

Musical instruments in Siberia (Early stage of the Upper Paleolithic)

Lyudmila LBOVA^a, Darya KOZHEVNIKOVA^b, Pavel VOLKOV^c

Abstract

Musical instruments provide information about the formation of complex behavior of Early Modern Man. Evidence of musical creativity in the archaeological cultures of the Early Upper Paleolithic is extremely rare. On the territory of Siberia, in the Transbaikal region were found fragments of flutes and whistles from the long bones of birds (Khotyk, Kamenka) and animals (Podzvonkaya), which are dated to the Early Upper Paleolithic stage. Use-wear analysis confirms our assumption about the use of these items as flutes and whistles. The report will present new materials and ideas for musical creativity of the ancient inhabitants of Siberia in the context of the Upper Paleolithic's innovations that took place about 40,000 years BP.

Key words: *Early Upper Paleolithic; Siberia; Transbaikalia; symbolic behavior; musical creativity; flute; whistle.*

Musical activities are an important part of sign behavior, characterized by a complex culture and behavior of Modern humans (Mellars 2005). Because of the paucity of findings, the question of the genesis and evolution of musical creativity, its early stages and the distribution of musical culture are controversial in modern and especially in archaeological literature. The discovery of a series of bone flutes and whistles in European Aurignacian complexes indicates the existence of stable musical traditions already in the late 35-40,000 BP. On the territory of Siberia discoveries of musical instruments dating to the early Upper Paleolithic are unique. The results of the integrated studies of the two items, obtained from excavations in Transbaikalian localities, reveal the complex and multifaceted process of formation and development of modern humans in North Asia.

The question of the origin of musical creativity, the oldest discoveries of musical instruments are topics which, because of the paucity of finds, are virtually underdeveloped in Russian archaeological practice. Musical behavior and musical instruments are not synonymous, and it is likely that the behavior that we can recognize as music existed long before the first musical instrument.

Despite the fact that arguments have been resented supporting the existence of the musical abilities of Neanderthals and of earlier forms of hominids (for example, the "Neanderthal" flute of the cave Divje Babe I, Slovenia) (D'Errico *et al.* 1998;

a Novosibirsk State University, Institute of Archaeology & Ethnography SD RAS Novosibirsk Russia.

b Novosibirsk State University, Novosibirsk Russia.

c Institute of Archaeology & Ethnography SD RAS, Novosibirsk Russia.

Mithen 2005; Morley 2006), most researchers tend to be skeptical of this fact. The discovery of a series of bone flutes and whistles in Aurignacian complexes in Europe (Belgium, France, south-west of Germany and Austria), with stratigraphic evidence and a series of absolute dates, points to the existence of a stable musical tradition in Europe already at the turn of 40,000 BP (Cross 2001; D'Errico *et al.* 2003; Morley 2003; Conard *et al.* 2009).

The total number of discoveries in Eurasia of objects interpreted as musical instruments (flutes and whistles, drums, rattles, ideofony, etc.) is now more than 225 units. The Mezinsky Music Complex (Ukraine) and flutes from Geissenklösterle, Hohle Fells, Vogelherd (south-western Germany), Isturitz (France), whistles from Tarté, Haute-Garonne, Le Moustier, Saint-Jean-de Verges, etc., today are the most famous "archaeological" ancient manifestations of musical creativity.

Of particular interest are both the objects themselves, the archaeological context of the inds (horizons of the habitat, the structure of the cultural layer, especially accommodation, etc.) and their production technology.

The archaeological context and materials

In western Transbaikalia were found whole specimens and fragments of whistles, as well as a fragment of a flute. The types of archaeological locations, identified by characteristics such as structures in planigraphy, the technical and typological composition of the artifacts collections, the functional definition of tools, the collection of bones material, were determined in open-site complexes with a clear stratification. In general, sites are classified as seasonal. They were culturally and chronologically assigned to the initial stage of the Upper Paleolithic (Lbova 2000; 2002; Lbova *et al.* 2003; Germonpre & Lbova 1996, etc.).

Kamenka

Kamenka is located in the western Trans-Baikal region in the basin of the river Uda. A study of the complex was carried out by L.V. Lbova in 1989-1995. A and B complexes were isolated. Complex A was studied over 210m². It included seats and hearths, as well as a zone of activity. The structure of the site revealed two household complexes, separated by an "empty" space (7-8m) and an unsystematic accumulation of blocks of stone. In one of them (40m²) an accumulation of undivided parts of animals are represented by skulls and limbs of horses, bison, sheep and other animals. The animal carcasses were dismembered on the spot. Another household complex (70m²) in the west is different. We noted 10 zones of concentration finds. Functional analysis showed that bones and stones were used and paint was ground there.

The exact definition of the age of the Kamenka A complex is problematic, the range of dates being rather broad (Table 1). But we have well correlated data within 30,000-31,000 BP and 35,000-40,000 BP. At present, given other data from natural sciences and comparisons with similar complexes, it seems preferable to date it to a period within 35,000-40,000 BP.

In this archaeological context, in 1993 objects were found and classified by the authors as a whistle and fragments of a whistle. The object is made from fragments of a long goose bone with a flattening on one side. Particular attention should be paid to a relatively large cylindrical artefact (2.5cm long 1cm in diameter) found in the collection of bone objects (31 items concentrated in 1m² (square A-2). it is slightly

polished on the surface. On the flattened side of these clear cuts are marks not manifestly intended. There are two series of parallel cuts, perpendicular to the axis of the object, first two deep grooves (length 8mm.), then 7 and 5 smaller and less deep.

