Linking anthropological and archaeological evidence: Notes on the demographic structure and social organisation of the Bronze Age necropolis Velika Gruda in Montenegro

Philippe DELLA CASA

Izvleček

Gomila Velika Gruda na vzhodni jadranski obali, je bila izkopana v letih 1988-1990. V zgornjih plasteh so odkrili nekropolo z začetka mlajše bronaste dobe, s skupinskimi skeletnimi in žganimi grobovi, kostnicami in otroškimi pokopi v žarah. Antropološka analiza ostankov kaže na populacijo z majhnim številom otrok. Arheološka slika kaže, da večina keramike izvira iz žarnih grobov. Ti so imeli v gomili slabe pogoje za ohranitev, kar bi lahko povzročilo odsotnost perinatalnega dela populacije (novorojenčki in dojenčki). Na podlagi modela, da skupinski pokopi predstavljajo družinske grobove, lahko sledi, da je grobišče na začetku pripadalo majhni vaški skupnosti.

Abstract

The burial mound Velika Gruda on the eastern Adriatic coast was excavated in the years 1988-1990. The upper layers recovered a necropolis of the beginning of the late Bronze Age with collective inhumations and cremations, ossuaria and infant's jar burials. The anthropological analysis of the human remains showed an average population with a small amount of young children. The archaeological situation, however, evidences that an important number of pottery finds comes from jar burials that suffered poor preservating conditions in the mound and should thus produce the missing perinatal segment of the population (newborns and infants). In a model where the collective burials represent "family graves", a small village community can be postulated at the origin of the burial site.

The demographic structure and social organisation of prehistoric necropoles and thus the relationship between buried and living populations are much debated subjects, with some reccuring features such as the "deficit of infants" strongly biasing the discussion. With the example of a recently excavated burial site on the east Adriatic coast, it shall be shown that we do have the necessary tools to approach questions of demography and society even on sites that at first sight seem to be suffering geographical isolation and poor preservation of finds.

TIVATSKO POLJE AND VELIKA GRUDA BURIAL MOUND

In the years 1988-90, the Department of Prehistory of the University of Zurich lead by Prof. Margarita Primas and the Opštinski zavod za zaštitu spomenika kulture in Kotor, with its former director Jovan Martinović, collaborated in an excavation on the burial mound Velika Gruda in the Boka Kotorska, Montenegro (*Fig. 1*). The tumulus is situated in the wide coastal plain of Tivat and is only a few hundred metres distant from the well-known Mala Gruda barrow with its richly furnished late Copper Age central grave (Parović-Pešikan, Trbuhović 1971). The plain is a traditionally agricultural area and at the time of publication partially occupied by Tivat airport and the expanding industrial zone of Kotor.

Very little is known about prehistoric settlement in this area, as in the whole of South Dalmatia. Besides excavations of some ever-present tumuli (gomile), investigations have been limited so far to a few cave sites on the steeper slopes of the Boka Kotorska in Spila near Perast or Vranjaj above Herceg-Novi (Marković 1985), as well as single trenches in hillforts (gradine) surround-

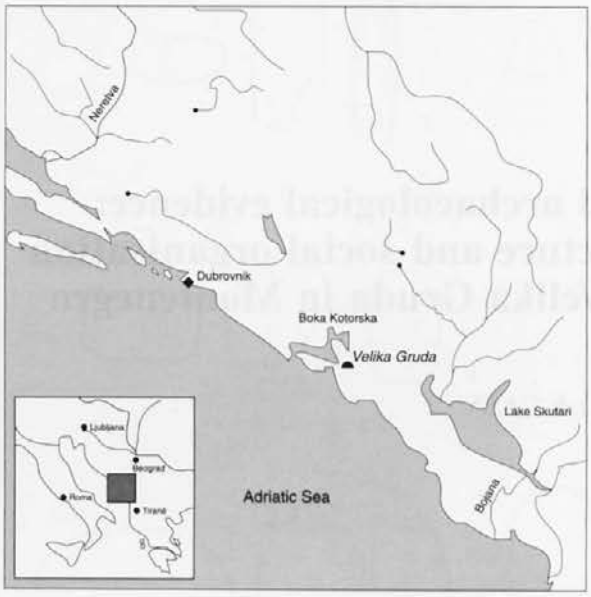

Fig. 1: Location of the burial mound Velika Gruda on the Adriatic coast.
Sl. 1: Lega gomile Velika Gruda.

ing the Tivatsko polje, e. g. Sv. Luka-Gosići and Pjaca-Vranovići (Pušić 1976; Parović-Pešikan 1977-1978). The hillforts have, until now, not provided material earlier than the Iron Age; the Late Copper and Bronze Age are poorly documented and their archaeological and chronological situation not entirely clarified (Della Casa 1995a). Statements on possible topographical locations of sites and subsistence patterns of prehistoric populations are not yet more than first hypotheses in a very complex issue (Benac 1990; Čović 1990; Della Casa 1996).

The well preserved tumulus Velika Gruda is 6 m high with a diameter of 26 m and a volume of nearly 1600 m^3. It consists of a multi-layered clay mound with a top stone covering up to 1 m thick. The simplified stratigraphy (*Fig. 2*) illustrates the sequence of clay and stone tips in the mound: the primary central grave 1 - a slab cist - goes together with the first clay mound (A). At a much later point in time, grave 2 was set in a pit on top of the existing tumulus and covered with a heap of stones (B). The mound was then twice enlarged by substantial tips of clay (C1, C2) and more graves were added. The ones on top of layer C2 were subsequently covered by a massiv stone tip (D) with again more graves placed in it.

