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Hermeneutics of the Archaeological Artifact: Destruction and Reconstruction of the Lost Meaning

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HERMENEUTICS OF THE ARCHAEOLOGICAL ARTIFACT: DESTRUCTION AND RECONSTRUCTION OF THE LOST MEANING

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Introduction: "*Every image of the past that is not recognized by the present as one of its own concerns threatens to disappear irretrievably.*" **Walter Benjamin**, "Theses on the Philosophy of History"

The understanding of an epoch's tradition and culture depends on the complex interpretation and understanding of each surviving artifact that can contribute to the reconstruction of a coherent notion of our past. Therefore, from the point of view of cultural hermeneutics, any archaeological artifact may be regarded as a creative expression of thought fixed in various forms (in a text or an inscription, in an image or an object) that belongs to a definite cultural and historical environment. Such creative expressions of thought in the form of images, objects, texts or apparently meaningless inscriptions come to us as *hermeneutic problems* that require a solution. A hermeneutic problem's solution is based on the question-and-answer structure, as dialectics forms the foundation of the hermeneutic phenomenon. Each solved hermeneutic problem reveals a past event and brings its cultural impulse back to life. This reconstruction is meant to gradually complete in detail the metaphysical picture of our cultural memory until its continuity is fully restored. It is the search for continuity and coherence of the cultural process that provides the best way to establish whether an artifact's meaning has been correctly interpreted and understood, for each development is an integral part of a chain of developments that determine the vision and the spirit of a particular cultural epoch.

I have chosen as subject of this study one of the most disputed artifacts whose interpretation and understanding still leaves a number of questions unanswered: the Berezan Bone Graffito (550 – 525 BC or early 5th c. BC). As the questions related to this artifact continue to outnumber the answers, I could not resist the temptation to see where the hermeneutical approach would take me in the attempt to answer one of the most difficult and challenging hermeneutical riddles we have inherited from the past.

Cup Berlin, Douris, 490-485 BC

	The Artifact as a Hermeneutic Problem
The question-and-answer structure	**I** **The Facts: Biography and Historiography of the Artifact**
	II **A. The Terms: the Artifact's Ontological Parametres** **B. The Problem**
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The Berezan Bone Graffito (550 – 525 BC or early 5th c. BC) as a Hermeneutic Problem

The Facts

Biography of the artifact: In 1982, V. N. Korpusova presented for publication to Anna Rusjaeva of the Ukrainian Academy of Sciences a small bone plaque identified as the shinbone of a bull or horse with dimensions of 4.8 x 3.5 cm and a thickness of 3 – 4 mm[2].

Three texts (fig. 1 a: text↓, fig. 1 b: text↑, fig. 2 text↓) were inscribed on both sides of the trapezoidal bone fragment. Two texts positioned one next to the other and overlapping are inscribed on the polished side which is considered to be the obverse[3]. Layered graphic images are discernible over them; Rusjaeva suggests they

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[2] Rusjaeva 1986, 25-26; Onyshkevych 2002, 162 n. 10.

[3] This type of writing in two directions ↓↑ is no exception; it was widely used in the Hellenistic world of that time. Very

represent two dolphins or bow[4] (fig. 1 a, fig. 1b).

On the reverse of the plaque, the inscription is positioned in the upper and the lower zone, the medium being unusable for the remains of bone marrow that are still distinguished (fig. 2).

Archaeological Context: Only after the death of Vladimir Lapin who had been in charge of the excavations in Berezan Island, was this unique find discovered in his personal archive. As Russjaeva's publication of 1986 shows, there is no documentation on the bone plaque, except for a partial inventory number "AB" (for Ancient Berezan in Russian)[5].

About eight years later, in June 1994, Lada Onyshkevich obtained a further valuable piece of information in a personal conversation with A. Rusjaeva. Onyshkevich wrote: "Rusjaeva mentioned that she heard that the excavator found seven bone plaques, but only two, including this one, remain in archives. She described the other plaque remaining in the archives as almost blank, with only random scratches on its surface."[6]

Since the discovery of the bone plaque was accompanied by a mystery, the archaeological context of the find itself is not clear either.

Dating the Bone Plaque: Given the lack of any archaeological context or laboratory tests, the only way to date the Berezan bone plaque is by paleographic analysis. It shows that the letter forms are archaic and may be dated between 550 and 525 BC[7]. Onyshkevich, however, suggests a slightly different dating: the end

of the 6th to the beginning of the 5th century BC[8].

Authenticity of the Bone Plaque: The lack of any documentation or archaeological context understandably raises the issue of the bone plaque's authenticity. Despite that, for now it is considered authentic in the bibliography[9].

Historiography: In 1986 A. Rusjaeva wrote her article „Miletos – Didyma – Borysthenes – Olbia"[10]. Thanks to this first publication, the bone plaque of the Berezan Island has turned into one of the most interesting epigraphic records of the last twenty years in the end of the 20th and the beginning of the 21st century. The strange texts and combinations of letters written in such a peculiar way do not cease to provoke the scientists of whole world, making them seek clearer and more accurate explanation of the mysterious meaning[11] embedded by the ancient author.

Regretfully, however, a consensus regarding the three texts from this epigraphic record has not been reached yet[12]. A short summary of the leading opinions on this issue has been given by Vanessa Gorman (2001): „Two leading suggestions are that the numbers refer to the growing number of colonists at Olbia (A. Rusjaeva)

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interesting example is a large lead tablet with a Lex Sacra (c. 460 – 450 BC or earlyer) from Selinus, Sicicly, given as a gift to the J. Paul Getty Museum in 1981 and returned to Italy in 1992. The text is inscribed in two columns, written upside down to one another and separated by a bronze bar. (For more details see Jameson, Jordan, Kotanski 1993; SEG XLIII 1993, 630; SEG LI 2001, 1387; Lupu 2005, 359 - 387). The custom of writing on bone plaques (also in a manner of *boustrophedon*) is clearly documented in inscriptions from Olbia from the 6th – 5th c. BC (Tolstoi 1953, graffiti no. 6, 10)

[4] Rusjaeva 1986, 28.

[5] Rusjaeva 1986, 25 n. 3.

[6] Onyshkvych 2002, 162 n. 6.

[7] Rusjaeva 1986, 28.

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[8]Onyshkevych 2002, 162; Cf. *LSAG* 325; [8] Onyshkvych 1998, 76 -78.

[9] See last Onyshkvych 2002, 162 n. 7.

[10] Rusjaeva 1986, 25-64.

[11] Rusjaeva 1986, 25 – 64; *SEG* 1986, 694; Ehrhardt 1987, 78 –117; Burkert 1990, 155-160; *Bull. Ep.*, 1990, no. 549; Vinogradov 1992, 78-80; Rusjaeva 1992, 14-16; Graham 1993, 195 – 196; Burkert 1994, 49-60; Dubois 1996, 145 – 154; Onyshkevych 1998, 70-152; Gorman 2001, 193-194; Onyshkevych 2002, 161-179; Fol 2004, 101-116: According to A. Fol the texts from the bone plaque of Berezan are connected with the Orphic cult in Thrace and have a magical spell formula character and „cause suggestion about the duality of the Orphic Son of the Great Goddess-Mother upon the expected emergence of the chthonic hypostasis of Apollo, i.e. of the emergence of Dionysius." (Fol 2004, 113). This hypothesis, however, is an evident over-interpretation, artificially adapted to the so called Thracian Orphism which was introduced by A. Fol in the beginning of the 80s and today even more becomes an eclectic construct not being based on the main principles of the Orphism in Hellas and on the historical realities in ancient Thrace.

[12] See Onyshkevych 2002, 161-179.

or to temporal stages in the development of the colony (W. Burkert). However, Burkert's identification of this inscription as an oracle is problematic, since the text does not fit the pattern established by Fontenrose: while obviously pertains to religious matters, it does not contain any instruction or confirmation that can be taken as an answer to a question. Instead, it has been suggested that the plaque may be either a ‚membership token' or a hymn or prayer to Apollo Hebdomaia, related or a precursor to the Orphic cult."[13]

The Terms: the Artifact's Ontological Parametres

An anonymous author who lived in the late 6th or early 5th century BC wrote down three texts on both sides of a small bone plaque:

Fig. 1 a: text↓

	ΝΙΚΗΦΟΡΟΣ ΒΟΡΕΩ
ΕΠΤΑ	ΛΥΚΟΣ ΑΣΘΕΝΗΣ
ΕΒΔΟΜΗΚΟΝΤΑ	ΛΕΩΝ ΔΕΙΝΟΣ
ΕΠΤ(Α)ΚΟΣΙΟΙ	ΤΟΞΟΦΟΡΟΣ ΦΙΛΙΣ(?)
ΔΟΡΕΗ	ΔΥΝΑΜ(?) ΙΗΤΗΟΣ
ΕΠΤΑΚΙ(Σ)ΧΙΛΙ(ΟΙ)	ΔΕΛΦΙΣ ΦΡΟΝΙΜΟΣ
	ΕΙΡΗΝΗ ΟΛΒΙΗ
	ΠΟΛΙ(Ν) ΜΑΚΑΡΙΖΩ
	ΕΚΕΙ ΜΕΜΝΕΜΑΙ ΛΗΤΟ

Fig. 1 b: text↑

ΕΕΠΤΑ

ΑΠΟΛΛΩΝΙ
ΔΙΔΥΜ(ΑΙΩΙ)
ΜΙΛΗΣΙΩΙ

ΜΗΤΡ(ΟΣ) ΟΛΟΛΒΟΦΟΡΟΣ
ΝΙΚΗΦΟΡΟΣ ΒΟΡΕΩ
ΔΙΔΥΜ(Α)

Fig. 2: text↓

ΕΒΑΝΒΟΥΔΙΔ Α Α Α
Α Α   ΑΑΑ Α   Α Α Α

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[13] Gorman 2001,194.

The Problem: Two Lines of Letters (fig. 2 text↓) on the Bone Plaque's Reverse Side

The most controversial, the most confusing and given the least attention by scholars is the record on the bone plaque's reverse side (fig. 2: text↓).

According to Rusjaeva, the sequence in the first line of letters, ΕΒΑΝΒΟΥΔΙΔΑΑΑ can be reconstructed as "hebd(o)m(ekonta) bou(s) Did(ymaioi)", which translates as "seventy bulls of Didymaean Apollo"[14]. However, in this reconstruction "alpha"[15] has been replaced with "delta", "nu" has been replaced with "mu", and too many extra letters have been added.

The three alphas at the end of this line (line 1), as well as the nine alphas in the next line (line 2) Rusjaeva suggests the initials of Apollo and of his mother Leto and sister Artemis[16]. According to Onyshkevich, however, "such ideas are mere speculation, however, with nothing to substantiate them[17]."

To Burkert, the letter sequence ΕΒΔΝΒΟΥΔΙΔΑΑΑ "looks like an abbreviation of "hebdomon bous", probably a sacrificial term, as "bous hebdomos" is attested for a strange vegetarian offerings at Athens[18].**"** He is quite right, though, that "all remains very tentative[19]."

Evidently, the two sequences of letters (lines 1-2) remain enigmatic, and their mystery can hardly be solved with the present approach of analyzing each text separately, independently from the other two texts.

However, this approach raises a number of questions:

· Why has it been necessary for these three texts to be recorded in such an unusual way (fig. 1a: text↓; fig. 1b: text↑, fig. 2: text↓) on a single bone plaque?

· What was the reason not to use for example three bone plaques for each text?

· Isn't this an indirect hint that the so called three individual texts are actually one whole text comprised

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[14] See Gorman 2001, 26-28, 61.

[15] According to Rusjaeva „alfa", according to Burkert „delta".

[16] Rusjaeva 1986, 58.

[17] See Onyshkevych 2002, 165.

[18] Burkert 1990, 155-160; Burkert 1994, 53.

[19] Burkert 1990, 155-160; Burkert 1994, 53.

of three parts?

· How to find the reasonable explanation of these two lines of letters?

All these questions gave enough grounds to go back again to that epigraphic record but using an approach entirely different from that of the previous investigations: not as three individual texts without connection between them but as three interconnected parts of one text.

Mode of Solution of the Hermeneutic Problem

First Level of Interpretation: the Guiding Hermeneutical Thread

Starting point: The results of previous research make it clear that explaining the meaning of the separate texts in themselves contributes little to the understanding of the anonymous author's overall concept. Therefore, when interpreting the bone plaque graffito, we need to apply a specific characteristic of the understanding process known as the **hermeneutic circle.** This specific feature of the understanding process has been elucidated by Schleiermacher who claims that to understand the whole, we need to understand its separate parts; on the other hand, to understand the parts, we need to have an idea of the meaning of the whole.

Understanding and explaining are interrelated. To understand something, it needs to be explained, and vice versa: to explain something, it needs to be understood. In other words, in order to understand the bone plaque's function and meaning, we need to explain them, and vice versa, in order to explain its function and meaning, we need to understand them.

Interpretation Conditions – Text Structure:

If the three parts of the text were interconnected, then they must have been contemplated in a precise system having a specific structure. For determining the structure of this text, of prime importance is to find its beginning and end. There are three outward signs by which the beginning of the text can be distinguished from its end:

· The beginning has been written on one side of the bone plaque (fig. 2: text↓) and the end on the other (fig. 1b: text↑);

· The beginning (fig. 2: text↓) and the end (fig. 1b: text↑) have been recorded in opposite directions;

· The text begins (fig. 2: text↓) and ends (fig. 1b: text↑) with the invocation (epiklesis) "Nikephoros Boreo" (Bearer of victory of Boreas). The invocation of a god at the beginning and at the end is typical of the Greek poetical tradition during the Archaic period. An evidence to that, we find in Hesiod's *Theogony*: the poet relates the Muses' praise of their father Zeus, their song beginning and ending identically: „Next, as they begin and as they end their song, they hymn Zeus, father of gods and men, saying how much he is the greatest and strongest of the gods."[20]

In this allocation of the two texts in the beginning and end, the place of the longest text from the face of the plaque (fig. 1a: text↓) will be between them (fig. 3). Therefore, the structure of the text includes 18 lines total, of which two lines of letters recorded above a text:

Transcription of the text:

1		ΕΒΑΝΒΟΥΔΙΔ Α Α Α
2	Α Α	Α Α Α Α Α Α Α
3		ΝΙΚΗΦΟΡΟΣ ΒΟΡΕΩ
4	ΕΠΤΑ	ΛΥΚΟΣ ΑΣΘΕΝΗΣ
5	ΕΒΔΟΜΗΚΟΝΤΑ	ΛΕΩΝ ΔΕΙΝΟΣ
6	ΕΠΤ(Α)ΚΟΣΙΟΙ	ΤΟΞΟΦΟΡΟΣ ΦΙΛΙΣ(ΤΟΣ)
7	ΔΟΡΕΗ	ΔΥΝΑΜ(?) ΙΗΤΗΟΣ
8	ΕΠΤΑΚΙ(Σ)ΧΙΛΙ(ΟΙ)	ΔΕΛΦΙΣ ΦΡΟΝΙΜΟΣ
9		ΕΙΡΗΝΗ ΟΛΒΙΗ
10		ΠΟΛΙ(Ν) ΜΑΚΑΡΙΖΩ
11		ΕΚΕΙ ΜΕΜΝΕΜΑΙ ΛΗΤΟ
12	ΕΕΠΤΑ	
13		ΑΠΟΛΛΩΝΙ
14		ΔΙΔΥΜ(ΑΙΩΙ)
15		ΜΙΛΗΣΙΩΙ
16		ΜΗΤΡ(ΟΣ) ΟΛΟΛΒΟΦΟΡΟΣ
17		ΝΙΚΗΦΟΡΟΣ ΒΟΡΕΩ
18		ΔΙΔΥΜ(Α)

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[20] Barker 1984, 35, n. 7.

Translation of the text:

1		ЕΒΑΝΒΟΥΔΙΔ A A A
2	A A	A A A A A A A
3		Bearer of victory of Boreas (the North wind),
4	Seven –	She-wolf without strength,
5	Seventy –	Mighty, powerful lion,
6	Seven hundred –	Most loved Bowbearer,
7		Mighty gift – a Healer,
8	Seven thousand –	Wise dolphin.
9		Blessed peace!
10		I bless the City!
11		There I bear remembrance to Leto.
12	Seven	
13		To Apollo,
14		The Didymaian,
15		The Milesian.
16		Bearer of luck of the mother (or the motherland),
17		Bearer of victory of Boreas (the North wind).
18		Didym(a)

Commentary of lines 1-2 (fig. 2: text ?):

Notably, the letters in the two lines (lines 1-2) are positioned in a very unusual way. For example, the first two *alphas* of line 2 are sloped to the left, and there are no other letters above them. Line 1 begins from the third *alpha*, and ends just before the last, ninth *alpha*. The *alphas* in line 2 vary in size. The third, the fourth and the fifth match the *epsilon*, the *beta*, the *alpha*, the *nu* and the *beta* of the above line (line 1), the sixth *alpha* (line 2) is positioned under the *omicron* and the *upsilon* of line 1, empty space has been left under the first *delta* and *iota* of line 1, and the seventh, the eighth and the ninth *alphas* connected by a common stroke in line 2 match the second *delta* and the three *alphas* of line 1.

