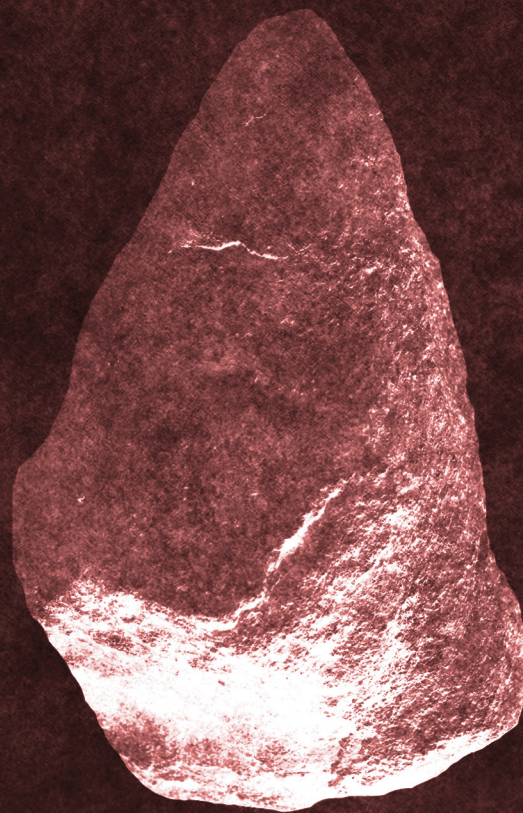


ARCHAEOLOGY STUDIES *raw material exploitation from prehistory to the Middle Ages*

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to the Middle Ages*



Editors

Selena Vitezović

Dragana Antonović

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Urednici:
Selena Vitezović
Dragana Antonović

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BEAUTY (CON)TEST: AESTHETIC QUALITIES OF KNAPPED STONE RAW MATERIALS

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Abstract: *Archaeologists usually describe discovered final products as “beautiful”, but that attribute is rarely used to characterize raw materials for knapping. The paper examines the possibilities and limitations of the aesthetic approach based on psychological research to the study of raw materials. The question is whether the raw materials described according to economic criteria as useful (high-quality and valuable) may be identified as “beautiful” and others as “less beautiful” or “ugly”. Comparison of two raw materials used in the Mesolithic and Neolithic of the Iron Gates: quartzite, which is traditionally considered ugly and aesthetically remarkable Balkan flint, justified to some extent the rooted stance. However, practical work with students of archaeology pointed out that the process of learning actually creates narratives. In their first meeting with chipped stone, students see quartzite as “nice, beautiful” for it “shines”, “is bright” and “smooth” (pebble cortex). On the other hand, the final year students, who have passed courses in prehistoric archaeology and technology of knapped stone artefacts, find the quartzite “ugly” because it is complicated and difficult to analyse. Although we cannot bring certain conclusions about the aesthetic value systems in the past, we may consider grounds for their construction.*

Keywords: *quartzite, Balkan flint, raw materials, knapped stone, aesthetics, the Iron Gates, Mesolithic, Early Neolithic*

Apstrakt: *U arheologiji je raširena praksa da se pojedinačni predmeti kao finalni proizvodi opisuju kao „lepi”, međutim, taj atribut se retko sreće pri karakterizaciji sirovina za izradu okresanih alatki. Rad ispituje mogućnosti i ograničenja za estetski pristup pri proučavanju sirovina. Na osnovu psiholoških istraživanja o estetskom doživljaju razmotreno je da li se sirovine prema ekonomskim kriterijumima opisane kao korisne (kvalitetne i dragocene) mogu odrediti i kao „lepe”, a ostale kao „manje lepe”, ili „ružne”. Poređenje dve sirovine upotrebljivanih u mezolitskim i neolitskim industrijama Đerdapa: kvarcita, koji se tradicionalno*

