

## Datiranje arheološkega najdišča Maharski prekop na Ljubljanskem barju

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### Izvleček

V prispevku je kritično ovrednoten članek *Houses, pots and food: the pottery from Maharski prekop in context*, avtorjev Dimitrija Mlekuža, Andreje Žibrat Gašparič, Milene Horvat in Mihaela Budja, ki je izšel leta 2012 v reviji *Documenta Praehistorica* 39.

**Ključne besede:** Ljubljansko barje, Maharski prekop, datiranje, metodologija

### Abstract

This paper critically evaluates the article *Houses, pots and food: the pottery from Maharski prekop in context*, authors Dmitrij Mlekuž, Andreja Žibrat Gašparič, Milena Horvat and Mihael Budja, which was published in 2012, in the journal *Documenta Praehistorica* vol. 39.

**Key words:** Ljubljansko barje, Maharski prekop, dating, methodology

### UVOD

Prve arheološke najdbe z območja na ledini Veliko mostišče,<sup>1</sup> severovzhodno od Iga na Ljubljanskem barju, kjer se nahaja arheološko najdišče Maharski prekop, je poznal že Karl Deschmann v začetnem obdobju raziskovanja kolišč. Tako je vedel<sup>2</sup> za kole v Iščici,<sup>3</sup> ki jih danes označujemo z najdiščnim imenom Spodnje mostišče.<sup>4</sup> Bil je tudi seznanjen<sup>5</sup> s koli in drugimi najdbami iz Strojanskega grabna,<sup>6</sup> ki so poznani pod najdiščnim imenom Strojanska voda.<sup>7</sup> Kolišče, za ta prispevek se zdi primernejši izraz arheološko najdišče Maharski prekop, pa je

odkril Staško Jesse, ki je leta 1953 na parceli 1252/1 k. o. Ig zastavil 18 m<sup>2</sup> veliko sondo.<sup>8</sup> Najdbe je pripisoval prostranemu naselju (kolišču) Veliko mostišče,<sup>9</sup> tj. združenemu najdišču Strojanska voda in Maharski prekop, kar se zaradi različnih razlogov v strokovni literaturi ohranja do danes.<sup>10</sup>

Leta 1970 so se na Maharskem prekopolu pod vodstvom Tatjane Bregant začela obsežna izkopavanja. Do leta 1977 je bila raziskana več kot 1200 m<sup>2</sup> velika površina (*sl. 1a*),<sup>11</sup> kar je po Deschmannu še vedno najboljše arheološko izkopavanje bakrenodobnega naselja na Ljubljanskem barju.

Leta 2005 je skupina raziskovalcev z Inštituta za arheologijo ZRC SAZU zastavila na že raziska-

<sup>1</sup> Tudi Spodnje ali Dolnje mostišče, Veliki mah ...

<sup>2</sup> Deschmann 1876, 472.

<sup>3</sup> Tudi Išci ali Išci.

<sup>4</sup> Npr. Velušček, Čufar 2008, sl. 5.

<sup>5</sup> Deschmann 1876, 471–472.

<sup>6</sup> Tudi Strojanska voda, Maharski graben, kanal ali prekop.

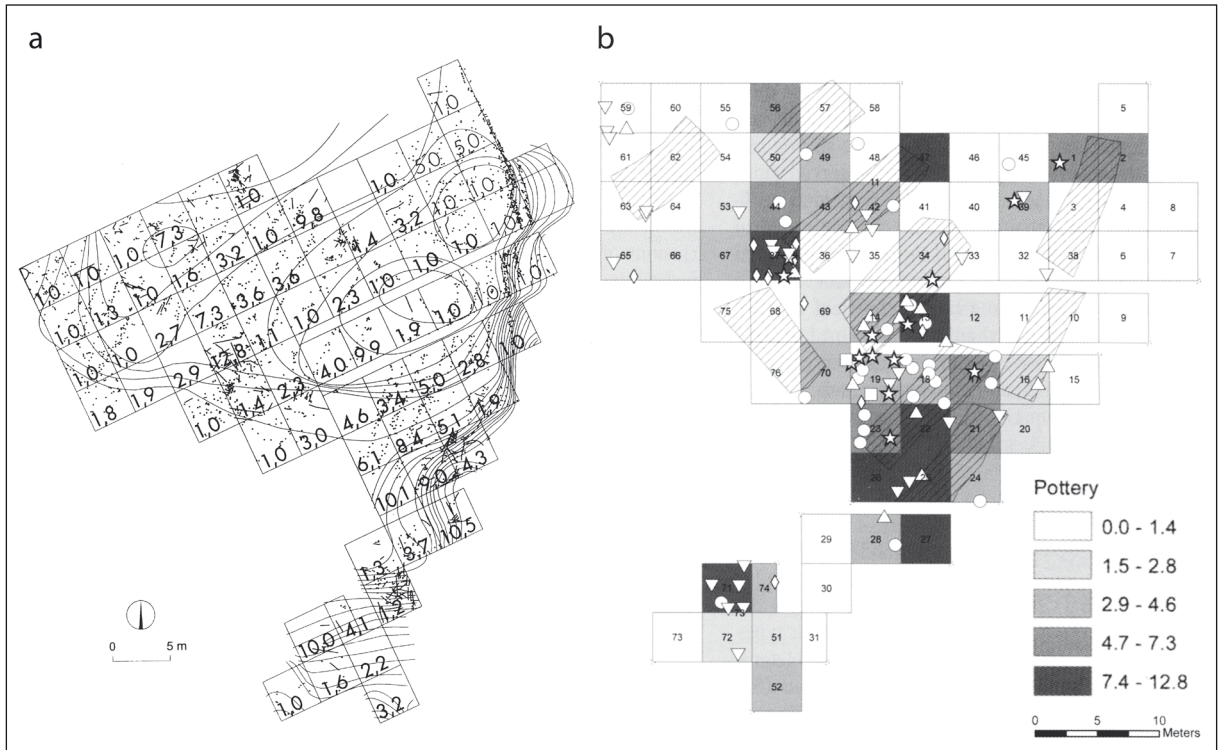
<sup>7</sup> Velušček, Čufar 2008, 34–36.

<sup>8</sup> Jesse 1954, 95–97.

<sup>9</sup> Ibid., risba 1.

<sup>10</sup> Npr. Bregant 1974a, 8; Parzinger 1984, 51, Abb. 7; Mlekuž, Budja, Ogrinc 2006, 258.

<sup>11</sup> Npr. Bregant 1974a; 1974b; 1975; 1996.



Sl. 1: Maharski prekop. **a** – Razporeditev keramike po kvadrantih v kilogramih (Velušček 2001, sl. 22). **b** – Razporeditev keramike in drugih najdb na Maharskem prekopu (Mlekuž et al. 2012, Fig. 8).

Fig. 1: Maharski prekop. **a** – Arrangement of pottery in the squares in kilograms (according to Velušček 2001, Fig. 22). **b** – Arrangement of pottery and other finds at Maharski prekop (according to Mlekuž et al. 2012, Fig. 8).

nem območju najdišča več sond in pridobila les za dendrokronološke raziskave.<sup>12</sup>

V približno istem obdobju se je z območjem, kjer je najdišče Maharski prekop, ukvarjala tudi skupina z Oddelka za arheologijo Filozofske fakultete Univerze v Ljubljani pod vodstvom Mihaela Budja. Terenske raziskave so usmerili v LIDARsko snemanje, vrtanje vrtin in radiokarbonsko datiranje z namero, da pojasnijo razvoj holocenske krajine in človekove dejavnosti v njej.<sup>13</sup>

Intenzivno je bilo tudi kabinetno delo, pri katerem se je obravnavalo najdišče Maharski prekop. Kmalu po sondiranju je Jesse podal prvo tezo o kronologiji naselja.<sup>14</sup> Leta 1954 piše, da keramika iz sonde po lepoti ornamenta ne dosega ižanske, ki ji je po izdelavi sicer podobna, a veliko slabše kvalitete. Zaradi majhnega števila najdb avtor tudi ne podaja jasne kronološke opredelitve. Zdi pa se, da je to dejstvo spodbudilo Bregantovo, da je najdišče

postavila v zgodnjo bronasto dobo.<sup>15</sup> Kmalu se to ni ujemalo z rezultati radiokarbonskega datiranja.<sup>16</sup> Enigmo oz. popolno zmešnjavo<sup>17</sup> okrog kronološkega mesta Maharskega prekopa je transparentno razrešil nemški prazgodovinar Hermann Parzinger.<sup>18</sup> S primerjalno tipološko analizo keramičnih najdb je prepoznal dva kulturna horizonta, katerih razvoj je potekal vzporedno z razvojem badenske kulture v srednjem Podonavju,<sup>19</sup> kar je bilo med raziskovalci nato tudi sprejeto<sup>20</sup> in med njimi so nekateri s tem, kar je očitno, zelo pohiteli.<sup>21</sup>

Da se tudi arheološka najdišča težko izognejo svojemu začetnemu slovesu, dokazuje dogajanje v devetdesetih letih prejšnjega stoletja. Naj začnem z mlajšim dogodkom, tj. z razstavo *Pozdravljeni*,

<sup>15</sup> Npr. Bregant 1974a, 23.

<sup>16</sup> Glej Bregant 1975, 49.

<sup>17</sup> Glej npr. Bregant 1975, 45–46.

<sup>18</sup> Parzinger 1984.

<sup>19</sup> Horizont *Maharski prekop – a*, ustreza boleraški stopnji; horizont *Maharski prekop – b*, ustreza nadaljevanju razvoja badenske kulture (po Parzinger 1984, 51).

<sup>20</sup> Npr. Dular et al. 1991.

<sup>21</sup> Glej Budja 1983; Bregant 1984.

<sup>12</sup> Velušček, Čufar 2008; 2010; Čufar et al. 2010.

<sup>13</sup> Npr. Mlekuž, Budja, Ogrinc 2006; Budja, Mlekuž 2008a.

<sup>14</sup> Jesse 1954, 97.



Sl. 2: Maharski prekop. Rekonstrukcija naselja (po Bregant 1996, 30).

Fig. 2: Maharski prekop. Settlement reconstruction (after Bregant 1996, 30).

*prednamci! Ljubljana od prazgodovine do srednjega veka*, ki je bila postavljena v Cankarjevem domu v Ljubljani. Na njej je bila premierno predstavljena maketa kolišča Maharski prekop (sl. 2), ki je dejansko negacija arhitekture, parodija na prostorsko ureditev koliščarskega naselja. V celoti se izogiba primerjalnim izsledkom dolge zgodovine raziskovanj kolišč v Švici in jugozahodni Nemčiji, na kar je opozorila tudi Tatjana Greif.<sup>22</sup> Gre za razlago, ki meče zelo slabo luč na strokovno raven slovenske arheologije in muzealstva.

Drugi, kljub vsemu v strokovnih krogih odmevnejši dogodek, je izid članka leta 1995, v katerem Budja razlaga, kot meni, s širšim pogledom na dogajanje in upoštevanjem drugih dejavnikov, kot so paleookoljske raziskave itd., arheološko najdišče Maharski prekop.<sup>23</sup> S tem, da je Parzinger na najdišču prepoznal dva kulturna horizonta, Budja dodatno utemeljuje večfaznost poselitve in doda še tretji horizont oz. fazo, kot jo imenuje. Ugotavlja tudi, da je bilo kolišče, kot tip naselja, le v zadnji

fazi poselitve, ki se dejansko edina sklada s Parzingerjevo kronološko shemo. Prvi dve poselitveni fazi sta tako v kronološkem razumevanju najdišča kot tudi v tipologiji naselja novost. Budja najstarejšo fazo enači z obdobjem, ki je časovno blizu poselitvi na Resnikovem prekopu, drugo fazo pa postavlja v vmesno obdobje med prvo in tretjo poselitveno fazo. Meni tudi, da je poselitev v prvi in drugi fazi vezana na plani naselbini ob strugi s tekočo vodo.<sup>24</sup> Nekaj let kasneje v diplomskem delu razpravlja o podobnih fantastično-teoretskih tezah tudi Dimitrij Mlekuž.<sup>25</sup>

To je bilo tudi obdobje, ko sem se v okviru doktorskega študija in pisanja disertacije ukvarjal s keramičnimi najdbami z Maharskega prekopa in sem zagotovo med redkimi raziskovalci, ki so imeli vse oz. veliko večino keramičnih fragmentov s tega najdišča v rokah. Zanimalo me je, ali so fragmenti posod z ornamentom, ki se sicer na Maharskem prekopu redko pojavljajo, pogostejši, kar bi lahko bilo dotlej prezrto. Še vedno pa se mi zdi pomenljiva ugotovitev, da keramične najdbe kažejo na razmeroma kratkotrajno poselitev, ki sem jo okvirno postavil v tretjo četrtino četrtega tisočletja pr. Kr.<sup>26</sup> Gre za tezo, ki ne odstopa bistveno od Parzingerjeve in se v tipološkem smislu naslanja na analogije v krogu badenske kulture in njej sočasnih kultur. Najdb, ki izstopajo, je malo.<sup>27</sup> Na pogled je mogoče prepoznati edino t. i. resniško keramiko, ki bi naj bila po Bregantovi najdena pod kulturno plastjo, v njej in nad njo.<sup>28</sup> Približno ducat fragmentov in stratigrafska razpršenost sta jo napeljevala do sklepa, da so na Maharski prekop ti fragmenti prišli naplavljeni s kolišča Resnikovega prekopa, ki leži vzvodno, tj. južno od Maharskega prekopa, ali iz nekega še neodkrita kolišča v isti smeri in podobne starosti.<sup>29</sup>

Leta 2002 smo z raziskovanjem na Resnikovem prekopu hipotezo podkrepili s konkretnimi argumenti. Ugotovili smo, da je bilo najdišče odplavljeno že v prazgodovini<sup>30</sup> in je možno, da je dejansko prišlo do naplavljanja najdb do Maharskega prekopa. Kljub temu pa še vedno ostaja odprto vprašanje, ali je teza dovolj podprta, da je verjetna? Menim, da dokler ne bo ponujena boljša, bolj argumenti-

<sup>24</sup> Ibid., 170–171.

<sup>25</sup> Mlekuž 1999.

<sup>26</sup> Velušček 2001, 78.

<sup>27</sup> Glej Bregant 1974b, 52; 1975, 43; Velušček 2001, sl. 29.

<sup>28</sup> Glej Bregant 1975, 43.

<sup>29</sup> Npr. Bregant 1974b, 52, 54.

<sup>30</sup> Glej Velušček 2006a.

<sup>22</sup> Greif 1997, 21.

<sup>23</sup> Budja 1994, 169–175.

rana razlaga, jo moramo, če drugega ne, pri vsaki nadaljnji razlagi kot realno možnost upoštevati.

V disertaciji sem na podlagi rezultatov arheološko-dendrokronoloških raziskav v Iščici na najdišču Parte-Iščica<sup>31</sup> s prepričljivimi argumenti opozoril, da vrste s koli na Maharskem prekopu predstavljajo ostanke pravokotnih kolib<sup>32</sup> in ne arhitekture, ki je predstavljena na že omenjeni maketi in jo je po potrebi zagovarjal tudi Budja. O tej problematiki sva večkrat razpravljala. Prvič je diskusija potekala javno na Biotehniški fakulteti v okviru predstavitve dendrokronologije v Sloveniji, v kateri je izražal zelo odklonilno mnenje do takšne razlage, češ, da je profesor Bregantova že večkrat objavila drugačno razlago. Druge so potekale na štiri oči na Oddelku za arheologijo, kjer je bila na mizi ocena moje disertacije. Na koncu sva zaključila, da niti jaz niti on nisva živela v obdobju poselitve Maharskega prekopa in da lahko razlaga temelji izključno na podatkih, ki se jih zbere v sedanjosti (sic).

Kljub nestrinjanju z argumenti o arhitekturi se je nekaj let kasneje, natančneje 2006, pojavil ponovni predlog načrta najdišča Maharski prekop, v katerem trije avtorji, poleg Mihaela Budje in Dimitrija Mlekuža še Nives Ogrinc, predstavijo "novo" ugotovitev, ki se ujema z mojo iz disertacije in drugih objav, ki so sledile,<sup>33</sup> in to brez navedbe vira, kar je zelo nekorektno početje. Primer omenjam zato, ker se je to dogajalo že pred tem,<sup>34</sup> ko so bili objavljeni očitno namerno zamolčani podatki iz mojega magistrskega dela.<sup>35</sup> Zakaj menim, da namerno? Zato, ker se, kljub opozorilom,<sup>36</sup> tako početje še vedno nadaljuje! Zadnjič se je to zgodilo v članku iz leta 2012, kjer je na sliki 8 (sl. 1b) predstavljena količinska razporeditev keramičnih najdb po kvadrantih.<sup>37</sup> V besedilu beremo "*Additionally, around 224 kg of pottery were collected at the site*".<sup>38</sup> Od kod je taka količina? Upam si trditi, da sem edini, ki je keramiko z Maharskega prekopa stehal, v disertaciji omenjam "*približno 220 kg keramike*".<sup>39</sup> Ne glede na to, da je rezultat s slike 22 iz disertacije (glej sl. 1a), ki bi jo morali avtorji omenjenega članka navesti, zgolj okviren

in zaradi tega je malo verjetno, da je ponovljiv, priporočam, da se seštejejo kilogrami s sl. 1a in ustvari mnenje o viru pri Mlekuž et al. 2012, 330, Fig. 8 (sl. 1b).

