*). By analysing the skulls, she also racially defined the skeletons: the two males as belonging to the Cro-Magnonids and the two females to the Mediterranoids.[9] Today, however, the anthropological scientific community agrees that human race is a social rather than a biological construct and that definitions of skull types lead to over-generalization. A classification into racial groups based on skeletal morphology is, therefore, not appropriate.[10] Considering that attempts to define an individual's origin (*ancestry*) are permeated by misunderstanding, abuse and controversy,[11] the morphological characteristics of a skeleton which reflect, to a certain extent, the individual's geographical origin offer a possible (albeit problematic) starting point for research into the individual's biological origin. In addition, current research demonstrates much greater genetic intra-population than inter-population diversity, and further shows there is no genetic basis for the differentiation of people into distinct racial groups.[12]

The results of the skeletal analysis of the remains from Graves 2–5 by Tatjana Tomazo-Ravnik partly

6 Shipman, Foster, Schoeninger 1984.
7 E.g. Thompson, Gauthier, Islam 2009; Thompson, Islam, Bonniere 2013; Snoeck, Lee-Thorp, Schulting 2014.
8 See here Tomazo Ravnik; Thomas, Brezje; Štamfelj.
9 Pahič 1962–1963, 353.
10 E.g. Işcan, Steyn 2013, 195–197.
11 Sauer, Wankmiller 2009, 187.
12 Işcan, Steyn 2013, 195–197.

(50–60 let).[13] Bistveno pa ne odstopajo tudi rezultati Thomasove, ki prav tako ocenjuje, da je bil v grobu 2 pokopan starejši moški (nad 50 let), v grobu 3 mlajša ženska (okoli 20 let), v grobu 4 zrela odrasla oseba (40–50 let) – ali gracilen moški ali robustna ženska ter v grobu 5 starejši moški (40–55 let) (*sl. 1*). Opazila pa je tudi nekaj dodatnih patoloških sprememb, in sicer morebitni zaceljen zlom reber osebe iz groba 3, znake osteoartritisa in morebitne bolezni metabolizma osebe iz groba 4 ter znake osteoartritisa in zaceljenega zloma reber pri osebi iz groba 5.[14]

Ob izrazitih razlikah v oralnem zdravju in izraziti obrabi nekaterih zob, ki morda kaže na njihovo uporabo pri določenih opravilih, na kar opozarjajo tudi druge raziskave, Štamfelj v svoji študiji natančno razišče bolezni zob, kot sta karies in parodontalna bolezen. Hkrati s pomočjo rentgenskih posnetkov zob in statistične obdelave podatkov ocenjuje, da je moški v grobu 2 umrl v starosti okoli 53 ± 10 let, ženska v grobu 3 v starosti okoli 33 ± 10 let in moški v grobu 5 v starosti okoli 58 ± 10 let (*sl. 1*).[15]

Opravljene analize kažejo na določena manjša odstopanja pri razlagi podatkov, pridobljenih z uporabo makroskopskih analiz (*sl. 1*). Ker tovrstne analize omogočajo predvsem oceno biološkega profila oseb, bi bilo za določitev spola in starosti ter ugotavljanje patoloških sprememb priporočljivo izvesti dodatne rentgenske in računalniško-tomografske, histološke[16] in molekularne, denimo DNA[17] ali peptidne[18] analize, ki pa nam zaradi finančnih in drugih vzrokov niso bile dostopne. V obravnavanem primeru so bile z makroskopskim opazovanjem ocenjene starosti ob smrti in patološke spremembe izrazito dopolnjene s poglobljeno analizo zob in čeljustnic. Poleg tega je bil zaradi izrazitih razlik med zgornjo in spodnjo čeljustnico izražen dvom o rekonstrukciji skeleta iz groba 2, dodatno pa sta bila odkrita zgornji levi drugi sekalec in zgornji levi prvi kočnik, ki ne pripadata osebam iz grobov 2, 3 ali 5, temveč četrti osebi, ki je umrla v starosti 27 ± 10 let. Ker glede na razliko v ocenah starosti dodatna zoba verjetno ne pripadata osebi iz groba 4, ki naj bi bila po analizah skeletnih ostankov ob smrti stara 40–50 let (*sl. 1*), gre morda za posmrtne ostanke osebe iz groba 1, ki jih v svojem prispevku omenja S. Pahič. Razlike v oceni spola osebe iz groba 4 in rekonstrukcija skeleta iz groba 2 zaenkrat ostajajo nerazrešene, prav tako

corresponded to the results obtained by Vida Brodar (*fig. 1*). Tomazo-Ravnik estimated that an older male (over 50 years old) was buried in Grave 2; a young adult female (around 30 years old) in Grave 3; a mature adult female (40–50 years old) in Grave 4; and an older adult male (50–60 years old) in Grave 5.[13] Jayne-Leigh Thomas came to similar conclusions (*fig. 1*): she estimated that an older male (over 50 years old) was buried in Grave 2; a younger female (about 20 years old) in Grave 3; a mature adult (40–50 years old) – either a gracile male or a robust female – in Grave 4; and an older male (40–55 years old) in Grave 5. She also noted some additional pathological changes, namely a possible healed rib fracture of the individual from Grave 3; signs of osteoarthritis and a possible metabolic disease of the individual from Grave 4; and signs of osteoarthritis and a healed rib fracture of the individual from Grave 5.[14]

Štamfelj[15] examined the teeth for dental diseases such as caries and periodontitis, and to determine the age of the individuals using dental radiography and statistical data processing. Taking into account differences in oral health and significant wear and tear on the teeth from various activities, he estimated that the male in Grave 2 died at the age of about 53 ± 10 years; the female in Grave 3 at the age of about 33 ± 10 years; and the male in Grave 5 at the age of about 58 ± 10 years (*fig. 1*).