smatra ružnim, i estetski izuzetnog balkanskog kremen, pokazalo je u određenoj meri opravdanost ukorenjenog stava. Dalje razmatranje je ukazalo da je za stvaranje narativa zaduženo učenje, na šta je ukazao praktični rad sa studentima arheologije. Pri prvom susretu sa okresanim kamenom, studenti kvarcit posmatraju kao „lep” jer „svetluca”, „sija”, i „gladak je” (korteks oblutka). Sa druge strane, studenti završnih godina, koji su prošli kurseve iz arheologije paleolita i mezolita, i tehnologije okresanih kamenih artefakata, smatraju da je kvarcit „ružan” jer je „komplikovan i težak za analizu”. Iako se ne mogu doneti sigurni zaključci o estetskim vrednosnim sistemima u prošlosti, mogu se razmotriti osnove za njihovo građenje u odgovarajućim prostornim i hronološkim okvirima.

Ključne reči: kvarcit, balkanski kremen, sirovine, okresani kameni artefakti, estetika, Đerdap, mezolit, rani neolit

“Have nothing in your house that you do not know to be useful, or believe to be beautiful”
William Morris

Aesthetic qualities of past remains are usually described from an individual standpoint or generally accepted values, however they were rarely treated in scientific manner. This study investigates in which ways we can relate aesthetic characteristics to the archaeological material based on their usefulness as an objective measure.

The object of beauty

Having in mind that the beauty is in the eye of the beholder, we don't have to and even can't reconstruct or consider aesthetical value systems and criteria of past times. However, it is a tempting field for scholars who willingly or not ascribe levels of beauty to the material they study. Psychological research demonstrated that there are some general rules about perceptions and understanding of beautiful and its connections to the other qualities of sensed

objects. Usually the final products, i.e. objects are valued in aesthetic way, so here I want to examine the possibilities to do the same with the very raw materials before they are processed. If we know that something is useful and necessary, can we consider its beauty values?

Beauty comes with age

Aesthetic qualities of past remains were treated in different manners during the history of archaeology. In its beginnings, in the period of cultural archaeology only artistic objects were perceived through the aesthetic lenses, following / according to the *Zeitgeist* of the time and its motto *l'art pour l'art*. Cave paintings, painted Greek pottery, decorative pottery, Palaeolithic Venus sculpts, etc. were presented as beautiful objects.

The processual archaeology brought the system view and scientific approach which called for biological theories and multidisciplinary research. The questions asked were if and how much something is functional, useful, durable, so little attention (if any) is paid to the other qualities of the studied material. The reconstruction of the *chaîne opératoire* was essential in the artefact analyses and was of the great importance for the description of the subsystem of economy. It demanded the development of experimental studies in order to judge dexterity needed and search for the origin of the raw materials. Scholars separated examination of attributes of objects themselves and the consistent raw materials. The aesthetic value of an object was judged by its economic value which was determined by its making process and the material it was made of.

The post-processual archaeology promoted scholars as individuals and allowed them to flirt with the uncovered material. Beautiful was (and is) everything that an archaeologist considers as beautiful. Special attention was given to the contexts of discovered objects.

Archaeologists are ready to describe final products of knapped stones as beautiful, exceptional, masterpiece as extensive literature shows. However, little attention is paid to the raw materials they

were made of. Archaeological research is usually oriented towards the investigation of economic systems concerning raw materials in prehistory. It discovers and describes the exploitation, exchange and trade of raw materials based on their distribution within and among regions. The precious stones and metals are accepted as valuable raw materials and based on that as beautiful when talking on later periods (thanks to written records and their closeness to the modern criteria of value system). However, the prehistoric lithic materials are described as precious and exotic based on their proximity to the resource but rarely characterized aesthetically. In lithic studies, theoretical background of processual archaeology together with experimental research in making replicas enabled the relative ranking of the lithic raw materials by their knapping properties. Raw material, valued whether for its good properties or distant origin, added attractiveness to a finished product. The oldest knapped tools of special aesthetic appeal are bifacial handaxes (Mithen 2003) valued for their symmetry in three dimensions: in plan, in profile and in section. Finely grained raw materials used for their making would enhance their beauty (e.g. purple biface found in Sima de los Huesos, Atapuerca). There are even cases where fossils are left intact within the stone of the artefact (e.g. West Toft, Norfolk with *Spondylus spinosus*, Swanskomb, Kent with fossil echinoid) which is especially attractive.

