Power and Prestige in the Copper Age of the Lower Danube

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Abstract: *The author discusses the role of prestige-goods exchange for the social systems of the Copper Age of the Eastern Balkans. After showing that clear distinctions of 'wealth' exist even in those areas which lack rich graves like the Varna cemetery, the author discusses the dating and repartition of prestige goods of copper, ground stone and flint. It becomes clear, that several overlapping exchange networks existed simultaneously. The items exchanged were reffering to each other when their shape or material is concerned and the introduction of copper smelting technology seems to have been causing the initial impulse. Within these networks not only goods, but also ideas about elite burials and social hierarchies circulated. Finally, the role of prestige-good exchange is shortly discussed for the so-called collapse of the KGK VI complex.*

Rezumat: *Autorul discută în acest studiu rolul schimbului de bunuri de prestigiu pentru sistemul social din Eneoliticul Balcanilor răsăriteni. După ce arată că există distincţii clare de 'bogăţie' chiar şi în zonele unde lipsesc morminte bogate ca în necropola de la Varna, autorul discută cronologia şi repartiţia bunurilor de prestigiu din cupru, piatră şi silex. Este clar faptul că existau concomitent mai multe reţele de schimb, care se suprapuneau. În interiorul acestor reţele circulau nu numai bunuri, dar şi idei despre înmormântările elitelor şi ierarhiile sociale. În sfârşit, rolul schimbului bunurilor de prestigiu este discutat pe scurt în ceea ce priveşte aşa-numitul colaps al complexului cultural KGK VI.*

Key words: *Copper Age, Gumelniţa culture, copper axes, flint axes, power and prestige.*

Cuvinte cheie*: eneolitic, cultura Gumelniţa, topoare de cupru, topoare de silex, putere şi prestigiu.*

Introduction

The south-east European Copper Age is one of the most spectacular but also one of the most enigmatic periods in prehistory. Not only are many finds, like the Varna cemetery well known also to non-specialist of archaeology (Fig. 1), but the period itself was and is of uttermost importance for our understanding and modelling of prehistory. The current paper explores three aspects connected with the Copper Age. First a short history of research is given which sums up diffusionistic and non-diffusionistic theories and their implications for our understanding of the prehistoric past. This part finishes with some rarely considered finds from the southern Levant

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which show that comparable (yet not necessarily connected) phenomena can be found in the Near East again and suggest that the diffusion of ideas, stimuli and technologies cannot be totally ruled out when analysing the Balkan Copper Age. A second part deals with the impact extractive metallurgy had on the Late Neolithic societies of the Eastern Balkan region and discusses the dating, repartition and contexts of items (mostly axes) considered to be prestigious. A final part analyses these artefacts in a gift-giving model and explains the importance of prestigious items for the social reproduction of Copper Age societies.

Fig. 1. Varna, grave 43 (Fol, Lichardus 1988, 58 Abb. 29, picture courtesy of Moderne Galerie des Sarlaand Museums).

Metals and Society: The Copper Age, its history of research and impact of social archaeology

Realising that for a vast period there existed communities which already possessed the knowledge of smelting and melting copper very close to those who still used *lithic* technologies only, this lead to the definition of the Copper Age of the Carpathian Basin and the Balkan regions[1]. Shortly after the first scientific publication, this gave rise to a number of prominent theories. The appearance of

[1] Pulszky 1884.

copper items, for instance, was thought it to be the result of a migration of people[2]. More important, social complexity was seen as the result of translating the organisation of labour of metal-using societies into the local conditions of neighbouring regions ignorant of that technology[3]. This particular character is perhaps best demonstrated by the controversy about dating the Copper Age. When the well-known cemetery of Varna at the Bulgarian Black Sea coast was discovered, a scholarly debate concerning the age of the burials began which exposed major theoretical shortcomings of the accepted research paradigms. In the writings put forward by V. Gordon Childe[4], *cultural evolution* was synonymous with the diffusion of cultural innovations (both technological and social) from the Near East to the northern parts of Europe. This was explained with consecutive cultural stages which could only be achieved by proficiency of techniques. Bronze, for instance, was seen as elemental for achieving chiefdoms. Therefore clearly identifiable groups of wealth were not expected in any period before the Bronze Age. Thus the Varna cemetery was misdated into the Bronze Age by many scholars, because the wealth of the burials was comparable with similar rich burials in Anatolia, for instance in Alaca Hüyük[5]. This connection seemed logical within archaeology's theoretical boundaries, but when radiocarbon dates were becoming available, they showed that Varna was considerably older than such analogies. Indeed it was older than any find of comparable quality in the Near East. Colin Renfrew thereupon argued for an autochthonous development of south-east Europe without Near Eastern influences[6]. To understand this debate fully, it is necessary to realize the importance of the production of copper artefacts for human societies, and therefore, the early history of metal usage has to be revisited.