These four analyses demonstrate certain smaller discrepancies in the interpretations of the bone assemblage obtained only with macroscopic analyses (*fig. 1*). As this kind of analysis assesses the biological profile of individuals rather broadly, additional, radiograph and computed tomography, histological[16] and molecular, e.g. DNA[17] or peptide[18] analyses (which were beyond the scope of this project) would importantly add to the determination of sex, age at death as well as the identification of various pathological changes. Nevertheless, in-depth analysis of the teeth and jaws by macroscopic observation significantly narrowed down the estimates of age at death. Furthermore, given the significant differences between the upper and lower jaws of the skeleton from Grave 2, doubts were expressed about its earlier reconstructions. An additional upper left second incisor and upper left first incisor not belonging to individuals from Graves 2, 3 or 5 were also identified;

13 Glej tu Tomazo Ravnik.
14 Glej tu Thomas, Brezje.
15 Glej tu Štamfelj.
16 Ericksen 1991; Wittwer-Backofen 2012; de Boer, Van der Merwe 2016; Gocha, Robling, Stout 2020.
17 Stone et al. 1996; Skoglund et al. 2013.
18 Stewart et al. 2017.

13 See here Tomazo Ravnik.
14 See here Thomas, Brezje.
15 See here Štamfelj.
16 Ericksen 1991; Wittwer-Backofen 2012; de Boer, Van der Merwe 2016; Gocha, Robling, Stout 2020.
17 Stone *et al.* 1996; Skoglund et al. 2013.
18 Stewart *et al.* 2017.

Grob / Grave	V. Brodar		T. Tomazo Ravnik			J.-L. Thomas			I. Štamfelj	
	spol / sex	*starost / age*	*spol / sex*	*starost (leta) / age (years)*	*patologija / pathology*	*spol / sex*	*starost (leta) / age (years)*	*patologija / pathology*	*starost / age*	*patologija / pathology*
2	M	starejša odrasla oseba / older adult	M	> 50	karies / caries	M	> 50	karies, parodontalna bolezen, izguba zob pred smrtjo, zobni kamen / caries, periodontitis, ante mortem tooth loss, calculus	53 let	hipoplazija sklenine, parodontalna bolezen, karies, izguba zob pred smrtjo, zobni kamen / enamel hypoplasia, periodontitis, caries, ante mortem tooth loss, calculus
3	F	starejša odrasla oseba / older adult	F	~ 30	karies / caries	F	~ 20	karies, parodontalna bolezen, izguba zob pred smrtjo, zaceljen zlom dveh reber / caries, periodontitis, ante mortem tooth loss, healed fracture of two ribs	33 let	karies, izguba zob pred smrtjo / caries, ante mortem tooth loss
4	F	mlajša ali zrela odrasla oseba/ young or mature adult	F	40–50		M?	40–50	osteoartritis, bolezen metabolizma? / osteoarthritis, metabolic disease?	/	/
5	M	odrasla oseba / adult	M	50–60	karies / caries	M	40–55	karies, zobni kamen, izguba zob pred smrtjo, osteoartritis, zaceljen zlom rebra / caries, calculus, ante mortem tooth loss, osteoarthritis, healed rib fracture	58 let	paradontalna bolezen, zobni kamen / periodontitis, calculus

Slika 1. Brezje pod Brinjevo goro, gomila iz srednje bronaste dobe (Bd B1). Povzetek vseh opravljenih antropoloških analiz (Glej tu Tomazo Ravnik; Thomas, Brezje; Štamfelj).
Figure 1. Brezje bellow Brinjeva gora, the Middle Bronze Age burial barrow (Bd B1). Summary of all the anthropological analyses undertaken (See here Tomazo Ravnik; Thomas, Brezje; Štamfelj).

bi bile za zanesljivejšo diagnozo opaženih patoloških sprememb na rebrih in lobanji oseb iz grobov 3–5 potrebne dodatne mikroskopske in izotopske analize.

they appeared to belong to an individual who died at the age of 27 ± 10 years. Considering the difference in age at death estimates, the additional teeth probably did not belong to the individual from Grave 4 who died 40–50 years old according to the analysis of the skeletal remains (*fig. 1*). Rather, they might be associated with the individual from Grave 1, as mentioned by S. Pahič in his article. Discrepancies in the sex assessment of the individual from Grave 4 and the reconstruction of the skeleton from Grave 2 remain unexplained for the time being. In the future, additional microscopic and isotopic analyses are needed for a more reliable diagnosis of the observed pathological changes in the ribs and skull of individuals from Graves 3–5.

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