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BIKONIČNA POSUDA - KADA REKONSTRUKCIJA I ZAŠTO, A NA KRAJU I KAKO

A BICONICAL VESSEL - WHEN, WHY AND HOW TO UNDERTAKE A RECONSTRUCTION

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U ovom se članku razlaže kada i što rekonstruirati kada za restauraciju predmeta nisu udovoljeni minimalni osnovni preduvjeti koje nalaže struka. Prilikom rada na bikoničnoj posudi provedena je konzervacija i restauracija. Konzervacija je podrazumijevala dokumentaciju, analizu, čišćenje i stabilizaciju predmeta, a restauracija nadogradnju nedostajućih dijelova. Osnove restauracije keramike nalažu da se rekonstrukcija ne započinje prije prethodne konzervacije. Keramičke posude kojima nedostaje veliki dio (više od 60% cjeline) u teoriji se ne bi trebale podvrgnuti restauraciji, ali konzervaciji bi trebale. U ovom slučaju posuda je rekonstruirana u dogovoru s odgovornom kustosicom, zbog jedinstvenosti ornamenata i finoće te završne obrade keramike. Sama restauracija posude predstavljala je pravi izazov zbog njenog specifičnog oblika i ornamenata. U obradi rekonstruiranog dijela restauratorica je koristila suvremene alatke, te zbog toga nije bilo jednostavno "imitirati" ručni i detaljni rad prapovijesnog autora.

This paper discusses the issue of when and what to restore and when the minimum basic preconditions required by the profession for the restoration of an artefact have not been satisfied. Conservation and restoration were performed in the course of the work on a biconical vessel. The conservation process involved the documentation, analysis, cleaning and stabilisation of the artefact. Restoration involved rebuilding missing sections of the vessel. The basics of restoration mandate that reconstruction not be initiated prior to conservation. In theory ceramic vessels missing a significant portion (over 60% of the whole) should not be the object of a restoration effort, but should certainly be the object of conservation. In this case the vessel was reconstructed in consultation with a curator due to the unique quality of its ornamentation and the fineness of the pottery and its working. For the restorer the restoration of the vessel constituted a challenge. The specific form of the pot and its ornamentation were a challenge faced by the restorer. Given the fact that contemporary tools were used in the treatment of the reconstructed section it was difficult to "imitate" the handcrafted but detailed work of the prehistoric author.

KLJUČNE RIJEČI: prapovijesna keramika, čišćenje, konzervacija, konsolidacija, restauracija, rekonstrukcija

KEY WORDS: prehistoric pottery, cleaning, conservation, consolidation, restoration, reconstruction

U ožujku 2007. godine provedeno je ispitivanje statike zgrade Arheološkog muzeja Istre, koja se nalazi u Puli, na adresi Carrarina 3, a u tu je svrhu trebalo iskopati sonde uz zapadni i istočni kut južnog zida zgrade. Iako su istraživane površine bile vrlo ograničene, dobiveni su izuzetni rezultati. Na petoj razini najstarijeg kulturnog sloja u sondi iskopani su i istraženi mnogobrojni materijalni ostaci. Cijeli je istražen dio prostora bio prekriven ulomcima keramike, dijelovima grubih posuda, lonaca, pladnjeva, peka i sličnog. Takva keramika bila je upotrebljavana za pripremu hrane (Mihovilić 2011, 8). Iz pronađenih ulomaka bilo je moguće rekonstruirati posude različitih dimenzija, među kojima je i ona opisana u ovom radu.

Keramička, bikonična posuda s plastičnim meandrom na ramenu, oker smeđe boje, pronađena je u petom kulturnom sloju sonde. Visina rekonstruirane posude je 17 cm, promjer ušća iznosi 18,7 cm, a debljina stijenke je 0,7 cm. Inventarna joj je oznaka P-42158 (slika 1, 2



Sl. 1 Ulomci bikonične posude doneseni u konzervatorsko-restauratorsku radionicu AMI-ja (foto: A. Sardoz).

Fig. 1 Sherds of the biconical vessel brought to the AMI conservation and restoration workshop (photo by: A. Sardoz).



Sl. 2 Ulomci bikonične posude doneseni u konzervatorsko-restauratorsku radionicu AMI-ja (foto: A. Sardoz).