Heavy Metal rules: An Archaeology of Technique and Copper

Copper is the first metal used by humans, and its usage goes back to the Mesolithic in Anatolia: During the early Pre-Pottery Neolithic (PPN A; ca. 10,200-8,800 BC) native copper is used in a variety of comparable contexts[7]. The usage of copper changes slightly in the PPN B (ca. 8,800-6,900 BC) where beads made from hammered native copper[8] were discovered, as well as evidence of early heating

2 Much 1886.

3 e.g. Müller 1905.

4 Childe 1928; Childe 1947; Childe 1949.

5 Makkay 1976.

6 Renfrew 1969; Renfrew 1973.

7 Rosenberg 1994; Özdoğan, Özdoğan 1999.

8 Bilgi, Özbal, Yalçin 2004, 2-3; Yalçin 2000, 17-19; Esin 1993; Esin 1999; Yalçin, Pernicka 1999; Hautpmann *et alii* 1993.

(tempering) during the production process[9]. Heated copper can be worked more easily and therefore this seems to reflect a process of experimentation, and is also known also from Syria, Iran and Mesopotamia[10]. While the elaboration of this technique allows it to create also larger objects like a hammered mace-head from Can Hassan, dated to around 6,000[11], its impact is relatively low. At the current state of research, copper working is not transferred to South-East Europe during the Early Neolithic. With such a long tradition, however, it still seems reasonable to ask why copper should have had any new effects on society in the Copper Age.

During the late 6th millennium the first evidence for smelting and melting is visible in the archaeological record[12], and its importance should not be underestimated. Thereby copper is extracted from ores (*extractive metallurgy*) which is a much more complicated process than simply using native copper. The sudden appearance of both smelting and melting is a technological breakthrough which allows the production of larger objects and a new possibility to shape them as well as the independence of native copper sources. Melting again allowed the recycling of broken metal items and both techniques required elaborated *châine opératoires*, and the necessary working steps could not be controlled at a single place only (exploration for raw-materials, mining expeditions, transport of ores, smelting of ores, melting and casting metals, distribution of finished goods, recycling). Even when most *lithic* artefacts also required the transport of raw-materials, neither were the raw-material sources as limited nor the working steps as complex as with copper metallurgy. Extractive metallurgy therefore made it necessary to obtain control over larger areas, either by military force or by gift-giving relations. Complex metal items were not only heavy, but their production and consumption required a degree of social complexity significantly higher than in the previous Neolithic.

Varna: An apparent proof for the lack of social complexity or the beginning of a New Civilisation?

Most researchers agree that smelting and melting are too complex to be invented several times, but that the knowledge spread from a core area[13]. Calibrated C14-datings from Varna, however, seemed to contradict this very notion, since it was earlier than comparable finds from Asia Minor, the Levant and Syria-Mesopotamia.

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9 Maddin, Stech, Muhly 1991, 378.

10 Molist *et alii* 2009; Smith 1969; Hole 2000; Solecki 1969; Moorey 1988.

11 Yalçin 1999; Yalçin 2000, 21, Fig. 7; cf. also for hammered items from Iran: Thornton *et alii* 2002, 1456.

12 Cf. Pernicka 1990.

13 Roberts, Thorton, Piggot 2009; Craddock 1995; Craddock 2001.

The metallurgy of the Balkan region was according to Renfrew the result of technological developments in ceramic production which allowed to reach temperatures of more than 1,100°C in the 5th millennium and in that way enabled communities to smelt ores[14]. Complex, extractive metallurgy was thus not the product of diffusion but of internal structural change. This, in turn, would have led to abnegate any connection between metallurgy and social evolution, and might even be understood as denying that there were evolutionary stages in prehistory. Therefore the early dates from the Varna cemetery and other Copper Age sites either meant that re-thinking the interconnections between copper and social complexity or changing our focus of attention from the Near East to South Eastern Europe was necessary.