The different periods of occupation can be dated both by archaeological finds and a series of radiocarbon dates. The central grave and first tumulus belong to the Mala Gruda late Copper Age phase (Primas 1992; Primas 1996). The subsequent graves and mound tips (B-D) together form a cultural and chronological unity, a necropolis dated to the beginning of the late Bronze Age - Reinecke's Bz D (Della Casa 1996). The mound was reused for a burial in the early Iron Age and again probably in the Middle Ages.

GRAVE AND BURIAL FORMS OF THE BRONZE AGE NECROPOLIS

The diversity of grave and burial forms is a conspicuous feature of the Velika Gruda necropolis. In the Bronze Age occupation period, collective inhumations and cremations, ossuaria and jar burials appear side by side (*Fig. 3*). Characteristics of the collective graves are a rectangular shape, an eclosing made of blocks or slabs, a gravel bed as base for inhumations as well as a stone and slab covering. The tombs are prevailingly oriented SE-NW with the individuals buried on their right or left sides in a flexed position. Despite the very poor preservation of most of the skelet material, evidence is given that the collective graves are the result of a gradual addition of subsequent burials. This is exemplified by the situation in grave 2, where one clearly identifies the last burial in situ with the remains of former burials scooped aside (*Fig. 4*). In grave 9, the only collective cremation burial of the mound, the individuals were cremated in situ and extinguished with lime-wash.

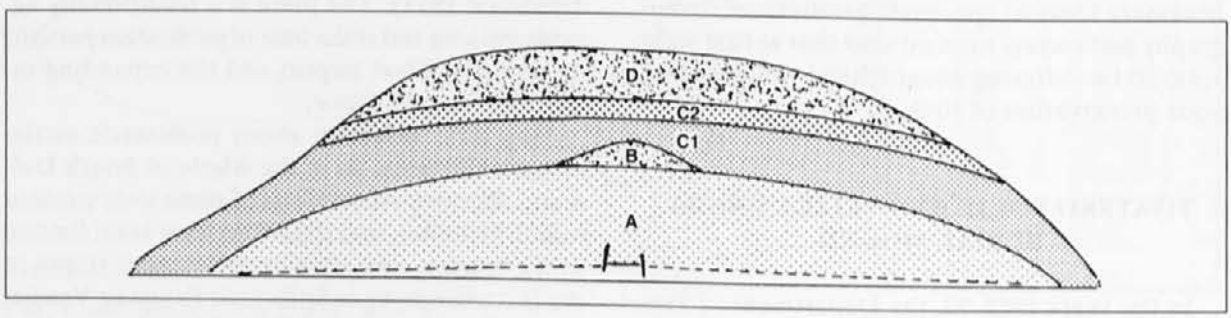

Fig. 2: Simplified stratigraphy of the burial mound Velika Gruda.
Sl. 2: Poenostavljena stratigrafija gomile Velika Gruda.