With the reconstruction of the text's structure, it immediately draws the attention that the beginning and the end of the two lines of letters (lines 1-2) are clearly consistent with the beginning and the end of the text in each line. Thus, in the inscription on the reverse side of the bone plaque (fig. 2: text↓) the first letter of line 1 (*epsilon*) and the third *alpha* of line 2 are positioned precisely above the first letter *nu* of the text "*Nikephoros Boreo*". The last *alpha* of line 1 and the last *alpha* of line 2 stand precisely above the *omega*, the last letter of "*Nikephoros Boreo*" (line 3). The two initial *alphas* facing left (line 2) opposite the others, are the only ones that can be placed above hepta, hebdomekonta, hept(a)kosioi, doree, heptaki(s)hili(oi) (lines 4-8).

Introducing the Principle of Open Interpretation

The Parallels: One of the proofs that the sequence in the structure of the text is regular is to find parallels which would not only prove it but also help for the explanation of the bone plaque itself. The parallels among the epigraphic records with such text structure can be found among the musical documents[21].

Would it then be possible to assume that the two lines of letters may be interpreted as musical notation[22]? In that case, let us see whether sufficient evidence can be found in support of that hypothesis.

Here are the characteristic elements of "musical

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[21] A comparison with the magical papyri could not be made for the following reasons because in their very beginning it is always mentioned that the text is a kind of spell or magic, with description of the exact guidelines and the necessary items for their performance. The individual letters appearing in the text have an explanation that they stand for the name of a deity or that they are a magical formula. Furley and Bremer clearly define the differences between religious and magical hymns: "Magical hymns were private by definition, all the texts of the magical papyri were meant to be performed by a solitary practitioner at home, by night." (See Furley and Bremer 2001, I:32, 47-48)

[22] Let us take another look on the reverse side of the bone plaque. Imagine that the middle part was polished (Text 3↓); in that case, the natural position of epiklesis *Nikephoros Boreo* would have been below the two lines of letters, and it would not have been inscribed in the lower part.

notation" in the Berezan bone graffito (550 – 525 BC or early 5th c. BC):

1. The letters in the first two lines (lines 1-2) all belong to the "vocal" notation system.

2. "Vocal" notation over the first line of the text only (lines 1-2).

3. Two notation lines ("vocal" notation only) (lines 1-2).

4. Line with repeated note (line 2).

5. Syllable doubling (line 16).

Musical notation type – musical notation over the first line only: The first parallel for this musical notation type is frg. 4[23] from the collection of cartonnage scarps in the Ashmolean Museum, dating from the third to second century BC[24]. Pöhlmann and West give the following explanation: „Verse with notation over the first line only. This cannot represent a pattern to be followed throughout, because here the verses are of variable length, and their boundaries are not indicated in the manuscript. Possibly the singer used these notes as a starting-point and then improvised his melody[25]."

The other parallel is a fragment of hymn, discovered in the precinct of Asclepius at Epidaurus in 1977 (fig. 4). It was inscribed in the late third century AD, but according to Pöhlmann and West, the composition may be several centuries older. They write: „The fact that musical notation appears only over the first line suggests that the same melody served for every line, possibly a traditional procedure in singing hexameters[26]."

Comparative Table

Berezan bone graffito	Frg. 4	Hymn to Asclepius
550 – 525 B.C. or early 5th c. B.C.	3 – 2 c. BC	Inscribed in the later 3 c. AD
Notation type: Musical notation over the first line only		
Musical notation system: The melody is recorded with letters of the vocal notation system		
Performance: The same melody served for every line of the text		

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[23] Although we do not have the complete musical document, it is hardly likely that it contained other lines of notation, preceding or following the preserved text. The case with the hymn to Aslepius is the same. The two fragments' compositional structure indicates clearly that the same type of notation is used, namely, on the first line only. The existence of this type of notation is confirmed by a much older bone graffito, as the comparative table above shows. Unfortunately, out knowledge of Archaic music is insufficient to explain each element of this musical notation; besides, this research seeks to raise the inevitable issues related to the certain and uncertain elements involved in each reconstruction attempt.

[24] DAGM 2001, 25-28.

[25] DAGM 2001, 27-28.

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[26] DAGM 2001, 61.

Fig. 4**: *Hymn to Asclepius* with vocal notation over the first line only**

]ẸN $\overline{\Delta}\,\overline{Z}\,\overline{\Theta}\,\overline{E}$ $\overline{\Lambda}$ ΕΝΔΟ[

1]ον ἀείϲωμεν

2] ἀνθρώποιϲιν

3 'Απόλλω]νι κλυτοτόξωι

4]ωϲ δέ ϲ' ἀείϲω

5 ἐπιϲτα]μένωϲ καταλέξαι

6]ιου ἀγλαὰ τέκνα

7]ϲ ὕμνοϲ ἀοιδῆϲ

8]ϛον δέ ϲοι ἧτ[ορ

9]ούνεκα π[

10]μο[

Berezan bone graffito

1		ΕΒΑΝΒΟΥΔΙΔ Α Α Α
2	A A	A A A A A A A
3		ΝΙΚΗΦΟΡΟΣ ΒΟΡΕΩ
4	ΕΠΤΑ	ΛΥΚΟΣ ΑΣΘΕΝΗΣ
5	ΕΒΔΟΜΗΚΟΝΤΑ	ΛΕΩΝ ΔΕΙΝΟΣ
6	ΕΠΤ(Α)ΚΟΣΙΟΙ	ΤΟΞΟΦΟΡΟΣ ΦΙΛΙΣ(ΤΟΣ)
7	ΔΟΡΕΗ	ΔΥΝΑΜ(?) ΙΗΤΗΟΣ
8	ΕΠΤΑΚΙ(Σ)ΧΙΛΙ(ΟΙ)	ΔΕΛΦΙΣ ΦΡΟΝΙΜΟΣ
9		ΕΙΡΗΝΗ ΟΛΒΙΗ
10		ΠΟΛΙ(Ν) ΜΑΚΑΡΙΖΩ
11		ΕΚΕΙ ΜΕΜΝΕΜΑΙ ΛΗΤΟ
12	ΕΕΠΤΑ	
13		ΑΠΟΛΛΩΝΙ
14		ΔΙΔΥΜ(ΑΙΩΙ)
15		ΜΙΛΗΣΙΩΙ
16		ΜΗΤΡ(ΟΣ) ΟΛΟΛΒΟΦΟΡΟΣ
17		ΝΙΚΗΦΟΡΟΣ ΒΟΡΕΩ
18		ΔΙΔΥΜ(Α)

Double lines of musical notation: An example of such a notation type is Pap. Oslo 1413 frg. a, frg. c, frg d of unknown province, belongs to a small collection of Greek papyri acquired in 1933 by Carl Schmidt in Berlin[27].

Comparative Table

Berezan bone graffito **550 – 525 B.C.** **or early 5th c. B.C.**	Pap. Oslo 1413 frg. a, c, d **1 – 2 c. AD**
Notation system: The melody is recorded with letters of the vocal notation system. Double lines of musical notation + text	
Performance (Pap. Oslo 1413 frg. a, frg. c, frg d) : "The text immediately below the two notation lines should be sung first with one of the melodies and right after that with the other one respectively."	
Performance (Berezan bone graffito): ?	

According to the melody reconstruction, the text immediately below the two notation lines should be sung first with one of the melodies and right after that with the other one respectively[28].

Line with repeated musical note: Among the preserved fragments, the best example of a line with repeated musical note is line 5 of Pap. Oxy. 3162. Although this line has no beginning or end, the six repetitions of the same note, which corresponds to the number of syllables, indicates that it was not an uncommon practice. The missing notes at the beginning and at the end may have been or not have been different. Line 5 of Mesomedes' *Hymn to Nemesis* is an example of one and the same note repeated nine times, with just two different notes at the end[29].

A possible explanation of such a repetition in

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[27] DAGM 2001, 124-125, 128.

[28] DAGM 2001, 125.
[29] DAGM 2001, 100-101.

the notation of the Berezan bone graffito is that the line may have been performed differently in terms of singing, accompaniment or both.

Syllable doubling: Among the preserved fragments with musical notation we find another similarity with the musical document from the bone plaque. In the last part of the text (line 16) the syllable "-oλ" is repeated two times. Such a repetition can be found in fragment 15, line 3 also from the collection of cartonnage scarps in the Ashmolean Museum[30]. About the doubled syllable „-ει" Pöhlmann and West write: „-εéåé, doubled because divided between notes[31]."

Other examples of syllable doubling can be also found in fragments 18 and 28, the explanation of Pöhlmann and West being one and the same: „probably melodic doubling of -ει-[32]."

Epistemological effects upon entering the hermeneutic circle:
On the origin of Greek notation systems[33]

The instrumental notation system preceded the vocal one: Today, it is widely believed that the vocal and the instrumental notation systems emerged at different times, and it is generally accepted that the instrumental notation system appeared much earlier than the vocal[34].

The more ancient origin of the instrumental notation system is related to letters' archaic form: „The instrumental symbols in their basic forms can on the whole be matched with letters in sixth- and fifth-cen-

tury local Greek scripts, or easily derived from them."[35] According to Westphal, the origin of the instrumental notation system may be dated to the late 7th c. BC[36].

Unlike the instrumental notation system, the vocal included all letters of the Ionian alphabet, and was thus much easier and understandable to vocal performers. As the Ionian alphabet was officially adopted in Athens in 403/2 BC, West respectively dates the vocal notation system's origin to the late 5th c. BC or the 4th c BC. He suggests that the vocal notation system emerged as a simplified version of the instrumental notation system[37].

The vocal notation system preceded the instrumental one: Bataille, whose study of the notation systems is based on a paleographic analysis, advances the opposite theory: that the vocal notation system emerged about the 3rd c. BC or later. Only then were the symbols of the instrumental notation system invented, using the basic symbols of the vocal notation[38].

West, however, rejects this theory and brings up the following questions: „If the vocal system was already in existence, what need was there to invent a separate instrumental system, when the other would have served equally well for both voices and instruments? And why should a straightforward alphabetic system, once established, be fragmented and tortured into something so much more obscure? If on the other hand the instrumental system was the older, it is easy to imagine that a need was subsequently felt for a less abstruse set of symbols, especially for the use of singers, who did not necessarily have the same technical training as the player on an instrument[39]."

Could the vocal and the instrumental notation systems have emerged simultaneously? Winnington – Ingram rejects both Bataille's and Chailley's late dating of the vocal notation system[40] and the prevailing

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[30] DAGM 2001, 30.

[31] DAGM 2001, 31.

[32] DAGM 2001, 32, 33.

[33] The question of Greek notation systems' origin has been studied by a number of leading philologists, paleographs and paleomusicologists. Despite their differences, without their exquisite contribution not a single research would have been possible today.

[34] Westphal 1883, 155 ff; See Gevaert 1875 – 1881, I: 424; Monro 1894, 68 – 75; Vetter 1933, 851; Gombosi 1939, 11, 78 – 82; West 1992, 36 – 46.

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[35] West 1992, 38.

[36] Westphal 1883, 155 ff.

[37] West 1992, 36 – 46.

[38] Bataille 1961, 5 – 20; Chailley 1967, 201 – 216.

[39] West 1992, 36.

[40] Winnington–Ingram 1978, 240.

theory of the earlier origin of instrumental notation, claiming this has not yet been conclusively proved[41].

Barker also finds the later emergence of the vocal notation system controversial, and points out quite logically: "The assumption that the instrumental system is the earlier, and that the vocal notation is a later simplification, more easily to read, is almost certainly correct; but it seems inadequate by itself to explain the adoption of the latter and the subsequent survival of the two side by side. Most singers even in Hellenistic times would have learned to play an instrument, and there is no reason to suppose that singers as a class were less intelligent, less capable of fathoming notational complexities, than were instrumental performance. The double usage seems plainly designed to reflect performers' need to distinguish notes to be played from notes to be sung, in which case the scores must sometimes have represented distinct parts for voice and for instrument. The Orestes papyrus, exiguous as it is, demonstrates that this was indeed so.[42]"

According to Barker, the two notation systems probably developed between c. 450 and 350 BC[43].

Could the vocal and the instrumental notation system have emerged as far back as in the Archaic age, simultaneously? There is no definitive answer to this question but some indirect evidence does exist in support of this assumption[44].

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[41] Winnington – Ingram 1978, 237.

[42] Barker 1995, 48 – 49;

[43] Barker 1995, 48 n. 7.

[44] The question of the two notation systems' origin is indeed controversial. If we accept West's dating of the vocal notation system (late 5th – 4th c. BC), the question is, why the name of its inventor/s was never mentioned in sources? Aristoxenus (4th c. BC) himself, known for his sharp tongue and biting criticism, would have been the first one to write a treatise on the issue! On the other hand, if we accept Bataille's and Chailley's dating (around 3rd c. BC), how could we explain the fact that in the 4th c. BC Aristoxenus spoke not only of musical notation but also of the skills that a practitioner of notation was supposed to have?

Archaic letter-forms as evidence in the dating of vocal and instrumental notation systems (Table I: Notation symbols by Alypios and Table II: Archaic Greek Alphabet and Greek Notation Systems – "vocal" and "instrumental")

All letters of the instrumental notation system are undoubtedly identical with all letter-forms that were used during the Archaic Age. Westphal therefore dates the origin of the instrumental notation system to the late 7th c. BC.[45]

As supported by Winnington – Ingram's observations on the evolution of the shape of vocal notation system's letters in time, in most later papyri and medieval manuscripts there is a strong tendency to use minuscule forms. Therefore, he says, „the modified forms, which are not liable to adaptation in the same degree, could however in some cases provide evidence of date[46]."

"fau, koppa, psi"

The vocal notation system uses repeatedly the letter-forms „fau", „koppa", and the very rare form of „psi" that were found in Archaic inscriptions but ultimately dropped out of use and were not included in the Ionian alphabet that was officially adopted in Athens in 403/2 BC.

Jeffery's research demonstrates that these letter-forms were widely used in the local script of Archaic Greece. The vocal notation system includes two doublet forms of "fau": the most common form „F" that can be encountered in inscriptions from as far back as 700 BC as the letter following epsilon in the alphabet[47]; and another form, later described by Alypios as „pi plagion apestrammenon"[48]. This latter form of "fau" was used in Euboia and its colonies (in the second half of the 6th c. BC[49]), in Boiotia and Tessaly, as well as in

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[45] Westphal 1883, 155 ff.

[46] Winnington–Ingram 1978, 239.

[47] Jeffery 1990, 24 -25, pl. 48 fig. 18, 19, 20, 21, 22; pl. 39 fig. 66.

[48] Alypi, Isagoge, c. 2 (cf. C. von Jan 1895, 385).

[49] Jeffery 1990, 79.

Korkyra (in the fifth century)[50] .

According to Jeffery, the form of "koppa" that is used in the vocal notation system "seems to be established everywhere by the middle of the sixth century, perhaps earlier[51]."

A particularly rare form of ⁎ (psi) was used in Ozolian Lokris and Arcadia. Jeffery says: „the form may possibly have come from one of the towns of Achaia, which lay between Lokris and Arkadia[52]."

The fact that „koppa", „psi" and „fau" have remained unchanged in the vocal notation system, and "psi" and "fau" in the instrumental notation system, is in itself indisputable proof of the two notation system's archaic origin and parallel evolution.

Archaic letters of the vocal notation system according to Alypios and Aristides Quintilianus
(Table I: Notation symbols by Alypios and Table III: Archaic Greek Alphabet, Greek Notation Systems and description of the letter by Alypios)

Alypios arranged the tones of the vocal notation system following the order of the Ionian alphabet. The letters, however, were only enough for the tones of one of the three existing octaves. In the main octave, as well as in part of the second octave he used different letter-forms, and described them in the familiar alphabetical order. For example, after "anti alpha" he placed Я (rho), describing it as „beta elleipes"[53]. He did the same with all other letters that can be identified as archaic letter-forms. For example, the rare archaic Ꙑ (psi) has been described as "chi diephthoros"[54] , while the widespread „koppa" – that can be seen both in the alphabet on an ivory school-tablet some time around 700 – 650 BC in Etruria and in the alphabet on a bronze krater in 530 – 525 BC in Lakonia as well as in many other epigraphic sources and graffiti from various locations in Greece – has been described as „ou kato grammen echon"[55] . (see Table II and Table III)

Unlike Alypios, Aristides Quintilianus who used a wealth of ancient sources did not name a single letter but simply observed: "Descending a tone from the lowest of all, The Hypodorian, we adopt the sign […] as the first of the symbols: then we take the one which comes after it…: then the next." (Arist. Quint. *De mus.* 23. 10)

Unlike Alypios, he did not associate the deepest tone with „omega tetragonon" or the Archaic letter-form ⁎ (psi) with "chi diephthoros", or "koppa" with „ou kato grammen echon", etc. but chose to use the nondescript „sign".

Archaic letter-forms that had long been out of use did not even have names in the writings of Aristides Quintilianus, while Alypios gave them completely new ones.