Can we use aesthetic attributes and how we use them? These questions have been addressed to through the comparison of two lithic raw materials used in the Mesolithic and Early Neolithic of the Iron Gates region: quartzite (fig. 1) which is seen as ugly among local scholars and Balkan flint (fig. 2) which researchers usually consider as beautiful.

Mirror mirror on the wall who's the fairest of them all

Mesolithic & Neolithic of the Iron Gates region

Quartzite and Balkan flint are common raw materials in the Mesolithic and Early Neolithic of the Iron Gates region. It has been thoroughly studied region since the excavations in 1960s and 1970s



1 cm

Fig. 1. Quartzite. Splinter from Lepenski Vir. Photo by Milica Mitrović.

Sl. 1. Kvarcit. Odbitak tehnikom na nakovnju sa Lepenskog vira. Foto: Milica Mitrović.



1 cm

Fig. 2. Balkan flint. Truncated blade from Lepenski Vir. Photo by Milica Mitrović.

Sl. 2. Balkanski kremen. Sečivo sa retuširanim prelomom sa Lepenskog vira. Foto: Milica Mitrović.

as is evidenced by large body of literature as well as recent and on-going fieldwork research and projects¹. Numerous sites have been discovered on both sides of the Danube on territories of Serbia and Romania. Quartzite (quartz in older literature) mostly predominates in Mesolithic assemblages, together with local grey flint. The most common tools are end-scrapers, simply retouched flakes and retouched blades (Radovanović 1996, Păunescu 2000).

Honey waxy flint with white spots, so called Balkan flint mostly appears in the Early Neolithic contexts, whether as tools or elongated blades. Lepenski Vir is the site with the greatest percentage of this raw material. The opinion is that Balkan flint is of foreign origin and was

¹ Numerous researchers have written uncountable books and articles on finds and culture of the Iron Gates region, so I would not list them so as not to skip somebody.

imported, whether as the raw material or semi-product. In the process of neolithization, it means that local Mesolithic communities took Balkan flint and its products as luxury, exotic and valuable items. Within the same context, quartzite should be considered as abundant, expedient material of everyday usage. Which of those two is more beautiful?

Background in psychology

We understand that beauty is a pleasurable feeling of different intense that rises in the perception of each individual (Delle Donne 2010), but on the other hand in order to appraise and compare raw materials by their aesthetic attributes, we need to create a sort of checklist that would help us to set some standards and possibly more objective perspective.

The very word “aesthetics” is no longer synonymous with “beauty”, especially in the world of humanities and social sciences. The Western aesthetics as a distinct discipline was invented in the nineteenth century and was mainly the subject of philosophy where its field of study goes beyond the artistic objects and phenomena. It is understood that “aesthetic” identifies sense perception, not only the visual, rather it involves exploration and evaluation through all the senses (Lothian 1999), while some even call it the theory of sensibility and consider it the foundational discipline (Berleant 2010). Many sub-disciplines such as environmental aesthetics, the aesthetics of everyday life, the aesthetics of popular culture, the aesthetics of sport, the politics of aesthetics etc. assisted the creation of new relations with other disciplines, e.g. the comparative aesthetics, social aesthetics, which supported the development from the theoretical point of view (Berleant 2010: 73).

Here I examine beauty through the psychological domain, having in mind Clarke’s (1968) system view of culture where psychology is centred and interconnects all other sub-systems (religious and social patterns, economy and material culture). Archaeological literature is full of examples of fusion of aesthetical and economic attributes, while psychological research justifies practice of connecting those two. In that way, we can judge and describe raw materials by known measurable characteristics and later relate them to the more abstract dimensions.