> Henrietta Todorova even stated provokingly yet not without reason:
> '*During the Eneolithic […] the formula* Ex Oriente Lux *had lost a considerable part of its significance, because new and compact ethno-cultural complex with an independent economic and cultural potential had appeared […]. Its impact was so strong that one may justifiably reword the formula to* Ex Balcanae Lux.'[15]

Is it then the 'Beginning of a New Civilisation' as an exhibition of the Varna finds in Saarbrücken, Germany was titled (cf. the title of Fol and Lichardus 1988)?

Is the Balkan Copper Age unique?

Even if, at the moment, it is difficult to show direct contacts between the Balkan region and the Near East, a number of new developments show that the state of research and excavation is far from comparable[16]. Lost wax casting of possibly intentionally alloyed arsenical copper has been documented in the famous hoard from the Cave of the Treasure in Nahal Mishmar, Israel[17]. The hoard was wrapped inside a mat and placed into a natural crevice of a cave. It consisted of 426 objects most of them made of pure copper or a copper-arsenic-antimony-alloy. Mace-heads are the largest find-group and only made from pure copper, while so-called standards, crowns and vessels are made from alloys[18]. In the cave there have been found also slightly younger settlement traces and the later prehistoric settlement was until recently connected with the hoard and the latter consequently dated to the middle of the 4th millennium. Modern radiocarbon-dates of the mat can be combined to c. 4,300-4,100 BC which means the

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14 Renfrew 1973, 174-175.

15 Todorova 1978, 1.

16 Cf. Özdoğan, Parzinger 2000; Oates et al. 2007; Klimscha 2011c; Garfinkel et al. 2014.

17 Bar-Adon 1980; for the evidence of alloying cf. Shugar 1998; Goren 2008: 376; Gošić 2008, 71-72. Cf. also the arguments brought forward by Lechtmann 1996; Moesta 2004.

18 cf. Bar-Adon 1980 with excellent pictures.

hoard belonged to the Chalcolithic Ghassulian/Ghassul-Be'er-sheva culture[19]. In settlements of this culture there have been found analogies for the copper artefacts and these sites all end before 4000/3900 BC[20]. Another spectacular find from the region derives from a cave, too: In the Nahal Qanah near Tel Aviv, eight gold rings which probably belonged to one or two graves were discovered and can be dated to before 4000 BC[21]. Thus, even if the Levant is relatively far away from the Balkan region, and even if there still is a difference of at least 200 years to the richest graves of the Varna cemetery, these finds clearly show a comparable or possibly higher technological understanding of the casting of metals as well as the use of precious metals. Given the uncertainty of radiocarbon-datings in the 5th millennium and the lack of research in many parts of the Near East, there is good chance that even older evidence of metal usage will be found in the future.

But what are the consequences for this? Do we have to forget about Renfrew's way of explaining prehistory and go back to the simple *diffusionistic* models? At other places, I have suggested, that these have become *possible* again[22]. Nevertheless we need to consider the differences regarding both technology and the social system between both regions. Yet, this does not limit the importance of the south-east European Copper Age at all, in fact, it makes it even more interesting as it shows that, there was both similarity, but also divergence in the socio-technological development between the Balkans and the Near East. The 'rules' of social evolution, if these indeed exist, are much more complex than previously thought.