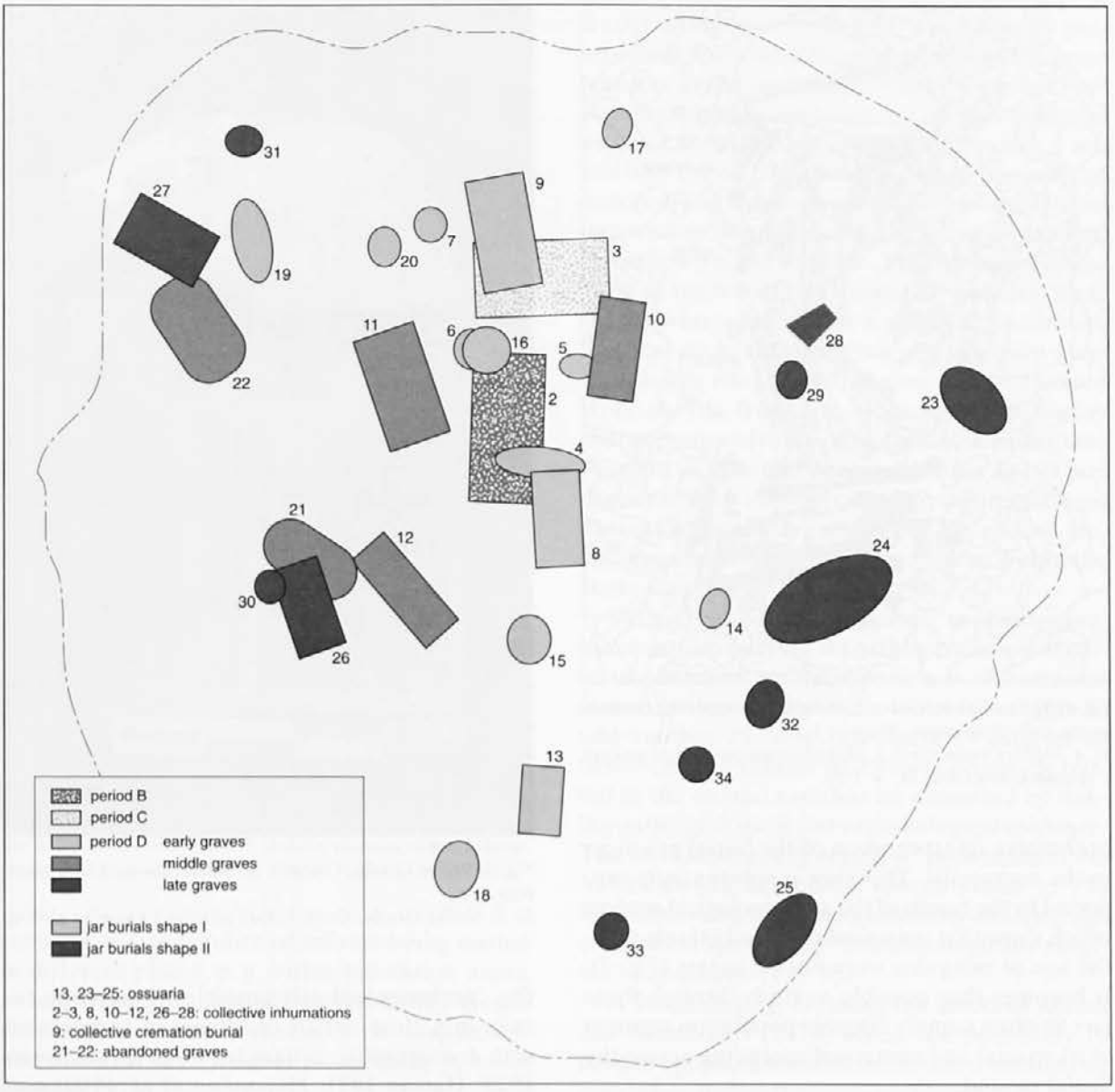

Fig. 3: Velika Gruda. Overview of the Bronze Age graves in the burial mound.
Sl. 3: Velika Gruda. Tloris bronastodobnih grobov v gomili.

A singularity in burial practice can be observed with the ossuaria, of which most are situated at the edge of the mound (e. g. graves 23-25). They consist of simple pits with redeposited bone material. A possible interpretation of the ossuaria results from the observation of two abandoned graves (21, 22) as well as of repeatedly used graves (9, 13). It looks as if those graves were cleared of their content and re-placed, the bones subsequently re-buried in the ossuaria pits. Connections between graves and ossuaria are also indicated by the scattering of matching sherds. Grave 13 must be considered an ossuarium too, as despite its neat grave construction, it only contained re-deposited children's bones.

On the other hand, large globular jars were used as counterpart to stone-built tombs for burying infants. Some of these jars, especially those situated within the clay strata C1/C2, were almost entirely preserved, sometimes with an accompanying small vessel. In general, very little bone material could be recovered in the jar burials, though at least one even bore a clearly identifiable double inhumation (*Fig. 5,6*). The stone tip (D) merely provided a number of fragmentary findings, usually dense scatters of sherds belonging to one large jar, along with scattered human remains. Several cases, as for instance the graves 3/7 and 26/30, indicate close spatial relationship between jar burials and collective burials (*Fig. 3*), giving way to a com-

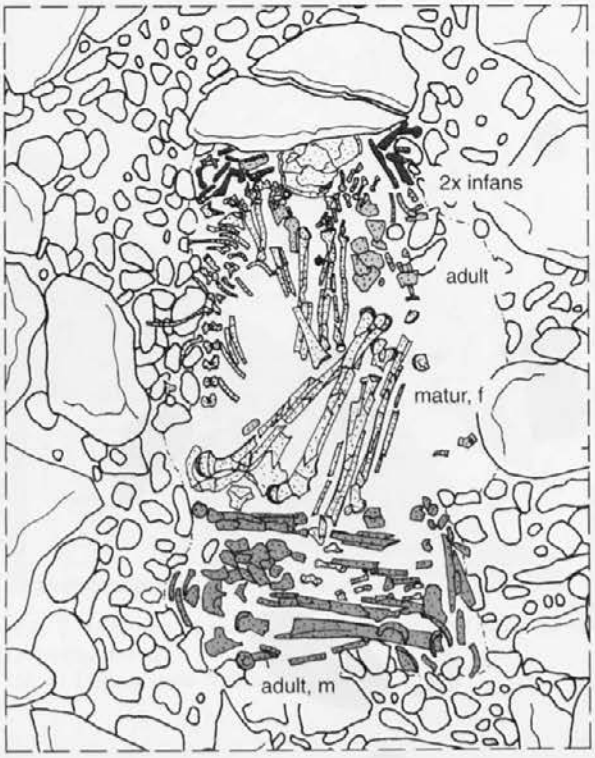

Fig. 4: Velika Gruda. Grave 2: individually identified burials in the collective grave. Scale = 1:20.
Sl. 4: Velika Gruda. Grob 2: identificirani posamezni pokopi v skupinskem grobu. M. = 1:20.

Fig. 5: Velika Gruda. Grave 7: jar burial covered by a stone slab.
Sl. 5: Velika Gruda. Grob 7: žara pokrita s kamnito ploščo.

prehensive interpretation of the burial practices in the necropolis. This view is substantially supported by the results of the anthropological analysis which show that only newborns and infants up to the age of two years were buried in jars (*Fig. 7*). It becomes thus possible to study through these jars an often scantily tangible population segment in its spacial and numerical spreading across the burial mound.

ANTHROPOLOGICAL AND DEMOGRAPHICAL ANALYSES

The anthropological analysis of the human bone material from the necropolis was effectuated by Thomas Bossi on the excavation site itself and at the laboratories of the Department of Anthropology of the University of Zurich. Due to very poor preservation of bones, analyses had to concentrate on the counting of individuals and the determination of age (seldom also sex) using metric and morphological features of teeth and skull fragments. From the 13 collective graves and ossuaria, and the 8 jar burials that had preserved bone material, a total of 125 individuals could be sorted out (*Fig. 8*). The statistical evaluation of this "anthropologically tangible" population results in a clear deficit of infants in comparison with demographic standards (45-60 %, see Weiss 1973; Hassan 1981; Herrmann et al. 1990) and other Bronze Age necropoles in eastern Europe (Nicolăescu-Plopşor 1961; Teschler-Nicola 1985; Heinrich, Teschler-Nicola 1991), as children amount to only 26 % of the buried population, with newborns and infants (0-2 years) making up a maximum of 8 % (*Fig. 9*).