Vrnimo se k razlagam. Leta 2006 je izšel že navedeni članek, v katerem je obravnavano najdišče Maharski prekop.<sup>40</sup> Avtorji razpravljajo o več gradbenih fazah. Območje naj bi bilo kontinuirano poseljeno zelo dolgo časa. Nenavadna arhitektura<sup>41</sup> je dobila pravilno pravokotno obliko.<sup>42</sup> Razlage, tudi tiste, ki so sledile,<sup>43</sup> so bolj ali manj variacije na isto temo in so bile tako nenavadne, da so sprožile živahno diskusijo,<sup>44</sup> ki pa očitno ni prinesla otipljivih rezultatov. Pogrešam npr. pojasnitev, zakaj je moj raziskovalni pristop napačen ter ozek.<sup>45</sup> Pričakoval bi tudi neizprosno kritiko članka, ki sva ga pripravila skupaj s Katarino Čufar za revijo *Arheološki vestnik*, kjer sva prvokrat predstavila izsledke arheološko-dendrokronoloških raziskav na najdišču Maharski prekop in novoodkrite najdbe z naselbin Strojanova voda in Gornje mostišče.<sup>46</sup>

Rezultati raziskave kažejo, da je bil Maharski prekop obljuden krajše obdobje okrog sredine četrtega tisočletja pr. Kr.,<sup>47</sup> kar se ujema s pred leti predlaganim mestom v okviru relativne kronologije.<sup>48</sup> V članku sva na podlagi primerjav keramike tudi sklepala, da sta naselji Strojanova voda in Gornje mostišče starejši, z dendrokronološko raziskavo pa sva ugotovila, da je Spodnje mostišče mlajše od Maharskega prekopa.<sup>49</sup>

Ugotovitev potrjuje staro tezo, ki pravi, da so prazgodovinska naselja na mokrotnem svetu v okolici Iga na Ljubljanskem barju kronološko razvrščena od starejšega proti mlajšemu z juga proti severu, tj. z obrobja v smeri proti središču Ljubljanskega barja, in da je izbira lokacije vzročno povezana z bolj ali manj postopnim krčenjem jezera.<sup>50</sup> Najjužneje je Resnikov prekop, ki pripada savski skupini lengyelske kulture, sledita Gornje mostišče in Strojanova voda iz obdobja kulture keramike z brazdastim vrezom (Retz-Gajary), nato Maharski prekop in Spodnje mostišče, kulturna skupina

<sup>31</sup> Velušček, Čufar, Levanič 2000.

<sup>32</sup> Velušček 2001, 75–77.

<sup>33</sup> Glej *ibid.*, 75–77, sl. 23; Velušček 2004a, 77; 2005, 202.

<sup>34</sup> Glej karte z označenimi najdišči pri Mlekuž 1999, Figs. 2, 9, 10 in prim. z Velušček 1997, 51–104.

<sup>35</sup> Glej Velušček 1997.

<sup>36</sup> Velušček 2009a, 301.

<sup>37</sup> Mlekuž et al. 2012, Fig. 8.

<sup>38</sup> *Ibid.*, 330.

<sup>39</sup> Velušček 2001, 73.

<sup>40</sup> Mlekuž, Budja, Ogrinc 2006.

<sup>41</sup> Glej Bregant 1996, 30; Budja 1994, 169–175.

<sup>42</sup> Mlekuž, Budja, Ogrinc 2006, Fig. 7.

<sup>43</sup> Glej npr. Budja, Mlekuž 2008a; 2008b.

<sup>44</sup> Velušček 2007; 2009a; Andrič 2009; Verbič 2011.

<sup>45</sup> Glej Budja, Mlekuž 2008a, 359, 361.

<sup>46</sup> Velušček, Čufar 2008.

<sup>47</sup> Glej *ibid.*, sl. 7.

<sup>48</sup> Velušček 2001, 96.

<sup>49</sup> Velušček, Čufar 2008.

<sup>50</sup> Glej Ložar 1942, 90.





Sl. 3: Izsek iz karte 1 : 5000 Ljubljana J-25 (Velušček, Čufar 2008, sl. 3).

Fig. 3: Section from the map 1 : 5000 Ljubljana J-25 (Velušček, Čufar 2008, Fig. 3).

Stare gmajne (primerljiva z razvojem badenske kulture, glej sl. 3) ter najvišje na severu v smeri od vzhoda proti zahodu kolišča iz tretjega (Vučedol, Somogyvár-Vinkovci) in nekatera morda tudi iz drugega tisočletja pr. Kr.<sup>51</sup>

Priznati je treba, bili smo veseli in, glede na izkušnje z drugih najdišč na mokrih tleh po Ljubljanskem barju, ne preveč presenečeni, ko smo dobili rezultate dendrokronoloških meritev za naselje Strojanova voda. Ugotovilo se je, da je zadnja gradbena dejavnost datirana v leto  $3550 \pm 10$  cal BC<sup>52</sup> in da je kmalu nato prišlo do opustitve naselja. Je približno 35 let starejša od dendrokronološko potrjene najzgodnejše gradbene dejavnosti na Maharskem prekopu, ki označuje začetek poselitve.

Ni si težko predstavljati, da je podobno veselje prevevalo raziskovalce, ko so prišli rezultati radiokarbonskih meritev starosti organskih ostankov s keramike z Maharskega prekopa, še posebno, če jih primerjamo s starejšimi datumi.<sup>53</sup> Zato se na prvi pogled zdi, da je z novimi datacijami podprta teza o dolgotrajni poselitvi arheološkega najdišča Maharski prekop dokaj prepričljiva. Ker pa so za razumevanje kronologije poselitve, in to ne samo Ljubljanskega barja, kot menijo Mlekuž et al.,<sup>54</sup> temveč tudi ostale Slovenije in celo širše, novi podatki in njihova razlaga vendarle zelo pomembni, jih je treba postaviti v prostor in čas ter preveriti njihovo interpretativno vrednost, kar je dejansko vsebina tega prispevka.

<sup>51</sup> Glej Velušček, Čufar 2008, sl. 5.

<sup>52</sup> Čufar, Velušček, Kromer 2013, Fig. 1.

<sup>53</sup> Glej npr. Mlekuž, Budja, Ogrinc 2006, Tab. 1.

<sup>54</sup> Mlekuž et al. 2012, 328.

## ARHEOLOŠKO NAJDIŠČE MAHARSKI PREKOP “V KONTEKSTU”<sup>55</sup>

V uvodu v članek *Houses, pots and food: the pottery from Maharski prekop in context*, ki je izšel v angleškem jeziku v reviji *Documenta Praehistorica* 39 (2012, 325–338), avtorji Dimitrij Mlekuž, Andreja Žibrat Gašparič, Milena Horvat in Mihael Budja najprej na kratko predstavijo kronologijo arheoloških raziskav na najdišču Maharski prekop. Opaziti je, da pozabijo omeniti raziskavo, ki je potekala leta 2005 in katere cilj je bil v prvi vrsti pridobiti les za dendrokronološke raziskave. Podatek je bil objavljen večkrat, med drugim v revijah *Arheološki vestnik*<sup>56</sup> in *Journal of Archaeological Science*.<sup>57</sup>

Najprej se ustavimo pri orientaciji načrtov kolišč Maharski prekop pri Mlekuž et al. 2012. Na slikah 4 do 8 iz leta 2012 (prim. npr. *sl. 1b*) je načrt glede na smeri neba napačno usmerjen, zato primerjaj npr. s *sl. 22* iz moje disertacije<sup>58</sup> (*sl. 1a*), kjer je načrt pravilno orientiran. Zanimivo je, da je bilo še leta 2006 drugače,<sup>59</sup> a danes se “nova” usmeritev pojavlja tudi že na razstavah.<sup>60</sup>

Nadaljujemo z vprašanjem glede poglavja “*Spatial organisation*” (ibid., 329–331), v katerem je navedena že objavljena trditev,<sup>61</sup> da je srednja vrednost (“*mean value*”) premera navpičnih kolov 5,8 cm, kar dejansko zelo odstopa od primerljivih vrednosti z drugih kolišč na Ljubljanskem barju, ki se gibljejo med 8 in 10 cm.<sup>62</sup> Zato je upravičeno vprašanje, kako se je pridobilo takšen podatek in koliko je zanesljiv? Koli s takšno debelino gotovo nekaj pomenijo. Upati je, da se ne išče razlage v smeri, kot se je “našla” za Resnikov prekop, ki se je kmalu izkazala za popoln strel v prazno.<sup>63</sup> Kljub temu naj opozorim, da srednja vrednost v letu 2005 naključno pobranih 234 vzorcev kolov z

območja Maharskega prekopa, ki ga je predhodno raziskala Bregantova, med katerimi so zajeti tako nosilni koli objektov kot tudi koli iz palisade, znaša **8,9 cm** (sic).<sup>64</sup>

Iz istega poglavja je tudi naslednja ugotovitev: “*Most of the houses are oriented with the longer side parallel to the channel*” (ibid., 329), kar lahko razumemo kot podporo trditvama: “*Maharski prekop was located next to an active channel*”, kar je navedeno v poglavju “*Maharski prekop*” na str. 326, in “*which supports the evidence of the active paleochannel associated with the site*” iz obravnavanega poglavja na str. 330.

Najprej naj opozorim, da to ne drži! Na Maharskem prekopu je večina objektov postavljena v smeri jugozahod–severovzhod, včasih z manjšim odklonom, ki je na koliščih Ljubljanskega barja prevladujoča,<sup>65</sup> nekateri objekti pa sledijo liniji palisade oz. lesene ograje ali “*valobrana*”.<sup>66</sup> Avtorji obravnavanega prispevka sicer pravilno ugotavljajo, da je bil en objekt povsem drugače usmerjen.<sup>67</sup> Torej menijo, da je vzporedna usmerjenost objektov glede na strugo oz. jarek lahko argument za sočasnost naselitve in struge, v kateri je nekoč mimo najdišča tekla voda, kar se sicer za krajše obdobje in ob ustrezno visokem vodostaju dogaja tudi še danes? Ker profili, ki jih objavlja Bregantova,<sup>68</sup> kažejo, da struga s poselitvijo ni sočasna, se poraja vprašanje, ali dopuščajo možnost, da je vzročnost med naseljem in strugo zgolj navidezna? Glede na omenjeno prevladujočo usmerjenost vrst s koli na drugih koliščih Ljubljanskega barja bi moral biti odgovor vsekakor pritrdilen. Da je naselje starejše od jarka, meni tudi Tomaž Verbič, kar je ponazoril s konceptualnim stratigrafsko-sedimentološkim modelom razvoja sedimentacijskega okolja ob Maharskem prekopu.<sup>69</sup>

Na str. 329 (Mlekuž et al. 2012) piše, da: “*Based on relative height of the piles, we can divide the settlement into two building phases*” (glej *sl. 4*). Res je,

<sup>55</sup> Po Mlekuž et al. 2012, 325.

<sup>56</sup> Velušček 2007, 428; Velušček, Čufar 2008, 40.

<sup>57</sup> Čufar et al. 2010.

<sup>58</sup> Prim. npr. Bregant 1996, 27.

<sup>59</sup> Glej Mlekuž, Budja, Ogrinc 2006, Figs. 5–9.

<sup>60</sup> Skrb vzbuja dejstvo, da najdemo enako napačno orientacijo izkopavalnega načrta kolišča Maharski prekop tudi na maketi na razstavi *Kolo/Wheel 5200 let/years*, ki je bila odprta maja 2013 v Mestnem muzeju v Ljubljani.

<sup>61</sup> Glej Mlekuž, Budja, Ogrinc 2006, 259.

<sup>62</sup> Glej npr. Velušček, Čufar, Levanič 2000, grafikon 1; Čufar, Velušček 2004, sl. 6.2.2; Velušček et al. 2004, 43; Čufar, Korenčič 2006, tab. 1; Čufar et al. 2009, 179, 194; Gaspari et al. 2009, tab. 6.1.

<sup>63</sup> Glej Budja 1994, 167–169 in prim. z Velušček 2006a.

<sup>64</sup> Katarina Čufar, ustna informacija.

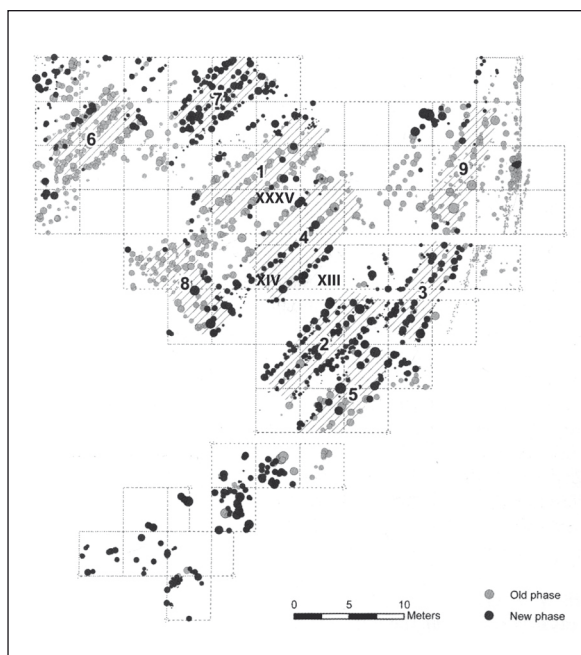
<sup>65</sup> Npr. Bregant 1964, pril. 1; 1996, 27; Harej 1978, tloris; 1981–1982, pril. 1; 1987, pril. 1; Velušček, Čufar, Levanič 2000, sl. 8; Velušček 2001, sl. 23; Velušček 2006b, sl. 5; Gaspari et al. 2009, sl. 6.3; Velušček, Toškan, Čufar 2011, sl. 8; Šinkovec 2012, 254–255.

<sup>66</sup> Mlekuž et al. 2012, 326; glej tudi Velušček 2001, 76.

<sup>67</sup> Glej še Mlekuž, Budja, Ogrinc 2006, 260, Fig. 7.

<sup>68</sup> Glej Bregant 1974a, pril. 1: severni profil kvadranta VIII, južni profil kvadrantov III in IV, južni profil kvadrantov VI in VII; ead. 1974b, pril. 1: severni in južni profil; ead. 1975, pril. 3: severni profil kvadranta XV itd.

<sup>69</sup> Verbič 2011, 92, sl. 4; glej še Velušček 2009a, 305, sl. 3.



Sl. 4: Maharski prekop. Razvrstitev vertikalnih kolov in koč po kronoloških fazah; temelji na relativni višini kolov (Mlekuž et al. 2012, Fig. 6).