Fig. 2 Sherds of the biconical vessel brought to the AMI conservation and restoration workshop (photo by: A. Sardoz).

In the course of testing the structural statics of the building of the Archaeological Museum of Istria at No. 3 Carrarina street in March of 2007 trenches were excavated along the western and eastern corners of the building's southern wall. The excavation yielded exceptional results in spite of the very limited area under investigation. Numerous material remains were recovered from the oldest, fifth cultural layer in the excavated trenches and investigated. The entire investigated area was covered with potsherds, fragments of coarse ware, pots, platters, baking lids and the like. This pottery was used in food preparation (Mihovilić 2011, 8). Ware of varying sizes was reconstructed from the potsherds found, among which is the vessel described in this paper.

The ceramic, biconical vessel with a plastic meander on its shoulder, of ochre brown colour, was found in the fifth cultural layer of the investigated trench. The height of the reconstructed vessel is 17 centimetres, with a mouth diameter of 18.7 cm and a wall thickness of 0.7 cm. It carries the inventory code P-42158 (Figs. 1, 2 and 3). The potsherds were of interest due to the rotund form, with an inverted mouth, and due to the richly decorated motif on the vessel's shoulder. On its shoulder the vessel bears a decoration consisting of a ribbon with a plastic depiction of a dense oblique meander or linked swastikas. The motif is historically familiar, but usually executed in a simpler incising technique, with pseudo-ribbon impression, painting or, as done at Nesactium, by sculpting on monuments (Figs. 4, 5 and 6) (Mihovilić 2011, 24). On the sherds of this vessel the motif is executed in ribbon-like strips that were applied to the smoothed form of the biconical vessel. Two strips of protuberant and smoothed clay ribbons form the motif of an oblique meander or linked swastikas. Due to the singularity of these potsherds and their ornamentation it was decided in consultation with the responsible archaeologist, curator



Sl. 3 Plastični ornament meandra (foto: A. Sardoz).

Fig. 3 Plastic meander ornament (photo by: A. Sardoz).

i 3). Ulomci posude bili su zanimljivi zbog trbušastog oblika s uvijenim ušćem i bogatog motiva na ramenu. Motiv na ramenu izveden je trakama koje plastično prikazuju gusti kosi meandar ili povezane svastike. Motiv je već poznat u povijesti, ali obično je bio izveden u jednostavnijoj tehnici urezivanja, pseudovrpčastim utiskivanjem, slikanjem ili, kako je to u Nezakciju učinjeno, klesanjem na spomenicima (slike 4, 5, 6) (Mihovilić 2011, 24). Na ulomcima ove posude motiv je izveden od vrpčastih traka koje su naknadno dodane na zaglađeno bikonično tijelo. Dvije trake ispupčenih i zaglađenih glinenih vrpca tvore motiv kosog meandra ili povezanih svastika. Zbog posebnosti ovih ulomaka, u suradnji s odgovornom arheologinjom, kustosicom dr. sc. Kristinom Mihovilić, odlučeno je rekonstruirati cijeli lonac, iako se takva odluka kosi s osnovnim pravilima struke.



Sl. 4 Primjer ornamenta na kamenom spomeniku (foto preuzeto iz Mihovilić 2014., str. 342).

Fig. 4 An example of the ornament on a stone monument (photo from Mihovilić 2014, p. 342).

Nakon arheoloških istraživanja u konzervatorsko-restauratorsku radionicu Arheološkog muzeja Istre stiglo je ukupno šest ulomaka bikoničnog lonca. Ulomci, koji su činili otprilike trećinu posude, bez pripadajućeg dna, oprani su tekućom vodom i mekanim PVC četkicama. Nakon što se keramika osušila, utvrđeno je da na ornamentu ima zaostalih tvrdih nečistoća i naslaga koje se nisu mogle ukloniti pranjem. Odlučeno je ukloniti te nečistoće, jer je procijenjeno da će time ornament doći do punog izražaja. Nečistoću su uglavnom činile kalcifikacija i zemlja. Budući da je kalcifikacije bilo teško ukloniti s površine keramike i iz utora ornamenta, zbog njihovog čvrstog prijanjanja za površinu keramike, uklanjanje je provedeno uz pomoć stereo lupe i finih alatka, odnosno kirurškim skalpelima različitih dimenzija. Odlučeno je da je mehaničko čišćenje bolje, zbog veće mogućnosti kontrole postupka. U slučaju kemijskog čišćenja kontrola je slabija pa bi moglo doći do oštećenja površine keramike (slika 7). Nakon što su površina keramike i ornament na njoj očišćeni, provedena



Sl. 5 Primjer ornamenta na sličnim posudama (foto preuzeto iz Mihovilić 2014., str. 166).