Deficit of perinatal individuals is a well-known phenomenon in prehistoric cemeteries (Teschler-Nicola 1985) often due to overall worse preservating conditions for infant's bones and frequent "special treatment" of deceased young children. Both factors apply to the necropolis Velika Gruda, as delicate infant bones were almost only preserved in burial jars well embedded and protected by cover slabs (*Fig. 5*) and, with the exception of the ossuarium in grave 13, no skeletal remains of newborns and infants under 2 years were recovered in collective graves (*Fig. 7*). We must also

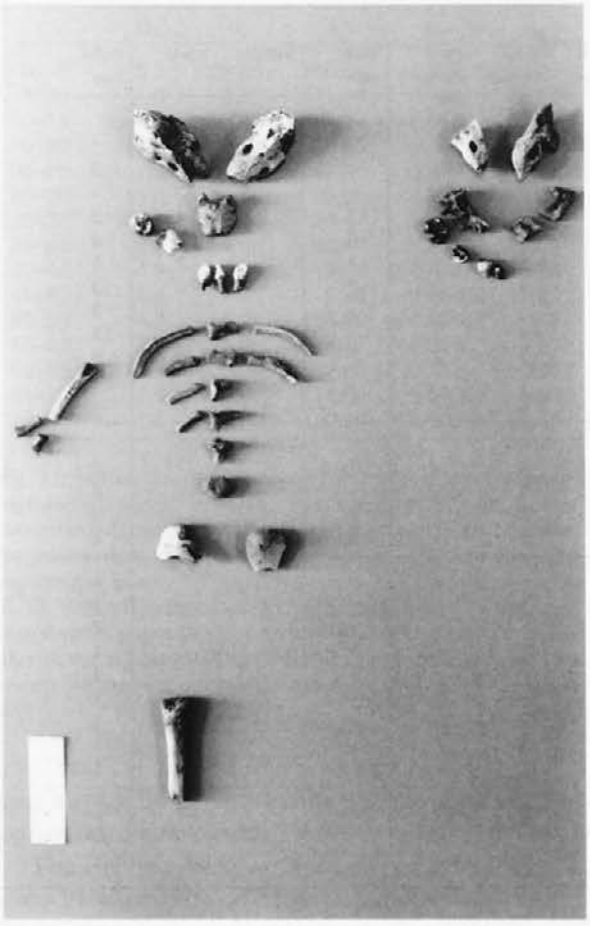

Fig. 6: Velika Gruda. Grave 7: skeletal remains of two infants.
Sl. 6: Velika Gruda. Grob 7: ostanki skeletov dveh otrok.

consider the possibility of infants being buried in different places, e. g. within habitation areas, as shown by jars identical to the Velika Gruda shapes used as burial vessels in the Gajtan settlement near lake Skutari in northern Albania (Jubani 1972).

However, there is good archaeological evidence of an originally much larger number of infant's jar burials in the Velika Gruda necropolis. Except for the 8 jars with associated remains of at least 9 young individuals (*Fig. 8*), another 9 pottery finds from the site present exactly the same features as the jar burials. These vessels are always completely broken up, but the sherds spread within a restricted area of not more than 1 m^2, and the forms can always at least partially be restored. The shapes equal those of attested burial jars, and an accompanying small vessel (beaker, cup or bowl) is also common. The typological evaluation of the burial jars shows that only two basic shapes were used: one is a globular jar with cylindrical neck, the other one a more open form with flaring rim (*Fig. 10*). Again at least 16 more stray sherds from the stone tip (D) display characterstics of these jar shapes. It becomes thus possible to interpret them as former burial jars that were most probably destroyed and scattered during the many re-workings of the mound (re-openings and re-placements of graves within the stone tip etc.).

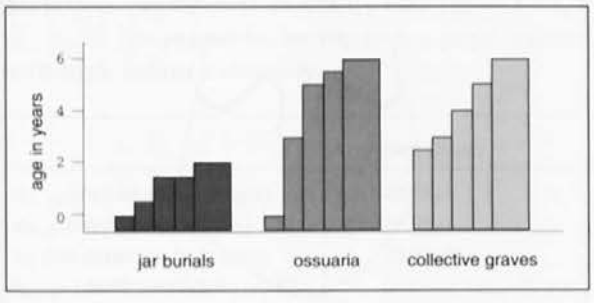

Fig. 7: Velika Gruda. Repartition of the segment infans I (0-6 yrs) on various burial forms.
Sl. 7: Velika Gruda. Porazdelitev segmenta infans I (0-6 let) glede na način pokopa.

We may so add 25 jar burials to the original number. Considering the strong tradition of collective burial in our necropolis, n.b. also attested in one jar burial (*Fig. 6*), it looks reasonable to add another 25 % to this figure. A total of 40 newborns and infants (0-2 years) originally buried in the mound can thus be estimated by linking anthropological and archaeological evidence. The "archaeologically enlarged" population of the Velika Gruda necropolis amounts now to 156 individuals and shows a significantly differing age repartition against the "anthropologically tangible" population (*Fig. 9*).