Different variations of letter-forms
Both the instrumental and the vocal notation system contain different variations of the same letter form: three for gamma, two for rho, two for fau, two for heta, three for lambda, five for sigma, two for upsilon, and three for psi. Here, we will only consider two very early forms of „nu" and „mu"[56]. According to Jeffery's classification, the instrumental notation system has preserved the earliest version of nu[57], described by Alypios as "eta ameletikon katheilkusmenon"[58]. The version of „mu" in the vocal notation system is parallel to the letter-form's original and earliest version found in inscriptions from Eretria[59]. Alypios describes it as "xi diploun anestrammenon"[60].

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[50] Jeffery 1990, 24 -25, pl. 79 fig. 6.
[51] Jeffery 1990, 34.
[52] Jeffery 1990, 105, 213.
[53] Alypi, Isagoge, c. 2 (cf. C. von Jan, 1895, 385).
[54] Alypi, Isagoge, c. 4, c. 5, c. 6, c. 9, c. 15 (cf. C. von Jan 1895, 372, 373, 374, 377, 383)

[55] Alypi, Isagoge, c. 2, c. 8, c. 11 (cf. C. von Jan 1895, 370, 376, 379)
[56] As the subject is complicated and requires detailed and thorough argumentation, this part of the article will be developed in a further detailed study.
[57] Jeffery 1990, 31.
[58] Alypi, Isagoge, c. 4 (cf. C. von Jan 1895, 372).
[59] Jeffery, 1990, 31.
[60] Alypi, Isagoge, c. 8 (cf. C. von Jan 1895, 391).

Rotation of the letters

Another specific characteristic of the letters in both the instrumental and the vocal notation systems is their rotation: the letter-forms are reversed and inverted. This notion, Jeffery notes, is very old: "The boustrophedon method occurs in the Middle Minoan hieroglyphic system, in Hittite hieroglyphs, and rarely, in the South Semitic alphabet. Its adoption simply implies a pictorial conception of the letters as outlined figures which can be turned in either direction according to need. This notion was evidently present in the minds of the first Greek writers, and it was the easier for them to carry it out because twelve of the twenty-six shapes were symmetrical (delta, zeta, heta, theta, omicron, san, koppa, tau; later phi, xi, psi), six required very little change (alpha, gamma, crooked iota, lambda, sigma, upsilon), and only eight looked markedly different in reverse (beta, epsilon, fau, kappa, mu, nu, pi, rho).[61]"

Many of the vocal notation system's letters clearly have all definite characteristics of the great archaism. The presence of these letters as symbols of notes in the vocal notation system itself is indicative of this notation's long period of development. With time, letters that could be modified naturally underwent changes, while archaic letter-forms that were part of the notation system since its invention were preserved as they were in inscriptions from the time of its invention.

All these observations suggest that the vocal and the instrumental notation systems emerged simultaneously back in the Archaic age.

Statistics of musical documents by the 1ˢᵗ c. BC, by type of notation

Strangely enough, in his treatise the *Elementa Harmonica* Aristoxenus does not mention instrumental and vocal notation systems separately, but writes of notation in general. Only much later sources such as Aristides Quintilianu, Bacchius, Gaudentius and Alypios speak clearly of a division between instrumental and vocal notation. Shouldn't we then ask the question what the two notation systems may have looked like in the beginning, and what modifications may they have undergone to reach their final form as presented by Aristides Quintilianus, Bacchius, Gaudentius and Alypios.

It is generally known that since the dawn of history, vocal and instrumental music have developed in parallel. Why would then only instrumental music be recorded? We may assume that the notion of recording music would require the notation of both voice and instrument. What type of notation was used, and whether there was such a strict differentiation between vocal and instrumental notation is another question.

To check this assumption, here are statistics on the notation types used in musical documents until the 1ˢᵗ c. BC that have survived to date:

I. Musical documents where the notation has been lost but a scholion is available
1. Euripides, Orestes 140 – 2 ≈ 153 – 5, 5 c. BC

II. Musical documents containing records of vocal and instrumental music using letters of the vocal and the instrumental notation
1. Pap. Vienna G 29825 c, 3 c. BC: Besides the vocal note there are the instrumental notes
2. Pap. Vienna G 2315, 3 – 2 c. BC: vocal notation alternating with instrumental
3. Pap. Vienna G 13763/1449, Nos. 15-16, 3 – 2 c. BC
   Vocal music with text which is interrupted by instrumental sequences: after line with vocal notation with text there are two lines of instrumental notes.
4. Pap. Vienna, 29825 d – f, 3 – 2 c. BC Besides the vocal note there are the instrumental notes

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[61] Jeffery, 1990, 46.

III. Musical documents containing instrumental music recorded with letters of the vocal notation only

1. Pap. Hibeh, 3 c. BC

IV. Musical documents containing vocal music recorded with letters of the instrumental notation only

1. Delphi Inv. 489, 1461, 1591, 209, 212, 226, 225, 224, 215, 214, 128/7 BC

V. Musical documents in which the voice is recorded with vocal notation only

1. ? Pap. Leiden inv.P. 510, 3 c. BC (Euripides, Iphigenia in Aulis)
2. Pap. Zenon 59533, 3 c. BC
3. Pap. Vienna G 29 825 a/b recto, 3 c. BC
4. Pap. Vienna G 29 825 a/b verso, 3 c. BC
5. Epidaurus, SEG 30.390, Hymn to Asclepius, Hellenistic?
6. Pap. Asm, inv. 89B/31, 33, 3 – 2 c. BC
7. Pap. Ashm. Inv. 89B/29-32, 3 – 2 c. BC
8. Pap. Michigan 2958 lines 19 – 26, 2 c. BC
9. Pap. Oxy. 3704, Frs. 1 – 2, 2 c. BC
10. Delphi inv. 517, 526, 494, 499, Paean of Athenaeus, 128/7 BC
11. Nylasa inv. 3, Hymn to Sinuri, 1 c. BC
12. Pap. Oslo 1413 a lines 1 – 15; b – f, 1 c. BC

Musical documents in which the voice is recorded with the vocal notation are the most numerous (twelve) and the earliest evidence of a musical document in vocal notation dating back to the 5th c. BC (unfortunately, not preserved, just referenced) (Euripides*, Orestes* 140 – 2 ≈153 – 5, 5).

Parallel notation has been used in four musical documents, the earliest dating back to the 3rd c. BC. There is also a document, containing instrumental music recorded in vocal notation (3rd c. BC) and another one from 128/7 BC, containing vocal music in instrumental notation.

These statistics raise the question why instrumental music was recorded in vocal notation, and vocal music in instrumental notation. Why are musical documents containing vocal notation the most numerous? Could they have been performed without instrumental accompaniment? These questions remain unanswered. It is fairly possible, however, that the vocal notation was used for the recording of voice and instrument together, as those were identical[62].

All this evidence, however, suggests a long tradition in the use not only of the "instrumental" but also of the "vocal" notation system.

Aristoxenus, The Elementa Harmonica

Interesting evidence has been left behind by Aristoxenus[63] in his treatise the *Elementa Harmonica*. Ob-

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[62] For more details on heterophonia and poikilia, see Barker 1995, 41 – 60.

[63] Aristoxenus was born in Tarentum, probably in the first half of the 4th c. BC, at the time when the great philosopher, statesman, mathematician and musician Archítus was still alive. (Barker 1989*,* 119). Aristoxenus was the son of the musician Spintharus, Socrates' disciple. He first studied philosophy and music with his father, then with the Pythagoreans Lamprus of Erythrae and Xenophilus who taught him the Pythagorean *Teaching of the Harmony and the Soul* (*Suid.* s. v.). Probably around 330 BC he went to Athens and joined Aristotle's school. Aristoxenus wrote 453 books on music, philosophy, history and paideia-related ideas. A number of the writings concerned Pythagoras and Pythagoreans to whom he may be considered to belong (Wehrli 1945, frg. 11-41). In his treatises on music, Aristoxenus rejected the previous harmony theories and accused their creators of incompetence and charlatanism. Because of his biting

viously, during his lifetime (4th c. BC) there was no doubt about the Archaic origin of notation in general, only about its accuracy and application. Seeking to give as precise a definition as possible to musical concepts, Aristoxenus remained faithful to his critical approach, and was fairly unceremonious to:

1) The earliest attempt at musical theory: „Up to now no one has ever carefully defined what the distinguishing feature of each of them is: and yet if this is not defined, it is not at all easy to say what a note (phthongos) is. Anyone who does want to be forced into the position of Lasus and certain of the followers of Epigonus, who thought that a note has a breadth, must say something rather more precise about it: and once this has been defined, many of the subsequent issues will become clearer." (Aristoxenus, *El. Harm*. I. 3. 10-20)[64]

2) The „practitioner of notation": "That what we have said is true, and that the practitioner of notation needs nothing more than a perceptual grasp of the magnitudes of intervals, will be clear to those who consider the matter." (Aristoxenus, *El. Harm*. II. 39. 30)

3) Notation itself: „A person who sets out signs to indicate intervals does not use a special sign for each of the distinctions which exist among intervals – for instance, for the several divisions of the fourth produced by the differences between the genera, of the several arrangements produces by alteration in the order of the combination of the incomposite intervals. We shall say the same thing about the functions (dynameis) which the natures of the tetrachord create, for the interval from nete hyperbolaia to nete and that from mese to hypate are written with the same sign, and the signs do not distinguish the differences in their functions; so that their scope extends only to the magnitudes, and no further." (Aristoxenus, *El. Harm*. I. 40. 10)

4) Its purpose: the graphic representation of a melody so that it is made accessible and understandable: „As to the objective that people assign to the science called harmonics, some say that it lies in the notation of the melodies, claiming that this is the limit of the comprehension of each melody, while others locate it in the study of auloi, and in the ability to say in what manner and form what origin each of the sounds emitted by the aulos arises." (Aristoxenus, *El. Harm*. II. 39. 10)

5) The ambition to "popularize" music: "If the so-called harmonicists adopted this supposition out of ignorance, there would be nothing perverse about their procedure, but their ignorance must have been powerful and profound. But if they propounded the doctrine while fully aware that notation is not the limit of the present science, aiming to please the general public and to give them some end-product visible to the eye, then they are to be condemned, instead, for gross perversity in their method." (Aristoxenus, *El. Harm*. II. 40. 30)

"*All things resemble number*…"

Another, albeit indirect proof that vocal and instrumental music were both recorded as early as during the Archaic age is found in Pythagorean statements such as:

• "all things resemble number…" (Sextus Empiricus *Adv. Math.* Vii.94 – 5)

• " the whole heaven is a harmonia and a number" (Aristotle *Metaphysics* 985b23ff)

• „and harmonia is a systema of three concords, the fourth, the fifth and the octave; and the proportions (analogiai) of these three concords are found in the four numbers (tetraktis) previously mentioned, in one, two, three and four." (Sextus Empiricus *Adv. Math.* Vii.94 – 5)

The concept that the *invisible* can be made *visible* through numerical representation undoubtedly demonstrates that in the 6th c. BC the practice of representing tonoi with numbers was long in use. As an inscription on a wooden Greek school tablet from the Roman period and the 3rd c. AD shows, Pythagoras[65] was certainly familiar with the Archaic notation system, given that the grammar exercise consisted in writing several versions of the following sentence: "Pythagoras, the philosopher who split (from the others) and taught

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criticism, his contemporaries were not overly fond of him, and described him as morose and pessimistic.

[64] Barker 1989, 127 – 128, n. 11.

[65] See Riedweg 2002.

grammata,, advised his disciples to refrain from things in flesh and blood[66] .”

As musical composition developed and grew more complicated, the notation naturally had to grow more complex, and notes were defined with increasing accuracy. Thus, the first theoretical treatise on music appeared in the late 6th c. BC. It was written by Lasus of Hermione, a remarkable musician and probably a Pythagorean[67] .

The „Musical Records” on Late Archaic and Classical vase paintings

Greek vase paintings are undoubtedly the most varied in both mythological stories and very real life situations having to do with education and upbringing, music and sports, love, war, religious ceremonies, death, etc. These representations of real life scenes are particularly valuable as a "documentary archive", for they are effectively an imprint of the most special moments in the lives of various people in the distant past. In many cases, they have preserved their names[68] or even the names of their favourite horse[69] , as well as the name of the maker or artist himself[70] , who related a human story in the graceful images of each fine piece of pottery[71] . Thus, along with written and epigraphic sources, Greek vase images are among the most significant sources of information on ancient Greek music.

According to the chronology developed by E. Pöhlmann and M. West, in *DAGM* the oldest preserved musical document is a fragment of a clay epinetron (a knee-guard for sewing) from the early 5th c. BC. Attributed to the Sappho Painter, it features several Amazons, one of them playing the trumpet. The trumpet's sounds are clearly marked with letters: *tote totote*[72] .

This trumpet signal, *tote totote*[73] , reminds of the word *tototoi*, which was used frequently in the Greek language and its meaning had to do with a mournful cry[74] .

Such "*musical records*" were not infrequent at that time, and were particularly typical of vase paintings by Brygos Painter, Onesimos, Douris Painter[75] and his disciple Akestorides. This is undisputable evidence that the practice of recording music was common in musicians' circles long before it became fashionable with painters (early 5th c. BC). Musical records of this type are a unique illustration not only of the "composition" itself but also of the authentic atmosphere of its creation or performance.

Four new musical documents from the early 5th c. BC that I found in the process of the research may undoubtedly shed more light on a number of controversial issues related with the origin, the evolution and the use of Greek notation systems, as well as with the composing, recording and performing of music during the Archaic age (figg. 5, 6, 8, 9).

- *Two Greek vases from the early 5th c. BC with identical images: a professional aulos player, enhoplios orchēsis and „inscriptions sans signification”*

The collection of Bibliothèque Nationale, Cabinet des Médailes, Paris, contains a lekythos, inv. no 2985[76] and an oinochoe, catal. no 272[77] from the early 5th c. BC. The images and the inscriptions on them have attracted very little if any interest on behalf of the scientific establishment, as the bibliographic reference clearly demonstrates. These images and inscriptions, however, are of exceptional significance for the study of ancient Greek music (figg. 5, 6).

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[66] Kenyon 1909, 30-40.

[67] According to Theon of Smyrna, he was a Pythagorean (59.4-21 = DK 18.13). There is no other evidence to that effect but he did live in Pythagoras' time.

[68] See for example Kretschmer 1894, 51, 63 – 65, 74 – 75.

[69] Kretschmer 1894, 32, 43.

[70] Kretschmer 1894, 51 – 52, 74 – 75.

[71] On realism in Greek art, see Chaniotis 2005, 189 – 212.

[72] DAGM 2001, 8, No. 1, fig. 1.

[73] On the interpretation of *tote totote* as a musical notation record, see Bélis 1984, 99 – 109. On the interpretation of *tote totote* as a typical trumpet sound, see DAGM 2001, 8.

[74] On the use of *tototoi* see. Chadwick 1976, 87.

[75] Buitron – Oliver 1995, 41 – 45.

[76] *CVA* 1931, pl. 84. 5 - 6.

[77] De Ridder 1901, Catal. No 272, fig. 27; Massow 1916, 41; CVA 1931, pl. 66. 3, 7.

The Images

As the table below illustrates, the paintings on the oinochoe and the lekythos are nearly identical, with a few small exceptions.

Oinochoe, Attic, early 5th c. BC, Bibliothèque Nationale, Paris, Catal. No 272	Lekythos, Attic, early 5th c. BC, Bibliothèque Nationale, Paris, Inv. No 2985
Common elements:	
· A professional aulos player: phorbeia[78], auloi: two pipes with equal size · A weapon dance · An inscription consisting of letters "without meaning"	
Different elements:	
· The number of figures · The dancers' weapons	

Inscriptions

On both ancient vases there are inscriptions on which I found no commentary. The inscription on the lekythos, inv. no 2985 has been described by the authors of *Corpus Vasorum Antiquorum*, *France 10* as „inscriptions sans signification"[79], and it is not mentioned in any other publication (fig. 6a). The inscription on the oinochoe (catal. no 272), has also been described as "inscriptions n'offrant aucun sens"[80] (fig. 5a). Strangely, in the earlier publications of A. De Ridder[81] and W. von Massow[82] it is not mentioned at all.

However, the sole drawing made by the authors of *Corpus Vasorum Antiquorum*, *France 10* letters signifying notes of the instrumental notation system can clearly be distinguished. This is why no textual meaning could be found in the letter sequence.

• *Painters' musical records*

As other vase paintings from the late Archaic and Classical period also show, painters would use certain elements to suggest that the painting contains musical notation. Sometimes, the melody is inscribed in circles or words coming out of the musician's mouth; in others, there is even part of the lyrics on a papyrus roll, while the notation is inscribed on a tablet[83]. Some images show the sound produced by the musical instrument. No wonder that among the many music-related images there are even records of instrumental notation, as is the case of these two vases. Of course, many of the images imply a humorous meaning, e.g. the image on the famous Brygos cup, (Munich inv. 1646). It definitely emphasizes the musician's slow wits as he is playing too loud. The painting represents the aulos player standing by a reclined older man who has a phiale in his left hand, while with the right hand he is definitely clutching his head. The small letters coming out of his mouth are not the song's lyrics but signify his reaction: „*ou dunamou*"[84].