Fig. 5 An example of the ornament on similar vessels (photo from Mihovilić 2014, p. 166).



Sl. 6 Primjer ornamenta na sličnim posudama (foto preuzeto iz Mihovilić 2014., str. 114).

Fig. 6 An example of the ornament on similar vessels (photo from Mihovilić 2014, p. 114).

Kristina Mihovilić PhD, that the entire pot should be reconstructed, bearing in mind that this decision runs against the basic rules of the profession.

Following the archaeological investigation a total of six sherds of the biconical pot were delivered to the conservation/restoration workshop of the Archaeological Museum of Istria. The potsherds, which comprised approximately one third of the vessel without the base, were washed in flowing water with soft bristled PVC brushes. Once the pottery had dried it was established that there were residual hard grime and deposits on the ornament that could not be removed by washing. Given that their removal would present the vessel's ornamentation in its full glory it was decided that the removal of the



Sl. 7 Ornamet s kalcifikacijama (foto: A. Sardoz).

Fig. 7 The ornament with calcification (photo by: A. Sardoz).

je konsolidacija 10-postotnom otopinom akrilne emulzije u vodi (Dispersion K 9) radi veće stabilnosti keramike. Konsolidans je kistom nanesen na površinu, a višak je uklonjen uz pomoć papirnatih ubrusa.

U razmatranju ulomaka i cjeline koju oni tvore (trećinu posude bez njenog dna), nametnulo se pitanje: rekonstruirati ovu posudu ili se držati pravila restauratorske struke? Naime, struka nam nalaže nekoliko pravila: poštivanje integriteta predmeta, odnosno poštivanje estetskog, povijesnog i fizičkog integriteta; princip reverzibilnosti – izbjegavanje upotrebe materijala koji mogu postati štetni i onih koji ne osiguravaju njihovo uklanjanje s povijesnog predmeta; prikladnost obrade predmeta – niti jedan postupak ne smije biti poduzet ako nije u najboljem interesu predmeta (Buys i Oakley 1993, 85–98). U slučaju ove posude upitno je pravilo integriteta: nedovoljno elemenata cjeline posude da bi se s apsolutnom sigurnošću moglo tvrditi kakav je bio njen originalni oblik. Nakon konzultacija s odgovornom kustosicom o toj problematici zaključeno je da se u ovom slučaju može zanemariti pravilo integriteta s obzirom na važnost

grime be undertaken. The grime consisted largely of calcification and soil. The calcification that had built up over time was difficult to remove from the surface of the pottery and grooves in the ornament as they were firmly stuck to the texture of the pottery and were, therefore, removed with the aid of stereo loupes and fine tools, i.e. surgical scalpels of various sizes, in order to not damage the surface and texture of the original pottery. It was decided that mechanical cleaning was the better option in terms of the possibility of controlling the operation. In the use of chemical cleaning there is a higher level of risk related to the control of the intervention, which could lead to the damaging of the ceramic surface (Fig. 7). Consolidation was performed once the surface of the pottery and the ornamentation on it were cleaned with the objective of improving the stability of the ceramic. The pottery was consolidated using an aqueous solution with 10% acrylic emulsion (Dispersion K 9) applied to the surface with a brush, with excess consolidant removed with the aid of paper towels.

predmeta i mogućnost povijesnih paralela. Jedinственost oblika posude, fina obrada, tekstura keramike i njena zaglađenost daju joj poseban izgled i istaknuto mjesto u Prapovijesnoj zbirci Arheološkog muzeja Istre. Kustosica je zahvaljujući poznavanju tipologije bikoničnih posuda priložila restauratorici crtež jedne bikonične posude koja je bila slična po dimenzijama. Uz pomoć tog crteža napravljena je rekonstrukcija cijele posude, uključujući i dno, koje je u potpunosti nedostajalo. Restauratorica je dala izdvojen osvrt na rekonstrukciju samog ornamenta, koji posudu i čini posebnom.