A life-table (*Fig. 11*) using the model of Acsádi and Nemeskéri (1970) offers the possibility to compare populations of different burial sites among each other, though the issues are biased by a number fundamental problems (Ward, Weiss 1976; Hassan 1981; Herrmann et al. 1990). The age and sex diagnosis of skeletal remains is a conjectural procedure using metric and morphological indicators of recent reference populations. Due to variations of these indicators and subjective choice or interpretation of criteria, all anthropological evaluations of (pre)historic skeletal series bear a random error. This has exemplary been illustrated on the material of the Mezőcsát middle Bronze Age necropolis (Hänsel, Kalicz 1986). On the other hand, palaeodemographic models such as life-tables are based on stationary populations with constant rates of fertility and mortality (cohorts), yet this might not match the conditions of many (pre)historic populations. As Wahl (1982, 40) has stated, "... all mathematical methods used for re-construct-

	number of ind.	infans I 0–6 yrs	infans II 6–12 yrs	iuvenil 12–17 yrs	adult I 17–25 yrs	adult II 25–35 yrs	matur 35–55 yrs	senil >55 yrs	indet. age	female	male	indet. sex
collective burials												
grave 2	5	2	-	-	1	1	1	-	-	1	1	3
grave 3	2	-	-	-	2	-	-	-	-	-	2	-
grave 8	11	1	1	-	2	2	2	2	1	1	1	9
grave 9	7	-	-	1	-	-	-	-	6	1	2	4
grave 10	5	-	1	1	-	1	1	-	1	2	2	1
grave 11	17	-	7	-	2	6	1	-	1	1	3	13
grave 12	4	-	-	1	1	2	-	-	-	-	1	3
grave 26	22	-	2	-	8	8	4	-	-	2	1	19
grave 27	12	2	1	1	4	1	1	2	-	2	4	6
grave 28	1	-	-	-	1	-	-	-	-	-	-	1
grave 35	3	-	-	-	-	1	2	-	-	1	2	-
ossuaria												
grave 13	6	3	1	1	-	-	-	-	1	1	-	5
grave 23	6	1	1	-	2	1	1	-	-	-	-	6
grave 24	9	1	-	1	-	2	2	-	2	-	-	9
grave 25	5	-	-	1	-	-	1	1	2	-	1	4
jar burials												
grave 6	1	1	-	-	-	-	-	-	-	-	-	1
grave 7	2	2	-	-	-	-	-	-	-	-	-	2
grave 15	1	1?	-	-	-	-	-	-	-	-	-	1
grave 18	1	1?	-	-	-	-	-	-	-	-	-	1
grave 20	1	1?	-	-	-	-	-	-	-	-	-	1
grave 29	1	1	-	-	-	-	-	-	-	-	-	1
grave 30	1	1?	-	-	-	-	-	-	-	-	-	1
grave 33	1+1?	1	-	-	-	-	-	-	1?	-	-	1+1?
totals	125 (100%)	16+4 (16%)	14 (11%)	7 (6%)	23 (18%)	25 (20%)	16 (13%)	5 (4%)	14+1 (12%)	12 (10%)	20 (16%)	92+1 (74%)

Fig. 8: Velika Gruda. Summary of the results of the anthropological analyses.
Sl. 8: Velika Gruda. Povzetek rezultatov antropološke analize.

ing prehistoric populations offer just estimations, for the dynamics of a population resulting from many single events (migrations, catastrophes, epidemics, matrimony and birth regulations etc.)

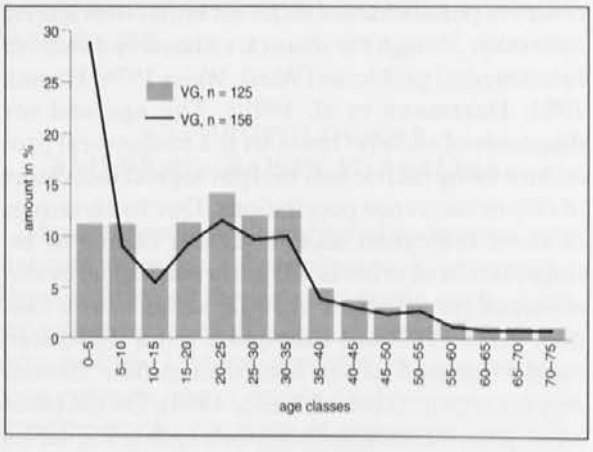

Fig. 9: Velika Gruda. Comparison of the age repartition in the "anthropologically tangible" (n = 125) and the "archaeologically enlarged" (n = 156) population.
Sl. 9: Velika Gruda. Primerjava starostne porazdelitve med "antropološko določljivo" (n = 125) in "arheološko dopolnjeno" (n = 156) populacijo.

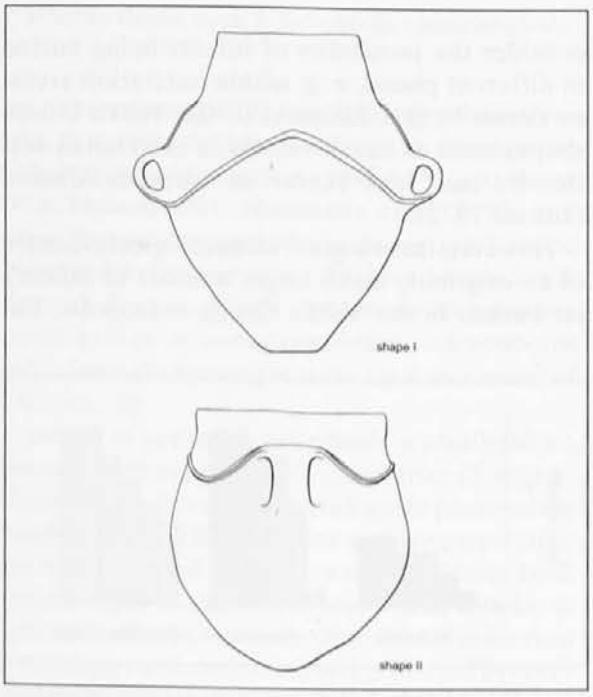

Fig. 10: Velika Gruda. Basic shapes of burial jars. Scale = 1:8.
Sl. 10: Velika Gruda. Osnovni obliki žar. M. = 1:8.