The Copper Age in Romania and Bulgaria:

The burial ground of Varna belongs to the 'cultural complex' - Kodžadermen-Gumelniţa-Karanovo VI (KGK VI). Radiocarbon dating shows that KGK VI started before 4600 and ended around 4250/4200[23]. Geographically this area is restricted to the north by the Carpathians, to the east by the Black Sea, to the west by the Balkan Mountains and the south by the Aegean (Fig. 2). It is distinguished by multi-layer tell settlements and massive copper tools and weapons. The ceramic styles are (apart from natural and political borders) the main argument for the division into cultures[24]: Along the Lower Danube the Gumelniţa culture can be found[25], while in the Dobrogea local

19 Aardsma 2001; Klimscha 2014a; Klimscha 2014b.

20 Gilead 2009; Klimscha 2009a; Klimscha 2012b.

21 Gopher, Tsuk 1996; Klimscha 2014b.

22 e.g. Klimscha 2011b; Klimscha 2011c.

23 Görsdorf, Bojadžiev 1996; Klimscha 2007; Weninger, Reingruber, Hansen 2010; exhaustive data compilations can be found in Bem 1998; Bem 2000-2001.

24 Todorova 1978, 138.

25 Rosetti 1934, 6ff.

research has defined the Stoicani-Aldeni-Bograd group[26]. The tell site of Kodžadermen[27] is sometimes used to describe a group of sites placed in north-eastern Bulgaria and south of the Stara Planina the sixth layer of Tell Karanovo and similar sites are summarised in the Karanovo VI-culture.

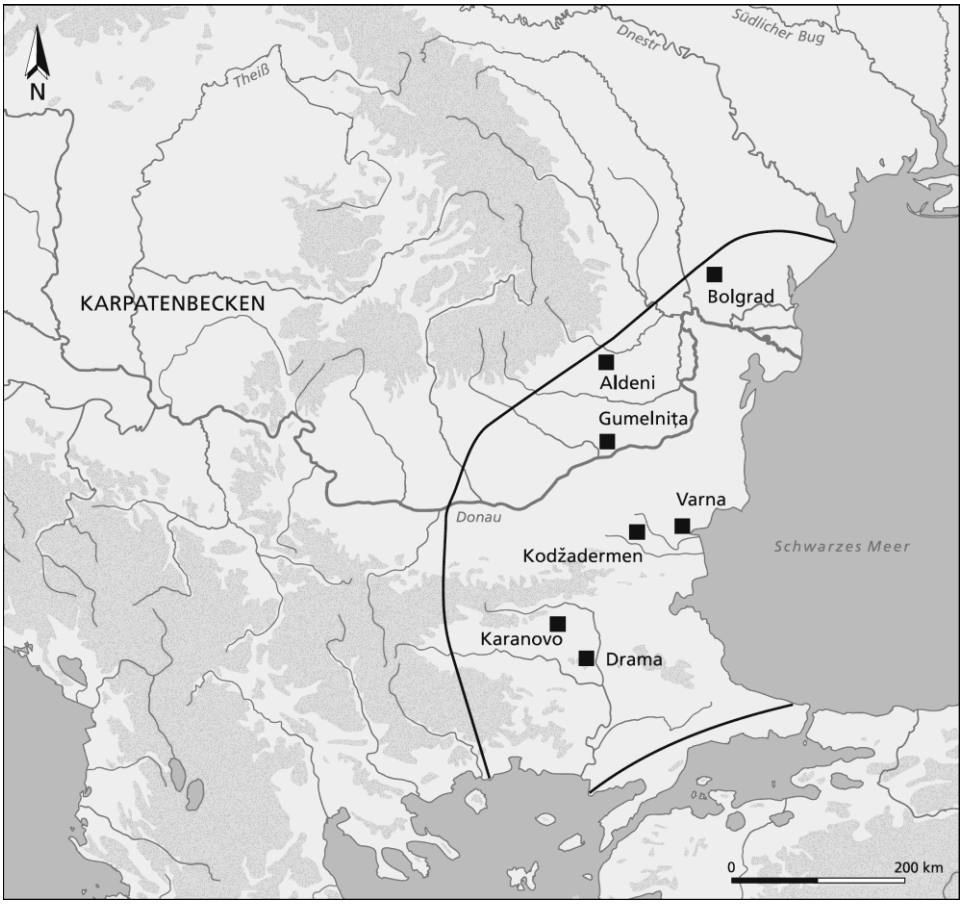

Fig. 2. Simplified distribution of the KGK VI cultural complex.