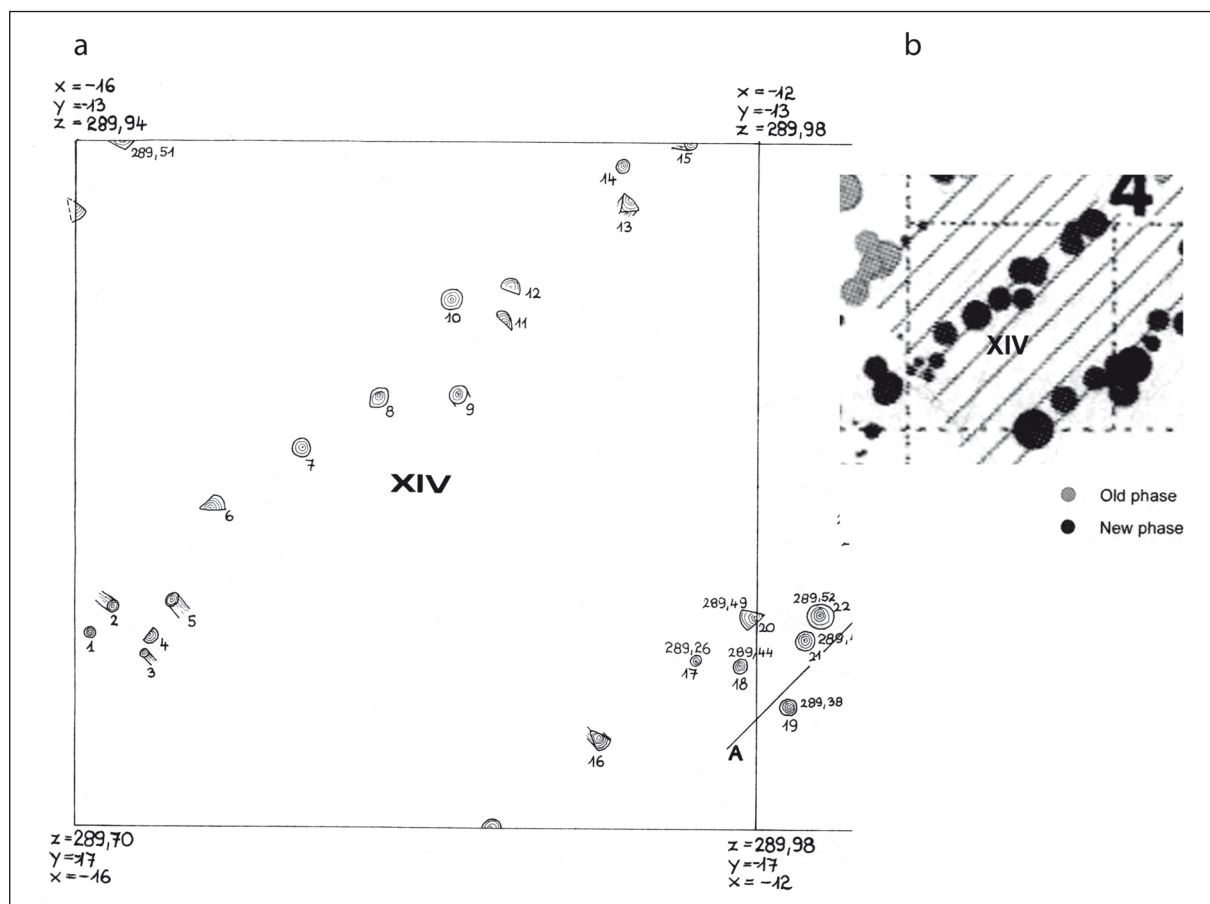
Fig. 4: Maharski prekop. Vertical piles and houses arrangement according to chronological phases based on relative height of the piles (Mlekuž et al. 2012, Fig. 6).

da v dokumentaciji o izkopavanjih na Maharskem prekopu in objavljenih virih<sup>70</sup> najdemo podatke o višinah kolov, a bolj malo je takšnih, ki povedo, kdaj dejansko se je posamezen kol prvokrat pojavil. Za kole iz sond na Resnikovem prekopu (sondiranje leta 2002),<sup>71</sup> iz Blatne Brezovice (sondiranje leta 2003), Hočevarice (sondiranje leta 1998) in Starih gmajn (sondiranja leta 2002, 2006 in 2007)<sup>72</sup> so na

<sup>70</sup> Npr. Bregant 1975, pril. 3.

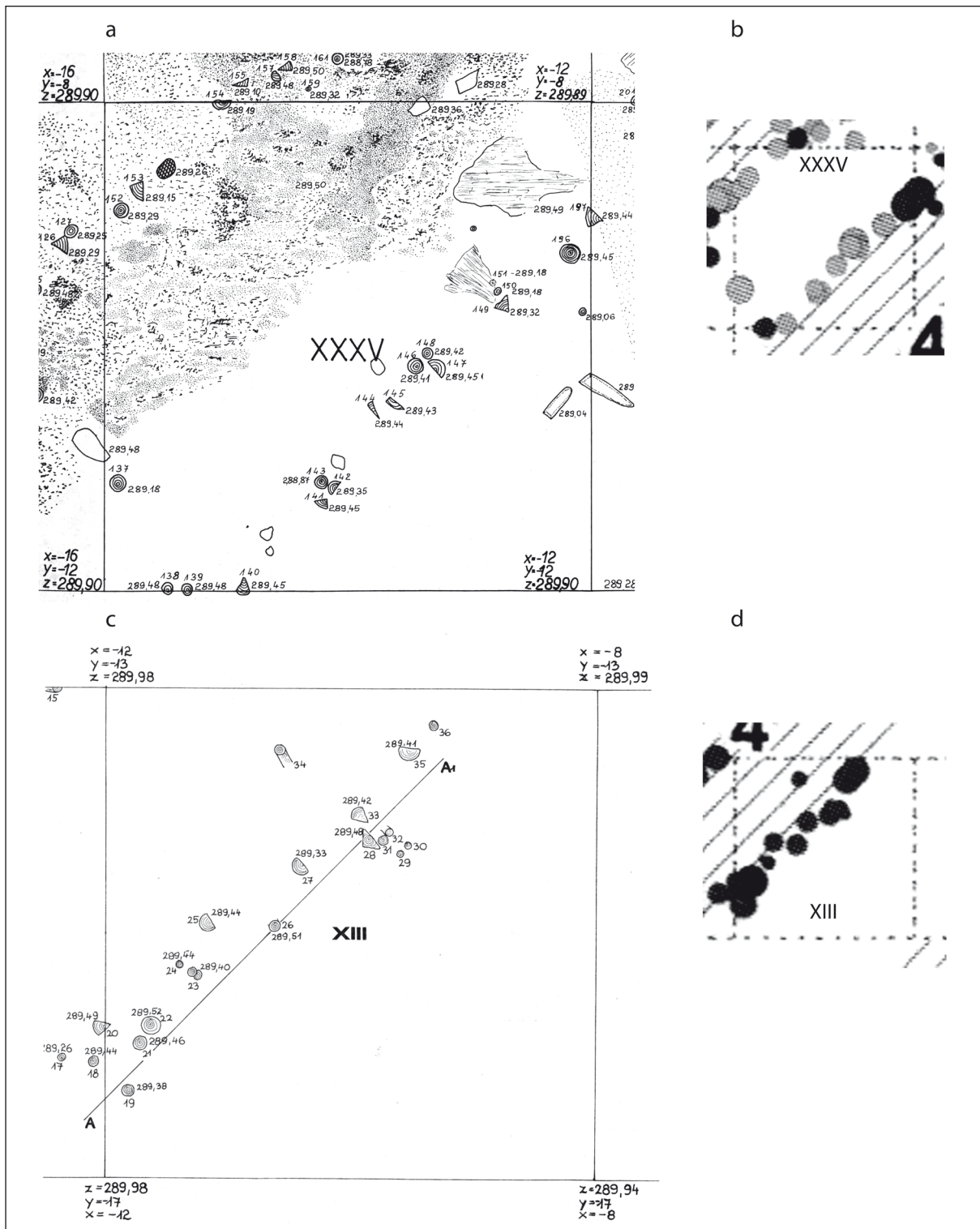
<sup>71</sup> Velušček 2006b, sl. 5.

<sup>72</sup> Arhiv Inštituta za arheologijo ZRC SAZU.



Sl. 5: Maharski prekop. **a** – Surovi podatki o višinah kolov v kvadrantu 14 (po Bregant 1974b, pril. 1). **b** – razlaga poselitvenih faz v kvadrantu 14 na podlagi višin kolov (po Mlekuž et al. 2012, Fig. 6).

Fig. 5: Maharski prekop. **a** – Raw data about the pile heights in square 14 (after Bregant 1974b, Insert 1). **b** – Interpretation of settlement phases in square 14 on the basis of pile height (after Mlekuž et al. 2012, Fig. 6).



Sl. 6: Maharski prekop. **a** – Surovi podatki o višinah kolov v kvadrantu 35 (po Bregant 1975, pril. 4). **b** – Razlaga poselitvenih faz v kvadrantu 35 na podlagi višin kolov (po Mlekuž et al. 2012, Fig. 6). **c** – Surovi podatki o višinah kolov v kvadrantu 13 (po Bregant 1974b, pril. 1). **d** – Razlaga poselitvenih faz v kvadrantu 13 na podlagi višin kolov (po Mlekuž et al. 2012, Fig. 6).

Fig. 6: Maharski prekop. **a** – Raw data about the heights of the piles in square 35 (after Bregant 1975, Insert 4). **b** – Interpretation of settlement phases in square 35 on the basis of pile height (after Mlekuž et al. 2012, Fig. 6). **c** – Raw data about the pile heights in square 13 (after Bregant 1974b, Insert 1); **d** – Interpretation of settlement phases in square 13 on the basis of pile heights (after Mlekuž et al. 2012, Fig. 6).



voljo takšni podatki z napako do enega centimetra, za Maharski prekop podatkov ni. Ker predvidevam, da avtorjem ni pomembno, na kateri točki so bile višine kolov izmerjene, domnevam, da se pri razlagi na to niso ozirali. Pomembno jim je bilo namreč dejstvo, da podatki o višinah obstajajo, a žal s tem zavajajo strokovno javnost. Poglejmo njihovo razlago na naši *sl. 5b* in jo primerjamo s surovimi podatki o višinah kolov iz kvadranta 14 pri Bregantovi (*sl. 5a*). Presenečeni!? V kvadrantu 14, v večini primerov, višine ob kolih niti niso zabeležene, tudi v izvorni dokumentaciji, ki jo kopirano hranimo na Inštitutu za arheologijo ZRC SAZU, jih ni. Podatki o višinah kolov so pomanjkljivo zabeleženi tudi v kvadrantu 13 (glej *sl. 6c*), kot tudi npr. v kvadrantih 11, 12, 15, 72, 73 itd.<sup>73</sup> Po drugi strani se pri razlagi nekaterih višin, ki so sicer navedene, ne upošteva, kot npr. velja za kvadrante 9, 10 in predvsem 15.<sup>74</sup> Še bolj problematična pa se zdi sama vsebina razlage višin kolov, ki jo vidimo na *sliki 4*, saj na tej podlagi utemljujejo dvofazno intenzivno poselitve, t. i. "Old phase" in "New phase".<sup>75</sup> Npr. v kvadrantu 13 koli z višinami od **289,33** do **289,52 m** označujejo mlajšo fazo intenzivne poselitve, drugod, v npr. bližnjem kvadrantu 35, koli z višinami od 288,87 do **289,45 m** označujejo starejšo fazo poselitve (*sl. 6a-d*; glej še *sl. 4*). Za mlajšo generacijo slovenskih poznavalcev "moderne" krajinske arheologije pa navajam še nekaj podobnih primerov iz npr. kvadrantov 18,<sup>76</sup> 21,<sup>77</sup> 23,<sup>78</sup> 30<sup>79</sup> in 39,<sup>80</sup> ki naj se primerjajo s podatki s *sl. 4*.<sup>81</sup> Priznati moram, da je meni na podlagi nabora takšnih podatkov razlaga višin pri Mlekuž et al. 2012 bolj, ko se vanjo poglobljam, vedno manj razumljiva. Če povzamem z angleško frazo: "Garbage in, garbage out".<sup>82</sup>

Po drugi strani se zdi možno, da je razloge za različne višine kolov, če menimo, da so bili izmer-

jeni na točki, ko se je kol prvič pojavil, iskati v neustrezni metodi izkopavanja za kolišče, ki se je uporabljala pred desetletji, a avtorji obravnavane študije tega niti kot možnost ne navedejo. Za uporabljeno metodologijo izkopavanja navajam ustni vir izkopavalca Janeza Dirjeca,<sup>83</sup> ki je bil udeleženec terenskih raziskav na Maharskem prekopolu, celo eden izmed ključnih sodelavcev, saj je v glavnem on kopal, medtem ko so drugi izkopane kocke pregledovali na površju ob izkopnem polju. Kopal se je po režnjih debeline približno 30 cm, kolikor je merila v dolžino žlica lopate, volumensko so to bile kocke (30 × 30 × 30 cm), pri čemer je najbrž prihajalo tudi do lomov navpičnih nosilnih kolov.

Komentirati je treba tudi nadaljevanje: "When the superstructure was destroyed (either by fire, flood or decay), only parts of the posts below the occupational surface survived" (Mlekuž et al. 2012, 329). V nekaterih primerih je mogoče, da trditev celo drži, v drugih pa je vsekakor za lase privlečena, zato previdno pri razlagi! Kot argument predstavljam fotografijo modernega kolišča ob jezeru Nokoué v Beninu v Zahodni Afriki (*sl. 7*), ki ne potrebuje dodatnega komentarja. Pod fotografijo je sicer navedeno, da je ohranjenost opuščenih lesenih gradbenih elementov neposredno odvisna od nihanja gladine jezera, jakosti valovanja in vodnega toka.<sup>84</sup>

V skoraj dvajset let starem prispevku, v katerem Budja obravnava problematiko poselitve na območju najdišč Resnikov in Maharski prekop, beremo, da se je tekoča voda nevarno približala slednjemu v zadnji fazi takrat trifazne poselitve,<sup>85</sup> ki je kronološko blizu Parzingerjevima horizontoma in tudi najbližja koncu mlajše faze intenzivne poselitve po Mlekuž et al. 2012. Že z bežnim pogledom na *sliko 4* pa se razlaga zakomplicira, saj ugotovimo, da je bilo naselje Maharski prekop v obdobju zadnje faze intenzivne poselitve brez "valobrana", ki je bil narejen iz tanjših kolov, kar se zdi iz zgoraj zapisanega nerazumljiva ugotovitev, ki zahteva pojasnilo. Tudi sicer naj bi bila omenjena struktura postavljena za zaščito naselja pred tekočo vodo (glej *ibid.*, 330), ki je nehala ogroziti najdišče šele v tretjem tisočletju. Na str. 326 avtorji članka namreč namigujejo, da: "The organic infill of the palaeochannel that runs parallel to the site dates

<sup>73</sup> Glej Bregant 1974b, pril. 1: XI, XII; ead. 1975, pril. 3: XV; za kvadranta LXXII in LXXIII podatki niso objavljeni, fotokopijo izvorne dokumentacije hrani Inštitut za arheologijo ZRC SAZU.

<sup>74</sup> Prim. Bregant 1974b, pril. 1: IX, X; ead. 1975, pril. 3: XV.

<sup>75</sup> Mlekuž et al. 2012, Fig. 6.

<sup>76</sup> Bregant 1975, pril. 3: XVIIII.

<sup>77</sup> *Ibid.*, pril. 3: XXI.

<sup>78</sup> *Ibid.*, pril. 3: XXIII.

<sup>79</sup> *Ibid.*, pril. 4: XXX.

<sup>80</sup> *Ibid.*, pril. 4: XXXIX.

<sup>81</sup> Podatki o označbi kvadrantov so na *sliki 1b*.

<sup>82</sup> <http://oxforddictionaries.com/definition/english/garbage?q=Garbage>[zadnji dostop 15. okt. 2013].

<sup>83</sup> Janezu Dirjecu se zahvaljujem za informacijo o metodologiji izkopavanja na Maharskem prekopolu med letoma 1972 in 1977.

<sup>84</sup> Pétrequin 1997, 104.

<sup>85</sup> Budja 1994, 170–173, 174.



Sl. 7: Ganvié, jezero Nokoué – Benin, Zahodna Afrika (Pétrequin 1997, Abb. 128).

Fig. 7: Ganvié, lake Nokoué – Benin, West Africa (Pétrequin 1997, Fig. 128).

*the silting up of the channel to 2833–2466 calBC, attesting that the channel was abandoned before that date”.*

Kdaj je torej tekoča voda tekla mimo naselja in od kdaj je “valobran”, ki je naselje varoval pred vodo? S *slike 4* in na podlagi sklepanja na sočasnost med “valobranom” in strugo s tekočo vodo (ibid., 330) lahko sklepamo, da je “valobran” stal že v obdobju pred nastopom mlajše intenzivne poselitvene faze, kar dokazujejo koli z nižjimi absolutnimi višinami. Med njimi je v kvadrantu 4 tudi nekaj izjem z izmerjenimi višjimi absolutnimi višinami (*sl. 4*), kar kaže, da je bil krajši odsek valobrana postavljen oz. da je bil valobran na krajšem odseku popravljen v obdobju mlajše intenzivne poselitvene faze. Na *sliki 4* najdemo tudi tretjo skupino, ki je ostala kronološko neopredeljena, čeprav so ob kolih višine velikokrat zabeležene, kar je še posebej razvidno iz kvadranta 15.<sup>86</sup> Na podlagi takšnih ugotovitev torej lahko sklepamo, da je naselje okrog 3550 cal BC ščitil “valobran”, postavljen tudi iz do 850 let starih kolov, iz obdobja okrog 4400 cal BC. Nesmisel, čeprav ne gre za novost.<sup>87</sup> Je pa še nekaj več, iz zapisanega pridemo do jasnega zaključka, da je s takšno razlago višin kolov nekaj zelo narobe.