Ulomci keramike zalijepljeni su reverzibilnim nitroceluloznim ljeplivom (Mecosan L-TR). Kada se ljeplivo osušilo, provedena je rekonstrukcija osnovnog, bikoničnog oblika posude. Prilikom rekonstrukcije oblika posude bilo je nemoguće utvrditi njezinu visinu. S obzirom da tijekom istraživanja nije pronađen niti jedan ulomak dna posude, u konzultaciji s odgovornom kustosicom i na osnovu sličnih

In considering the sherds and the sections they form (a third of the vessel without its base) the question that arose was, "Should this vessel be reconstructed or should the rules of the restoration profession be adhered to?" The profession sets out a number of rules that should be observed: due regard to the integrity of the artefact, i.e. a respect of its aesthetic, historical and physical integrity; the principle of reversibility, i.e. avoiding the use of materials that may become detrimental and materials that cannot be removed from the historical artefact; the suitability of the treatment of the artefact, i.e. no single procedure should be undertaken if it is not in the best interest of the artefact (Buys and Oakley 1993, 85-98). In the case of this vessel the questionable aspect pertains to the issue of integrity - the elements of the vessel available are not, namely, sufficient to determine with certainty what the original shape of the vessel was. Following consultations on this issue



Sl. 8 Rekonstruirana posuda (foto: A. Sardoz).

Fig. 8 The reconstructed vessel (photo by: A. Sardoz).

posuda iz tog povijesnog razdoblja zaključeno je kolika je mogla biti njena visina. Rekonstrukcija posude napravljena je od modelarskog gipsa, na lončarskom kolu. Gips za rekonstrukcije upotrebljava se zbog kompatibilnosti s keramikom: slične je tvrdoće i lako se nanosi te posljedično i lako uklanja, a slične je i vodopropusnosti te termalnosti (Buys i Oakley 1993, 119–138) (slika 8). Sama gipsana rekonstrukcija obrađivana je mehanički, uz pomoć različitih alatki kao što su skalpeli različitih oblika, lopatica za obradu gipsa, vodobrusni papir različite kakvoće.

Najveći izazov bio je imitiranje ornamenta kosog meandra ili kose svastike. Rekonstrukcija ornamenta je rađena također od gipsa. Na rame posude, nastavljajući se na originalni ornament, grafitnom olovkom iscrtan je tok i smjer ornamenta. Slojevitim nanošenjem mliječnog gipsa uz pomoć kista preko samog crteža imitirao se ukrasni ornament. Nakon što je dobiven željeni oblik ornamenta i njegova visina, višak gipsa odstranjen je uz pomoć skalpela, a zaobljen i zaglađen oblik postignut je uz pomoć vodobrusnog papira (slika 9, 10 i 11).



Sl. 9 Izrada rekonstrukcije ornamenta (foto: A. Sardoz).

Fig. 9 Fabricating the reconstruction of the ornament (photo by: A. Sardoz).



Sl. 10 Izrada rekonstrukcije ornamenta (foto: A. Sardoz).

Fig. 10 Fabricating the reconstruction of the ornament (photo by: A. Sardoz).

with the responsible curator it was concluded that, in this case, the rule of integrity may be disregarded in consideration of the significance of the artefact and the possibilities of historical analogies. The singular form of the vessel, its fine treatment, the texture of the pottery and even the smoothness of the pottery impart to it a special appearance and a special place in the Prehistoric collection of the Archaeological Museum of Istria. The curator, familiar with the typology of biconical vessels, provided the restorer with a drawing based on the dimensions of similar biconical vessels with the aid of which the reconstruction of the entire vessel was made and, most critically, the reconstruction of the entirely missing base. The restorer focused in particular on the reconstruction of the ornament that makes this vessel special.