x	D_x	d_x	l_x	q_x	e_x
0– 5	45.0	28.85	100.00	0.288	20.27
5–10	14.0	8.97	71.15	0.126	22.47
10–15	8.5	5.45	62.18	0.088	20.35
15–20	14.3	9.17	56.73	0.162	17.06
20–25	17.9	11.47	47.56	0.241	14.87
25–30	15.0	9.62	36.09	0.266	13.81
30–35	15.6	10.00	26.47	0.378	12.91
35–40	6.3	4.04	16.47	0.245	14.23
40–45	4.8	3.08	12.44	0.247	13.04
45–50	3.8	2.44	9.36	0.260	11.51
50–55	4.3	2.76	6.92	0.398	9.68
55–60	2.0	1.28	4.17	0.308	9.42
60–65	1.5	0.96	2.88	0.333	7.50
65–70	1.5	0.96	1.92	0.500	5.00
70–75	1.5	0.96	0.96	1.000	2.50

Fig. 11: Velika Gruda. Abridged life-table of the "archaeologically enlarged" population (x: age class; D_x: number of individuals deceased in x; d_x: death frequency in x; l_x: survival frequency in x; q_x: death probability in x; e_x: average life expectancy in x).
Sl. 11: Velika Gruda. Izvleček iz življenske tablice "arheološko dopolnjene" populacije(x: starostni razred; D_x: število osebkov umrlih v x; d_x: odstotek umrlih v x; l_x: odstotek živih v x; q_x: verjetnost smrti v x; e_x: pričakovano povprečno trajanje življenja v x).

can hardly be seized in the record and are not considered in models."

The Bronze Age populations of Cîrna (Nicolăescu-Plopşor 1961), Pitten (Teschler-Nicola 1985) and Gemeinlebarn F (Heinrich, Teschler-Nicola 1991) can nevertheless be taken into comparison for some general tendencies (*Fig. 12*). With 43 % of children (0-15 years) the Velika Gruda "enlarged" population is now well balanced as against demographic standards; this is particularly obvious when the perinatal segment (0-5 years) is taken into consideration. Accordingly, life expectancy at birth is rather low with only little more than 20 years. Death probability reaches a first peak in an early adult segment already. This might be due to the fact that patterns of tooth abrasion were the almost only age indicators in our material and thus might have lead to a systematic deviation. An overall mortality rate ($m = 1 \div e_0$) of ± 50 ‰ seems to be likely for populations with high infant mortality.

SOCIAL ORGANISATION OF THE NECROPOLIS

If we accept the possible links between anthropological and archaeological evidence, the Velika Gruda population appears as "normal" or "representative" in demographic terms. We may thus turn to the interpretation of the burial site as a whole. *Fig. 13* shows the age repartition within collective burials on the mound. With a few exceptions (graves 3, 13, 35), subadult and adult individuals are present in all the graves and ossuaria. This also accounts for female and male individuals, as far as it is possible to argue with only 25 % of sex determined cases. In a model based on a village community living in separate households, the collective graves can best be interpreted as "family graves", associated with newborn's and infant's jar burials (*Fig. 3*).

The living population (P) of the presumed village (or hamlet) can be calculated with a formula proposed by Acsádi and Nemeskéri (1970): $P = k(De_0 \div t)$, where D is the sum of individuals buried in the necropolis, e_0 the life expectancy at birth, t the duration of the necropolis and k a constant factor (1.1 or 1.0, see Heinrich, Teschler-Nicola 1991). The duration of the necropolis can be estimated archaeologically using the repartition of burial jar shapes within the necropolis. The two basic shapes separate clearly in the horizontal startigraphy (*Fig. 3*) and make two phases, each lasting maybe two generations or 50-60 years. We find thus a living population of 28-35 individuals, or a village with 6 "nuclear families" of 5-6 individuals each (for similar estimations see Teschler-Nicola 1985 and Della Casa 1995b).

A rough estimation of the duration of each collective grave can also be given according to the number of buried individuals. The synthesis of these estimations is shown in a graph illustrating the evolution of the burial site (*Fig. 14*). The graph also displays that the necropolis starts with a "founder generation" (Wittwer-Backofen 1991). Later on, several graves are used at the same time, while the last graves illustrate the abandonment

	Velika Gruda	Cîrna	Pitten	Gemeinlebarn F
d_{0-15} (individuals 0–15 yrs)	43.3%	37.3%	47.6%	33.6%
d_{0-5} (individuals 0–5 yrs)	28.9%	23%	16.4%	11.7%
e_0 (life expectancy at birth)	20.3 yrs	23.6 yrs	22.5 yrs	26 yrs
$q_{>0.25}$ (death probability >0.25)	0–5, 25–30, >45 yrs	>30 yrs	>35 yrs	>30 yrs
m (mortality)	49‰	52‰	44‰	38‰

Fig. 12: Comparison of some general demographic values in Bronze Age cemeteries of eastern Europe.
Sl. 12: Primerjava nekaterih demografskih vrednosti med bronastodobnimi grobišči v vzhodni Evropi.