Zelo nenavadna, a v skladu z razlago palisade oz. “valobrana”, je potem tudi rekonstrukcija

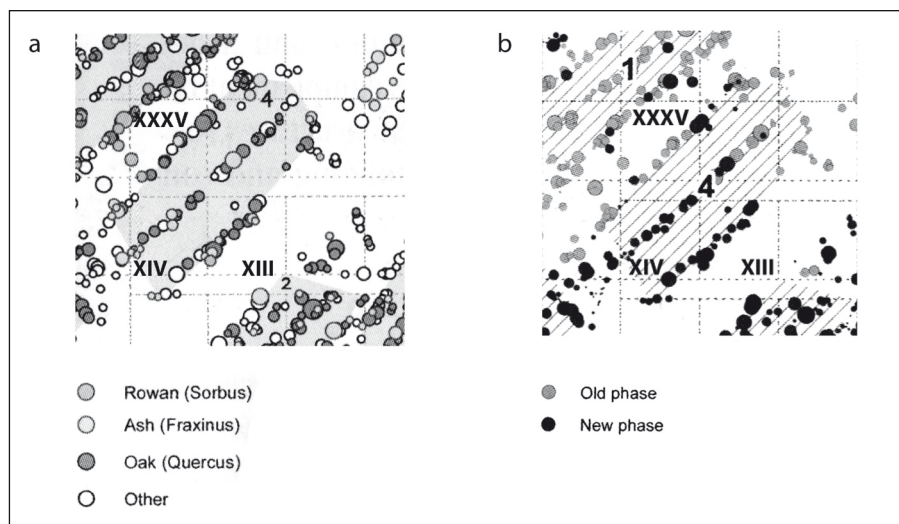
tlorisov koč, če jo povežemo z dvema fazama poselitve (tj. “Old phase” in “New phase”) na najdišču Maharski prekop. Avtorji jo povzemajo po članku iz leta 2006<sup>88</sup> in je že takrat zahtevala podrobno analizo, saj je spornih več točk, a vsaj na nekaterih segmentih naredimo to ob tej priliki. Na *sliki 5* (Mlekuž et al. 2012, 330) povezujejo krožce, ki predstavljajo navpične nosilne kole. Iz tega so dobili pravokotnike, ki naj bi predstavljali tlorise posameznih objektov. Za primer vzemimo kočo s *slike 8a*, kjer je pod št. 4 osenčen pravokotni tloris objekta s približno izmero 12 × 5 m (glej še *sl. 1b*). Trik je že na naslednji str. 331, s *slike 8b* je namreč razvidno, da je tloris dejansko sestavljen iz dveh sestavnih delov: starejšega (med 4400 in 4000 cal BC) na severovzhodni strani s podaljšano zahodno linijo kolov (*sl. 9c*) in mlajšega (med 3800 in 3550 cal BC) na jugozahodni strani (*sl. 9d*) s koli v dveh vrstah, ki sežejo malo čez polovico dolžine tlorisa koč št. 4, ki je, kot pišejo, približno vsaj dvesto let mlajši od starejšega dela objekta.<sup>89</sup> Glede na to, kar je ugotovljeno že pri “valobranu”, se ponuja razlaga, ki pravi, da so prazgodovinski prebivalci Maharskega prekopa k staremu delu koč št. 4 s podaljšano zahodno vrsto nosilnih kolov preprosto dodali še dve krajši vrsti in tako dobili nov prostoren objekt iz novih, a tudi najmanj približno dvesto let starih kolov (sic)

<sup>86</sup> Glej Bregant 1975, pril. 3: XV.

<sup>87</sup> Prim. Budja 1994, 173.

<sup>88</sup> Mlekuž, Budja, Ogrinc 2006, 260, Fig. 7.

<sup>89</sup> Mlekuž et al. 2012, 328.



Sl. 8: Maharski prekop. **a** – Detajl (s slike 5, Mlekuž et al. 2012) z osenčenim tlorisom koče št. 4 in legendo. **b** – detajl (s slike 6, Mlekuž et al. 2012), s šrafiranim tlorisom in kronološko opredeljenimi koli koče št. 4 in legendo. Fig. 8: Maharski prekop. **a** – Detail (from Figure 5, Mlekuž et al. 2012) with shaded ground plan of house no. 4 and a Legend. **b** – Detail (from Figure 6, Mlekuž et al. 2012) with striped ground plan and chronologically defined parts of house no. 4 and a Legend.

(sl. 9a). Žal, treba je zapisati, da se ob takšnem razmišljanju arheološka interpretacija konča, od tu dalje je to fantaziranje brez vsakega pomena.<sup>90</sup>

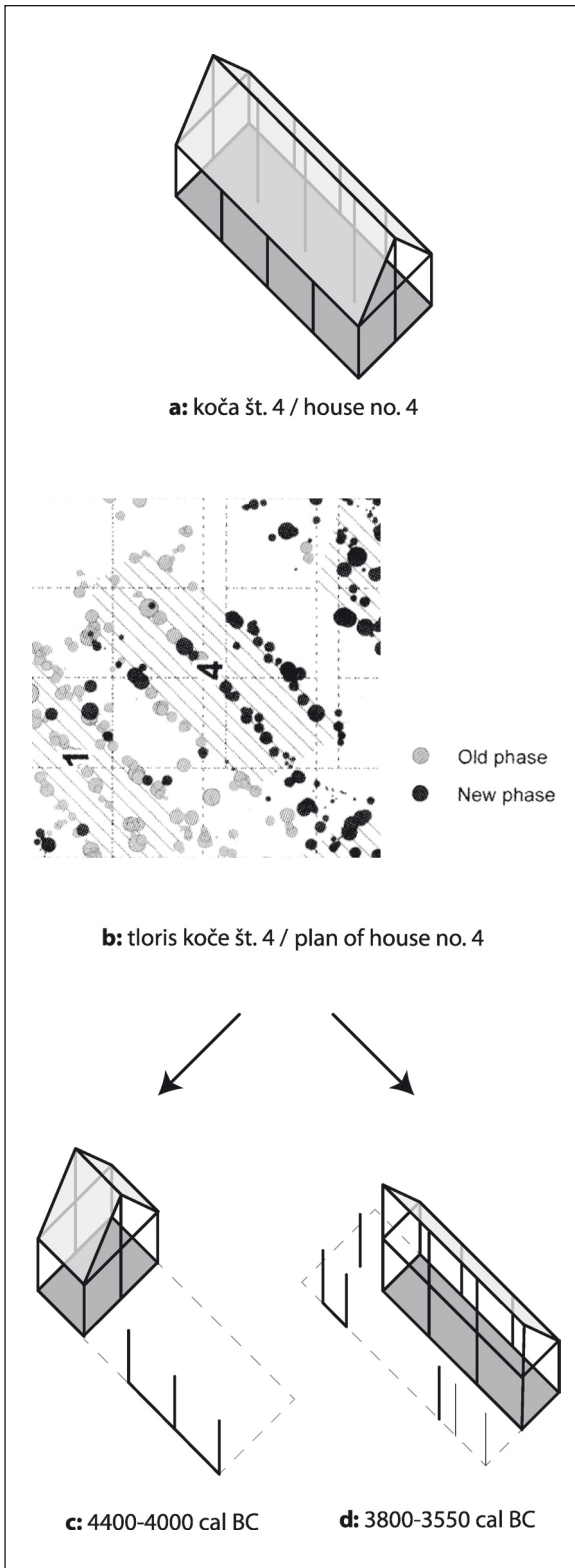
Na podoben način razlagajo tudi razpršenost arheoloških najdb po najdišču. “Concentrations of stones are another common feature of the site ... Stones form distinctive clusters or features that were commonly found at the peripheral ends of houses. Stones were sometimes distributed along lateral rows of piles and are often associated with lenses of charcoal, indicating that they could be interpreted as remnants of thermal structures”, pri čemer izhajajo iz virov pri Bregantovi (Mlekuž et al. 2012, 330). Na str. 328 pišejo: “It appears that the site was settled for a much longer period, had distinct phases of occupation, and shows traces of earlier visits or activities”, na drugem mestu na str. 326 in 328: “a period of intensive occupation dating between 4400 and 4000 calBC, and a second occupation period between 3800 to 3550 calBC” itd., skratka trdijo, da je bil Maharski prekop dolgo časa oz. dvakrat intenzivno poseljen. Torej, v katero obdobje intenzivne poselitve sodijo kamni, okrog katerih je najti oglje itn.? Ne verjamem, upam, da tudi oni sami ne, v trditev s str. 331: “At long-term settlements, we cannot assume any direct relation between structural remains and artefact distribution.” Z razmišljanjem na takšen način se

namreč zdi fantazijsko in nesmiselno razpravljanje o distribuciji najdb na arheološkem najdišču ter s tem povezana trditev: “The distribution of pottery at Maharski prekop is clustered. We can observe at least three distinct concentrations: one in the paleochannel in the southern part of the site; in the central part of the site; around old phase house 1 and between new phase houses 2, 4 and 5” (ibid., 331). Razvidno je namreč, da mešajo vertikalno in horizontalno stratigrafijo, izrecno namreč navajajo: “Therefore, the stratigraphic position of artefacts within the ‘cultural layer’ is lost, compelling us to treat the artefacts as only a single spatial distribution over the site” (ibid., 330) in objavljajo načrt naselja s koli z različnimi višinami, na podlagi katerih prepoznajo dve intenzivni fazi poselitve (sl. 4). Kaj je nosilce mlajše intenzivne poselitvene faze prignalo, da so na območju “stare” koče št. 1 pustili prazen prostor? Ali so jih morda motili ostanki starejšega objekta? Ali pa naj sprejmemo celo tezo, da je tam stala več sto let stara in morda še vedno uporabna lesena koča, ki je očitno morala stati v vlažnem okolju, kar velja tudi za vse druge organske ostanke na najdišču, sicer se ne bi ohranili? Fantazija!

V okviru teze o dolgotrajni poselitvi najdišča Maharski prekop je podobno problematična tudi obravnava keramike (glej sl. 10), ki spada v kategorijo kronološko najbolj indikativnih artefaktov z najdišča Maharski prekop. O izvoru maloštevilnih fragmentov, ki so tipološko primerljivi resničnim

<sup>90</sup> Podatke o trajanju uporabe koliščarskih koč na Ljubljanskem barju dobimo npr. pri Velušček, Čufar, Levanič 2000.





Sl. 9: Maharski prekop. Rekonstrukcija gradbenih dejavnosti na območju kočice št. 4, na podlagi slikovnega gradiva (slike 5 in 6 pri Mlekuž et al. 2012).

Fig. 9: Maharski prekop. Rekonstrukcija building activities in the area of house no. 4, based on graphics (Figures 5 and 6 in Mlekuž et al. 2012).

najdbam, sem že pisal,<sup>91</sup> zato jih v nadaljevanju ne omenjam več. Pomembnejše se zdi vprašanje, kam sodijo za potrebe analize funkcionalno razvrščene skupine posod s sl. 10, ki so označene kot "Typical vessels from each defined use group from Maharski prekop" (Mlekuž et al. 2012, 336): 1. v starejšo (4400–4000 cal BC), ali 2. v mlajšo (3800–3550 cal BC) fazo intenzivne poselitve, ali morda v nobeno izmed njih? Na podlagi objavljenih skupin glede na njihovo namembnost na sl. 10 sicer ni težko ugotoviti, da gre za časovni okvir badenske kulture, kar ni nič novega.<sup>92</sup> Podobno, vsaj približno tako, je nekoč menil tudi Budja.<sup>93</sup>

Najpomembnejši in hkrati najzanimivejši del obravnavanega izvajanja so vsekakor radiokarbonske datacije, na katerih sloni celotna teza o poselitvi in starosti Maharskega prekopa, ki jo v članku zagovarjajo avtorji. Zdi se, da se povsem ne zavedajo, kaj takšne razlage potegnejo za sabo, čeprav na str. 328 na kratko razglabljajo tudi o posledicah. Datumi se jim očitno zdijo zelo pomembni, saj jih navajajo večkrat, tako oni (Mlekuž et al. 2012, tabela 1 in slike 2, 3) kot kolegi v članku, ki sledi njihovemu.<sup>94</sup>

Na tabeli 1 navajajo 35 radiokarbonskih datumov: 22 je pridobljenih z meritvijo starosti organskih ostankov na keramiki, petkrat so datirani les oz. leseni koli in šestkrat živalske kosti. Datum z laboratorijsko oznako AA-27182 je bil pridobljen z analizo oglja iz profila MP1 v jarku v globini 63–61 cm.<sup>95</sup> Datum z laboratorijsko oznako Z-353 pa je bil pridobljen na vzorcu lesa iz testne sonde 4, ki je bila zastavljena bližje najdišču Strojanova voda (glej sl. 3), zato je najprej treba odgovoriti na vprašanje, h kateremu najdišču dejansko sodi.<sup>96</sup> Teza, da je Maharski prekop del nekega večjega, a razpršenega naselja,<sup>97</sup> je namreč še vedno povsem brez dokazov, tako dendrokronoloških kot tudi klasično arheoloških.<sup>98</sup>

Na str. 326 so na podlagi radiokarbonskih datacij ugotovili, da: "A new series of direct dates of pottery significantly contributes to the chronology of the site", na str. 328 pa menijo, da: "Therefore, new chronological sequence for Maharski prekop also

<sup>91</sup> Glej op. 27 in npr. Velušček 2009a, 298–299.

<sup>92</sup> Po Parzinger 1984, Tab. 4; Velušček 2004c, tab. 5.3.1.

<sup>93</sup> Budja 1983, 81.

<sup>94</sup> Ogrinc et al. 2012, Fig. 1; Tab. 1.

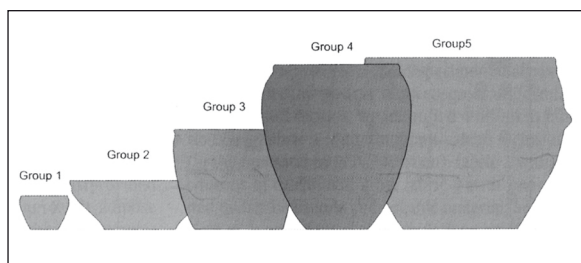
<sup>95</sup> Po Budja, Mlekuž 2008a, tab. 1.

<sup>96</sup> Glej Bregant 1975, 10–11, pril. 1 in Velušček, Čufar 2008, sl. 3.

<sup>97</sup> Glej npr. Mlekuž, Budja, Ogrinc 2006, 261.

<sup>98</sup> Prim. Velušček, Čufar 2008; Velušček 2009a.





Sl. 10: Značilne oblike posod po definiranih funkcionalnih skupinah (Mlekuž et al. 2012, Fig. 10).

Fig. 10: Characteristic vessel shapes according to defined functional groups (Mlekuž et al. 2012, Fig. 10).

has implications for the chronology of the micro-region, as the gaps in the chronology are filled.” Ali je verjeti tem trditvam? Iz do sedaj zapisanega je razvidno, da gre dejansko za vero in odločitev, ne pa za moč dokazov. Znanost pa temelji in se razvija ravno na moči faktov in argumentov, ki jih je v obravnavanem pisanju zelo malo, vsaj takih, ki prepičajo.

V pravilnost datacij se ne morem spuščati, ker zaupam v korektno strokovno delo v laboratorijih,<sup>99</sup> tudi sicer nimam informacij, ki bi kazale nasprotno. Tematika, o kateri je treba razpravljati, pa so konkretne datacije organskih ostankov s keramike z Maharskega prekopa: kako se je do njih prišlo oz. kaj je dejansko datirano? Iz pisanja v dveh člankih<sup>100</sup> ni povsem jasno, ali gre vedno za ostanke hrane ali morda za neke druge organske ostanke, kar je lahko problematično<sup>101</sup> in v primeru obravnavanih datacij morda celo ključno vprašanje. Pri Ogrinc et al. 2012 izvemo, da: “We selected 20 pottery fragments for a pilot chemical study encompassing lipid distribution including fatty acids, stable isotope composition ... and the di- and triacylglycerols distribution of organic residues ... Within the assemblage, three samples (MP85, MP158A and MP181) were obtained from charred organic residues from vessel surfaces.”<sup>102</sup> Pri tem je treba poudariti, da dva vzorca (MP85 in MP181) nista radiokarbonsko datirana,<sup>103</sup> pri tretjem (MP158A) pa je datacija pokazala na čas  $4860 \pm 40$  BP oz. 3710–3527 cal BC.<sup>104</sup> Datirani so bili tudi organski ostanki

s sedemnajstih fragmentov keramike, na katerih je bila opravljena raziskava lipidov, tj. ostankov maščob.<sup>105</sup> Avtorji obravnavanega prispevka enkrat pišejo, da so datirani “food residue” (Mlekuž et al. 2012, tabela 1), drugič “organic residues”,<sup>106</sup> ali “charred organic deposits”<sup>107</sup>, ali “carbonised food/organic residues” (Mlekuž et al. 2012, 328). Vsekakor pogrešam transparentnost! Zakaj ne razložijo natančno, kaj so poslali na datiranje? Zakaj tako pomembnih fragmentov ne objavijo, da si strokovna javnost lahko ustvari vtis o izpovedni vrednosti predstavljenih datacij? Na takšen način izgublja vrednost tudi tisto, kar bi vrednost lahko imelo, saj se ustvarjata manipulativno okolje in skrivalnica, kar je verjetno odraz nezaupanja v lastno raziskovanje. Skratka, v obravnavanem članku pogrešam transparentno povezavo med oblikami posod in radiokarbonskimi datumi, ki je zagotovo, kot se zdi, ključna.

Ker v obravnavanem prispevku opažam, da prihaja do velikega neskladja med rezultati različnih raziskovalnih postopkov,<sup>108</sup> kar je posledica skoraj popolnega ignoriranja različnih skupin temeljnih podatkov, ključnih za razumevanje arheološkega najdišča Maharski prekop, naj opozorim, da se to ne dogaja prvič. Naj omenim spodmol Pod Črmukljo, kjer je Budja menil, da je bila najdena keramika v čistem mezolitskem kontekstu in je iz tega vira namigoval na nujno sočasnost.<sup>109</sup> Sedaj, ko je keramika objavljena, pravzaprav je objavljena le fotografija z vso keramiko iz plasti z mezolitskimi najdbami in dodatno še fotografija ter risbe fragmentov posod, ki so narejene na lončarskem kolesu,<sup>110</sup> bo težko prepričati dobronamerno strokovno javnost, ki spremlja literaturo in se spozna na problematiko, v pravilnost njegovih sklepov.