Bonding of the potsherds was accomplished using nitrocellulose reversible glue (Mecosan L-TR). The reconstruction of the basic, biconical form of the vessel was executed once the glue had dried. The height of the vessel could not be ascertained in the process of the reconstruction of its form. Given that no base sherds were found in the course of the archaeological investigation its existing height was concluded on the basis of similar vessels from the same historical period and in consultation with the responsible curator. The reconstruction of the vessel was done on a potter's wheel using modelling plaster. Plaster is used in the reconstruction due to its compatibility with the pottery: similar hardness, easy applicability and, thus, easy removal, similar permeability to water and thermal qualities (Buys and Oakley 1993, 119–138) (Fig. 8). The actual plaster reconstruction was processed mechanically with the aid of various tools such as: scalpels of various shapes, a trowel for plaster application, wet sanding paper of varying fineness. On the existing basic form of the vessel the greatest challenge was to imitate the oblique meander or oblique swastika ornament. The reconstruction of the ornament was also accomplished using plaster. On the shoulder of the vessel, continuing on from the original ornament, a graphite pencil was used to sketch out the flow and direction of the ornament. The decorative ornament was imitated by the application with a brush of layers of plaster of a milky consistency over the sketched out figure. Once the desired form and height of the ornament had been achieved the excess plaster was removed using a scalpel and the rounded and smoothed form achieved using wet sanding paper (Figs. 9, 10 and 11).

The final step in the restoration of this biconical vessel was retouching – finishing and painting the plaster reconstruction. Although retouching is not considered a



Sl. 11 Izrada rekonstrukcije ornamenta (foto: A. Sardoz).

Fig. 11 Fabricating the reconstruction of the ornament (photo by: A. Sardoz).

Završni korak u restauraciji ove bikonične posude bio je njen retuš – dotjerivanje ili bojanje gipsane rekonstrukcije. Iako se retuš ne smatra tehnikom konzervacije ili restauracije, jer niti usporava niti sprječava propadanje keramičke posude, on ipak doprinosi estetskoj vrijednosti predmeta. Retuš rekonstruiranog, gipsanog dijela posude napravljen je akrilnim bojama. Restauratorica je odlučila da retuš bude što sličniji originalnim dijelovima posude tj. keramike, iako to nije i nužno pravilo u retuširanju rekonstrukcije. Prilikom retuša restauratorica se vodila osnovnim načelima tog postupka, kao što je reverzibilnost boje – akrilna boja je topiva u vodi te ju je samim time i lako ukloniti s rekonstruiranog dijela. Akrilna boja također ne reagira s gipsanom rekonstrukcijom, već samo pokriva bjelinu gipsa, ravnomjerno se nanosi po cijeloj površini uz pomoć kista i tako se lako kontrolira njeno nanošenje, a to olakšava očuvanje originalne keramike (Buys i Oakley 1993, 139-148) (slika 12).

conservation or restoration technique, as it neither retards nor prevents the deterioration of the ceramic vessel, it does contribute to the aesthetic value of the artefact. Retouching of the reconstructed, plaster sections was accomplished using acrylic paint. The restorer opted to retouch the vessel to be as similar as possible to the original potsherds, i.e. the pottery, although this is not strictly speaking the rule when retouching a reconstruction. In the course of retouching the restorer adhered to some basic principles, such as the reversibility of the paint – acrylic by all means as it is soluble in water making it easy to remove from the reconstructed section. Furthermore acrylic paint does not react with the plaster reconstruction and only forms a cover over the white plaster – it is applied uniformly across the entire surface using a brush, thus its application can be easily controlled, which facilitates the preservation of the original pottery (Buys and Oakley 1993, 139-148) (Fig. 12).



Sl. 12 Rekonstruirana i retuširana posuda (foto preuzeto iz Mihovilić 2011., str. 28).

Fig. 12 Reconstructed and retouched vessel (photo from Mihovilić 2011, p. 28).

ZAKLJUČAK

U ovom članku metodologija rekonstrukcije posude kosi se s jednim od osnovnih načela restauracije, koje nalaže da ulomci predmeta trebaju činiti bar 60 % cjeline te da bi se u najmanje jednom segmentu trebao vidjeti puni profil predmeta, što omogućava vjerodostojnu interpretaciju njegovog originalnog oblika. Ovog se načela svaki restaurator treba držati, iz poštovanja prema materijalu s kojim radi.