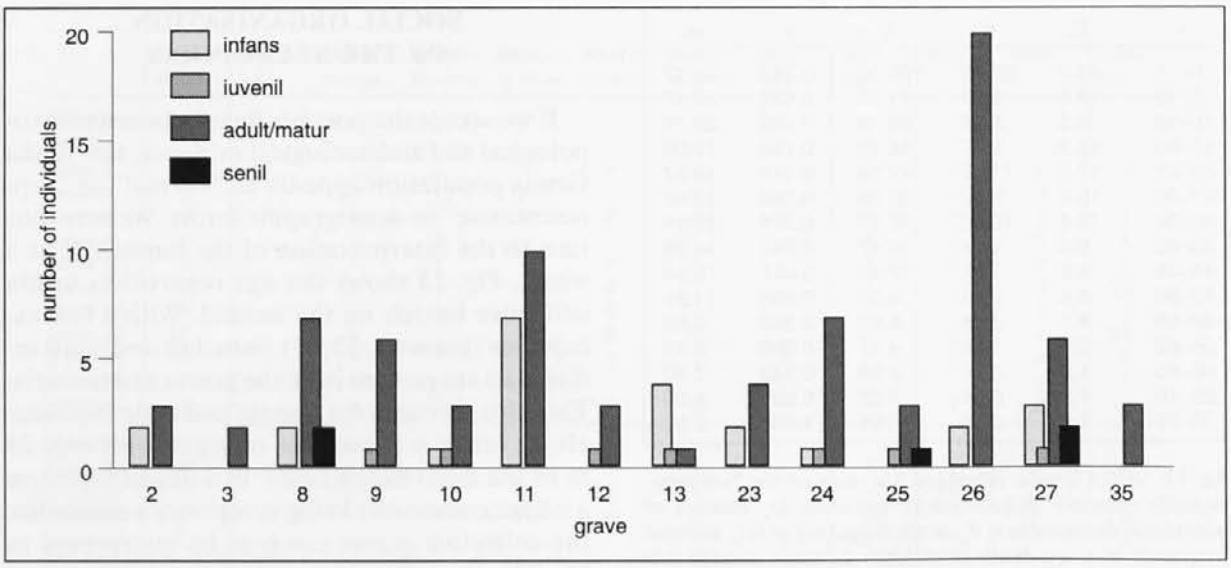

Fig. 13: Velika Gruda. Age repartition of individuals within collective burials.
Sl. 13: Velika Gruda. Porazdelitev osebkov po starosti v skupinskih grobovih.

of the cemetery and/or the corresponding settlement.

The number of thoroughly excavated and anthropologically analysed Bronze Age necropoles in the eastern parts of Europe is still small. Comprehensive knowledge of the formation processes, the find ensembles and the skeletal materials of a cemetery is yet essential as regards demographic and social contexts of past populations. Despite the limitations of palaeodemographic models, the example of the Velika Gruda necropolis shows that a combined argumentation can well approximate the dynamics of a prehistoric burial site. Furthermore, models on the social organisation of prehistoric groups can be obtained. Whether these issues match the results of settlement excavations and spatial surveys still has to be proven.

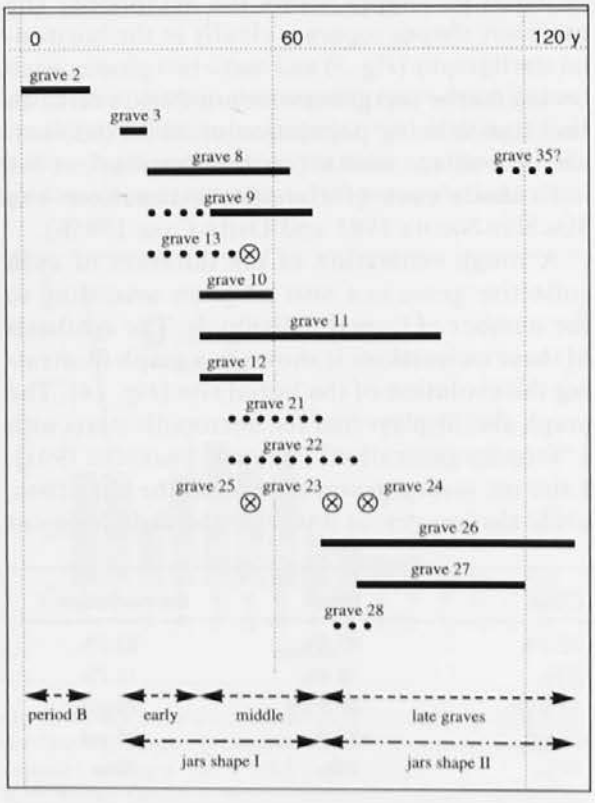

Fig. 14: Velika Gruda. Evolution and duration of the necropolis.
Sl. 14: Velika Gruda. Razvoj in trajanje grobišča.

Acknowledgements

This paper was presented at the Inaugural Meeting of the European Association of Archaeologists (EAA) in Ljubljana in September 1994. I would like to thank Margarita Primas, Biljana Schmid-Sikimić, Thomas Bossi (all Zurich) and Bryon Bass (Edinburgh) for their support and comments on the views expressed here.

ACSÁDI, G. and J. NEMESKÉRI 1970, *History of human life span and mortality*. - Budapest.

BENAC, A. 1990, Quelques exemples des changements socio-économiques dans les périodes préhistoriques en Yougoslavie. - *God. Cent. balk. isp.* 28, 35-47.

ČOVIĆ, B. 1990, Über die Struktur der Viehzucht im nordwestlichen Balkan während der Bronze- und Eisenzeit. - *God. Cent. balk. isp.* 28, 65-73.

DELLA CASA, Ph. 1995a, The Cetina group and the transition from Copper to Bronze Age in Dalmatia. - *Antiquity* 69, 565-576.

DELLA CASA, Ph. 1995b, Zur sozialen Organisation bronzezeitlicher Nekropolen des 14. und 13. Jahrhunderts v. Chr. im dinarischen Raum. - In: *Trans Europam. Festschrift für Margarita Primas*, Antiquitas 34,69-80.