Kot naslednji primer, ko se teza postavlja na podlagi enega nabora analiz in se pri tem druge zanemarijo oz. prikrijejo, naj navedem datacijo “pokopov” v Ajdovski jami, kjer so, kljub izredno homogeni keramiki,<sup>111</sup> prišli do zaključka, da so na jamska tla polagali trupla v obdobju 6400 do 5300 cal BP.<sup>112</sup> Nenavadna ugotovitev, še posebno,

<sup>105</sup> Glej Ogrinc et al. 2012, Tab. 1 in prim. Mlekuž et al. 2012, Tab. 1.

<sup>106</sup> Ogrinc et al. 2012, 340.

<sup>107</sup> Ogrinc et al. 2012, Fig. 1.

<sup>108</sup> Prim. npr. Velušček, Čufar 2008; Velušček 2009a; Mlekuž et al. 2012.

<sup>109</sup> Budja 1996, 325–326.

<sup>110</sup> Velušček 2007, sl. 2, 4, 5.

<sup>111</sup> Glej Velušček 2006b, 37.

<sup>112</sup> Po Ogrinc, Budja 2005, 105, 113.

<sup>99</sup> Pri tem imam v mislih laboratorije na Poljskem (Poz-) in v ZDA (AA-, Beta-).

<sup>100</sup> Glej Mlekuž et al. 2012 in Ogrinc et al. 2012.

<sup>101</sup> Glej Žibrat Gašparič 2008.

<sup>102</sup> Ogrinc et al. 2012, 340.

<sup>103</sup> Ibid., Tab. 1.

<sup>104</sup> Glej Mlekuž et al. 2012, Tab. 1; Ogrinc et al. 2012, 341, Fig. 1; Tab. 1.

če je soavtor besedila arheolog, ki je kljub vsemu spodbudila druge raziskovalce in nato pripeljala do pozitivne rešitve, tj. direktnega datiranja človeških kosti.<sup>113</sup> Rezultat je bil pričakovan, saj se je polaganje mrtvih k večnemu počitku v Ajdovski jami zožilo na obdobje okrog 4300 pr. Kr., ki najverjetneje ni presegalo ene generacije oz. je bilo še krajše.<sup>114</sup>

Z Ajdovsko jamo je povezan tudi skoraj šolski primer interdisciplinarne raziskave, ki so jo vodili slovenski raziskovalci in je bila izpeljana tako, kot je treba. Alojz Šercelj je pri določevanju rastlinskih ostankov iz paleolitskega najdišča Divje babe I prepoznal tudi zoglenelo zrno ječmena, kar bi, če bi resnično izviralo iz paleolitske plasti, predstavljalo skoraj nepredstavljivo, nekaj izjemnega, svetovno senzacijo.<sup>115</sup> Zato je Ivan Turk, vodilni raziskovalec v jami, zrno poslal na AMS-datiranje v Kanado, ki je pokazalo, da vprašljiva najdba sodi v eneolitik.<sup>116</sup> Korekten znanstveni pristop je ovrzel dvom glede starosti. Še več, Šercelj se je nato spomnil, da je najbrž prišlo do nehotenega mešanja z vzorci iz Ajdovske jame, saj jih je določeval dan pred tistimi iz Divjih bab. Za takšno znanstveno korektnost je treba biti pošten do sebe in drugih, odprt za znanstveno kritiko.

Kot omenjeno, obravnavanemu prispevku manjka kritičen pogled na novo skupino radiokarbonskih datumov. Zdi se, da se avtorji do njih obnašajo podobno kot Bregantova, ko je na mizo dobila radiokarbonske datacije iz laboratorija v Zagrebu in jih v razlagi kratko malo prezrla,<sup>117</sup> s tem, da ignorirajo ali si priredijo vse, kar je bilo na Maharskem prekopu do "njihovih" radiokarbonskih datumov ugotovljeno, da le ustreza njihovi tezi. Če Bregantovo v kontekstu časa lahko še razumemo, je njihovo izvajanje nekorektno in kot tako strokovno povsem nedopustno.

Ponovno se ustavimo pri številu radiokarbonskih datumov. Z območja najdišča jih na tabeli 1 (Mlekuž et al. 2012, 327) navajajo 33 oz. 34, če k najdišču prištejemo tudi datirano oglje (AA-27182). Kot je bilo omenjeno, vzorec iz testne sonde 4 (mediana: 2991 cal BC) ne sodi k obravnavanemu najdišču. V analizo, kar je razvidno s slike 3 (ibid., 328), pa jih vključujejo 27. Zakaj toliko in kateri med njimi so bili izbrani, ni pojasnjeno. Od tega se pri šestih datacijah organskih ostankov na keramiki vrednost

mediane giblje od 4327 do 4016 cal BC. Na čas med 4400 in 4000 cal BC pri 2-sigma kaže sedem datumov, zato preseneča, da na str. 328 pišejo: "*at least 14 of the new dates obtained from pottery fall into the period between 4400 and 4000 calBC*" (sic). Pri enajstih vzorcih se vrednost mediane giblje med 3782 in 3563 cal BC. V nadaljevanju tako pridobljena vrha na krivulji prevedejo v dve intenzivni fazi poselitve: "*The sum of distribution of AMS radiocarbon dates demonstrates roughly a bimodal distribution of probabilities, with a period of intensive occupation dating between 4400 and 4000 calBC, and a second occupation period between 3800 to 3550 calBC*" (ibid., 326, 328). Pri tem pa je zelo narobe trditev: "*The oak chronology of 173 years from Maharski prekop is dated between 3661 and 3489 calBC ... This corresponds well with the second concentration of radiocarbon dates presented above and indicates a period of intensive building and other activities at the site*" (ibid., 328), saj ne drži. Poudarjam, **za kronologijo poselitve Maharskega prekopa so edino pomembni datumi poseka lesa in ne obdobje njegove rasti, ki vsi padejo v čas krepko po vaši drugi intenzivni fazi poselitve, po letu 3550 cal BC,**<sup>118</sup> in se vsekakor bolje ujamejo z datumi okrog 3500 cal BC, ki jih na tabeli 1 z 2-sigma razponom navajajo trinajst.<sup>119</sup> Od tega so datirani organski ostanki s keramike v petih primerih, petkrat so datirane živalske kosti, dvakrat les in enkrat ostanki oglja. Poleg zgoraj navedenih vrednosti mediane od 4327 do 4016 in 3782 do 3563 cal BC je z Maharskega prekopa datiranih še 16 vzorcev z mediano: 5523, 3547, 3543, 3543, 3511, 3495 (kost), 4612, 3990, 3868, 3464, 2406 (organski ostanki na keramiki), 3872, 3477, 3392, 3011 (les) in 3463 cal BC (ogljje). Ključna ugotovitev za razumevanje teh podatkov šele sledi: "*The intriguing older dates from Maharski prekop testify to sporadic activities at the site before the intensive occupation period between 4400 and 3550 calBC. Thus, one sample of animal bone yielded a date 5615–5475 calBC, which makes it contemporaneous with the date of a Mesolithic site at the Breg pri Škofljici (5843–5307 calBC). Additionally, one date of charred food/organic residues on pottery (4708–4502 calBC) is roughly contemporaneous with the dates from Resnikov prekop ... As already*

<sup>113</sup> Bonsall et al. 2007, 731–732.

<sup>114</sup> Ibid., 734.

<sup>115</sup> Ivan Turk, ustni vir.

<sup>116</sup> Turk 1989, 56.

<sup>117</sup> Bregant 1975, 49.

<sup>118</sup> Glej in prim. Velušček, Čufar 2008, sl. 7.

<sup>119</sup> Laboratorijske št. AMS-datacij: Poz-48521, -48520, -48661, -48659, -48518; Beta-219610, -219611, -219606, -219607, -219608; AA-27182; in dveh konvencionalnih datumov: Z-315, -278 (po Mlekuž et al. 2012, Tab. 1).

mentioned, the radiocarbon date of the organic infill of the palaeochannel (2833–2466 calBC) indicates the terminus ante quem for the palaeochannel located next to the site, suggesting that the palaeochannel silted up before that date. One date of carbonised food/organic residue on pottery from Maharski prekop comes immediately after this event, suggesting sporadic activities continued after the abandonment of the site” (ibid., 328). Najbolj pade v oči, da najprej utemeljujejo dve intenzivni fazi poselitve med 4400–4000 in 3800–3550 cal BC (ibid., 326, 328), nato pa nadaljujejo z eno intenzivnejšo fazo med 4400 in 3550 cal BC (ibid., 328). Na približno dvestoleten hiatus: “These two concentrations are separated by a gap of around 200 years after 4000 calBC” (ibid., 328), so tako očitno še na isti strani kar pozabili.

V nadaljevanju nato trdijo, da dva starejša datuma (mediana: 5523, 4612 cal BC) dokazujeta sporadične aktivnosti na najdišču, ki naj bi se dogajale tudi še v tretjem tisočletju (ibid., 328), v obdobju Dežmanovih kolišč, kar jim dokazuje datum z mediano 2406 cal BC (Poz–48519).

Naj spomnim, tudi slednja domneva ni novost, saj je na podlagi redkih keramičnih fragmentov podobno razlagala že Bregantova.<sup>120</sup> Iz podatkov, ki jih predstavljajo, je o dejanski interpretativni vrednosti predlaganega radiokarbonskega datuma (Poz–48519) težko razpravljati, a kar se nanaša na tipologijo keramike, domneva Bregantove zagotovo ne drži, saj za kronološko indikativne kose najdemo analogije v krogu kultur četrtega tisočletja.<sup>121</sup> Obenem se lahko vprašamo, kaj v okviru “sporadičnih aktivnosti” pomeni datum z mediano 3011 cal BC (Z–305)? Ali gre za “sporadično aktivnost”, ki so jo pozabili navesti? Kako lahko npr. pojasnijo, da so obdobja teh aktivnosti (mediane treh datumov: 5523, 4612, 2406 cal BC) bistveno drugačna po intenzivnosti poselitve od obdobja med 4400 in 4000 cal BC, ki je dokumentirano s šestimi oz. sedmimi<sup>122</sup> datacijami, katerih vrednost mediane se giblje od 4327 do 4016/3990 cal BC, pri 2-sigma razponu pa od 4366 do 3952/3811 cal BC. Za statistiko v arheologiji je gotovo zanimiva trditev, da je en radiokarbonski datum na stoletje, kot je npr. za 47. stoletje (mediana: 4612 cal BC),

treba povsem drugače razumeti kot šest ali sedem datumov, razpršenih na štiristo let, med 4400 in 4000 cal BC, in od tega se v slednji skupini datumi celo grupirajo v treh podskupinah z mediano: 1. podskupina (4327), 2. podskupina (4171, 4139, 4120, 4109) in 3. podskupina (4016/3990 cal BC).

## SKLEP

Ob sklepu naj se povrnem k osnovnemu problemu, ki ga odpira obravnavani prispevek. Iz zapisanega lahko zaključimo, da naj bi bil Maharski prekop poseljen oz. so na območju najdišča zaznane “sporadične aktivnosti” v presledkih od sredine šestega do sredine tretjega tisočletja pr. Kr., le v obdobju, ki ga dokumentirajo gradbene dejavnosti hrastove kronologije (pribl. med 3515 in 3490 ± 10 cal BC)<sup>123</sup> in, če hočete, v obdobju, ki naj bi ga zaobjela Parzingerjeva horizonta (sredina in okvirno druga polovica četrtega tisočletja pr. Kr.),<sup>124</sup> ugotavljajo, da poselitve na Maharskem prekopu ni bilo oz. kot pišejo: “The final spike after 3500 calBC can be attributed to a wiggle in the calibration curve between 3500 and 3400 calBC” (Mlekuž et al. 2012, 328).

S pojasnjevanjem na takšen način je jasno, da pripeljejo vsako resno arheološko razpravo do absurda. Ponovno se zastavljajo nekoč<sup>125</sup> že postavljena vprašanja o tem, zakaj so se ohranili organski ostanki? O kakšnem okolju se pogovarjamo: suhih ali mokrih tleh? Ali naslednje nesmiselno vprašanje o tem, kaj še ostane od lesa na mokrotnem Ljubljanskem barju po več kot dvesto letih uporabe? Itd.<sup>126</sup>

Pomembna so tudi vprašanja o keramiki. O tem, kakšna je keramika z Maharskega prekopa, ki je značilna za drugo polovico petega tisočletja pr. Kr.? Kakšna je keramika z Maharskega prekopa, ki je značilna za prvo polovico četrtega tisočletja? Zakaj so analogije s Hočevarico<sup>127</sup> in npr. Strojano vodo<sup>128</sup> samo v posameznih oblikah, kvaliteti izdelave keramike in skoraj nič v ornamentu? Kako je s keramiko, za katero najdemo analogije po najdiščih druge polovice četrtega tisočletja na

<sup>120</sup> Glej Bregant 1975, 43–45.

<sup>121</sup> Glej Parzinger 1984, 37–39, Taf. 2, 3; Velušček 2004c; Velušček, Čufar 2010.

<sup>122</sup> V primeru, da v skupino vključimo tudi datum z mediano 3990 cal BC (Poz–48509: 5180 ± 40; 2-sigma razpon: 4219–3811 cal BC) (po Mlekuž et al. 2012, Tab. 1).

<sup>123</sup> Npr. Velušček, Čufar 2008; Čufar et al. 2010; Čufar, Velušček, Kromer 2013.

<sup>124</sup> Glej npr. Parzinger 1992.

<sup>125</sup> Glej npr. Velušček 2007, 426–429; 2009a, 297–306; Andrič 2009, 317–324.

<sup>126</sup> Glej npr. Velušček 2009a.

<sup>127</sup> Glej Velušček 2004b, 228–230.

<sup>128</sup> Glej Velušček, Čufar 2008, 36.





Sl. 11: Erodiran desni breg Iščice na območju prazgodovinskega naselja Spodnje mostišče. V profilu je dobro vidna naselbinska kulturna plast iz druge polovice četrtega tisočletja pr. Kr.

Fig. 11: Eroded right bank of the Iščica in the area of the prehistoric settlement Spodnje mostišče. In profile the settlement cultural layer from the second half of the fourth millennium BC is clearly visible.

Ljubljanskem barju,<sup>129</sup> ki, tako trdijo, nima nič skupnega s poselitvijo na Maharskem prekopu?

Odgovor je preprost. V diskusijo so vpeljali nekaj, česar očitno nimajo namena narediti razumljivo niti se potruditi, da bi se njihovo izvajanje iz stavka v stavek: “A new series of direct dates of pottery significantly contributes to the chronology of the site ... The sum of distribution of AMS radiocarbon dates demonstrates roughly a bimodal distribution of probabilities, with a period of intensive occupation dating between 4400 and 4000 calBC, and a second occupation period between 3800 to 3550 calBC ... These two concentrations are separated by a gap of around 200 years after 4000 calBC” (ibid., 326, 328), ... “Therefore, the stratigraphic position of artefacts within ‘cultural layer’ is lost, compelling us to treat the artefacts as only a single spatial distribution over

the site ... People tend to dump refuse some distance from where it was produced, and where others have previously dumped refuse, producing concentrations. The distribution of pottery at Maharski prekop is clustered ... At long-term settlements, we cannot assume any direct relation between structural remains and artefact distribution” (ibid., 330, 331), iz slike v sliko (prim. sl. 8a in 8b) itd., medsebojno podpiralo. Skratka, v strokovno literaturo vnašajo kost za glodanje, ki bo najbrž že v odgovoru na ta diskusijski prispevek doživela nadaljnjo transformacijo, v maniri že vidnih fantastičnih in unikatnih razlag, ki pa seveda davkoplačevalce v konkretnem denarju drago stanejo.

Pa še to. Pred dnevi sem hodil po Ljubljanskem barju in posnel nekaj zame šokantnih fotografij, kako Iščica spodjeda kulturno plast kolišča Spodnje mostišče (sl. 11). Strošek zaščite je minimalen, vsekakor manjši od sredstev, ki so jih avtorji obravnavanega prispevka do sedaj porabili za radiokarbonsko dati-

<sup>129</sup> Npr. Stare gmajne (Velušček 2009b) in Blatna Brezovica (Korošec 1963; Velušček 2009c); glej še Parzinger 1984.



ranje. Predlagam, da jih v bodoče namenijo zaščiti, v nasprotnem bo v nekaj desetletjih diskusija potekala le še o oslovi senci, brez možnosti, da se takšne ali drugačne teze preverijo na terenu. Da o kulturnem spomeniku v okviru UNESCO ne govorimo!