The talented painter who produced the images on both vases in the collection of the Bibliothèque Nationale, (it could well be the same painter in both cases), actually made a logical decision. How else could, in fact, one "paint" an aulos melody complete with all its important aspects:

a) the fact that it is a solo, i.e. there can be no lyrics;

b) its virtuosity (circles are no good for that);

c) the musician's talents as a professional soloist and composer, the fact that he was an educated person who could read and write instrumental notation. Aristides Quintilianus mentions that this was the method of recording "the instrumental pieces (kola), and interludes in songs, for auloi or for stringed instruments without the voice" (*De mus*. I. 11. 23)

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[78] Athen. 616 e-f. (See Barker 1984, 273 n. 57.)

[79] Lekythos, Inv. No 2985: *CVA* 1931, 65, pl. 84. 5 - 6.

[80] Oinochoe, Catal. No 272: *CVA* 1931, 49, pl. 66. 3, 7.

[81] De Ridder 1901, Catal. No 467, Pl. XIX.

[82] Massow 1916, 41.

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[83] On the method of composing and recording a melody, see below the interpretation of a fragment of a red-figure kylix, Naukratis, c. 485 BC (Oxford G 138,3,5,11).

[84] For alternative interpretation of the same image, see DAGM 2001, 8.

Painters undoubtedly had broad and diverse knowledge. They observed the details of life which would often go unnoticed by ordinary people. In their art, such small details would become strong visual accents that extended the theme and added emotional profundity to the painting. The examples are numerous; here, we will only mention the painting on another vase in the collection of the Bibliothèque Nationale, Paris[85], infused with special human warmth. It represents a seated young man, playing a double aulos. A small dog stands in front of him, mesmerized by the brilliant performance of his master and friend. The moment we look at that painting, we cannot help searching the visual accents that would help us penetrate beyond the image (fig. 7).

Recording the music must have been quite some challenge, and not only to musicians. A number of music-related images suggest that the painters must have been frequent visitors to musicians' studios, and must have observed the composing process. This is particularly visible in the red-figure kylix painting from Naukratis (fig. 8). Thus, it is not surprising that the Paris painter not only showed the particular aulos type but also copied rather accurately the letters of the instrumental notation. It means he took keen interest in the way notes were represented. However, whether these letters are just an imitation of a melody, or the accurate copy of an aulos composition can only be determined after the notation has been analyzed and the melody has been reconstructed.

• *Musical studio*

Owing to the accurate images that painters used to decorate fine vases with a variety of scenes, we can no draw from a priceless source of knowledge on topics on which there is very little in written sources, or they have failed to survive. For example, we can see what a "musical studio" looked like in ancient times, how the composing took place, whether musical notation was taught, etc.

However, a fragment that has survived acciden-tally, illustrates the process of creating and recording a musical composition. On the outside of a small red-figure kylix from Naukratis (Oxford G 138,3,5,11; c. 485 BC), attributed to Onesimos[86] or to Douris[87], there is the image of a seated man wearing a himation, holding a spread papyrus role with a clearly visible text. The lines are written boustrophedon and in the Attic alphabet: ΣΤΕΣΙΧΟΡΟΝ Η ΥΜΝΟΝ ΑΛΟΙΣΑΙ. Opposite him was probably the image of another seated male, but unfortunately all that has been left of him is a hand holding a stylus, writing on an open triptychon. To the left of the two seated male figures is a seated musician, playing the double aulos (fig. 8).

According to Edgar, this is a school scene in which the tutor dictates the text from the papyrus roll to the student sitting opposite him, the text undoubtedly being intended for the beginning of an ode, and may be supposed to be addressed either to the Muses or to a chorus of women[88]. Further on, Edgar mentions that "it is not necessary to suppose that ΣΤΗΣΙΧΟΡΟΝ ΗΥΜΝΟΝ is the opening of an actual hymn; it may be merely a stock phrase in melic poetry (cf. Pind. Pyth. i. 6). Though ΣΤΗΣΙΧΟΡΟΣ does not occur in any extant Greek hymn, it is a familiar word in this province, being the name of the famous poet of Himera. According to Suidas, it was not his real name, but a nick name or epithet, and certainly seems suspiciously appropriate as the personal name of a choric poet."[89]

If the scene depicted a school dictation, however, why is the tutor holding the papyrus roll right in front of the student's eyes so that he can copy it easily? Moreover, why would a school dictation require the presence of an aulos player?

In this case we can presume that the painter represented a musical team in the process of composing: the poet holding the papyrus roll, the composer playing the aulos, and the scribe who puts down the melody as

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[85] De Ridder 1901, Catal. No 467, pl. XIX.

[86] See Beck 1975, 26 no. 119.
[87] See Edgar 1898 – 9, 64; Hogarth, Lorimer, Edgar 1905, 120.
[88] Edgar 1898 – 9, 64.
[89] Edgar 1898 – 9, 64 – 65.

the composer plays[90]. The image seems to depict the beginning of the process as the text which translates as "Beat Stesichorus or the hymn" is no text from a hymn or song but an encouraging appeal to the composer / aulos player. The artist maybe sought to suggest that the composition in question was a choral song (hymn) intended for a choral agon.

From this image we construe that a song was created by a poet, a musician and an expert in *melographia*. The poet wrote down the text on papyrus. He then took it to a composer who composed the melody on an aulos. While the musician was composing inspiredly, specially trained experts in melographia recorded the melody on tablet.

Another image on an attic r.f. cup Basel, Antikenmuseum BS 465, c. 490 BC[91] we can see the composer / aulos player checking whether the composition was recorded correctly. The lessons in *melographia* and *rhythmographia* were evidently intended for young musicians who, before starting to compose themselves, were to gain experience and knowledge with an older and established musician and composer. The image clearly shows, how eager is the young assistant to get his master's approval, while the master holding a stylus checks carefully the music on the tablet. His contented smile suggests that the record is so meticulous it needs no corrections (fig. 9)

The vocal and the instrumental melody were evidently written down on tablets, separately from the text which was on papyrus. Each of the melodies was then transferred from the tablet to the papyrus, synchronizing it with the text, by an expert in *rhythmographia*. If the transfer was delayed, with time the melody was lost and only the text on the papyrus was left, as it definitely survived longer than the records on the tablets. This explains why so many texts have survived to date without an accompanying melody[92].

Second Level of Interpretation: Metaphysics of the Text

Destruction and Reconstruction of the Lost Meaning

"In modern research on rituals, more attention has been paid to questions of origins – to the reconstruction of the original form and meaning of rituals – than to their transformation and survival in later periods, notably in the Hellenistic and Imperial periods. When late evidence is studied, this is usually done with the perspective of understanding earlier forms through historical context."[93]

The compositional text elements: The identification of the musical notation as an element of the structure of the text from the Berezan bone graffito gives an opportunity for this epigraphic record to be defined as a *musical document*. Here we have to determine its compositional form which includes: the compositional text elements and musical type. The text consists of three parts which include the following compositional elements:

1-2	musical notation
3-8	allusions to mythical narratives about Apollo:
3	invocation (epiklesis)
4-8	praise (eulogia):
4	allusions to the story of god's birth
5-8	allusions to mythical narratives about Apollo's great and beneficial deeds:

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[90] In a list of winners among the alumni in Teos, there are examinations in *rhythmographia* and *melographia* (*CIG* 3088). Boekh (*CIG* 2214) interprets this as a record of instrumental music and simple notation. The latter can also be seen is a list of graduate winners from Magnesia (*Syll.* 525). (See Aug. Hug 1933, "Musikunterricht", RE 31 HBd.: 877-892). The very existence of school subjects related to musical notation and its harmonization with the text indicates that such experts were in demand.

[91] Beck 1975, 22, n. 7m.

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[92] Of course the subject requires a more in-depth study for which all characteristic images that can shed light on the issue should be collected, analyzed and interpreted. . (On this question see Pöhlmann 1960, 10, 84; *CVA* 1962, 378, pl. 93; Meyer 2004, 44–249; Prauscello 2006).

[93] Chaniotis 2005, 52.

5	Apollo – "ΛΕΩΝ ΔΕΙΝΟΣ" (= Archegetes Oikistes Patroos);
6-7	Apollo Toxophoros and Ietros;
8	Apollo Delphinios.
9-18	relatively short sections:
9-11	blessing/prayer (litaneia)
12	?
13-15	dedication
16-17	refrain-singing
18	sacred topography (location of the altar)

These compositional elements, as well as the early dating (c. 550-525 BC or late 6th – early 5th c. BC) provide all grounds for the musical document of Berezan to be defined as *prosodion*.

The musical type „prosodion": The word "prosodion" is well attested in the terminology of ancient poetry and religion in the sense of "processional song"[94]. The prosodion was an original composition of several parts connected in meaning, which was especially intended for the festive religious procession[95]. With regard to the definition of prosodion, T. Mathiesen summarizes: „The prosodion – or processional – as a type may have encompassed relatively short sections following hymns or paeans – and accompanying limited movement from the place where the hymn was sung to the altar itself – as well as longer independent compositions accompanying more extended processions. The prosodion apparently included some narrative about the god to whom it was addressed, but supplication was the central purpose of its text[96]."

The prosodion in the literary and the religious tradition

Ancient sources are unanimous that the prosodion is not a hymn (Poll. 4. 53; *Syll*. 450. 4f). Proclus pays special attention to that: "some, using the term improperly, say that prosodia are paeans (Phot. *Bibl*. 320a21-25; 320a18-20).

The paian, just like a prosodion, was addressed initially to Apollo and Artemis[97]. The main difference between a hymn and a prosodion is in the way they are performed, and in their accompaniment. According to the ancient theory presented by Proclus, the hymn was sung to the accompaniment of the kithara (Procl. Chrest., 320a18-20), ... by a male chorus at the temple of Apollo (Paus. 4.4.1). The prosodion, on the other hand, was a cult song performed to the accompaniment of the aulos during a religious procession to the temple or to the altar: "it is said to be a prosodion when they process to the altars or temples, and in processing, it was sung to the accompaniment of the aulos." Pollux explains that this aulos was called embatērios aulos (v. 82).

Making a difference between prosodion, hyporchema and stasimon, the author of *Etymologicum Magnum* (s.v.) explains that the songs that were sung during the procession to the temple or to the altar were called *prosodia*, those for dancing around the altar were known as *hyporchemata*, and those sung subsequently in a standing position were *stasima*.

In the literary tradition, the prosodion was first mentioned by Aristophanes who explained that it was a song of gratitude, praising the god, and sung to the accompaniment of the aulos (*Av*. 853 = Suda). The author of *Etymologicum Magnum* defines the prosodion as a prayer (litaneia).

The processional songs had their own metric pattern, *metron prosodiakon* (Heph. 153, 18f), used specifically in celebrations and prayers (Heph. 47.22–48, 22; 153.19f; 154.11–15; Schol. Aristoph. *Nub*. 651). This metron, however, was often described differently, which indicates the lack of theoretical clarity on the issue (Dion. Hal. *comp. verb*. 4; Heph. 216.16–217.2; 302.1–7; Arist. Quint. *De mus*. 1.17). The very few available prosodion fragments were written in the metra

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[94] Rutherford 2000, 147-148.

[95] On the composition and performance of paeans and prosodia see Furley 1993, 21 – 41.

[96]Mathiesen 1999, 83.

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[97] *Paion* is a title of Apollo and means *Healer*. *Paean* may be a prayer for healing or deliverance and also song of victory (Hom. Il. I.472-3); (Barker 1984, 19).

described above and in other metra[98].

According to Pausanias, prosodia were current from the beginning of the archaic period (4.4.1). When looking for the prosodion's archetype, we certainly need to make the basic difference between *the prosodion as a poetic work* and *the prosodion (a musical type) as a cult song* belonging to the religious tradition. As a poetic work, the prosodion was founded by Clonas. However, the prosodion (a musical type) as a processional song of the conservative religious tradition has no terminus post quem as the archetype should be sought much earlier than the emergence of the artistic tradition. The fragments from the Bacchilide prosodion are a good example. They are not related to the procession, and contain no prayer of praise[99]. Thus, becoming an agonal poetic work, the prosodion was naturally subject to change, and a poet was not obliged to observe the religious canon, as confirmed by Ps. Plurtarchus: "The diction in the poems of the people I have mentioned was not rhythmically undisciplined (lelymenē) or lacking in metre, but resembled that of Stesichorus and the ancient composers of song, who composed hexameter poems and set them to music. Heraclides says also that Terpander, a composer of kitharodic nomoi, set his own hexameter verses and those of Homer to music appropriate to each nomos, and sang them in competitions." (*De mus*. 1132c)

As a non competitive processional song, the prosodion had a simple structure, suitable for performance during a procession. The simplicity was also determined by the prosodion's function, and by the fact that it was repeated many times[100]. To allow all participants in a procession (men, women and children) to take part in its performance, the prosodion maybe needed a text that was easy to remember, and a simple, repetitive melody. Ps. Aristiotle confirms that: "the reason is that in the old times free men performed in the choruses themselves, and it was hard for a large group of people to sing in the competitive manner; hence they sang songs within a single harmonia. For it is easier for one person to execute many modulations than for many, and easier for a competitive artist than for those who maintain the character. That is why they composed simpler melodies for them. Antistrophic composition is a simple: there is just one rhythm, based on a single unit of measurement (*Probs*. XIX. 15)."

This characteristic of the non-agonal prosodion corresponds exactly to the compositional structure of the Berezan prosodion which should be regarded not as a work of high poetic value but rather as a traditional cult song for the people.

The main problem here is the lack of a metric pattern which calls in question the completeness of the text on the bone plaque.

The Narrative of Allegory: analysis and interpretation of the compositional elements: The Berezan text is concise, rich in epithets and metaphors, and apparently has no plot. In an outside reader who is not acquainted with the time and situation context, this "poetic" style would create a feeling of incompleteness and obscurity. It is certain, however, that in the 6th century BC in Miletos and Olbia it would have posed no difficulty to anyone to discover and follow the "plot" in the metaphors, and to obtain a mental picture of the complete mythological narrative.

Lines 3-8: Allusions to mythical narratives about Apollo

Invocation

Line 3: ΝΙΚΗΦΟΡΟΣ ΒΟΡΕΩ

The prosodion ends in the way it begins – with the epiklesis *Nikephoros Boreo*[101]. In the sources, the epithet *Nikephoros* is associated with Artemis, Aphrodite, Athena, Demetra, Zeus and Selene but not with

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[98] Muth 1974, 861.
[99] Muth 1974, 863.
[100] Rutherford 2001, 447 – 448.

[101] Furley observes a choriambic dimeter in *Nikephoros Boreo*. It is particularly important to note here that the prosodion to the Limenios paean was written in aeolic rhythm (glycinics and choriambic dimeters, with a pherecratean as clausula) (See DAGM 2001, 85).

Apollo[102]. The cult to Athena Nikephephoros was particularly strong in Pergamon, as Hellenistic inscriptions from that region testify[103].

This, however, must not let us think that this epiklesis does not refer to Apollo. In the writing from Pantikapaios this epithet is associated with gods-winners (*theois nikephorois*) without naming them[104]. This means that the epithet *Nikephoros* may be referred to the name of any god.

In the inscriptions of Berezan bone graffito the epiklesis *Nikephoros Boreo* is unique as an epiklesis of Apollo. But like any epithet or epiklesis it has been created for a specific purpose[105]. And exactly here it is used to announce the purpose of this prosodion – a praise of Apollo carrying victory over the North wind Boreas.

Praise (*Lines 4-8*)[106]

1. Allusions to the story of Apollo's birth (line 4).
2. Allusions to mythical narratives about Apollo's great and beneficial deeds (lines 5-8):
a) Apollo – "ΛΕΩΝ ΔΕΙΝΟΣ" (= Archegetes Oikistes Patroos) (line 5);
b) Apollo Toxophoros and Ietros (lines 6-7);
c) Apollo Delphinios (line 8).

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[102] Kruse 1936 „*Nikephoros*", RE, Bd. 17.1:310-312.

[103] Altertümer von Pergamon, 76, 516.

[104] IOSPE II: 22, № 26.

[105]*Athena Nikephoros*: In connection with his victories, King Attalos I gave Athena a new name, Nikephoros. This epiclesis was further confirmed and established in votive inscriptions by later rulers of Pergamon. For details on votive inscriptions to a "military" god invoked with the epiclesis Nikephoros, see Chaniotis 2005, 143 – 154; Kruse 1936 „*Nikephoros*", RE, Bd. 17.1:310-312; *Apollo Smintheus*: A plague of mice had led the worship of Apollo as god of mice in Sminthus (See Parke, Wormell, 321-323).

[106] According to Furley, this listing of Apollo's epithets in the nominative case resembles predicates of magical texts: Apollon is: a, b, c… or we may assume that here we only have the frame of the praise of Apollo, not the whole text, which in turn would explain the absence of a convincing metrical pattern.