DELLA CASA, Ph. 1996, *Die bronzezeitliche Nekropole Velika Gruda (Opš. Kotor, Montenegro). Fundgruppen der mittleren und späten Bronzezeit zwischen Adria und Donau*. - Univforsch. z. prähist. Arch. 33.

HÄNSEL, B. and N. KALICZ 1986, Das bronzezeitliche Gräberfeld von Mezőcsát, Kom. Borsod, Nordostungarn. - *Ber. Röm. Germ. Komm.* 67, 5-88.

HASSAN, F. A. 1981, *Demographic archaeology*. - New York.

HEINRICH, W. and M. TESCHLER-NICOLA 1991, Zur Anthropologie des Gräberfeldes F von Gemeinlebarn, Niederösterreich. - In: W. Neugebauer, *Die Nekropole F von Gemeinlebarn, Niederösterreich*, Röm. Germ. Forsch. 49, 222-256.

HERRMANN, B. et al. 1990, *Prähistorische Anthropologie. Leitfaden der Feld- und Labormethoden*. - Berlin.

JUBANI, B. 1972, La céramique illyrienne de la cité de Gajtan. - *Iliria* 2, 409-450.

MARKOVIĆ, Č. 1985, *Neolit Crne Gore*. - Centar za arheološka istraživanja Filozofskog fakulteta u Beogradu 5.

NICOLĂESCU-PLOPŞOR, D. 1961 Cercetări antropologice asupra osemintelor din necropola de incinerație de la Cîrna. - In: V. Dumitrescu, *Necropola de incinerație din epoca bronzului de la Cîrna*, 365-386, București.

PAROVIĆ-PEŠIKAN, M. 1977-1978, Arheološka istraživanja u Boki Kotorskoj. - *Starinar* 28-29, 19-67.

PAROVIĆ-PEŠIKAN, M. and B. TRBUHOVIĆ 1971, Iskopavanja tumula ranog bronzanog doba u Tivatskom polju. - *Starinar* 22, 129-141.

PRIMAS, M. 1992, Velika Gruda. Ein Grabhügel des 3. und 2. Jahrtausends v. Chr. in Montenegro. - *Arch. Korrbl.* 22, 47-55.

PRIMAS, M. 1996, *Hügelgräber des frühen 3. Jahr-tausends v. Chr. im Adriagebiet - Velika Gruda, Mala Gruda und ihr Kontext*. - Univforsch. z. prähist. Arch. 32.

PUŠIĆ, I. 1976, Tragovi preistorije i rezultati dosadasnjeg istrazivanja na teritoriji Boke Kotorske. - *Materijali* 12, 127-132.

TESCHLER-NICOLA, M. 1985, Die Körper- und Brandbestattungen des mittelbronzezeitlichen Gräberfeldes von Pitten, Niederösterreich. - In: F. Hampl et al., Das mittelbronzezeitliche Gräberfeld von Pitten in Niederösterreich 2. - *Mitt. Prähist. Komm.* 21/22, 127-263.

WAHL, J. 1982, Leichenbranduntersuchungen. Ein Überblick über die Bearbeitung und Aussagemöglichkeiten von Brandgräbern. - *Praehist. Ztschr.* 57, 1-180.

WARD, R. H. and K. M. WEISS 1976, The demographic evolution of human populations. - In: *The demographic evolution of human populations*, 1-23, London.

WEISS, K. 1973, Demographic models for anthropology. - *American Antiquity* 38.

WITTWER-BACKOFEN, U. 1991, Nekropole und Siedlung - Möglichkeiten und Grenzen der Rekonstruktion prähistorischer Bevölkerungsstrukturen. - *Mitteilungen der Berliner Gesellschaft für Anthropologie, Ethnologie und Urgeschichte* 12, 31-38.

Povezava antropoloških in arheoloških podatkov: pripombe k sestavi prebivalstva in družbeni ureditvi bronastodobnega grobišča Velika Gruda v Črni gori

Povzetek

Gomila Velika Gruda je bila izkopana v letih 1988-1990. Leži na obalni ravnini pri Tivatu, blizu bakrenodobne gomile Mala Gruda. Prazgodovinska poselitev na tem območju je skromno raziskana, saj je površinsko pregledanih ali izkopanih samo nekaj najdišč.

V gomili Velika Gruda je moč razlikovati več faz poselitve: poznobakrenodobni centralni grob, celotno mlajšebronastodobno nekropolo in posamezne kasnejše grobove. Strukture so datirane z radiokarbonsko in arheološko metodo.

Bronastodobno nekropolo sestavlja trinajst kamnitih grobnic s skupinskimi pokopi, štiri grobne jame s skeleti in več kot trideset žarnih pokopov novorojenčkov in otrok. Od slednjih je le osem antropološko določenih, medtem ko so ostali določeni na podlagi fragmentiranih najdb in značilnih oblik žar. Zaradi upoštevanja antropoloških in arheoloških podatkov vključuje antropološka analiza večje število osebkov.

Življenska tablica s 43% umrljivostjo otrok in pričakovano življensko dobo ob rojstvu, ki znaša nekaj več kot dvajset let, je dobro uravnotežena in se ujema z demografskimi standardi predindustrijskih populacij.

Obsežna interpretacija vseh razpoložljivih podatkov ponuja tudi model družbene urejenosti grobišča. Skupinski grobovi in pripadajoči žarni grobovi so predstavljeni kot družinski grobovi na grobišču majhne vaške skupnosti približno tridesetih prebivalcev.

Dr. Philippe Della Casa
Abt. Ur- und Frühgeschichte
Universität Zürich
Karl Schmid-Str. 4
CH-8006 Zürich