Prilikom uvida u ulomke posude prvotni je zaključak bio da se restauratorski zahvat neće obaviti, upravo zbog navedenog načela struke. Međutim, na konzultacijama s odgovornom kustosicom naglašena je arheološka važnost ove posude pa je završno odlučeno pristupiti zahvatu rekonstrukcije nedostajućeg dijela. Osim arheološko-povijesne važnosti posude, restauratoricu su već pri prvom promatranju posude privukli njezin zanimljiv oblik te bogata dekoracija koja je bila dodatna motivacija pri izradi rekonstrukcije, koja je napravljena u uskoj suradnji s odgovornom kustosicom. Suradnja

CONCLUSION

This methodology for the reconstruction of a vessel contradicts one of the fundamental principles of restoration, which dictates that the potsherds should comprise at least 60% of the whole, and that at least one sherd should show the full profile of the artefact in a manner that permits the credible interpretation of its original form. Every restorer must adhere to this principle in respect of the material under treatment.

While examining the sherds of the vessel the initial conclusion was that the restoration intervention not be undertaken, precisely in view of the above-mentioned principle of the profession. The archaeological significance of this artefact was, however, emphasised in the course of consultations with the responsible curator and it was, consequently, decided that the reconstruction of the missing section should, after all, be undertaken. Besides the archaeological/historical significance of the vessel itself, the restorer's attention was drawn, during initial observation, to the vessel's interesting form and lavish

je bila ključna pri rješavanju mnogih pitanja, počevši od pretpostavljenoga oblika posude preko tehničkih modaliteta izvedbe dekoracije pa do (možda najvažnijeg) pravilnog smještanja i dimenzioniranja dna posude. Završni (rekonstruirani) oblik rezultat je kombinacije stručnih podataka arheološke struke s restauratorskom spretnošću u oblikovanju.

Prilikom restauracije posude nametnula su se brojna pitanja. Je li zbilja potrebno rekonstruirati ovu posudu? Koliko će doći do izražaja originalna keramika, budući da je gipsana rekonstrukcija preuzela 2/3 njenog volumena? Bi li se ovakvi zahvati uopće trebali izvoditi? Kada pristati na takve zahvate? Restauratorima koji obavljaju slične zahvate sigurno se nameću slična ili ista pitanja, ali unatoč svemu pristaju na takve rekonstrukcije. Mišljenje je struke da bi ovakvi zahvati zaista trebali biti izuzeci, opravdani posebnosti predmeta. Suradnja između kustosa i restauratora u takvim bi slučajevima trebala biti vrlo uska. Ponekad se zaista mogu zanemariti neki preduvjeti struke ako su razlozi opravdani, ali pri obavljanju takvih zahvata bitno je i dalje se držati etike struke, u prvom redu načela poštivanja originalnog materijala, koji mora biti zaštićen od daljnjeg propadanja te valoriziran u svojoj izvornosti.

ornamentation, which engendered further motivation in fabricating the reconstruction. The reconstruction of this vessel was effected in close collaboration with the responsible curator. This collaboration was critical in the resolution of numerous questions, starting from the assumed form of the vessel and including the technical modalities of the execution of the decoration and, perhaps the most important issue – properly situating and sizing the base of the vessel. The final (reconstructed) form of the vessel is the result of both the expert data provided by the archaeologist and the proficiency in shaping of the restorer.

Numerous questions arose in the course of the restoration. Does this vessel really need to be reconstructed? To what extent will the original pottery be shown in its full glory when two-thirds of its volume is comprised of the plaster reconstruction? Should interventions of this kind even be attempted? When should one consent to such an intervention? Restorers undertaking similar interventions are surely confronted with these and similar questions but, nevertheless, do consent to undertake these kinds of reconstruction interventions. It is the opinion of the profession that interventions of this kind should certainly be exceptions, justified only by the singularity of an artefact. The collaboration between curator and restorer should in these cases be very close. There are times when some of the imperatives of the profession may be disregarded if the reasons for the decision are justified, but in carrying out these interventions it remains critical that the ethical considerations of the profession still be adhered to, foremost the principle of respect for the original material, which must be protected from further deterioration and validated in its original form.

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