1. The story of Apollo's birth: "They say that the God was born after Leto had changed herself into she-wolf." (Aelian. *nat. an.* 10. 26)

Line 4: ΕΠΤΑ ΛΥΚΟΣ ΑΣΘΕΝΗΣ

„ΕΠΤΑ"

According to the ancient myth, Apollo was born on the 7th day of the month T(h)argelion (Diog. Laert. 3. 1: T(h)argelion in Delos), which was why in antiquity the number seven was considered sacred. Having arrived on the seventh day, he was styled as Hebdomaios (Plut. *Quest. Graec.* 292 E). Therefore, each month there were celebrations in honour of Apollo as lord of the seventh day (Hebdomagetes) (Aisch. Sept. 800). Such festivities were held in Miletus, too, by the priests to Apollo Delphinios, the Molpoi. This is confirmed by a very important religious inscription from the Delphinion in Miletus. The Molpoi Decree (Milet 1.3 # 133) can be dated to 450-449 BC by the aisymnetes lists (Milet 1.3 #122.i.78)[107]. This lengthy text concerns the Festival of the Hebdomaia in the month Taureon[108] which marked the beginning of the new year in Miletus and Olbia[109]. It says:

The Molpoi Decree, lines 6-18: Inauguration of New Aisymnetes

„At the festival of the Hebdomaia, on the eighth day the aisymnetes of the Molpoi…(provides?) both the sacrifices or the vascerals for the people pouring libations. (7) The aisymnetes and the prosetairos select (others) (or „the aisymnetes chooses the prosetairoi"), when (8) all the kraters have been poured and they have chanted the paean. And on the ninth day (and from (9) the loins and fifth part, which the stephanephoroi receive, (10) and the new man possesses things equal to these), they begin to sacrifice the victims (11) from those things (?archo) to Apollo Delphinios. And

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[107] Gorman 2001, 94.

[108] Nilsson 1906, 158 ff.

[109] Trümpy 1997, 90 – 93.

the kraters are mixed just as (12) is done among the Molpoi and the paean is sung, and the aisymnetes leaving office (13) sacrifices to Hestia from the halves (and let him himself pour the libation from the kraters and sing the paean); on the tenth day, (14) there are contests, and two perfect victims are given from the Molpoi to the stephanephoroi (15) and sacrificed to Apollo Delphinios. And the stephanephoroi compete, (16) both the new ones and (oi ereo), and they drink the wine of the Molpoi, and (17) the libation is poured from the kraters just as (is done) among the Moploi. The outgoing aisymnetes provides the things like those of (18) Onitadai[110] and takes for his portion just as the Onitadai do."[111]

„ΛΥΚΟΣ ΑΣΘΕΝΗΣ"

In the previous interpretations it has been assumed that the Apollo's epithet *Lykeios* was recorded here[112]. Unfortunately, the sources do not give any information about a weak Apollo *Lykeios* but about a weak, exhausted from the birth pains Leto in the form of a she-wolf the evidence is plenty (Hom.*Il.* 4. 101, Hom. *Hymn. Apoll.* 11. 89-101; Aristot. *hist. anim.* 6. 580A, Aelian. *nat. an*. 4. 4; 10. 26, Schol. Apoll. Rhod. 2. 123-129a).

Therefore, the concise word combination *weak, without strength wolf* should be interpreted as containing the allusions to narrative about the birth of Apollo.

Quite in the spirit of ancient tradition, the poet created an allusion about the myth associated with the birth of Apollo on the seventh day of the month, by recording "seven" on the Berezan bone graffito and adding the metaphorical word combination ΛΥΚΟΣ ΑΣΘΕΝΗΣ (the two words in this form are used both for the masculine and feminine gender[113]).

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[110] In bibliography, the Onitadai are regarded as related or closely connected with the priestly family that replaced the Branchidai after they moved to Persia (See Poland 1935, RE, Suppl. 6: 513 – 514 "Molpoi",).

[111] The translation of V. Gorman has been used.

[112] Rusjaeva 1986, 34; Burkert 1990; Burkert 1994.

[113] Aristotle and the scholiast with Apollo of Rhodes used

Undoubtedly, the idea of the Hellenes about Leto as a "*she-wolf weak, without strength*" was evidently very widely spread considering the fact that a bronze sculpture of a she-wolf was placed in Delphi as well, to remind of Leto's birth pains. Aelian testifies about this: „That is why, as I learn, at Delphi a bronze Wolf is set up, in allusion to the birth-pangs of Leto." (Aelian. *nat. an.* 10. 26)

Apollo himself received the epithet ΙΗΙΟΣ (1. lamenting, painful, severe birth pains, and 2. a summoning cry to Apollo ΙΗΙΕ ΔΑΛΙ'ΑΠΟΛΛΟΝ)[114].

2. Allusions to mythical narratives about Apollo's great and beneficial deeds (Lines 5-8)

Line 5: ΕΒΔΟΜΗΚΟΝΤΑ ΛΕΩΝ ΔΕΙΝΟΣ

Apollo – "ΛΕΩΝ ΔΕΙΝΟΣ" (= Archegetes Oikistes Patroos)

„ΕΒΔΟΜΗΚΟΝΤΑ"

If we assume that „ΕΠΤΑ" carries the meaning of Apollo's date of birth on the seventh day of the month, the subsequent lines of the text should be expected to contain the continuation of the mythological narrative of Apollo's great and beneficial deeds.

„ΛΕΩΝ   ΔΕΙΝΟΣ"

Homer relates: „He was born strong (HHApollo 11. 123-130) and greatly lord among gods and men all over the fruitful earth (HHApollo 11. 62-82)." Evidently, this concept was not alien to the author of the Berezan prosodion, either, as he compared Apollo on the 70th day from his birth to a „mighty, powerful lion".

On one hand *mighty lion* refers to Apollo, to his power and might. Along with this, however, an allusion is being made about the power of Miletos whose connection with Apollo is excellently evidenced in the

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the substantive *lukos* in the feminine (Aristot. *hist. anim.* 6. 580A; Schol. Apoll. Rhod. 2. 123-129a).

[114] See Furley, Bremer 2001, II:107: Fragments of Pindar's Deliaka, 3.2 Paian 5, For the Athenians, line 37; See also Table A.1: Epithets and attributes of the gods (Apollo).

second part of Homer's hymn to Apollo: „ O, Lord, Lycia is yours and lovely Maeonia and Miletos, charming city by the sea…" (*HHApollo* 11. 179-181)[115].

Miletos was the most important metropolis in the Hellenic world, with many colonies on the Sea of Marmara (Propontis) and the Black Sea (Pontos)[116]. The lion as a symbol of Apollo was also an original emblem of Miletos where today we can find various sculptures of lions from the archaic times[117]. One of the four harbours of Miletus was called the Lion Harbor. The Sacred Way ran from the sanctuary of Apollo Delphinios at the base of the Lion Harbor in Miletos through the vast plateau known as Stephania to the Oracle of Apollo at Didyma[118]. The magnificent temple to Apollo was itself evidence of the might and the power of Archaic Miletos[119]. All along the Sacred Way there were many shrines and scluptures including figures of seated men, seated women and lions[120]. During this period the most famous and the earliest coin type of ancient Miletus was the electrum lion coins. An interesting coin from the late 7th c. BC featuring a lion protome, probably Miletan in origin, was found at Berezan[121].

In Berezan – Olbia, as a colony of Miletos, the cult for Apollo was also widely spread. The distinguishing mark (parasemon) of the polis, however, was the *dolphin* which carried the semantic connection to Apollo Delphinios[122].

Apollo of Didyma and of Miletos was the main deity of all Milesian-Ionian colonies because of which he bore the epiklesis Archegetes Oikistes Patroos[123].

Lines 6 : ΕΠΤ(Α)ΚΟΣΙΟΙ ΤΟΞΟΦΟΡΟΣ ΦΙΛΙΣ(ΤΟΣ)

Apollo Toxophoros

While the laconic expression in *Lines 4-5* of the prosodion of Berezan creates alludes to the myth of Apollo's birth in the Delian part of the Homeric Hymn to Apollo, here the prosodion continues with an allusion to the story of Apollo's earliest adventure – the killing of Python, of which a detailed account is given in the Delphic part of the *Homeric Hymn to Apollo*[124]. This indicates that the prosodion's plot is identical with the plot of the *Homeric Hymn to Apollo*. Therefore, the Berezan text here can be interpreted as follows: on the 700th day from his birth (i.e. while still a toddler about two years of age) Apollo killed Python. To emphasize his victory, on the one hand, and to avoid neglecting his twin sister Artemis who was attributed the same epithet[125], on the other hand, the anonymous poet described Apollo as "the most beloved archer"[126]. Would the sources confirm that?

According to *Mythogr. Vat*. 3. 8. 1, Apollo fought Python at a very early age. How old was he, however, when he killed Python? The Delphian legend describes him as a young boy. One of the versions claims Apollo killed Python while he was still a baby in his mother's arms. According to Hyginos (fab. 140), the god was just four days old. However, Euripides in Iphigenia in Tauris wrote that after Leto gave birth to Apollo in Delos, she took the baby to Parnassus, a place inhabited by a dragon protecting the oracle from its mother

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[115] On the mythological and historical subjects of the mythological part of the hymn see Furley 1995, 29 – 46.

[116] Graham 1983.

[117] Cahn 1950, 7, 185 ff.; Shapiro 1989, 59; Rusjaeva 1986, 36; Gorman 2001, 168-169).

[118] Gorman 2001, 2.

[119] Greaves 2002, 129.

[120] Greaves, 2002, 119-121.

[121] Rusjaeva 1986, 37 n. 57.

[122] Rusjaeva 1986, 33; Vinogradov, Krizickii 1995, 109-112.

[123] Dougherty 1993, 18 – 27; Hansen, Nielsen 2004, 132; On the sculpture of Apollo Patroos see Shapiro 1989, 58.

[124] On the iconography, see Shapiro 1989, 58 -59.

[125] Line 6 and line 14: there are two epithets of Apollo and Artemis who, as twins born by Leto, were also called *didymoi paides* and *toxophoros gonos* (See Furley, Bremer 2001, II:393: Table A.1: Epithets and attributes of the gods (*Apollo* and *Artemis*)). A proof that Artemis and Apollo often had the same epithets are also the votive graffiti discovered in Olbia from the 6th-5th century BC and dedicated to Artemis Delphinia and Apollo Ietros and Delphinios (Vinogradov, Krizickii 1995, Fig. 105: 1-4 *Apollo Ietros* and 5-8 *Delphinios*; 106: 3 *Artemida Delphinia*; fig. 85: Coins from Olbia with dolphin, fig. 93).

[126] On Apollo Philesios or Philios see Fontenrose 1988, 118 – 122.

Ge. A baby in his mother's arms, Apollo killed the monster with his arrows and took possession of the shrine (Eurip. *Iph. Taur.* 1239–1252). The same version of the myth, saying that Apollo killed Python as a small child, about two years old, in his mother's arms, can also be seen on a black-figure lekythos from the early 5th c. BC [127] (fig. 10). This image is related to the Septerion festival which was held once in eight years and was dedicated to Apollo's fight with Python[128].

It seems that this version is best illustrated in art[129]. Klearchos of Soloi describes a bronze sculpture in Delphi representing Leto with the twins Apollo and Artemis in her arms. When Python attacked them, Apollo killed it (Klearchos 46. 2.318m)[130].

During the Archaic age, the concept of Apollo as Toxophoros was reflected in a number of images in which he was represented with bow and arrows. Pausanius wrote that in the late 6th c. BC the great sculptor Kanachos made specially for Didyma a bronze sculpture of Apollo Didymeus as Toxophoros (Paus. 8. 46. 3). As a large number of vase painting testifies, around 540 BC Apollo was increasingly represented as kitharodos[131], a concept that already reflected the important role of divine music (mousike) in polis life.

Lines 7: ΔΟΡΕΗ ΔΥΝΑΜ(?) ΙΗΤΗΟΣ

Apollo Ietros

In the Hellenistic notion of Apollo, his representations as Toxophoros and Ietros were closely related (Hom. *Il.* 1. 40-100). Apollo's arrows usually signify sudden death for men, generally from disease, just as

Artemis kills women, often in childbirth[132].

For fear of fatal illness and sorrows, the prosodion's author would not omit the praise of Apollo as the most beloved Archer and Healer. For the Miletan settlers in the faraway northern colony of Borysthenes (Berezan/Olbia) where the northern wind Boreas froze hard the land and the sea through the winter, Apollo was a powerful gift. They all believed that if they worshipped Apollo, he would bring them health instead of illness and death.

The cult to Apollo ΙΗΤΡΟΣ was widely spread in the Milesian apoikoi during the second half of the 7th c. BC and the first half of the 6th c. BC. During the Archaic age, he was commonly portrayed holding a bow in the one hand, and an olive or laurel twig in the other hand[133]. Another synonymous epithet that was often used to describe Apollo as ΙΗΤΗΟΣ=ΙΗΤΡΟΣ was ΠΑΙΑΝ, which also translates as "healer" or "deliverer"[134].

Archaeological excavations in Olbia showed that from the second quarter of the 6th c. BC, Apollo Ietros was the leading patron of the colony Borysthenes (Berezan/Olbia), and sacrifices and libations to him were made on primitive wooden altars in the western temenos[135].

Line 8: ΕΠΤΑΚΙ(Σ)ΧΙΛΙ(ΟΙ) ΔΕΛΦΙΣ ΦΡΟΝΙΜΟΣ

Apollo Delphinios

If the interpretation so far is correct, line 8 should be interpreted as follows. If 700 may mean the age of Apollo in days (i.e. close to two years) at the time of his first exploit, the killing of Python, the question here is, what happened next? The text indicates that 7000 days after his birth, Apollo became a "wise dolphin". This may well mean that he returned to Delphi many

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[127] Bf. Lekythos, early 5th c. BC: CVA 1931, pl. 86. 6 – 8; LM 3. 3408 fig. 4 (1); Fontenrose 1959, 16 – 17.

[128] Wernike 1895, 24; Fontenrose 1959, 453 – 454. The Pythian games were also held every eight years until 590 BC. They were initiated by Apollo to celebrate his victory over Python (Apollod. 1. 4. 1; Paus. 10. 6. 5 f; Poll. Onom. 4. 84); (Fontenrose 1959, 15 – 21, 456).

[129] Roscher 1965, 3405.

[130] For all versions of the myth of Apollo killing Python, see Fontenrose 1959, 21.

[131] Shapiro 1989, 54.

[132] Kirk 1985, 58.

[133] On the cult to Apollo the Healer in Olbia, see Rusjaeva 1986, 42-56; Oppermann 2004, 12 – 29, 34 – 40; 92 – 96.

[134] See Furley, Bremer 2001, 2:Table A.1: Epithets and attributes of the gods (Apollo): Paian 2.4; 6.1, Ieios 3.2; 11.2, Ieios Dalios Paian 9.2.

[135] Rusjaeva 2003b, 42 – 43.

years later, as a young man between 19 and 20 years of age (7000 days from his birth). Was that what actually happened?

One of the myth's versions goes that after the fierce fight with Python, having killed it, Apollo headed to Crete to be purified of blood pollution, and thereafter came back to Delphi[136]. Evidently, during that time he was to choose his first priests. His meeting with them is described perfectly in *Homer's hymn* (400 – 497). It reads that Apollo transfigured into a dolphin and thus appeared to the Cretan merchants he chose for his first priests. Soon afterwards, he revealed his divine appearance and, singing a paean to the accompaniment of a kithara, led the procession to Delphi where the new oracle was to be founded. (*HHApollo*, 388 - 390). The Homeric Hymn to Apollo clearly says that Apollo returned to Delphi as a young and handsome ephebe (499 – 500). This image is reflected in many vase paintings and sculptures, representing the handsome young Apollo as kitharodos[137].

Septerion, The Pythian festival and the Amphictyonics

The presence of mousike in Apollonian iconography is a fundamental element which, in the Hellenistic view, connects myth and reality. Aristoxenus wrote that having defeated Python, Apollo sang an *epitaphion*, thus initiating himself the Pythian festival devoted entirely to Pythion's funeral rites (Ps. Plut. *Mor*. 1136c). Every eight years the Delphians celebrated three "nine-year" festivals: Septerion, The Pythian festival and the Amphictyonics, all related to Apollo's victory over Python[138]. At first (until 590 BC), the Pythian games only included musical contects: kithara players competed for the prize, singing hymns in praise of Apollo and his victory over Python[139].

The famous Pythian nome was first performed at

an Amphictyonic festival by a professional aulet of the name of Sakadas. Pollux wrote that the composition consisted of five parts: *peira*, representing Apollo's inspection of the combat site; *katakeleusmos*, Apollo's challenge to the dragon; *iambikon*, the combat, during which were heard trumpet notes and the dragon's gnashing of teeth as Apollo's arrow struck home; *spondeion*, the god's victory; *katachoreusis*, the god'd dance to celebrate the victory (*Onom*. 4. 84). Despite the lack of lyrics Sakadas' virtuoso performance was so vivid that he won the musical contest in 586, 582 and 578 BC[140].

The cult to Apollo Delphinios

Indisputably the prosodion of the Milesian-Ionian colony Berezan-Olbia is associated with the cult to Apollo Delphinios. As V. Gorman points out: "The cult of Apollo Delphinios is characterized by its connection to the state government in Miletus, Olbia, Athens and Crete. At Miletus, besides providing both protection as patron of the city and a priest to serve as eponym, Apollo Delphinios safeguarded the state archives: epigraphic finds there include an Archaic sacrifice calendar, lists of the eponymous officials, and hundreds of inscriptions as treaties, anagraphai conferring citizenship or proxeny, and other state decree. Apollo Ietros and Delphinios was the patron god of Olbia and the aisymnetes of the Molpoi may also have been the eponymous official."[141]

Lines 4, 5, 6, 8: ΕΠΤΑ, ΕΒΔΟΜΗΚΟΝΤΑ, ΕΠΤ(Α)ΚΟΣΙΟΙ, ΕΠΤΑΚΙ(Σ)ΧΙΛΙ(ΟΙ)

So far, each of the figures 7, 70, 700 and 7000 was interpreted as meaning a certain age at which a certain event took place[142]. It seems that the anonymous

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[136] Fontenrose 1959, 454 – 455.