There are various approaches in psychology for aesthetical evaluation. Beauty has to do with the fields of emotion, motivation, cognition, thinking and learning at the same time, so we must consider all those psychological factors and their interactions when studying objects and phenomena (Delle Donne 2010: 90). The affective approach understands beautiful as pleasant (measures beauty through the intensity of pleasant stimulus), motivational as interesting, perceptive approach as harmony, good shape, and cognitive approach as clearness and intelligibility. It is not simple or even possible to judge raw materials by these criteria, however numerous research clearly demonstrate connections between economical values and levels of aesthetical impression.

Voland (2003) connects biological Costly signalling theory and the world of artefacts and art. He demonstrated that if something is to be “special” it has to be “expensive, highly costly”, which is determined by a) raw materials it is made of, 2) risk to life and health, 3) time invested, time effort. The same author stresses preciousness and value for something to be beautiful, especially when it comes to the raw materials of which objects are made. Although time invested raises the value of item, the price falls down with technological development (Voland 2003: 243–246). From the modern marketing point of view, products (i.e. artefacts) may be valued by two characteristics, the hedonic and utilitarian. The hedonic value presents the level of pleasure that the product is capable of giving to the average consumer, while utilitarian value is defined as the value of usefulness of a product used daily to deals with problems. So the product is liked or disliked form functional and non-functional aspects. The aesthetic experience involves attending to, perceiving and appreciating an object with regard to whatever utilitarian function it might perform (Baisya & Ganes 2008: 43, 44). All of those criteria have long been used by archaeologists to judge the value of items, especially from the exploited surrounding (e.g. to rank pray and collectable food) and the exchanged objects.

It is clear that raw material should be of a good performance, i.e. quality and consequently utility in order to be used. On the other hand it should be precious in order to bring a high status to its owner.

Once when we determine those two, we can evaluate and compare them by beauty.

Quality is in the first place

The best quality stones for knapping are those that can be cracked in a reliable and predictable manner, with conchoidal fracture. Such stones are brittle, homogeneous, and isotropic (Andrefsky 2005: 24). It seems that those features can be noticed and tested easily, however there are inconsistencies in judgment. Although there are general rules for determining good quality raw materials, a researcher as an individual plays an important role. There are number of examples in which researchers had different opinions in the analysis of the same material (e.g. classification and description of the raw materials in Klithi, Bailey 1997).

My precious

It is well known that archaeologists judge preciousness of objects by the distance they travelled (from the point of origin to the point of burying), their availability, and especially by the context of finding. A raw material gets higher price if its outcrops are in greater distance (local materials are exploited within radius of 5–10 km from the site where they have been found, while exotic materials originate from the distance greater than 100 km), if there is no much of it, if its extraction point is hardly accessible. The context of finding is somewhat discussible, but usually items placed in distinct places within living area and those in graves are thought to have had special meaning and likewise to have been highly praised.

Beauty contest

Balkan flint appeared in the Early Neolithic contexts after wide use of quartzite and is taken to be prestigious material exchanged in regional level (Radovanović 1996). It is represented by formal toolkits (blades with semi abrupt retouch) and because of its extra local origin it was exchanged rather in form of elongated blades than cores (Perlès 2001).

The raw material itself is brittle, but there are pieces which have lot of tiny fissures and holes as well as natural surfaces, which make it unsuitable to perform controlled strikes and knap the desired products easily. Its origin is disputable. The older literature says that it was imported from the so called Pre-Balkan Plateau (Kozłowski 1984), an area in northern Bulgaria. In more recent times, researchers think it is also found locally, because the number of finds made of Balkan flint decreases as we move downstream the Danube from the Lepenski Vir, and also there are number of specimen with pebble cortex, which suggest they came from secondary deposits (Šarić 2002). Chemical analyses demonstrated that Balkan flint is unlikely to be from a single source and possibly there are outcrops in eastern Serbia and southwest Romania (Gurova 2012). The quantities and availability are consequently also discussible, depending on the provenience.