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## Dating of the archaeological site Maharski prekop at the Ljubljansko barje

Translation

### INTRODUCTION

The first archaeological finds from the area of the fallow Veliko mostišče,<sup>1</sup> northeast of Ig at the Ljubljansko barje, where the archaeological site of Maharski prekop is situated, were known to Karl Deschmann in the initial period of pile-dwelling research. Therefore, he knew<sup>2</sup> of piles in the Iščica,<sup>3</sup> which are today marked by the site name Spodnje mostišče.<sup>4</sup> He also knew of<sup>5</sup> the piles and other finds from Strojano graben,<sup>6</sup> which are generally

known under the site name Strojanova voda.<sup>7</sup> The pile-dwelling, for which the term Maharski prekop archaeological site seems more appropriate, was discovered by Staško Jesse who set an 18 m<sup>2</sup> size trench at plot 1252/1 of land reg. Ig in 1953.<sup>8</sup> He attributed the finds to the extensive settlement (pile-dwelling) of Veliko mostišče,<sup>9</sup> i.e. the united sites of Strojanova voda and Maharski prekop, which has for various reasons persisted in the expert writing to date.<sup>10</sup>

In 1970, extensive excavations started at Maharski prekop under the leadership of Tatjana Bregant. By 1977, over 1200 m<sup>2</sup> of surface had been researched

<sup>1</sup> Also Spodnje or Dolnje mostišče, Veliki mah etc.

<sup>2</sup> Deschmann 1876, 472.

<sup>3</sup> Also Ižica or Išca.

<sup>4</sup> E.g. Velušček, Čufar 2008, Fig. 5.

<sup>5</sup> Deschmann 1876, 471–472.

<sup>6</sup> Also "Strojanova voda", "Maharski graben", "kanal", or "prekop".

<sup>7</sup> Velušček, Čufar 2008, 44–45.

<sup>8</sup> Jesse 1954, 95–97.

<sup>9</sup> Ibid., Drawing 1.

<sup>10</sup> E.g. Bregant 1974a, 8; Parzinger 1984, 51, Abb. 7; Mlekuž, Budja, Ogrinc 2006, 258.

(Fig. 1a),<sup>11</sup> which is (after Deschmann) still the most extensive archaeological excavation of a Copper Age settlement in the Ljubljansko barje.

In 2005, a group of researchers from the Institute of Archaeology ZRC SAZU set several trenches on the previously researched area and acquired wood for dendrochronological research.<sup>12</sup>

At the approximately same time, the area in which the site Maharski prekop is situated, was also dealt with by a group from the Department of Archaeology from the Faculty of Arts of the University of Ljubljana, under the leadership of Mihael Budja. Field research was directed into LIDAR recording, the drilling of boreholes, and radiocarbon dating, with the intention of explaining the development of the Holocene landscape and human activity within it.<sup>13</sup>

Cabinet work dealing with the Maharski prekop site was also intensive. Soon after the trenching, Jesse presented the first thesis about the chronology of the settlement.<sup>14</sup> In 1954, he writes that the pottery from the trench cannot be compared to the ornamental beauty of that from Ig, to which it is similar regarding the manufacturing but is of much poorer quality. Further on, due to a small number of finds, the author does not give a clear chronological conclusion. Nevertheless, it seems that the finding, probably additionally encouraged Bregant to place the site with a similar argumentation into the Early Bronze Age,<sup>15</sup> which soon proved inconsistent with the results of the radiocarbon dating.<sup>16</sup> The question or complete confusion<sup>17</sup> regarding the chronology of Maharski prekop was clearly resolved by the German prehistorian Hermann Parzinger.<sup>18</sup> With the comparative typological analysis of pottery finds, he recognised two cultural horizons, the development of which ran parallel to the development of the Baden culture in central Danubian region,<sup>19</sup> which was then

accepted amongst researchers;<sup>20</sup> some of whom, apparently, rushed to do so.<sup>21</sup>

The fact that archaeological sites also have difficulty escaping their initial reputation is proven by the events happening in the 1990s. Let us start with the more recent event, i.e. the exhibition *Pozdravljeni, prednamci! Ljubljana od prazgodovine do srednjega veka / Ancestral encounters: Ljubljana from Prehistory to the Middle Ages*, which was exhibited at Cankarjev dom in Ljubljana. This exhibition premiered the model of the pile-dwelling settlement Maharski prekop (Fig. 2), which is in fact the negation of the architecture, a caricature of the pile-dwelling settlement spatial arrangement, and completely evades the comparative finds from the long history of pile-dwellings research in Switzerland and south-western Germany, which was also drawn attention to by Tatjana Greif.<sup>22</sup> This interpretation reflects poorly on professional level of Slovenian archaeology and museology.

The previous event, which is still controversial in expert circles, was the publication of an article in 1995, in which Budja interprets the archaeological site of Maharski prekop with a wider view of the events and consideration of other factors, such as paleo-environmental research, etc.<sup>23</sup> With the fact that Parzinger recognised two cultural horizons at the site, Budja additionally asserts the multi-phasesness of settlement and adds the third horizon or phase, as he calls it. He also finds that this was a pile-dwelling, as a type of settlement, only in the last settlement phase, which is actually the only one that comes close to the Parzinger's chronological scheme. The first two settlement phases are a novelty, both in the chronological understanding of the site and in settlement typology. Budja equates the oldest phase with the period close to the settlement at Resnikov prekop and sets the second phase into the intermediate period between the first and third settlement phases. He also believes that the settlement of the first and second phases is connected to the open-air settlements along the channel with running water.<sup>24</sup> A few years later, similar highly speculative theoretic theses in his diploma work were also discussed by Dimitrij Mlekuž.<sup>25</sup>

<sup>11</sup> E.g. Bregant 1974a; 1974b; 1975; 1996.

<sup>12</sup> Velušček, Čufar 2008; 2010; Čufar et al. 2010.

<sup>13</sup> E.g. Mlekuž, Budja, Ogrinc 2006; Budja, Mlekuž 2008a.

<sup>14</sup> Jesse 1954, 97.

<sup>15</sup> E.g. Bregant 1974a, 23.

<sup>16</sup> See Bregant 1975, 49.

<sup>17</sup> See e.g. *ibid.* 1975, 45–46.

<sup>18</sup> Parzinger 1984.

<sup>19</sup> Horizon *Maharski prekop - a*, comparable with the Boleráz stage of the Baden culture; horizon *Maharski prekop - b*, comparable with the further development of the Baden culture (after Parzinger 1984, 51).

<sup>20</sup> E.g. Dular et al. 1991.

<sup>21</sup> See Budja 1983; Bregant 1984.

<sup>22</sup> Greif 1997, 21.

<sup>23</sup> Budja 1994, 169–175.

<sup>24</sup> *Ibid.*, 170–171.

<sup>25</sup> Mlekuž 1999.



This was also the period when (as part of my doctoral thesis research) I dealt with pottery finds from Maharski prekop and am thus certainly one of a few researchers who has directly held or handled most of the pottery fragments from this site. I was interested whether the fragments of vessels with ornamentation, which are otherwise rare at Maharski prekop, were more frequent, which could have been previously overlooked. That the pottery finds indicate the relatively short settlement, which I have set approximately into the third quarter of the fourth millennium BC, seems significant.<sup>26</sup> This is a thesis that does not significantly deviate from Parzinger, and which in a typological sense signifies the search for analogies within the circle of the Baden culture and cultures contemporary to it. Distinctive finds are scarce.<sup>27</sup> At a glance, only the so-called Resnikov prekop-type pottery can be recognised, which was, according to Bregant, found under the cultural layer, in it and above it.<sup>28</sup> Approximately a dozen fragments and stratigraphic dispersion lead her to conclude that these fragments came to Maharski prekop via deposition from the pile-dwelling Resnikov prekop, which is situated up-stream, i.e. south of Maharski prekop, or from some yet undiscovered pile-dwelling in the same direction and of similar age.<sup>29</sup>

In 2002, the hypothesis was supported by factual arguments, through the research at Resnikov prekop. We discovered that the pile-dwelling settlement had been washed away in prehistory;<sup>30</sup> therefore, it possible that there was redeposition of finds at Maharski prekop. Nevertheless, the question of whether the thesis is sufficiently supported by arguments remains open. I believe that until a better or a better-supported explanation is given, this one needs to be, at least, considered as a real option in every interpretation.

In my dissertation, based on the results of archaeological-dendrochronological research in the Iščica at the site Parte-Iščica,<sup>31</sup> I have shown that the rows with piles at Maharski prekop are the remains of the original houses<sup>32</sup> and not the architecture that is illustrated on the aforemen-

tioned model and was, when necessary, defended also by Budja.

We have had several discussions regarding this issue. The first discussion was public and happened at the Biotechnical Faculty of the University of Ljubljana, within the presentation of dendrochronology in Slovenia, where Budja expressed a very negative opinion regarding such interpretation, as if to say that Professor Bregant had published a different explanation several times previously. Other discussions happened privately at the Department of Archaeology, where my dissertation was being evaluated. At the end, we came to the conclusion that neither I nor he lived in the period of settlement of Maharski prekop and that the interpretation can be based solely on those conclusions that are gathered in the present.

Despite the non-agreement with the arguments about the architecture, a few years later, in 2006, an interpretation of the plan of Maharski prekop appeared in which three authors, (besides Mihael Budja and Dimitrij Mlekuž also Nives Ogrinc) present the “new” finding, which agrees with that from my dissertation and other publications that followed;<sup>33</sup> all of this was without any citation, which is, put mildly, unjust. Similar events happened prior to this example,<sup>34</sup> when data from my master’s degree thesis were clearly intentionally withheld.<sup>35</sup> It was most definitely intentional, because despite several warnings,<sup>36</sup> such instances repeatedly occurred. The last time this was presented was in the article from 2012, where Figure 8 (*Fig. 1b*) presents the quantity arrangement of pottery finds in squares.<sup>37</sup> It reads: “*Additionally, around 224 kg of pottery were collected at the site*”.<sup>38</sup> Where did they get this amount? In my dissertation, and I assert that I am the only one who ever weighed the pottery from Maharski prekop, I mention “*approximately 220 kg of pottery*”.<sup>39</sup> Regardless of the fact that the result from Figure 22 in the dissertation (see *Fig. 1a*), which should have been cited by the article authors, is simply a rough estimate and thus not probable to be repeatable, I recommend that kilograms from *Figure 1a* be added and one should

<sup>26</sup> Velušček 2001, 78.

<sup>27</sup> See Bregant 1974b, 52; 1975, 43; Velušček 2001, Fig. 29.

<sup>28</sup> See Bregant 1975, 43.

<sup>29</sup> E.g. Bregant 1974b, 52, 54.

<sup>30</sup> See Velušček 2006a.

<sup>31</sup> Velušček, Čufar, Levanič 2000.

<sup>32</sup> Velušček 2001, 75–77.

<sup>33</sup> See Velušček 2001, 75–77, Fig. 23; id. 2004a, 77; id. 2005, 202.

<sup>34</sup> See maps with marked sites in Mlekuž 1999, Figs. 2, 9, 10, and cf. Velušček 1997, 51–104.

<sup>35</sup> See Velušček 1997.

<sup>36</sup> Velušček 2009a, 311.

<sup>37</sup> Mlekuž et al. 2012, Fig. 8.

<sup>38</sup> *Ibid.*, 330.

<sup>39</sup> Velušček 2001, 73.

create his or her own opinion about the source in Mlekuž et al. 2012, 330, and Fig. 8 (Fig. 1b).

Let us return to interpretations. In 2006, the aforementioned article was published, which deals with the site Maharski prekop.<sup>40</sup> The authors write about several building phases. The area was supposedly continuously settled for a very long period of time. The unusual architecture<sup>41</sup> acquired a regular rectangular shape.<sup>42</sup> Interpretations, including those that followed,<sup>43</sup> are more or less variations on the same subject and were so unusual that they triggered a lively discussion,<sup>44</sup> but one that evidently did not bear any tangible results. What is lacking, for example, is the explanation of why my research approach is false and narrow.<sup>45</sup> Thus, one would expect a strong critique of the article that I prepared together with Katarina Čufar for *Arheološki vestnik*, in which we present the results of archaeological-dendrochronological research at the site Maharski prekop and (for the first time) the newly-discovered finds from the settlements Strojanova voda and Gornje mostišče.<sup>46</sup>

The research results show that Maharski prekop was inhabited for a shorter period of time, around the middle of the fourth millennium BC,<sup>47</sup> which agrees with the relative chronology suggested over a decade ago.<sup>48</sup> In the article, we concluded, on the basis of pottery comparisons, that the settlements Strojanova voda and Gornje mostišče are older, while the dendrochronological research found that Spodnje mostišče is younger than Maharski prekop.<sup>49</sup>

These findings confirm the old thesis that prehistoric settlements on wet ground around Ig in the Ljubljansko barje are arranged from older towards younger in the direction from south to north, i.e. from the edge in the direction towards the centre of the Ljubljansko barje basin, and that the choice of location is causally connected to the roughly gradual shrinkage of the lake.<sup>50</sup> The southernmost location belongs to Resnikov prekop, the Sava group of the Lengyel culture, which is followed

by Gornje mostišče and Strojanova voda from the period of the Furchenstich pottery (Retz-Gajary), then Maharski prekop and Spodnje mostišče, the cultural group Stare gmajne (comparable with the development of the Baden culture), (see Fig. 3), while furthest to the north, in the direction from the east to the west, lie the pile-dwelling settlements of the third (Vučedol, Somogyvár-Vinkovci) and at least some possibly of the second millennium BC.<sup>51</sup>

We were pleased and, according to the experience from other sites on wet land along the Ljubljansko barje, not very surprised when we obtained the results of dendrochronological measurements for the settlement of Strojanova voda, which determined that the most recent building activity at Maharski prekop; can be expected that soon after the settlement was abandoned – dates to 3550 ± 10 cal BC<sup>52</sup> and is approximately 35 years older than the dendrochronologically confirmed earliest building activity, which marks the beginning of the settlement.

As one can imagine a similar satisfaction must have been felt by the researchers when they received the results of the radiocarbon measurement of the organic residue age from the pottery from Maharski prekop, especially when compared to the older data.<sup>53</sup> Thus, at the first glance, the new evidence supporting the thesis about the long-lasting settlement of the archaeological site Maharski prekop seems fairly convincing. However, in order to understand the settlement chronology not only for the Ljubljansko barje, as is believed by Mlekuž et al.,<sup>54</sup> but also for the rest of Slovenia and beyond, the new data and interpretation must be placed in space and time, and their interpretative value must be verified. This is the *de facto* content of this article.

#### THE ARCHAEOLOGICAL SITE MAHARSKI PREKOP “IN CONTEXT”<sup>55</sup>

In the introduction to the article *Houses, pots and food: the pottery from Maharski prekop in context*, which was published in English in *Documenta Praehistorica* 39 (2012, 325–338), its authors

<sup>40</sup> Mlekuž, Budja, Ogrinc 2006.

<sup>41</sup> See Bregant 1996, 30; Budja 1994, 169–175.

<sup>42</sup> Mlekuž, Budja, Ogrinc 2006, Fig. 7.

<sup>43</sup> See e.g. Budja, Mlekuž 2008a; 2008b.

<sup>44</sup> Velušček 2007; 2009a; Andrič 2009; Verbič 2011.

<sup>45</sup> See Budja, Mlekuž 2008a, 367, 368.

<sup>46</sup> Velušček, Čufar 2008.

<sup>47</sup> See *ibid.*, Fig. 7.

<sup>48</sup> Velušček 2001, 96.

<sup>49</sup> Velušček, Čufar 2008.

<sup>50</sup> See Ložar 1942, 90.

<sup>51</sup> See Velušček, Čufar 2008, Fig. 5.

<sup>52</sup> Čufar, Velušček, Kromer 2013, Fig. 1.

<sup>53</sup> See e.g. Mlekuž, Budja, Ogrinc 2006, Tab. 1.

<sup>54</sup> Mlekuž et al. 2012, 328.

<sup>55</sup> After Mlekuž et al. 2012, 325.

Dimitrij Mlekuž, Andreja Žibrat Gašparič, Milena Horvat and Mihael Budja first briefly present the chronology of archaeological research at the site Maharski prekop. They neglect to mention the research carried out in 2005, the goal of which was to acquire the wood for dendrochronological research. This data has been published several times, including in *Arheološki vestnik*<sup>56</sup> and the *Journal of Archaeological Science*.<sup>57</sup>

Let us first pause at the plan orientation of the pile-dwelling settlement Maharski prekop in Mlekuž et al. 2012, where one can see an incorrect in Figs. 4 to 8 from the year 2012 (e. g. *Fig. 1b*), while for example on *Fig. 22* from my dissertation<sup>58</sup> (*Fig. 1a*) a correctly oriented plan is given. Interestingly, until 2006, the idea was different,<sup>59</sup> yet today the so-called “new” orientation even appears at exhibitions.<sup>60</sup>

The chapter “*Spatial organisation*” (ibid., 329–331), which presents the already published statement<sup>61</sup> that the mean value of vertical piles diameter is 5.8 cm, in fact greatly differs from comparable values for other pile-dwellings at the Ljubljansko barje and range between 8 and 10 cm.<sup>62</sup> The questions remain: how was this data acquired and how reliable is it? Piles with such size must mean something. It can be hoped that the explanation is not sought in the same direction as was done in the case of Resnikov prekop, which soon proved to be complete conjecture.<sup>63</sup> Let me here just add that the mean value for 234 randomly collected pile samples in 2005 from the area previously researched by Bregant and which include both, the supporting piles of buildings and the piles of the palisade, amounts to **8.9 cm**.<sup>64</sup>

The same chapter also features the following finding: “*Most of the houses are oriented with the*

*longer side parallel to the channel*” (ibid., 329), which can be taken as the support of the statements: “*Maharski prekop was located next to an active channel*”, written in the chapter *Maharski prekop* on p. 326, and “[...] *which supports the evidence of the active paleochannel associated with the site*”, from the discussed chapter on p. 330.