[137] On the iconography of Apollo as kitharodos see Shapiro 1989, 59; Oppermann 2004, 192.

[138] Fontenrose 1959, 453 – 458.

[139] Fontenrose 1959, 456.

[140] Fontenrose 1959, 458.

[141] Gorman 2001, 169-170; Oppermann 2004, 14, 69

[142] Presented here is a different interpretation of the numerical sequence 7, 70, 700, 7000, in which a parallel has been sought with the interpreted text's context (on other interpretations, see the bibliographic references). It is inappropriate to cite Polyaen. 8.33, Plut. *De mulierum virtutibus* 245D33 as parallels for a possible explanation of the numerical sequence (See Dubois

prosodion author's solution was no exception in the poetic tradition. This is confirmed precisely in a small excerpt from Aristophanes' comedy *Lysistrata* (641-646): "**When I was seven**, I was one of the Arrhephoroi, **then at ten** I was a „corn-grinder" for (Athena) Archegetis, **then I was** a „bear" at the Brauronia (sc. for Artemis), and as „pretty girl" I served as „basket-carrier' (sc. at the Panathenaia for Athena)."

Lines 9-18: Relatively short sections

Blessing/Prayer (litaneia) (Lines 9-11)

While the first part praises Apollo's strength and wisdom, here the lines 9, 10 and 11 clearly show the purpose of the prosodion of Berezan: to ask Apollo for peace, well being, and prosperity of the polis. Two specific synonyms have been used in the text: *olbios*[143] and *makaira*, which are also epithets respectively of Apollo and Leto[144]. The author has used this double meaning to make the analogy between Apollo – Artemis – Leto (children – mother) with polis-metropolis (Olbia – Miletus)[145]. According to Furley and Bremer the use in prayers "of words with double meaning corresponding to the two sides of the relationship involved worship"[146]. Thus, in people's minds, the connection between the protecting gods, and the citizens of the polis was even stronger and indestructible – just like several meanings coexist in one word and nothing can separate them.

This part of the text ends with a mention of Leto

1996 and Onyshkevych 2002, 165 n. 21) as they have been taken out of the context which suggests that they show the victims' number. This has nothing to do with the meaning of the Berezan bone plaque's text.

[143] About the renaming of the Milesian colony Olbia from Boristen see Rusjaeva 1986, 43 n. 90; Oppermann 2004, 2 – 7, 9.

[144] See Furley, Bremer 2001, 2:392: Table A.1: Epithets and attributes of the gods (*Apollo* 11.3, line 1230).

[145] In a private conversation, Furley expressed the opinion that "ΟΛΒΙΗ reads more naturally as adjective with ΕΙΡΗΝΗ. Perhaps πολι in line 10 is πολύ (much) as adverb with μακαρίξω." In that case, ΕΙΡΗΝΗ ΟΛΒΙΗ should be regarded as another item on the list of predicates' of Apollo.

[146] Furley, Bremer 2001, 1:61.

whom the poet described as a "weak she-wolf" at the beginning of the prosodion.

Line 12: ΕΕΠΤΑ

In the upper-left corner of the plaque, evidently separated from the text but with much smaller letters and with reduplication of "epsilon", "еепта" is recorded. As we saw, the main section of the prosodion also began with "епта". The difference, however, is in the reduplication of "epsilon" which was regarded as an error in previous publications.

Dedication and sacrifice (line 13-15), refrain-singing (line 16-17) and sacred topography (line 18)

This part of the prosodion explains that the sacrifice will be made to Apollo Didymeus of Miletus. These two epithets were very rare during the Archaic age as they had a purely geographical meaning. Researchers have discovered five votive inscriptions dedicated to Apollo of Miletus dated to the 6th c. BC[147].

According to Fontenrose the epithet Didymeus used to describe Apollo in fact meant the Apollo of Didyma (near Miletus)[148].

The rite of sacrifice was central to the worship of Apollo. It was accompanied by a prayer, an offering and the performance of cult songs during the ritual ceremony[149]. As Fontenrose put it, "apparently every sacrifice was preceded by a procession of the officiating priests, victims, attendants carrying sacred objects and utensils, and the persons in whose behalf the sacrifice was made – city officials in public sacrifices."[150]

The concluding part of the prosodion is related to the moment of sacrifice to Apollo Delphinios, the patron god of Miletus and worshiped in Didyma (Didymeus)[151], accompanied by a blessing/prayer (lines 9-11), an offering (line 13-15) and the performance of a refrain-singing (line 16-17).

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[147] Rusjaeva 1986, 58 - 59 , n. 150

[148] Fontenrose 1988, 114.

[149] Fontenrose 1988, 63.

[150] Fontenrose 1988, 65.

[151] Fontenrose 1988, 121.

Didym(a)

In the lower right corner of the plaque, clearly separated from the text, is the word "Didym" (line 18). As in many instances the hymns even indicated the location around the altar[152], we can assume this is also an indication of sacral topography. The earliest written sources on Didyma were several Archaic inscriptions from the 6th c. BC that testified to the establishment of the cult to Apollo Didymeus[153]. Herodotus confirmed that: he wrote that the oracle had a great prestige in the sixth century and was then controlled by the Branchidai family (Hdt. 1. 46.2; 92.2; 157.3-159.4; 2.159.3; 5.36.3; 6.19.2-3)[154]. On the other hand, however, as Fontenrose points out, Didyma as a place name was used to indicate the shrine and the location only from 450 onwards. Therefore, ancient authors often referred to the sanctuary and the village as Branchidai, from the name of the priestly or mantic family that controlled the sanctuary and Oracle before 494 BC when the archaic temple was destroyed[155]. After 494 BC, the priestly family of Branchidai gradually vanished[156]. However, the cult to Apollo and his sanctuary in Didyma lived on.[157] After the Branchidai moved to Persia, the cult to Apollo was most likely serviced by the priestly family of the *Onitadai,* mentioned in the Molpoi Decree. This ordinance reflecting an Archaic tradition clearly shows that between 494 and 450 BC Didyma continued to function actively as a cult centre[158].

Third Level of Interpretation: Outlining the Limits of Metaphysical Thought and an Attempt on their Transcending

The place of the Berezan prosodion in the Greek musical and religious tradition: Similarly to all other cult compositions of this type, we can suppose that the Berezan prosodion was certainly an important element of the special religious procession. Unfortunately, it is impossible to give a definitive answer to the questions related with its author, performance or the festival it was intended for. Therefore, only "the combination of all the evidence allows a reconstruction of the ritual."[159]

On the prosodion's author: The identity of the epigraphist who recorded the prosodion on the bone plaque is indeed unknown, but is it nevertheless possible to attempt a reconstruction of his profile? We don't know whether the plaque's owner had simply commissioned it, or whether the epigraphist was also the author of the text and the music. Was it a replica made for some special occasion, or was it an original work?

The inscription itself indicates that if the epigraphist was not trained in music, he would have hardly paid attention to the notation in making a copy. Therefore, he must have been able to read and write notation, and that he made an effort to preserve the music to which the text was supposed to be sung.

On the other hand, he recorded not only the prosodion's music but all its parts, even placing small accents on certain words by means of a double hasta (line 14). He obviously found it important to preserve the prosodion in its entirety of praise, offering at the sacrificial rite, and prayer. Thus, the musician is more likely to have been employed with a temple rather than a freelancer. He was probably related with the religious tradition of the metropolis Miletus and the cult center of Didyma where Apollo was celebrated as Delphinios, while as Ietros (Healer) he was a "powerful gift" (line 7) to the inhabitants of the colony of Olbia. We can therefore assume that the prosodion had been transferred to Berezan-Olbia as one of the traditional ritual performances of Miletus and Didyma, one of those ritual performances that were supposed to be studied by the polis population and sung during certain festivities[160].

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[152] Furley, Bremer 2001, 1:32.

[153] Milet. 1. 3. 178; DI 11, Milet 1. 3. 132a = LSAM 42A (Fontenrose 1988, 179 - 181).

[154] Fontenrose 1988, 9.

[155] Fontenrose1988, 3.

[156] See inscriptions no. 37 from 550 BC and no. 38 from 545 BC in the catalogue of Fontenrose 1988, 210 - 212.

[157] Fontenrose 1988, 14.

[158] Fontenrose 1988, 14.

[159] Chaniotis, 2005, 55.

[160] Polybius reports that ancient customs such as teaching

The contacts between Miletus and Olbia were very close, as a number of epigraphic sources testify. For example, an inscription on a white marble stele from c. 330 BC or earlier, found in 1903 in the paving of the Delphinium at Miletus, contains custom-based religious, legal and financial rights between the citizens of Miletus and Olbia: „Τάδε πάτρια ᾿Ολβιοπολίταις καὶ Μιλησί(ί)οις.”[161] The rules provide that the Milesian at Olbia may sacrifice on the same altars and visit the same public temples as the Olbian[162]. The reference to these old principles in an agreement of 330 BC means that the religious tradition had been transferred from the very establishment of Berezan-Olbia by Miletus[163], and religious hymns made up an important part of that tradition. The results of archaeological excavations of the western temenos in Olbia are a sound proof of those religious dynamics. According to Rusjaeva, they indicate "that the first settlers organized their religious festivals and the related rituals observing the traditions brought from the metropolis."[164]

The Molpoi

Looking for the possible author of the Berezan prosodion, the traces lead us to the information on the religious college of the Molpoi. Hesiod used the word *molpē*, in the sense of combination of singing and dance[165]. It was evidently no coincidence that this word was chosen to designate the Molpoi (singers) who, according to epigraphic sources, were the most ancient Hellenistic religious college. According to Hesychius, the Molpoi were simultaneously singers, poets and composers of hymns (hymnodoi) of very ancient origin. They came from Asia Minor but most of the evidence about them came from Ionia[166]. According to the written tradition, the oldest Molpoi were in Miletus[167]. There, they served both the cult to Apollo of Didyma, the official patron of Miletus, and the cult to their god Apollo Delphinios[168].

As ancient bearers of the religious tradition in the cult to Apollo Delphinios in which music played a particularly important role, the Molpoi were documented as present in the colony of Olbia as well. Their presence is proved by two votive inscriptions dedicated to Apollo Delphinios from the 5th c. BC[169].

As the name itself indicates, as early as in the Archaic age there were professional singers, poets and musicians/composers (aulos and kithara players) among the Molpoi. It was their responsibility to organize the entire musical performance during the religious ceremonies. Therefore, since times immemorial, temples were the natural environment where the entire music-related knowledge was born, taught, developed and conserved. Ps. Plutarchus wrote: „In still more ancient times, it is said, the Greeks knew nothing of the music of the theatre, and devoted all their skill to honouring

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traditional hymns and paeans to boys from an early age were preserved in certain conservative communities such as Sparta and Arcadia (4. 20. 8 - 11).

[161] On the entire inscription and commentary, see Tod 1948, no. 195.

[162] Tod 1948, 271.

[163] The aspiration to preserve the connection between the colony and the metropolis can be observed in other epigraphic sources as well, copies of relations that were established during the Archaic period. An example is copy from the 4th c. BC of an oath between the inhabitants of the colony Kyrene and the metropolis Thera from c. 600 BC (Bengtson 1975, no. 103.), or the oath of the Greek before the battle at Plataiai in 479 BC, copied because of its significance in the 4th c. BC on a stele in Acharnai (cf. Siewert 1972).

[164] Rusjaeva 2003b, 95.

[165] Barker 1984, I: 35 n. 11: "Molpē, here as usually, refers to a combination of song and dance. The word's emphasis is

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always on the singing, and sometimes no element of dancing is implied: but here, as line 70 shows, the Muses dance in procession as they go to Olympus."

[166] Poland 1935, 509, 511. In Ionia there are names related to this root, the most popular being Molpagoras. Herodotus (5.30) mentions a Molpagoras as the father of Aristagoras, i.e. in the 6th c. BC. Individuals named Molpagoras were found in the Miletan colonies of Panticapea (IOSPE II. 14) and Olbia (SEG 3, 594). A relatively rare name, Molpios was found in inscriptions from 512/11 BC (Poland 1935, 510). The last eidence on the Molpoi dates back to 31/32 AD, in a woman's name (Poland 1935, 513).

[167] Poland 1935, 510.

[168] Poland 1935, 511.

[169] *Inscriptiones Olbiae* 1968, no. 56 and no. 58; Graf 1974, 209 – 215.

the gods and educating the young. Among the people of those days no theatres had been built at all: music still had its home in the temples, in which they used it to give honour to the divine and to praise good man." (Ps. Plut., *De mus.* 27)

The musical notation on the Berezan bone plaque, as well as the musical notation of the two Delphic paeans[170], show unequivocally that in the pan-Hellenic temples to Apollo (Didyma, Delphi) the notation was not only well known but also widely used since the Archaic age. According to Ps. Plutarchus some of the nomoi sung to the kithara which were used by Terpander were constructed by Philammon of Delphi in ancient times (*De mus.* 1133b).

Unfortunately, the author of the Berezan prosodion failed to put down his name, but it is highly likely that he belonged to the Molpoi. The composers of the two Delphic paeans, however, did not remain anonymous. Interestingly, Athenaios and Limenios recorded their compositions with different notations. According to researchers, Limenios was the second of the seven kitharistai who took part in the Pythian Festival in 128 BC and who accompanied the professional chorus (Technitai)[171]. The identification of Athenaios, however, is still disputable[172].

On the festival during which the Berezan prosodion was performed: Cult music undoubtedly played a major role in all regular religious festivals which had precisely established and laid-down rules (eoptai) since the Archaic age, as evidenced by the Laws and Plato[173]:

· The day of the year on each they are to be held and the gods or divinities to be honored at each;

· Next there are to be ordinances prescribing what hymn is to be sung at each festival and with what dances each is to be accompanied;

· Public sacrifice to God and each hymn dedicated to its appropriate God (799 a - b);

· The selection of these official hymns and dances is entrusted to a group of examiners (dokemastai), consisting of men not less than fifty years of age, who have liberty to select for the liturgy any of the older songs and dances that they think appropriate (and there are many fine compositions of the ancients)) (802 a - b).

Music, as well as its appropriate selection, were of immense significance to the festival. Although the religious norms deprived the old cult songs of any change in time, their impact was not in the least influenced as the emotional experience was different every time[174]. On the one hand, the religious music, the more layers of memories and emotions it carried, and the more it created a feeling of a traditional atmosphere. On the other hand, however, the sharing of the musical performance created personal, deep-felt and unique experiences that made each festival an unforgettable moment of their lives[175].

The festival

The graffiti of Olbia provide valuable evidence of the festivity months dedicated to Apollo Delphinios and prove that during the archaic period in Miletos and Olbia the calendar was one and the same[176]. The sequence of all 12 months is listed on a vessel from the 5th c. BC. This calendar from Olbia coincides precisely with Bilabel's reconstruction of the months in Miletus[177]. According to that reconstruction, from the 7th c. BC in Miletus the year always began with the month Ταυρέων (April/May)[178]. Ehrhardt who also accepted the month Ταυρέων as the beginning of the year in Miletus paid particular attention to the fact that it was also an intercalary month[179].

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[170] On the common compositional structure of the two Delphic paeans, see Bélis 1992, 133 -142; Furley, Bremer 2001, 1:134 -138; DAGM 2001, 85. On the musical analyses see Bélis 1992, 31 - 129; Hagel 2000, 38 – 99.

[171] Colin 1913, 529 -532. Furley, Bremer

[172] Furley, Bremer 2001, 1:129 – 131.

[173] See Morrow 1960, 352 – 470.

[174] On the emotional context during the performance of rituals see Chaniotis 2006, 234 – 237.

[175] For more details see Chaniotis 2006, 211 – 238.

[176] Vinogradov, Rusjaeva 1980, 19-64. See Rusjaeva 2003a, 112-117; See Gorman 2001, 38.

[177] Trümpy 1997, 90.

[178] Trümpy 1997, 91; See Bilabel 1920, 67 – 80.

[179] Trümpy 1997, 91; See Ehrhardt 1983, 113 ff, 120 ff, 125.

As Trümpy noted, the identical names and succession of the months in Olbia and Miletus suggest that not only did the colony adopt the metropolis' calendar but it also preserved it unchanged for a long time[180].

The advent of spring and the New Year were celebrated in the first month, Taureon, with the main festival of Apollo Delphinios[181]. Information on this annual festival and on the instructions for the musical performance during the religious procession can be found in the third part of the above mentioned Molpoi Decree, the so called "Procession to Didyma (lines 18-31). It explains that on the way from Miletus to Didyma the procession led by the Molpoi stopped in six different places, and a paean was sung in each:

1. the first a stop was made „before Hekate before the Gates",

2. a second stop was made „before the sanctury of Dynamis",

3. a third stop was made „in the meadow on the heights before the nymphs",

4. a fourth stop was made „before the shrine of Hermes with the Loud Voice (?Enkelados)",

5. a fifth stop was made „before the Tribesman (Phylios), opposite the Horned One (Keraiites)",

6. a sixth stop was made „before the statues of Chares."[182]

Archaeological excavations in Olbia indicate that probably as early as in the second half of the 6th c. BC the western and the eastern temenos were connected by a very broad street (10-11 m wide) to accommodate religious festivals and processions[183]. The topography of the religious ceremony in honour of Apollo Delphinios, marking the arrival of the New Year, and the exact way the prosodion was performed are not yet clear.