The most common tools made of quartzite are splintered pieces and by products of technique knapping on anvil, i.e. splinters. The quality of quartzite is somewhat tricky to judge. It is homogenous, coarsely grained, and breaks conchoidally in predictable manner. On the other hand, it is found primly in the form of river pebbles, created with inner tiny fractures and fissures that are difficult to overcome. The researchers agree that quartzite isn't precious material, because it is available in large quantities in the vicinity of sites, and is picked up easily. The picture of children playing with pebbles on the river banks is imaginable in the past context.

Examination of contexts of finds of these materials on two representative sites, Vlasac for the Mesolithic period and Lepenski Vir for transitional phase and the Early Neolithic, do not indicate distinctions: both materials are found within and in the vicinity of houses / dwellings / stone constructions. However, this research is still in progress (Mitrović, *in prep*) and has included only stone constructions (interpreted as dwellings) as closed units within cultural layers so is possible that new investigations bring different outcomes.

If we compare raw materials on the basis of these criteria (Table 1) and accept that Balkan flint had extra-local origin and demands at least more effort to be reached (mining together with picking pebbles), then it can be concluded that it is more precious than quartzite

and is more beautiful. However, the results of psychological research cannot be directly applied to archaeological material, because the notion of beauty culturally specific and taught in the community.

		quartzite	Balkan flint
quality	brittleness	√	√
	hardness	√	√
	homogeneity	√ x	√ x
preciousness	distance of origin	x	?
	quantity	x	x
	availability	x	?
	context	x	x

Tab. 1. The comparison of Balkan flint and quartzite on the criteria set for quality and preciousness.
Tab. 1. Poređenje kvarcita i balkanskog kremena prema kriterijumima za kvalitet i dragocenost.

Ugly quartzling: the story of growing up

During few years of teaching and practical work with students on different levels of studies, I could observe an interesting pattern. When I was showing various raw materials to the students of first year, they would be delighted by quartzite: “it shines”, “is light”, “is gentle to touch its surface”... They would be indifferent to the Balkan flint in comparison to the other types and colours of flint and could not see anything special in it. The students of final years who had attended courses in prehistoric archaeology and technology of knapped stones, were trained to sort knapped stones by raw material and separate tools from collections. They literally hated quartzite because it is “hard to see retouch, recognize marks of hammer and anvil”, and even differentiate knapped surfaces from incidental breaks. Their reactions to the Balkan flint were like “wow, superb”, they considered it beautiful as they had already listened about its preciousness in the process of neolithization. It looks like the more mature students had

prejudice about quartzite because they had heard the rooted stances that quartzite industries represent “technological declination” and “undeveloped technology”.

Although these are only remarks, without scientific sample, questionnaire or research, they demonstrate that we are taught to judge the aesthetics. Those meetings were actually the inspiration for this paper. They reminded me to look back in times when I was taught to analyse the lithics: of course, I disliked quartzite in the beginning although I liked quartzite pebbles before “archaeological indoctrination”. More and more time I dedicated to the knapped quartzite, the more and more I learned the patterns and characteristic marks of its breakage and started to like it. Symons (1995: 80) described it perfectly: “Beauty is in the adaptations of the beholder” (cited in Thornhill 2003: 22). We, at least as archaeologists are not even subjective in our beauty experiences as thought at the beginning, but rather demonstrate various schools and traditions based on the regional level defined by the period we investigate.

In conclusion, there are no clear indicators which would support the rooted value of beautiful Balkan flint. Only the reminiscence of knappers could maybe explain the origin of such narrative. The comparison of final products of these two raw materials, long blades versus splinters and splintered tools, indicates experienced masters knapping flint with punch and pressure techniques and children playing with stones and learning the patterns of breaking it. It is not surprisingly at all as the society in general admires masterpieces among paintings and sculptures, but only parents highly value scrawls and plasticine figures of their children. The other explanation lies in the attitudes of the researchers themselves and their, i.e. our development as analysts which we had to have in mind when approaching our beautiful beloved material.