Site	Data	Lab. code	Publication
Kamenka (A)	26,760±265	COAH 3353	Lbova 2008
	30,460±430	COAH 3154	
	31,060±530	COAH 3133	
	35,845±695	COAH 2903	
	40,500±3800	AA 26743	
	49,000±6000 ¹	ГИ СО РАН 340	

Table 1.

Technological analysis revealed traces of production and probably traces of utilization.

The object is part of a long bone fragmented with a tool possessing a relatively narrow cutting edge, such as a knife. The object shows areas of polish at one end. Judging by the nature of the surface, this polish could be formed by contact with a relatively soft, flexible organic material.

A similar artifact could be represented by two longitudinal fragments discovered in a cluster of bones (picket I-XII, square. D/E – 3/3). On the surface of one of them are two series of cuts (length 4mm to 3) perpendicular to the axis of the bone.

The object represents the same part of a long bone, but it is difficult to determine the way it was worked. This could have been done with a relatively narrow working edge, typical of knives. The depth of the cuts is relatively small.

Traces of recycling as well as polish were only found at one end. Comparison of the “zone of wear” on the convex side, not in contact with the organic material inside the artifact, indicates a relatively intensive utilization of the object, similar to that described above.

Khotyk

Khotyk site is located in the Uda basin (western Transbaikalia) also, and was studied in 1998-2005 by L.V. Lbova. The finds were made in level 3, located in the central part of the section represented by a loess-like sandy loam, dated to Karginy time (from 25 to 60 thousand years ago) (Table 2).

Site	Data	Lab. code	Publication
Khotyk	28,770±245	CO AH-5082	Kuzmin <i>et al.</i> 2006 Lbova 2008
Level 3	32,700±1400	AA-60266	
Level 4	38,200±2800	AA-60267	
(upper part)	35,100±1500	AA-60613	

Table 2.

¹ Data by RTL.

The collection of artifacts from level 3 shows some techno-typological differences in comparison with the overlying and underlying levels. Tools include denticulates and points. Comparisons could be made between the complex of level 3 Hotyk observed in the collection, and the geological position of the Kamenka (A) site (Lbova 2000, 2002).

Clusters of artifacts with clear boundaries, or associated with different structural elements (built structures), mark the habitat. The flute was discovered in a cluster of artifacts and bone material, accompanied by patches of different colors, lots of hematite mica, mica, and the usual smoky quartz. To the east were found buried bones of animals. Rhino feet had been deliberately deposited by laying out small plates with backfilling ocher, accompanied by articles of colored jasper, quartz, bone and beads, pendants. 0,5m to the east was found a bison shoulder blade with a carved "female sign", which testifies to a ritual behavior.

As stated above, a fragment of a flute was discovered in the cluster with non-utilized objects. It is a piece of bird bone (perhaps a swan), 4.5cm long, less than 0.5cm in diameter; in the middle, a rectangular hole was deliberately made.

Micro-analysis revealed traces of production and traces of utilization. In particular, it was found that the artifact only represented a fragment of a larger object initially, because of clear visible traces of a break at one end.

Based on a study of traces of impact, we can say that the formation of the hole was made in several stages. Initially there were two parallel indentations in the form of grooves, the deepening of which led to a perforation of the bone, as if sawed with reciprocating strokes. Subsequently this hole was probably shaped as a rectangle by using the narrow edge of a cutting tool. The subsequent and final phase of the work in the area of the hole was consists in beaded channels cut by whittling with a knife. The movement of the tool in this case was unidirectional along its longitudinal axis slightly sloping, the knife opening up the product.

We also noted two groups of marks to the right and left that may be interpreted as deliberate markers were applied to the artifact in its manufacture.

It should be noted, that on its surface the artifact had linear micro traces, which were probably formed from abrasive particles. Such scratches do not result directly from the manufacture of the products but perhaps from the moment of their discovery.

In addition, traces of polish were noticed. The section and the surface of the bone has a natural, slightly "gritty" polish, usually formed by a prolonged contact of bone with some soft organic material, possibly from contact with a human hand. The same kind of smooth surface was observed on the sides of the deepening of the channel cut in the area of the hole.

Conclusions

It needs to be noted that music is a phenomenon both cultural and biological, and an interdisciplinary approach to studying the origins of musical creativity will attract additional resources to address this problem, and each of them in turn will increase the value of the findings.

The whistle and fragments in Kamenka A have a rather broad analogy. Similar products are well known at Kostenki 14, Denisova cave (Layer 11), the Aurignacian

layer of the Spy cave. The Khotyk object can be fairly confidently identified as a fragment of a flute, which can be considered the oldest musical instrument in the territory of Siberia. Nearly a clone was found in materials from the Aurignacian layers at Hohle Fells, Vogelherd and Geissenklösterle (Aurignacian, 36,800 years BP) in Germany, as well as at Isturitz in the French Pyrenees (17 subjects, interpreted as a flute; 35,000 years BP) (Conard *et al.* 2009; Turk & Kunej 2000; D'Errico *et al.* 2003).

Also, in Transbaikalia in the Podzvonkaya-site among objects not destined to be used, similar to findings in a number early Aurignacian complexes of Europe (Caldwell 2009; Dauvois 1989), is a drilled phalanx of an animal (possibly a gazelle), with obvious holes. One hole was drilled, the second fracture resulted from the pressure of the drill (Tashak 2009).

Our article bears on the morphology, micro wear analysis and manufacturing techniques, similar to European materials, of Early Upper Paleolithic objects confidently identified as musical instruments. Context and age are also comparable to what was found in Europe.

Despite some discussion of the challenges that exist, it is today possible to talk about the behavioral manifestations of Modern humans (Mellars 2005) in North and Central Asia (Lbova 2009). In this context, the discoveries of musical instruments add to the complex picture of the formation, development and possible communication of Modern Man.

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