On the performance of the prosodion: As it was demonstrated, the compositional structure of the prosodion of Berezan includes aulos accompaniment, an enumeration of the key moments of Apollo's sacral biography in unrhymed metaphorical combinations, a blessing/prayer, a dedication, and finally a small refrain. Evidently, that fragmentariness of the prosodion was the reason why even in antiquity it was likened to a paean, a prayer (litaneia) or a song of praise. This specific structure, however, was obviously suitable for the religious procession. Therefore, each part of the musical type prosodion was performed in a definite place, in a definite way.

Voice and accompaniment

According to the sources, at the time of Archilochus there already existed the practice to sing either in unison or differently from the accompaniment (Ps. Plut. *De mus*. 1141b; Ps. Arist. Probs. XIX. 18; XIX. 43). In the prosodion of Berezan, we obviously have a melody that was sung in unison with the accompaniment of the aulos. As the above statistics of musical document shows, recording instrumental music with vocal notation was fairly common.

Ps. Aristotel explains that when people sing both, or when one is sung and the other played on the aulos, it is as if they sing one note (Probs. XIX. 18).

Reconstruction of the performance

Lines 3-8: Due to the fact that there is no rhyme and a sequence of numbers is present, this part of the bone plaque inscription creates the impression of a magical text. However, as demonstrated by the analysis and the interpretation of the compositional elements, here we lack the typical context of a document with a magical content. In this case, we have a praise to Apollo consisting of an enumeration of his key epithets since Archaic times, in ascending order, as related to certain years of his biography.

According to the religious tradition, singing in prose was nothing extraordinary in a ritual dialogue between the people and the priest. Clement of Alexandria relates the following story: "And Apollodorus of Corcura says that this lines were recited by Branchus

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[180] Trümpy 1997, 91.
[181] Gorman 2001, 38.
[182] See Gorman 2001, 94; Furley, Bremer 2001, 1:134.
[183] Rusjaeva, A., 2003b, 93.

the seer, when purifying the Milesians from the plaque; for he, sprinkling the multitude with branches of laurel, led of the hymn somehow as follows: *Sing* (melpete) *Boys Hecaergus and Hecaerga.* And the people accompanied him, saying (epepsallen): *Bedu, Zaps, Chthon, Plectron, Sphinx, Cnaxzbi, Chthyptes, Plegmos, Drops* (*Strom.* 5. 8).

As the source shows, the priest is singing a hymn, of which a single line has reached us. With that hymn, Branchus calls upon the people (designated with the archaic word *laos*) to "sing praise" to the gods. However, the text that the people sing in response has no metric pattern, i.e. the religious tradition allowed the singing in prose of separate words and phrases as during the ritual the meaning of each word was obviously more important than the poetic form. Conservatively guarded and passed down from generation to generation in priests' clans, the sacral text depended on the cult event or festival. It was different for, say, the performance of katharsis (e.g. the source on the eponym of the Branchides priestly clan), and the festival of the patron-god Apollo Delphinios at the beginning of the New Year.

We can therefore assume that *lines 3-8* came fifth in the dialogue between the priest and the people. The reconstruction should look like this: on the way to the altar and the temple of Apollo each citizen was supposed to demonstrate that he knew what happened at *ΕΠΤΑ, ΕΒΔΟΜΗΚΟΝΤΑ, ΕΠΤ(Α)ΚΟΣΙΟΙ* and *ΕΠΤΑΚΙ(Σ)ΧΙΛΙ(ΟΙ)* of Apollo's biography. Thus, when the priest said „*ΕΠΤΑ*", the people probably sang „*ΛΥΚΟΣ ΑΣΘΕΝΗΣ*", when the priest sang *ΕΒΔΟΜΗΚΟΝΤΑ*, the people responded with "*ΛΕΩΝ ΔΕΙΝΟΣ*", to *ΕΠΤ(Α)ΚΟΣΙΟΙ* they responded with „*ΤΟΞΟΦΟΡΟΣ ΦΙΛΙΣ(ΤΟΣ)*", „*ΔΟΡΕΗ ΔΥΝΑΜ(?) ΙΗΤΗΟΣ*", and to *ΕΠΤΑΚΙ(Σ)ΧΙΛΙ(ΟΙ)* – with „*ΔΕΛΦΙΣ ΦΡΟΝΙΜΟΣ*".

Apart from that, the cult procession had its rigorous general rules. It required a text that was clear, easy to remember, and simple to sing. It ought not be long as it was repeated many times on the way to the altar or to the temple. As the Molpoi Decree indicates, the procession would stop in six places, and a paean would be sung by a special chorus to the accompaniment of a kithara. The prosodion (a musical type), however, was sung by all citizens, immediately after the paean, before the procession resumed its march on the Sacred Way. The huge crowd of people, sacrificial animals and carts loaded with food and wine was led not by the rhythm of the words but by the rhythm of the embatērios aulos, whose strong and penetrating sound repeated the music in unison.

Having stopped at the sacred sites, the procession would reach its final destination, the temple of Apollo. There, the priest would make a sacrifice at the altar and a libation to Apollo (lines 13-15), and would say a prayer (lines 9-11) on behalf of the polis. The people would then praise the god, singing a small refrain (lines 16-17).

We have every reason to believe that the prosodion of Berezan was one of the traditional songs at the Didyma cult center and was intended for performance in official cult to Apollo Delphinios in both Miletus and its colony Berezan-Olbia.

Unlike the two Delphic paeans that were specially composed for the musical-religious contests, and were performed by professional choirs (Technitai)[184], the prosodion of Berezan was one of the mandatory ritual performances that were studied by boys and girls in the polis from an early age so that the religious tradition could be learned and preserved. This is probably the reason why it was transferred from the metropolis to the colony. It is highly likely that it was the processional song that selected citizens of Miletus and Olbia sang during the main festival of Apollo Delphinios (the conqueror over the North wind) in the month Taureon. Apollo's victory over the north wind Boreas and the arrival of the New Year in spring were celebrated with sacrifices to the victorious god, songs and festive prayers for peace and prosperity.

Therefore, exactly on the Berezan bone graffito, the epiklesis of Apollo, "Nikephoros Boreo", was recorded. With the victory over Boreas by Apollo came the spring, the earth and the sea were released from the icy embrace of the North wind, the sea ways opened

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[184] Furley, Bremer 2001, 1:129.

and the trade ships full of food and various goods left from the colony to the metropolis and back.

Conclusion: „...every answer becomes a new question.”

Studying an archaeological find as a hermeneutic problem is doubtlessly a challenge to both the researcher and the reader. Here destruction was used as positive means of reconstruction of a certain event in the distant past. However, that event would be little but a dull fact if its cultural impulse is not evoked. Going beyond the artifact (from its visible aspect to its invisible essence) and transcending the metaphysical limits in order to access the ancient way of thinking became possible owing to the hermeneutical method. Following the hermeneutical approach, researcher and reader simultaneously join the process of events' reconstruction and thus become an integral part of the ontological understanding; in other words, knowingly or not, they engage in philosophizing, for the word's very etymology implies a thinking person's individual search for self-testing [185] . This is the process from the emergence of a thought to the action of reason to the explanation of the meaning (Plato, *Theaet.* 210 c). The process of thinking itself begins in wonder - and so does philosophy (Plato, *Theaet.* 155 d).

"There is no escape from philosophy," says Karl Jaspers. "The question is only whether a philosophy is conscious or not, whether it is good or bad, muddled or clear. Anyone who rejects philosophy is himself unconsciously practising a philosophy. ...Its questions are more essential than its answers, and every answer becomes a new question."[186]

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[185] *Philosophy* (Gr. φιλοσοφία; Lat. philosophia) means tendency, aspiration, love for wisdom or science, eagerness for education, knowledge, spiritual aspiration, inquisitiveness. The second meaning of the Greek word *philosophia* is science, scientific inquiry, research.

At the same time, however, *philosophia* also means the methodology of attaining a purpose by systematic (scientific, methodical) inquiry.

What does *philosopher* mean? The dictionary connects the word's (φιλόσοφος) first meaning with motivation, the individual aspiration for wisdom, love of learning and art and the ability to compose (speeches and songs).

The second meaning of *philosopher* is related to the spiritual journey, be it philosophical, methodological or scientific.

Only in the third place *philosopher* means specifically someone engaged in philosophy, a scientist, a researcher.

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[186] Jaspers 1951, 12.

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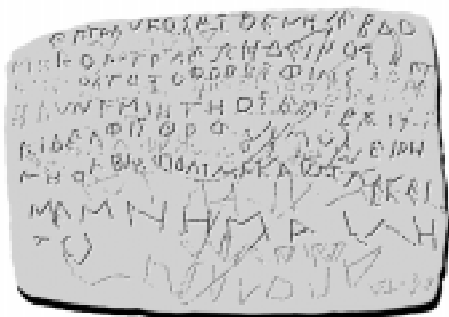
Fig. 1a: text ↓
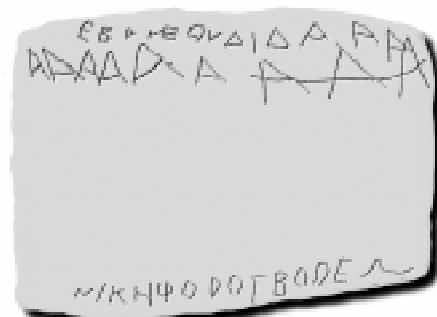
Text 1 ↓
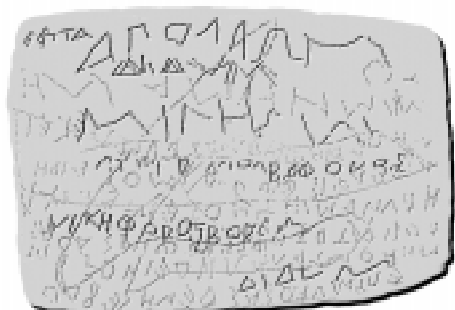
Fig. 1b: text ↑
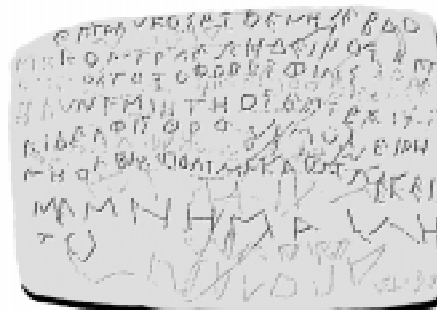
Text 2 ↓

The bone plaque from Berezan (550 – 525 BC or early 5th c. BC): The obverse of the plaque is variegated with writings and drawings in both directions (↑↓).
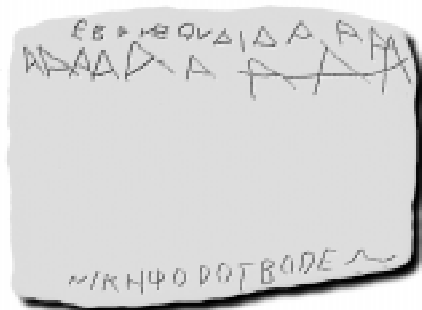
Fig. 2: text ↓

Text 3 ↑

The bone plaque from Berezan (550 – 525 BC or early 5th c. BC): On the reverse of the plaque, the writings are distributed in the upper and lower parts. The middle of the plate is left untreated and a trace of dried bone marrow is evident.
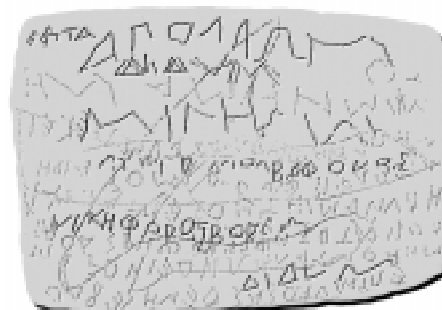
Fig. 3 Berezan bone graffito, 550 – 525 BC or early 5th c. BC: Reconstruction of the text structure

**Fig. 5: Oinochoe, Attic, early 5ᵗʰ c. BC,
Bibliothèque Nationale, Paris, Catal. No 272**
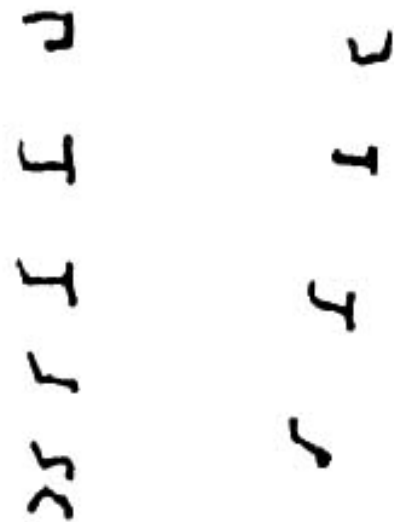
Fig. 5a: Inscriptions: Instrumental musical notation

**Fig. 6: Lekythos, Attic, early 5ᵗʰ c. BC,
Bibliothèque Nationale, Paris, Inv. No 2985**
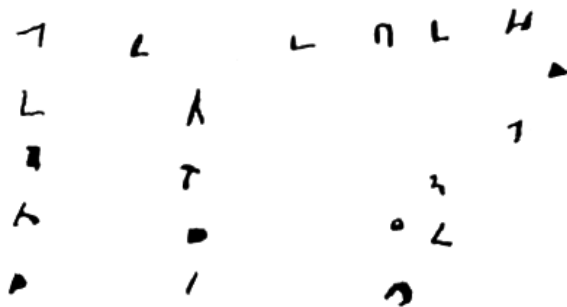
Fig. 6a: Inscriptions: Instrumental musical notation

Fig. 7: Oinochoe, Attic, early 5th c. BC,
Bibliothèque Nationale, Paris, Catal. No 467

Fig. 8: Fragment of red-figure kylix, Naukratis, c. 485 BC (Oxford G 138,3,5,11):
Ancient musical studio

Fig. 9: Attic r.f. cup Basel, c. 490 BC, Antikenmuseum BS 465:
Lessons in melographia

Fig. 10: Lekythos, early 5ᵗʰ c. BC
Bibliothèque Nationale, Cabinet des Médailes, Paris

Table I: Notation symbols by Alypios

ΣΗΜΕΙΑ ΛΕΞΕΩΣ (= ΦΩΝΗΣ) ΤΟΥ ΑΛΥΠΙΟΥ

Table II:
Archaic Greek Alphabet and Greek Notation Systems ("vocal" and "instrumental")

Archaic Greek Alphabet
c. 700 – c. 420 BC

c. 700 – 650 BC

Ivory school-tablet, Etruria (Jeffery: 48. 18)

c. 650 – 600 BC
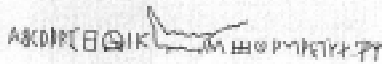
Bucchero bottle, Etruria (Jeffery: 48. 19)

c. 650 – 600 BC
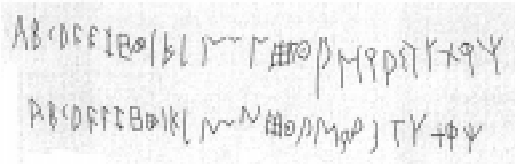
Bucchero amphora, Etruria (Jeffery: 48. 20)

650 – 600 BC
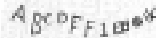
Bucchero goblet, Etruria (Jeffery: 48. 21)

c. 550 – 500 BC

Bucchero bottle, Etruria (Jeffery: 48. 22)

c. 575 – 525 BC

Graffito on vase, Thera (Jeffery: 75. 6)

550 – 525 BC
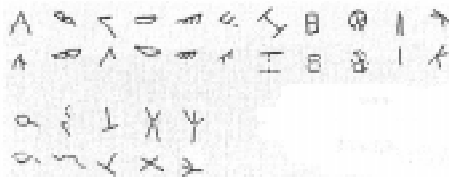
Graffiti on bronze krater, Lakonia (Jeffery: 39. 66)

500 – 450 BC

Painted inscription, Etruria (Jeffery: 48. 23)

450 BC

Abecedarium cut on rock, Amorgos, The Aegean Islands (Ionia)
(Jeffery: 56. 23)
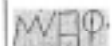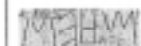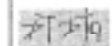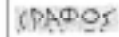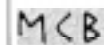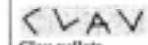
420 BC
Painted abecedaria on cup, Boiotia