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IZBOR ZA NAJLEPŠU: ESTETSKE OSOBINE KAMENIH SIROVINA ZA OKRESIVANJE

U arheologiji je uobičajeno da se pojedinačni predmeti opisuju kao „lepi”, a stav o lepom se menjao tokom vremena. U kulturno-istorijskom periodu lepi su bili isključivo predmeti smatrani za umetnine – skulpture, oslikana keramika, pećinsko slikarstvo. Procesna arheologija je proučavala funkcionalnost i korisnost predmeta, uz određivanje njegove ekonomske vrednosti, a manje pažnje je posvećeno drugim poljima. Post-procesna arheologija je dozvolila istraživačima da budu subjektivni kritičari i proglase lepim sve što su sami smatrali takvim. Estetskim atributima se opisuju i finalni proizvodi okresivanja, ali retko same sirovine korišćene za izradu alatki. Na osnovu psiholoških istraživanja o estetskom doživljaju razmotreno je da li se sirovine prema ekonomskim kriterijumima opisane kao korisne mogu odrediti i kao „lepe”, a ostale kao „manje lepe”, ili „ružne”. Da bi predmet bio koristan (i korišćen), kako pokazuje psihologija, potrebno je da bude upotrebljiv u rešavanju svakodnevnih zadataka i da bude prijatan, poseban, dragocen, što između ostalog određuje sirovina od koje je napravljen. Autori se slažu da i sirovina utiče na lepotu predmeta, ali i da smatrai određeni predmet lepim znači ceniti ga bez obzira na njegovu upotrebljivost.

Kako se koriste estetski atributi u arheologiji i da li se mogu koristiti ispitivano je na primeru kvarcita i tzv. balkanskog kremena (sl. 1 i 2), sirovinama prisutnim u mezolitu i neolitu Đerdapa. Kvarcit se tradicionalno smatra ružnim, a ističe se estetska izuzetnost balkanskog kremena. Njihovo poređenje prema kvalitetu i dragocenosti pokazalo je u određenoj meri opravdanost ukorenjenog stava (tabela 1). Kvalitet sirovine karakterišu cepljivost, čvrstoća i homogenost, a dragocenost određuju udaljenost od ležišta, količina, dostupnost i pristupačnost, i sam kontekst nalaza. Prema ovim kriterijumima su uočene sigurne razlike između sirovina, i jedino pri čemu se balkan-

ski kremen izdvaja jeste pitanje njegovog lokalnog ili udaljenog porekla. Dalje razmatranje je ukazalo da je za stvaranje narativa zaduženo učenje, na šta je ukazao praktični rad sa studentima arheologije. Pri prvom susretu sa okresanim kamenom, studenti kvarcit posmatraju kao „lep” jer „svetluca”, „sija”, i „gladak je” (korteks oblutka). Sa druge strane, studenti završnih godina, koji su prošli kurseve iz arheologije paleolita i mezolita, i tehnologije okresanih kamenih artefakata, smatraju da je kvarcit „ružan” jer je „komplikovan i težak za analizu”, a bivaju oduševljeni kada vide artefakte od balkanskog kremen. Verovatno je i da imaju predubeđenja o ovim sirovinama jer vladaju stavovi da kvarcitne industrije predstavljaju nedovoljno razvijene tehnologije i tehnološko opadanje, a da je balkanski kremen bio prestižno dobro u procesu neolitizacije. Različite tehnike obrade kvarcita i balkanskog kremen također su mogli da utiču na ukorenjivanje estetskih vrednosti. Naime, kvarcit se okresuje tehnikom na nakovnju, i mogu se zamisliti i deca, početnici, kako manipulišu sirovinom, dok se za izradu sečiva od balkanskog kremen koristila prevashodno *panč* tehnika, odnosno okresivanje sa posrednikom prenosnikom sile između čekića i jezgra, što zahteva veštog i iskusnog majstora. Iako se ne mogu doneti sigurni zaključci o estetskim vrednosnim sistemima u prošlosti, mogu se razmotriti osnove za njihovo građenje u odgovarajućim prostornim i hronološkim okvirima, a kao arheolozi svakako treba da budemo svesni svog školovanja i obučavanja kada pristupamo analizi našeg lepog dragog materijala.