Firstly, let me unequivocally state that this is not true. At Maharski prekop, the majority of buildings were constructed in the southwest-northeast direction, occasionally with a slight bend, the direction which is prevalent at the pile-dwelling settlements of the Ljubljansko barje,<sup>65</sup> while some buildings follow the line of the palisade or wooden fence or “*a revetment that protected the site from bank erosion*”.<sup>66</sup> The authors of the discussed article correctly state that one of the buildings was oriented completely differently.<sup>67</sup> They believe that the buildings’ orientation parallel to the channel can be evidence for the coexistence of the settlement and the channel, in which the water once ran pass the site and for a shorter period of time, and happens until this day with appropriately high water. The profiles published by Bregant<sup>68</sup> show that the channel is not contemporaneous with the settlement and thus the question is posed of whether they allow for the possibility that the causality between the settlement and the channel may be apparent. Considering the aforementioned prevailing orientation of rows with piles at the other pile-dwellings of the Ljubljansko barje, the answer should be affirmative. That the settlement is older than the channel is believed by Tomaž Verbič and is illustrated by a conceptual stratigraphic sedimentological model for the formation of the sedimentary environment near Maharski prekop.<sup>69</sup>

On p. 329, we read: “*Based on relative height of the piles, we can divide the settlement into two building phases*” (see *Fig. 4*). It is true that in the

<sup>56</sup> Velušček 2007, 428; Velušček, Čufar 2008, 48.

<sup>57</sup> Čufar et al. 2010.

<sup>58</sup> Cf. e.g. Bregant 1996, 27.

<sup>59</sup> See Mlekuž, Budja, Ogrinc 2006, Figs. 5–9.

<sup>60</sup> What is worrying is the fact that we can also find the same erroneous orientation on the model of the excavation plan of the pile-dwelling settlement Maharski prekop, which is presented at the exhibition *Kolo/Wheel 5200 let/years*, opened in May 2013 in the Mestni muzej (City Museum) in Ljubljana.

<sup>61</sup> See Mlekuž, Budja, Ogrinc 2006, 259.

<sup>62</sup> See e.g. Velušček, Čufar, Levanič 2000, Diagram 1; Čufar, Velušček 2004, Fig. 6.2.2; Velušček et al. 2004, 43; Čufar, Korenčič 2006, Tab. 1; Čufar et al. 2009, 180, 194–195; Gaspari et al. 2009, Tab. 6.1.

<sup>63</sup> See Budja 1994, 167–169, and cf. Velušček 2006a.

<sup>64</sup> Katarina Čufar, personal conversation.

<sup>65</sup> E.g. Bregant 1964, Insert 1; 1996, 27; Harej 1978, Ground plan; 1981–1982, Insert 1; 1987, Insert 1; Velušček, Čufar, Levanič 2000, Fig. 8; Velušček 2001, Fig. 23; Velušček 2006b, Fig. 5; Gaspari et al. 2009, Fig. 6.3; Velušček, Toškan, Čufar 2011, Fig. 8; Šinkovec 2012, 254–255.

<sup>66</sup> Mlekuž et al. 2012, 326; see also Velušček 2001, 76.

<sup>67</sup> See also Mlekuž, Budja, Ogrinc 2006, 260, Fig. 7.

<sup>68</sup> See Bregant 1974a, Insert 1: northern profile of square VIII, southern profile of squares III and IV, southern profile of squares VI and VII; 1974b, Insert 1: northern and southern profile; 1975, Insert 3: northern profile of square XV etc.

<sup>69</sup> Verbič 2011, 92, Fig. 4; see also Velušček 2009a, 305, Fig. 3.

documentation of the excavations at Maharski prekop and in the published sources<sup>70</sup> data can be found about the vertical pile height, yet there are few that reveal when an individual pile actually first appeared. While such data, with margins of error of up to one centimetre, are available for piles from the trenches at Resnikov prekop (trenching in 2002),<sup>71</sup> Blatna Brezovica (trenching in 2003), Hočevarica (trenching in 1998), and Stare gmajne (trenching in 2002, 2006, and 2007),<sup>72</sup> these do not exist for Maharski prekop. Assuming that the authors are not concerned about at what point the pile heights were measured, thus I conclude that they did not consider that in their interpretation. The important fact for them was that the data about the heights exist; unfortunately, however, they mislead the expert public with this notion. Let us examine their interpretation on *Figure 5b* and compare it with raw data about the pile heights from square 14 at Bregant (*Fig. 5a*). In the majority of cases, the heights of piles are not recorded in square 14, not even in the original documentation, the copy of which is kept at the Institute of Archaeology ZRC SAZU. Pile height data also are insufficient for square 13 (see *Fig. 6c*), as well as for squares 11, 12, 15, 72, 73 etc.<sup>73</sup> In contrast, certain heights, which in fact are given, are not considered in the interpretation, such as for squares 9, 10, and especially 15.<sup>74</sup> Even more problematic is the content of the interpretation of the pile height, revealed by *Figure 4*, since on the basis of this the authors substantiate the two-phase intensive settlement, the so-called “Old phase” and “New phase”.<sup>75</sup> For example, in square 13 piles with heights from **289.33 to 289.52 metres** signify the younger phase of intensive settlement; elsewhere, for example in the nearby square 35, piles with heights from 288.87 to **289.45 metres** mark the older settlement phase (*Fig. 6a–d*; see also *Fig. 4*). For the younger generation of Slovenian experts of “modern” landscape archaeology, let me state a few more similar examples from, for example, squares

18,<sup>76</sup> 21,<sup>77</sup> 23,<sup>78</sup> 30,<sup>79</sup> and 39,<sup>80</sup> which should be compared to the data from *Figure 4*.<sup>81</sup> I must admit that on the basis of such a collection of data the interpretation of heights in Mlekuž et al. 2012, to me seems increasingly unclear. Let me summarize with a phrase: “Garbage in, garbage out”.<sup>82</sup>

However, it does seem possible to search for the reasons for different pile heights (if we believe that they were measured at the point where the pile first appeared) in the inappropriate method of excavation for the pile-dwelling settlement used decades ago; however, the authors of the discussed study do not offer this as an option. For the excavation methodology used, I present the statement of the excavator Janez Dirjec,<sup>83</sup> who was part of the field research at Maharski prekop, in fact one of the key participants since he had done most of the digging, while others examined the dug-out cubes on the surface by the excavation field. Slices were dug 30 cm thick (i.e. the length of the shovel); regarding volume these were cubes (30 × 30 × 30 cm), where presumably the fractures of vertical piles had occurred.

The following also calls for a comment: “*When the superstructure was destroyed (either by fire, flood or decay), only parts of the posts below the occupational surface survived*” (ibid., 329). In certain cases this statement could be true while in others it is completely implausible; thus, one should take care with its application. As an argument, I present the photo of a contemporary pile-dwelling settlement by the lake Nokoué in Benin in western Africa (*Fig. 7*) which does not require additional comment. The caption to the photo states that the conservation of the abandoned wooden building elements directly depends on water surface fluctuations, strength of undulation, and water current.<sup>84</sup>

In an article from almost twenty years ago, in which Budja discusses the settlement in the area of the sites Resnikov and Maharski prekop, it is

<sup>70</sup> E.g. Bregant 1975, Insert 3.

<sup>71</sup> Velušček 2006b, Fig. 5.

<sup>72</sup> Archives of the Institute of Archaeology ZRC SAZU.

<sup>73</sup> See Bregant 1974b, Insert 1: XI, XII; 1975, Insert 3: XV; for squares LXXII and LXXIII the data is unpublished, a copy of the original documentation is kept at the Institute of Archaeology ZRC SAZU.

<sup>74</sup> Cf. Bregant 1974b, Insert 1: IX, X; 1975, Insert 3: XV.

<sup>75</sup> Mlekuž et al. 2012, Fig. 6.

<sup>76</sup> Bregant 1975, Insert 3: XVIII.

<sup>77</sup> Ibid., Insert 3: XXI.

<sup>78</sup> Ibid., Insert 3: XXIII.

<sup>79</sup> Ibid., Insert 4: XXX.

<sup>80</sup> Ibid., Insert 4: XXXIX.

<sup>81</sup> Data about the marking of squares available on *Figure 1b*.

<sup>82</sup> <http://oxforddictionaries.com/definition/english/garbage?q=Garbage>.

<sup>83</sup> I thank Janez Dirjec for the information about the excavation methodology at Maharski prekop between 1972 and 1977.

<sup>84</sup> Pétrequin 1997, 104.



stated that the flowing water dangerously approached the latter in the last phase of the then three-phase settlement,<sup>85</sup> which is chronologically close to Parzinger's two horizons and also the closest to the end of the younger phase of the intensive settlement, according to Mlekuž et al. 2012. With even a glimpse at *Figure 4*, the explanation becomes complicated, since we discover that the settlement of Maharski prekop was, in the period of the last phase of intensive settlement, without a "revetment", which was made of thinner piles and that, derived from the written above, an incomprehensible finding that demands clarification. Generally, the aforementioned structure was supposedly built to protect the settlement from flowing water (see *ibid.*, 330), which ceased to endanger the site no sooner than in the third millennium BC. On p. 326, the authors of the article suggest that: "The organic infill of the palaeochannel that runs parallel to the site dates the silting up of the channel to 2833–2466 calBC, attesting that the channel was abandoned before that date".

Therefore, when did the running water flow pass the settlement and from when on the "revetment", which protected the settlement from water? From *Figure 4* and on the basis of the conclusion to the contemporaneity of the "revetment", and the channel with flowing water (*ibid.*, 330), we can assume that the "revetment" already existed in the period before the beginning of the younger intensive settlement phase, which is proven by the piles with lower absolute heights. Among them, there are some exceptions in square 4 with measured higher absolute heights (*Fig. 4*), which indicates that the shorter section of the "revetment" was built or repaired in the period of the younger intensive settlement phase. On *Figure 4*, there is also a third group, which was left chronologically undefined even though heights are frequently written along the piles, which is especially evident from square 15.<sup>86</sup> On the basis of such conclusions, we can thus assume that around 3550 cal BC the settlement was protected by a "revetment", built from up to 850-year-old piles, i.e. from the period around 4400 cal BC. It is nonsense, even though not new.<sup>87</sup> Moreover, the above stated brings us to a clear conclusion that there must be something entirely wrong with such an interpretation of pile heights.

Highly unusual but in accordance with the palisade or "revetment", interpretation is also the reconstruction of the ground plans of houses if connected to two phases of settlement (i.e. "Old phase" and "New phase") at the Maharski prekop site, which the authors take from the article from 2006.<sup>88</sup> Even at that time, that article required a detailed analysis due to the fact that several findings are questionable, but let us now review some segments. On *Figure 5* (*ibid.*, 330), circles representing vertical piles are connected. Thus, they created rectangle that supposedly presents the ground plans of individual buildings. Let us take a house from *Figure 8a* as an example where, under no. 4, a rectangular ground plan of a building of approximately 12 × 5 m is shaded (see also *Fig. 1b*). The first problem arises on the following p. 331, where we can see from *Figure 8b* that the ground plan is actually composed of two parts: the older one (between 4400 and 4000 cal BC) at the north-eastern side and with a prolonged western line of piles (*Fig. 9c*), and the younger one (between 3800 and 3550 cal BC) at the south-western side (*Fig. 9d*) with piles in two rows reaching just over one half of the ground plan length of house no. 4, which is, as is written, approximately at least two hundred years younger than the older part of the building.<sup>89</sup> According to what had been already discovered regarding the "revetment", the explanation comes to mind that the prehistoric inhabitants of Maharski prekop added another two shorter rows to the old part of house no. 4 which had a prolonged western row of supporting piles, thus acquiring a new, spacious building made of new, yet also at least approximately two-hundred-year old piles, (*Fig. 9a*). It is disturbing that it needs to be stated that such a deduction concludes the archaeological interpretation and begins theorizing devoid of any meaning.<sup>90</sup>

The dispersion of archaeological finds along the site is explained in a similar manner:

"Concentrations of stones are another common feature of the site [...] Stones form distinctive clusters or features that were commonly found at the peripheral ends of houses. Stones were sometimes distributed along lateral rows of piles and are often associated with lenses of charcoal, indicating that they could

<sup>85</sup> Budja 1994, 170–173, 174.

<sup>86</sup> See Bregant 1975, Insert 3: XV.

<sup>87</sup> Cf. Budja 1994, 173.

<sup>88</sup> Mlekuž, Budja, Ogrinc 2006, 260, Fig. 7.

<sup>89</sup> Mlekuž et al. 2012, 328.

<sup>90</sup> Data about the duration of the use of pile-dwelling houses at the Ljubljansko barje can be acquired from e.g. Velušček, Čufar, Levanič 2000.

be interpreted as remnants of thermal structures”, where the authors rely on Bregant (ibid., 330). On p. 328 they write: “It appears that the site was settled for a much longer period, had distinct phases of occupation, and shows traces of earlier visits or activities”, and elsewhere on p. 326 and 328: “[...] a period of intensive occupation dating between 4400 and 4000 calBC, and a second occupation period between 3800 to 3550 calBC” etc., which basically claims that Maharski prekop was for settled for a long time or twice intensely settled. Then, to which period of the intensive settlement do stones, around which charcoal etc. can be found, belong? I do not believe (and hope that they do not either) the statement from p. 331: “At long-term settlements, we cannot assume any direct relation between structural remains and artefact distribution.” With this kind of thinking, the debate about the distribution of finds at the archaeological site seems imaginary and absurd: “The distribution of pottery at Maharski prekop is clustered. We can observe at least three distinct concentrations: one in the paleochannel in the southern part of the site; in the central part of the site; around old phase house 1 and between new phase houses 2, 4 and 5” (ibid., 331). Specifically, it is evident that they mix the vertical stratigraphy, about which they explicitly state: “Therefore, the stratigraphic position of artefacts within the ‘cultural layer’ is lost, compelling us to treat the artefacts as only a single spatial distribution over the site” (ibid., 330) and publish the settlement plan with piles of various heights, on the basis of which they recognise two intensive settlement phases (Fig. 4), and horizontal stratigraphy. What could have made the carriers of the younger intensive settlement to leave the space of the “old” no. 1 house empty? Were they bothered by the remains of the old building? Or am I to accept the thesis that the space was occupied by the several hundred years old and possibly still usable wooden house, which obviously had to be erected in a wet environment, which is true also of all other organic remains at the site, otherwise they would not have been preserved?

Within the framework of long-lasting settlement of the site Maharski prekop, the discussion of functional pottery groups (see Fig. 10), which belongs to the category of chronologically more indicative artefacts from the site Maharski prekop, is similarly problematic. I have already written about the origin of a few fragments typologically comparable to the finds of Resnikov prekop,<sup>91</sup> and

I will not dwell on them anymore. The question where the groups of vessels from Figure 10, which were functionally classified for the sake of analysis, and are labelled as “Typical vessels from each defined use group from Maharski prekop” (ibid., 336) belong is more important: 1) to the older (4400–4000 cal BC), or 2) the younger (3800–3550 cal BC) phase of intensive settlement, or 3) perhaps to none of them? On the basis of the published functionally-typological groups on Figure 10, it is not difficult to establish that we are dealing with the time frame of the Baden culture, which is not new.<sup>92</sup> Budja’s belief was once also similar, at least approximately so.<sup>93</sup>

The most important and at the same time the most interesting part of the discussed subject are most definitely the radiocarbon dates, on which the entire thesis about the settlement and age of Maharski prekop argued by the authors in the article is based. It seems that they are not completely aware what such interpretations entail, even though on p. 328 they briefly also debate the consequences. Data are clearly important in their opinion since they state them several times (Mlekuž et al. 2012, Table 1 and Figures 2, 3), as do their colleagues in the article following theirs.<sup>94</sup>

In Table 1, 35 radiocarbon dates are given: 22 acquired with the measurement of organic remains on pottery, five times the wood is dated or wooden piles are dated and six are dates of animal bones. The datum with laboratory mark AA–27182 was acquired with the dating of charcoal from profile MP1 in the ditch, at the depth of 63–61 cm.<sup>95</sup> The datum with laboratory mark Z–353 was acquired on the wood sample from test trench 4, which was set closer to the site of Strojanova voda (see Fig. 3); therefore we first need to answer the question of to which site it actually belongs.<sup>96</sup> The thesis that Maharski prekop is a part of some larger but dispersed settlement<sup>97</sup> is still completely without any proof, both dendrochronologically and classically archaeological.<sup>98</sup>

On p. 326, they discover on the basis of radiocarbon dates that: “A new series of direct dates of pottery significantly contributes to the chronology

<sup>92</sup> After Parzinger 1984, Tab. 4; Velušček 2004c, Tab. 5.3.1.