(Jeffery: 10. 20 A)
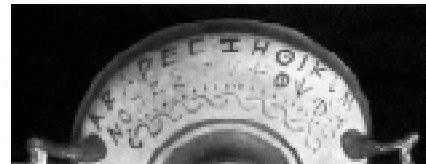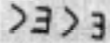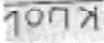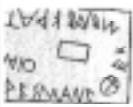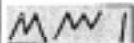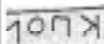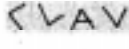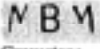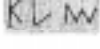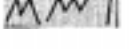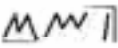
(Jeffery: 10. 20 B)
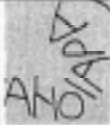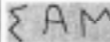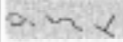
	Archaic Greek Alphabet and letter- positions	Vocal Notation System	Instrumental Notation System
Alpha	ΓAΓ ΙΛ Gravestone, c. 600 BC, Methana (Jeffery: 32. 1)	A Ɐ	
	MΛΡ Wall-block, c. 600 – 525 BC, Crete (Jeffery: 59. 2)		Ħ
	ΜΑΗΜ Wall-block, c. 600 – 525 BC, Crete (Jeffery: 59. 2)		H
	ΔΧΛ Marble building-block, c. 550 BC, Paros (Jeffery: 66. 28)		Λ
	ΛΘ Marble building-block, c. 550 BC, Paros (Jeffery: 56. 28)		
	ΑΙΑΙΟ Graffito on jug, c. 725 BC, Attica (Jeffery: 1. 1)		Δ

Beta	ΒΤΛ Graffito on sherd, c. 675 BC, Corinth (Jeffery: 18. 2)	B	
Gamma	ΗΓ Abecedarium cut on rock, c. 450 BC, Amorgos (Jeffery: 56. 23)	Γ	Γ
	ΒΤΛ Graffito on sherd, c. 675 BC, Corinth (Jeffery: 18. 2)	٦	٦
	ΕCΕ Gravestone, c. 500, Phokis (Jeffery: 13. 11)	C	
	ΚΡΑΦΟΣ Bronze plaque, c. 500 BC, Ellis (Jeffery: 42. 6)		
	M<B Leaden plaque, c. 525 – 500 BC, Epeiros (Jeffery: 46. 13)		<
	<ᐯΛᐯ Clay pellets, c. 475 – 450 BC, Rhegion (Jeffery: 49. 12)		

>Ǝ>Ǝ Leaden plaque, c. 450, Kamarina, (Jeffery: 52. 18)		⟩
Delta 8ᴸᴰ Graffito on sherd, c. 675 BC, Corinth (Jeffery: 18. 2)	△	
Epsilon Ǝ▽ Leaden plaque, c. 450, Kamarina, (Jeffery: 52. 18)	▽	
Ǝƨ₀ ᴇ Gravestone, c. 600 BC, Methana (Jeffery: 32. 1)	E	E
		Ǝ
		Ш
Fau ᖴ Graffito on conical oinochoe, c. 700 – 675 BC, Corinth (Jeffery: 18. 2)	F	F
		ᖴ

ᒐᒪ Gravestone, c. 600 BC, Methana (Jeffery: 32. 1)		⊔
⟩⟩ Graffito on Attic amphora, c. 600 BC, Metauros (Jeffery: 80. 6)		⊐
⊏○ᒐᛕ Stone base – block, c. 467 – 450 BC, Rhegion (Jeffery: 49. 8)		⊏
⊏ ⊥ Painted abecedarius on cup, c. 420 BC, Boiotia (Jeffery: 10. 20)		
Zeta ᖴI8 Bucchero bottle, c. 550 – 500 BC, Etruria (Jeffery: 48. 22)		
Heta ⊤Hꙅ Marble base, c. 500 – 475 BC, Northern colonial area, (Jeffery: 80. 2)	H	H

		⊣	⊣
	⊬⊢o Bronze hydria, 475 – 450 BC, Boiotia (Jeffery: 73. 8)		⊢
Theta	ξ ⊙ Bronze hydria, 475 – 450 BC, Boiotia (Jeffery: 73. 8)	O	
Iota	M Λ⋀ I Grave stele, c. 480 – 416 BC, Melos (Jeffery: 62. 25b)	I	I
	O7\ Gravestone, c. 600 BC, Methana (Jeffery: 32. 1)	\	\
	E\Δ Leaden plaque, c. 450, Kamarina, (Jeffery: 52. 18)		
			/
Kappa	⩥ Graffiti on bronze krater, c. 530 – 525 BC, Lakonia (Jeffery: 35. 66)	K	K

⏋O⏋⋊ Silver plaque, c. 550 BC, Ephesos (Jeffery: 66. 53)			⋊
⋉⋗⊣⊦⫶⊽⊦⊼ ⋎⍳ ▢ ⍺ PESMANE ⊘ Bronze statuette – plinth, c. 525 BC, Gela (Jeffery: 53. 48)			⋉
Lambda ⌐E⌠ Marble base, c. 500 – 475 BC, Northern colonial area, (Jeffery: 80. 3)		∧	
9O⋀' Graffito at Abou Simbel, c. 591 BC, Tees (Jeffery: 66. 56)		∧	
⋀F⩔ Bronze hydria – rim, c. 600 – 575 BC, Lakonia (Jeffery: 35. 7)			
⏋O⏋⋊ Silver plaque, c. 550 BC, Ephesos (Jeffery: 66. 53)		1	

	ϘꓤA Bronze aryballos, late 7th c. BC, Argos (Jeffery: 26. 3)		⅄		
	ꓞꓞIA Bronze aryballos, late 7th c. BC, Argos (Jeffery: 26. 3)				
	OꓥP Stone bearing a building record, c. 550 BC, Thessaly (Jeffery: 11. 2)		⅄		
	ᒋꓕI Stone – stele, c. 500 – 480 BC, Argos (Jeffery: 27. 17)		L		
	<∨∧∨ Clay pellets, c. 475 – 450 BC, Rhegion (Jeffery: 49. 12)		L		
Mu	KⱢM Painted inscription, c. 600 – 450 BC, Etruria (Jeffery: 48. 23)	M			
	MⱮꓲ Grave – stele, c. 480 – 416 BC, Melos (Jeffery: 62. 25b)				
	Aꓬꓬ Gravestone, c. 600 BC, Methana (Jeffery: 32. 1)				
	Moꓼ Marble kouros, c. 550 – 540 BC, Megara Hyblaia (Jeffery: 52. 25)	M			
Nu	ONE Leaden plaque, c. 450, Kamarina, (Jeffery: 52. 18)	N	N		
	▓ Wall – block, c. 600 – 525 BC, Gortyn (Jeffery: 59. 3)	И			
	Aꓬꓬ Gravestone, c. 600 BC, Methana (Jeffery: 32. 1)	Ꝯ			
	МBꓬ Gravestone, c. 475 – 450 BC, Akarnania (Jeffery: 44. 8)				
Xi	AꓪI Marble statue, c. 575 – 550 BC, Miletos (Jeffery: 64. 26)	Ξ			

Omikron			
	ϘΟΛ Graffito at Abou Simbel, c. 591 BC, Teos (Jeffery: 66. 56)	O	
	RIϘ Marble base, c. 500 – 475 BC, Northern colonial area, (Jeffery: 80. 2)		U
	ϘΜΟϞ Marble base, c. 500 – 475 BC, Northern colonial area, (Jeffery: 80. 2)		
			Ɔ
Pi	ΕΠΑ Gravestone, c. 600 BC, Methana (Jeffery: 32. 1)	Γ	
	ΠΟΛ Gravestone, c. 500, Phokis (Jeffery: 13. 11)	Π	
	οΠΔ Gravestone, c. 600 BC, Methana (Jeffery: 32. 1)		˥
	Ǝ⅃Ο Leaden plaque, c. 450, Kamarina, (Jeffery: 52. 18)	⌐	⌐

San			
	Ivory school – tablet, c. 700 – 650 BC, Etruria (Jeffery: 48. 18)	M	
	ΜΛ/Π Grave – stele, c. 480 – 416 BC, Melos (Jeffery: 62. 25b)		
Qoppa	ϘΟΛ Graffito at Abou Simbel, c. 591 BC, Teos (Jeffery: 66. 56)	Ϙ	
	ϘϘ Marble building – block, c. 550 BC, Paros (Jeffery: 56. 28)		
Rho	RIϘ Marble base, c. 500 – 475 BC, Northern colonial area, (Jeffery: 80. 2)	R	
	DPο Gravestone, c. 600 BC, Methana (Jeffery: 32. 1)	P	

Bronze handle, late 7th to early 6th BC, Lakonia (Jeffery: 35. 5)	b		Silver plaque, c. 550 BC, Ephesus (Jeffery: 66. 53)	3	3
			Gravestone, c. 475 – 450 BC, Akarnania (Jeffery: 44. 8)		E
Bronze label, 7th c. BC, Argos (Jeffery: 26. 2)			Diomedes Chalcidian amphora, Malibu, J. P. Getty		
Sigma					
Leaden plaque, c. 450, Kamarina, (Jeffery: 52. 18)			Gravestone, late 7th c. BC, Hybla Heraia (Jeffery: 52. 21)		
Gravestone, c. 500, Phokis (Jeffery: 13. 11)			Marble kouros, c. 550 – 540 BC, Megara Hyblaia (Jeffery: 52. 25)		
Gravestone, c. 600 BC, Methana (Jeffery: 32. 1)	Z	Z	Graffiti on bronze krater, c. 530 – 525 BC, Lakonia (Jeffery: 39. 66)		
Graffito on clay bobbin, 7th c. BC, Achaia (Jeffery: 44. 5)					

	Artifact				Artifact		
	ΛΕ ξ	ξ			ΙϤ8Α		Ϥ
	Bronze hydria – rim, c. 600 – 575 BC, Lakonia (Jeffery: 35. 7)				Gravestone, c. 600 BC, Methana (Jeffery: 32. 1)		
Tau	Υ Τ	T	T	Phi			⊥
	Marble pillar – capital for grave, c. 540 BC, Attica (Jeffery: 3. 29)				Ϙ Φ Ϙ	φ	
	◡ ⌒ ⪦	⊥	⊥		Ivory school – tablet, c. 700 – 650 BC, Etruria (Jeffery: 48. 18)		
	Graffiti on bronze krater, c. 530 – 525 BC, Lakonia (Jeffery: 39. 66)				○ ∅ Δ	θ	
Upsilon					Clay pellets, c. 475 – 450 BC, Rhegion (Jeffery: 49. 12)		
	Λ V	V	V	Chi			
	Gravestone, c. 500, Phokis (Jeffery: 13. 11)				Ο3ΥϞΧ	Χ	
	Υ Τ	Υ			Silver plaque, c. 550 BC, Ephesus (Jeffery: 66. 52)		
	Marble pillar – capital for grave, c. 540 BC, Attica (Jeffery: 3. 29)					Ψ	
		λ			Ϥ ⋏ Ε	λ	
		⋖			Graffiti on pottery, 7ᵗʰ c. BC, Rhodes (Jeffery: 67. 3a)		
			⪧		Ψ		
	ΕΡΜ		Ρ		⋏.	⟶	
	Gravestone, c. 600 BC, Methana (Jeffery: 32. 1)				Graffiti on bronze krater, c. 530 – 525 BC, Lakonia (Jeffery: 39. 66)		

Stone stele, c. 550 BC, Thessaly (Jeffery: 11. 1)			
Stone stele, c. 550 BC, Thessaly (Jeffery: 11. 1)			←
Gravestone, c. 480 – 450 BC, Thera (Jeffery: 62. 15)			
Graffito on skyphos, c. end of 6th c. BC, Rhodes (Jeffery: 68. 23)		⋀	
Psi Bronze plaque, c. 475 – 450 BC, Lokris, Ozolian and Opountain (Jeffery: 15. 4)		✳	
Stone base, c. 422 BC, Arkadia, (Jeffery: 41. 32)			
		✳	✳

Ivory school – tablet, c. 700 – 650 BC, Etruria (Jeffery: 48. 18)		Ψ	
Graffiti on pottery, 7th c. BC, Rhodes (Jeffery: 67. 3a)		⋏	
Graffiti on bronze krater, c. 530 – 525 BC, Lakonia (Jeffery: 39. 66)		→	
Stone stele, c. 550 BC, Thessaly (Jeffery: 11. 1)			
Stone stele, c. 550 BC, Thessaly (Jeffery: 11. 1)			←
Gravestone, c. 480 – 450 BC, Thera (Jeffery: 62. 15)			
Graffito on skyphos, c. end of 6th c. BC, Rhodes (Jeffery: 68. 23)		⋀	
Omega Marble building – block, c. 550 BC, Paros (Jeffery: 56. 28)		Ω	
6 c. BC, Kjolmen, Bulgaria (K. Boshnakov, forthcoming)			⊃

Table III:
Archaic Greek Alphabet, Greek Notation Systems and description of the letter by Alypios

I. Archaic Greek Alphabet		Vocal Notation System	Instrumental Notation System	Description of the letter by Alypios
Alpha	A Ａ	1. A	*2. Ａ	1. Alpha *2. Pi diploun
	Ɐ Ᵽ	1. Ɐ	*2. Ᵽ	1. Alpha anestrammenon *2. Pi diploun anestrammenon
	⋀		⋀	*Hemidelta katheilusenon
	⋊		△	*Hemidelta katheilkusmenon plagion
Beta	ᗺ	ᗺ		Beta
Gamma	Γ	Γ	Γ	Gamma orthon
	˥	˥	˥	Gamma apestrammenon
	C	C		*Sigma
	<		<	*Lambda plagion
	>		>	*Lambda plagion apestrammenon
Delta	△	△		Delta
	▽	▽		Delta anestrammenon
Epsilon	Ε	Ε	Ε	Ei tetragounon
	Ⴝ		Ⴝ	Ei tetragounon apestrammenon
	Ш		Ш	Ei tetragounon anestrammenon
Fau	F	F	F	Digamma
	ꓞ		ꓞ	Digamma apestrammenon
	Ⴤ		Ⴤ	Digamma anestrammenon
	Ⴑ		Ⴑ	*Pi plagion apestrammenon
	Ⴎ		Ⴎ	*Pi plagion

II. Archaic Greek Alphabet	Vocal Notation System	Instrumental Notation System	Description of the letter by Alypios
Zeta	Ⲓ			?
Heta	Ⴙ	Ⴙ	Ⴙ	Heta
	⊣	⊣	⊣	*Tau plagion
	⊢		⊢	*Tau plagion apestrammenon
Theta	Θ	Θ		Theta
Iota	Ι	Ι		Iota
	＼	＼	＼	*Bareia
	／		／	*Oxeia
Kappa	Κ	Κ	Κ	Kappa
	Ⲕ		Ⲕ	Kappa apestrammenon
	⤳		⤳	Kappa anestrammenon
Lambda	Λ	Λ		Lambda
	⅄	⅄		*Zeta ellipes
	⋏		⋏	*Hemialpha dexion kato neuon
	⋌		⋌	*Hemialpha dexion ano neuon
	˥		∟	*Gamma anestrammenon
Mu	⩘		⩘	*Xi diploun anestrammenon
	Μ			
Nu	Ν	Ν	Ν	Nu
	И	И		Antinu
	Ꮞ		Ꮞ	*Heta ametetikon katheilkusmenon

III. Archaic Greek Alphabet	Vocal Notation System	Instrumental Notation System	Description of the letter by Alypios
Xi	≣	≣		Xi
Omikron	*O*	*O*		Ou
	∩		∪	**Sigma apestrammenon
			ᗝ	*Sigma apestrammenon
Pi	Γ Γ	Γ Γ		Pi
	7 7		7 7	Pi katheilkusmenon
	⌐ ⌐	⌐	⌐ ⌐	Pi anestrammenon
San	M	M		*Mu
Qoppa	Ϙ	Ϙ		*Ou kato grammen echon
Rho	R	R		*Beta ellipes
	P	P		Rho
	b	b		Rho anestrammenon
	⌐	⌐		*Hemiphi plagion apestrammenon
	⌐		⌐	*Hemiphi plagion
Sigma	⌇∿	∿		*Mu anestrammenon
	Z	Z	Z	*Zeta
	3	3	3	Sigma diploun apestrammenon
	Ɛ		Ɛ	Sigma diploun
	⌣		⌣	Sigma diploun anestrammenon
	Ϟ	Ϟ		*Omega tetragonon
	Ϟ		Ϟ	*Omega tetragonon
	∼	∼		*Omega tetragonon huption
	Ƶ	Ƶ		*Xi
Tau	Τ	Τ	Τ	Tau
	⊥	⊥	⊥	Tau anestrammenon

IV. Archaic Greek Alphabet	Vocal Notation System	Instrumental Notation System	Description of the letter by Alypios
Upsilon	∨	∨	∨	*Lambda anestrammenon
	Υ	Υ		Upsilon
	⅄	⅄		Upsilon kato neuon
	⋋	⋋		
	⋋		⋋	
	Ͱ		Ͱ	*Hemialpha aristerion kato neuon
	Υ		Υ	*Hemialpha aristerion ano neuon
	⋋		⋋	
Phi	Φ	Φ		Phi
	Φ	Ɵ		Phi plagion
Chi	Χ	Χ		Chi
	Ψ	Ψ		
	⅄	⅄		
	⋋	⋋		
	⋌		⋌	
	∩	∩		*Hemibeta kato neuon
Psi	✳	✳		*Chi diephthoros
	✳	✳	✳	
	Ψ	Ψ		Psi
	⅄	⅄		Psi kato neuon
	⋋	⋋		
	⋌		⋌	
	∩	∩		
Omega	Ω	Ω		Omega
	ᗡ		ᗡ	*Sigma apestrammenon