<sup>93</sup> Budja 1983, 81.

<sup>94</sup> Ogrinc et al. 2012, Fig. 1; Tab. 1.

<sup>95</sup> After Budja, Mlekuž 2008a, Tab. 1.

<sup>96</sup> See Bregant 1975, 10–11, Insert 1 and Velušček, Čufar 2008, Fig. 3.

<sup>97</sup> See e.g. Mlekuž, Budja, Ogrinc 2006, 261.

<sup>98</sup> Cf. Velušček, Čufar 2008; Velušček 2009a.

<sup>91</sup> See footnote 27 and e.g. Velušček 2009a, 310.

of the site”, while they believe on p. 328 that: “Therefore, new chronological sequence for Maharski prekop also has implications for the chronology of the microregion, as the gaps in the chronology are filled.” Can these statements be believed? From what was written, it is clear that this is a belief and a decision, not supported by the power of evidence. Yet science is based on and develops solely on the power of facts and arguments, of which in the discussed writings we see few, at least those facts and arguments that convince.

Be as it may, I cannot comment on the correctness of dates since I believe in the accurate and professional work of laboratories;<sup>99</sup> moreover, I do not have any information to the contrary. I will, however, discuss the actual dates of organic residue from pottery from Maharski prekop: how were they defined or what was actually dated? It is not totally clear from the content of two articles<sup>100</sup> whether these are always remains of food or possibly some other organic residue, which can be problematic<sup>101</sup> and in the case of the discussed dates possibly even the key question. Ogrinc et al. 2012 writes that: “We selected 20 pottery fragments for a pilot chemical study encompassing lipid distribution including fatty acids, stable isotope composition [...] and the di- and triacylglycerols distribution of organic residues [...] Within the assemblage, three samples (MP85, MP158A and MP181) were obtained from charred organic residues from vessel surfaces.”<sup>102</sup> Two of these samples (MP85 and MP181) do not have radiocarbon dates,<sup>103</sup> while with the third (MP158A) the date points to the time 4860 ± 40 BP or 3710–3527 cal BC.<sup>104</sup> Organic residue from seventeen pottery fragments were also dated, on which a study of lipids was performed, i.e. residue of fats.<sup>105</sup> The authors of the discussed article in one instance write that “food residue” (ibid., Table 1) is dated, while elsewhere “organic residues”<sup>106</sup> or “charred organic deposits”<sup>107</sup> or “carbonised food/organic residues” are mentioned (ibid., 328).

<sup>99</sup> Here I have in mind laboratories in Poland (Poz-) and USA (AA-, Beta-).

<sup>100</sup> See Mlekuž et al. 2012, and Ogrinc et al. 2012.

<sup>101</sup> See Žibrat Gašparič 2008.

<sup>102</sup> Ogrinc et al. 2012, 340.

<sup>103</sup> Ibid., Tab. 1.

<sup>104</sup> See Mlekuž et al. 2012, Tab. 1; Ogrinc et al. 2012, 341, Fig. 1; Tab. 1.

<sup>105</sup> See Ogrinc et al. 2012, Tab. 1, and cf. Mlekuž et al. 2012, Tab. 1.

<sup>106</sup> Ogrinc et al. 2012, 340.

<sup>107</sup> Ogrinc et al. 2012, Fig. 1.

Why do they not explain precisely what was sent for dating? Why are such important fragments not published so that the expert public could form an opinion about the illustrative value of the presented dates? In this way, even those things that could have value lose it since they create a manipulative environment, which is probably a reflection of the distrust of their own research. To summarise, a transparent connection between the shapes of vessels and radiocarbon dates, which is crucial, is lacking in the article.

Let me bring attention to the fact that there is an enormous discrepancy between the results of different research approaches,<sup>108</sup> which is the consequence of almost complete disregard of several groups of base data, key to the understanding of the archaeological site Maharski prekop, and this is not the first time this has happened. Here I will mention the rock-shelter Pod Črmukljo, where Budja believes that pottery was found in a pure Mesolithic context and from this source hinted at the obvious contemporaneity.<sup>109</sup> Today, when the pottery is published (in reality a photo with all the pottery from the layer with Mesolithic finds and additionally a photo and drawings of vessel fragments made on the potter’s wheel),<sup>110</sup> it will be difficult to persuade the expert public, which is familiar with the assumption that his conclusions are accurate.

Another example of setting a thesis on the basis of one set of analyses while disregarding all others is the dating of “burials” in Ajdovska jama, where they had, despite fairly homogenous pottery,<sup>111</sup> reached the conclusion that bodies were laid on the cave floor in the period 6400 to 5300 cal BP.<sup>112</sup> This unusual finding, especially when a team includes an archaeologist, nevertheless encouraged other researchers and led to a positive solution, i.e. the direct dating of human bones.<sup>113</sup> The result was expected since the deposition of the dead to their eternal rest narrowed to the period around 4300 BC that most probably did not exceed one generation or even less.<sup>114</sup>

An almost textbook example of interdisciplinary study is also connected to Ajdovska jama, which

<sup>108</sup> Cf. e.g. Velušček, Čufar 2008; Velušček 2009a; Mlekuž et al. 2012.

<sup>109</sup> Budja 1996, 325–326.

<sup>110</sup> Velušček 2007, Figs. 2, 4, 5.

<sup>111</sup> See Velušček 2006b, 59.

<sup>112</sup> After Ogrinc, Budja 2005, 105, 113.

<sup>113</sup> Bonsall et al. 2007, 731–732.

<sup>114</sup> Ibid., 734.

was led by Slovenian researchers and performed as it should. Alojz Šercelj, when determining the plant residue from the Palaeolithic site Divje babe I, also recognised a charred barley grain, which would, if it had truly originated from the Palaeolithic layer, presented something incredible, a sensation in the world of archaeology.<sup>115</sup> Therefore, Ivan Turk, the leading researcher of the cave, sent the grain to Canada for AMS dating; the results showed that the questionable find belongs to the Eneolithic.<sup>116</sup> A true scientific approach refuted any doubt about the grain's age. Furthermore, Šercelj then figured that there must have been an unintentional mixing with the samples from Ajdovska jama, since he had been working with them one day before those from Divje babe. Such scientific correctness requires honesty towards oneself and others and openness for scientific criticism.

As mentioned before, the discussed article lacks a critical view of the new group of radiocarbon dates. It seems that the authors treat it similarly as Bregant, when she received radiocarbon dates from the laboratory in Zagreb and decided to ignore them in her interpretation,<sup>117</sup> by ignoring or manipulating everything that was discovered at Maharski prekop until "their" radiocarbon dates, as long as it fits the chosen thesis. If we can understand the procedures of Bregant in the context of time, their actions are incorrect and as such scientifically totally inadmissible.

Let us again stop at the number of radiocarbon dates. In Table 1 (ibid., 327), 33 or 34 samples, if we add the dated charcoal to the site (AA-27182), are presented from the site. As mentioned before, the sample from test trench 4 (median: 2991 cal BC) does not belong to the discussed site. While their analysis, as can be seen from Figure 3 (ibid., 328), includes only 27. Why this number and which of the samples were chosen is not explained. From these six dates of organic residue on pottery, the median value fluctuates from 4327 to 4016 cal BC. Seven dates point to the time between 4400 and 4000 cal BC at 2-sigma; therefore, a reader is surprised to see on p. 328 that: "[...] at least 14 of the new dates obtained from pottery fall into the period between 4400 and 4000 calBC". With eleven samples, the median value reaches between 3782 and 3563 cal BC. In the continuation, in this manner they bring acquired hiatuses on the curve

to two intensive settlement phases: "The sum of distribution of AMS radiocarbon dates demonstrates roughly a bimodal distribution of probabilities, with a period of intensive occupation dating between 4400 and 4000 calBC, and a second occupation period between 3800 to 3550 calBC" (ibid., 326, 328). The following statement is entirely incorrect: "The oak chronology of 173 years from Maharski prekop is dated between 3661 and 3489 calBC [...] This corresponds well with the second concentration of radiocarbon dates presented above and indicates a period of intensive building and other activities at the site" (ibid., 328).

I will emphasize that **for the chronology of settlement at Maharski prekop the only relevant dates are those of tree felling and not the periods of tree growth, which all belong to the time significantly later than in the discussed article second intensive settlement phase, after 3550 cal BC,**<sup>118</sup> and certainly better correspond to dates around 3500 cal BC, which are in Table 1 with range 2-sigma thirteen.<sup>119</sup> From these five examples are dates of organic residue from pottery, five examples are dates of animal bones, two are dates of wood, and one of charcoal residue. Besides the above stated median values from 4327 to 4016 and 3782 to 3563 cal BC, 16 samples with median values: 5523, 3547, 3543, 3543, 3511, 3495 (bone), 4612, 3990, 3868, 3464, 2406 (organic residue on pottery), 3872, 3477, 3392, 3011 (wood), and 3463 cal BC (charcoal) are also dated from Maharski prekop. The key conclusion for the understanding of these data is yet to follow: "The intriguing older dates from Maharski prekop testify to sporadic activities at the site before the intensive occupation period between 4400 and 3550 calBC. Thus, one sample of animal bone yielded a date 5615–5475 calBC, which makes it contemporaneous with the date of a Mesolithic site at the Breg pri Škofljici (5843–5307 calBC). Additionally, one date of charred food/organic residues on pottery (4708–4502 calBC) is roughly contemporaneous with the dates from Resnikov prekop [...] As already mentioned, the radiocarbon date of the organic infill of the palaeochannel (2833–2466 calBC) indicates the terminus ante quem for the palaeochannel located next to the site, suggesting that the palaeochannel silted up before that date. One

<sup>118</sup> See and cf. Velušček, Čufar 2008, Fig. 7.

<sup>119</sup> Laboratory nos. of AMS dates: Poz-48521, -48520, -48661, -48659, -48518; Beta-219610, -219611, -219606, -219607, -219608; AA-27182; and two conventional dates: Z-315, -278 (after Mlekuž et al. 2012, Tab. 1).

<sup>115</sup> Ivan Turk, personal conversation.

<sup>116</sup> Turk 1989, 56.

<sup>117</sup> Bregant 1975, 49.



*date of carbonised food/organic residue on pottery from Maharski prekop comes immediately after this event, suggesting sporadic activities continued after the abandonment of the site*" (ibid., 328). What catches the eye is that at first they define two intensive settlement phases between 4400–4000 and 3800–3550 cal BC (ibid., 326, 328), and then they continue with one intensive phase between 4400 and 3550 cal BC (ibid., 328). An approximately two hundred years hiatus ("*These two concentrations are separated by a gap of around 200 years after 4000 calBC*" (ibid., 328)) was thus obviously forgotten on the same page.

Further on, the authors claim that two older dates (median: 5523, 4612 cal BC) prove sporadic activities at the site, which supposedly happened also in the third millennium (ibid., 328), in the period of Deschmann's pile-dwellings, which assigns to them the date with a median of 2406 cal BC (Poz-48519).

Let me remind you that the latter assumption is not new, since it was similarly explained by Bregant on the basis of few pottery fragments.<sup>120</sup> On the basis of the data presented, it is difficult to debate the actual interpretative value of the suggested radiocarbon data (Poz-48519), yet since it refers to the pottery typology the assumption of Bregant it certainly cannot hold true because for the chronologically indicative pieces, analogies can be found within the circle of cultures of the fourth millennium BC.<sup>121</sup> Simultaneously, we can ask ourselves what does, in the framework of "*sporadic activities*", the date with median 3011 cal BC (Z-305) mean? Is this a "*sporadic activity*" that they had forgot to mention? How can they explain, for example, that the periods of these activities (median of three dates: 5523, 4612, 2406 cal BC) are significantly different regarding the intensity of settlement from the period between 4400 and 4000 cal BC, which is documented by six or seven<sup>122</sup> dates, the median value of which ranges from 4327 to 4016/3990 cal BC, and at range 2-sigma from 4366 to 3952/3811 cal BC. What is certainly interesting for the statistics in archaeology is the statement that one radiocarbon date per century, as is for example for the 47<sup>th</sup> century BC (median:

4612 cal BC), needs to be understood completely differently than six or seven dates dispersed over the period of four hundred years, between 4400 and 4000 cal BC, of which in the latter group dates even concentrates into three subgroups with medians: subgroup 1 (4327); subgroup 2 (4171, 4139, 4120, 4109), and subgroup 3 (4016/3990 cal BC).

## CONCLUSION

To conclude, I would like to return to the basic problem of the discussed article. From what is written, one can deduce that Maharski prekop was settled or that in the area of the site "*sporadic activities*" were detected at intervals from the middle of the sixth to the middle of the third millennium BC, only in the period documented by the building activities of the oak chronology (approx. between 3515 and 3490 ± 10 cal BC)<sup>123</sup> and (if ones wishes) in the period included by two of Parzinger's horizons (the middle and approximately second half of the fourth millennium BC)<sup>124</sup> the authors conclude that there was no settlement at Maharski prekop or as they write: "*The final spike after 3500 calBC can be attributed to a wiggle in the calibration curve between 3500 and 3400 calBC*" (ibid., 328).

With this kind of explanation, it is clear that any serious archaeological debate is rendered absurd. The already posed questions<sup>125</sup> regarding why organic residue was preserved reappears. What is the environment we are discussing: dry or wetland? Or the next nonsensical question about: what remains of wood in the wet Ljubljansko barje after more than two hundred years of use? Etc.<sup>126</sup>

Questions about pottery are also important. What are the characteristics of the pottery from Maharski prekop for the second half of the fifth millennium BC? What are the characteristics for the first half of the fourth millennium BC, like? Why do we find analogies with Hočevarica<sup>127</sup> and Strojanova voda<sup>128</sup> only in individual forms, qualities in pottery production, and almost none in the ornamentation? What about pottery, for which we

<sup>120</sup> See Bregant 1975, 43–45.

<sup>121</sup> See Parzinger 1984, 37–39, Taf. 2; 3; Velušček 2004c; Velušček, Čufar 2010.

<sup>122</sup> If we include in the group the date with median 3990 cal BC (Poz-48509: 5180 ± 40; range 2-sigma: 4219–3811 cal BC), (after Mlekuž et al. 2012, Tab. 1).

<sup>123</sup> E.g. Velušček, Čufar 2008; Čufar et al. 2010; Čufar, Velušček, Kromer 2013.

<sup>124</sup> See e.g. Parzinger 1992.

<sup>125</sup> See e.g. Velušček 2007, 426–429; 2009a, 309–315; Andrič 2009, 326–331.

<sup>126</sup> See e.g. Velušček 2009a.

<sup>127</sup> See Velušček 2004b, 228–230.

<sup>128</sup> See Velušček, Čufar 2008, 45.

find analogies on the sites of the second half of the fourth millennium BC at the Ljubljansko barje,<sup>129</sup> which, as the authors claim, have nothing in common with the settlement of Maharski prekop?

The answer is simple. They have introduced into the discussion a notion that they have no intention of clarifying or show the slightest effort that their writing from sentence to sentence: “A new series of direct dates of pottery significantly contributes to the chronology of the site [...] The sum of distribution of AMS radiocarbon dates demonstrates roughly a bimodal distribution of probabilities, with a period of intensive occupation dating between 4400 and 4000 calBC, and a second occupation period between 3800 to 3550 calBC [...] These two concentrations are separated by a gap of around 200 years after 4000 calBC” (ibid., 326, 328), [...] “Therefore, the stratigraphic position of artefacts within ‘cultural layer’ is lost, compelling us to treat the artefacts as only a single spatial distribution over the site [...] People tend to dump refuse some distance from where it was produced, and where others have previously dumped refuse, producing concentrations. The distribution of pottery at Maharski prekop is clustered [...] At long-term settlements, we cannot assume any direct relation between structural remains and artefact distribution” (ibid., 330, 331), figure to figure (cf. Figs. 8a and 8b) etc., is mutually supported. In short, the authors make a token acknowledgement of the expert literature, which will probably in the reply to this discussion paper receive further transformation, in the manner of already seen implausible and unsupported interpretations, which in the actual world cost the taxpayers a great deal of money.

A few days ago I walked along the Ljubljansko barje and took some, at least for me, shocking photos of how the Iščica is washing away the cultural layer of the Spodnje mostišče pile-dwelling settlement (Fig. 11). The cost of protection is minimal, certainly smaller than the means used by the authors of the discussed article for radiocarbon dating. I suggest that these funds in the future be intended for protection; otherwise, in the next few decades the discussion will only be able to run about something imaginary without any possibility to testing various theories in the field. Of course, the fact that this is a UNESCO world heritage site must also be considered.

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<sup>129</sup> E.g. Stare gmajne (Velušček 2009b) and Blatna Brezovica (Korošec 1963; Velušček 2009c); see also Parzinger 1984.