The state of research is still lacking in many aspects, although in recent years several promising projects have been begun and regional/municipal archaeologists could discover a large number of interesting details. Many sites, however, are published only preliminary[28]. General overview texts are available but not up to date[29].

[26] Comşa 1963; Dragomir 1970; Dragomir 1979; Dragomir 1983; Haşotti 1988-1989.

[27] Popow 1916-1918.

[28] cf. Klimscha 2011a for an overview.

Graveyards are known from many sites but apart from some exceptions[30] only preliminary reports or no information at all exist; the most important cemetery at Varna is currently being prepared for publication (cf. <http://www.ufg.uni-tuebingen.de/juengere-urgeschichte/forschungsprojekte/aktuelle-forschungsprojekte/varna/graeberfeld-von-varna.html> [accessed 11.12.2012] for the current state of publication). Hoards are known but not as common as in the Bronze Age[31] though a large number of single copper finds is perhaps filling this gap. There are, nevertheless, a number of settlements which have been recently or are currently excavated, for instance at Drama[32], Hîrşova[33] or Pietrele[34] and the renewed excavations at Tell Karanovo[35].

Axes and adzes made from stone and flint:

While in the preceding Boian/Karanovo V-phases the stone axes (or adzes, both terms are used synonymously here) were relatively short[36], in the KGKVI-layers there are significantly larger axes from a variety of materials. Why are stone axes now longer, wider and heavier? For the answer it is necessary to understand the morphology and contexts of the artefacts and those will be discussed now:

From the point of view of typology one can mainly differentiate between small ground stone axes or adzes with a rectangular or oval cross-section; small, narrow chisel-like tools (Fig. 3); large, polished flat adzes; slender, perforated, well polished flat axes on the one hand (Fig. 4) and large, surface-retouched axes made from flint on the other (Fig. 5). While large, heavy axe-blades were probably used in a different way, than the slender and lighter ones[37], this variety is not solely the product of intentional production, but in many cases the result of heavy recycling. However, use-wear analysis and morphological studies still allows determining the construction principles of the artefacts, and thus to estimate their respective functions[38].

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29 Todorova 1982; Nestor 1928; Nestor 1933; Mikov 1933.

30 Comşa 1995; Todorova-Simeonova 1971; Todorova 2002.

31 Nicu, Pandrea 1997, Fig. 6; cf. also the information in Vulpe 1975; Todorova 1981.

32 Lichardus *et alii* 2000.

33 Popovici, Rialland 1996.

34 Hansen *et alii* 2004; Hansen *et alii* 2005; Hansen *et alii* 2006; Hansen *et alii* 2007; Hansen *et alii* 2008; Hansen *et alii* 2009; Hansen *et alii* 2010; Hansen *et alii* 2011.

35 Hiller, Nikolov 1997; Hiller, Nikolov 2005.

36 Comşa 1974.

37 Winiger 1991.

38 Klimscha 2009b.

Fig. 3. Selection of class I ground stone axes from Pietrele, Giurgiu county, Romania. These axe-heads required an antler sleeve for usage (photos: S. Hansen, N. Becker, T. Vachta/DAI modified and arranged by author).

Fig. 4. Class II ground stone axes ("flat axes") from Pietrele, Giurgiu county, Romania (photos: S. Hansen /DAI modified and arranged by author).

Fig. 5. Class III flint axes from Pietrele, Giurgiu county, Romania (photos: S. Hansen /DAI modified and arranged by author).

The weight and the length of an axe-head is the easiest way for a primary arrangement. Four classes can thus be distinguished: Class I-axes are shorter than 7cm and can be sub-grouped into a unit weighing less than 30g and another unit with a maximum weight of 90g. Class II-axes have a weight of 91-250g and class III-

axes weigh more than 250g and are longer than 14cm. Certain types and materials are limited to distinct classes of weight and length: Bone adzes only happen to appear in classes Ia and Ib, as well as the small ground stone axes with rectangular or oval cross-section. The axes were general tools for a variety of purposes; they were made in two basic varieties: flat ground stone axes and heavy flint axes.

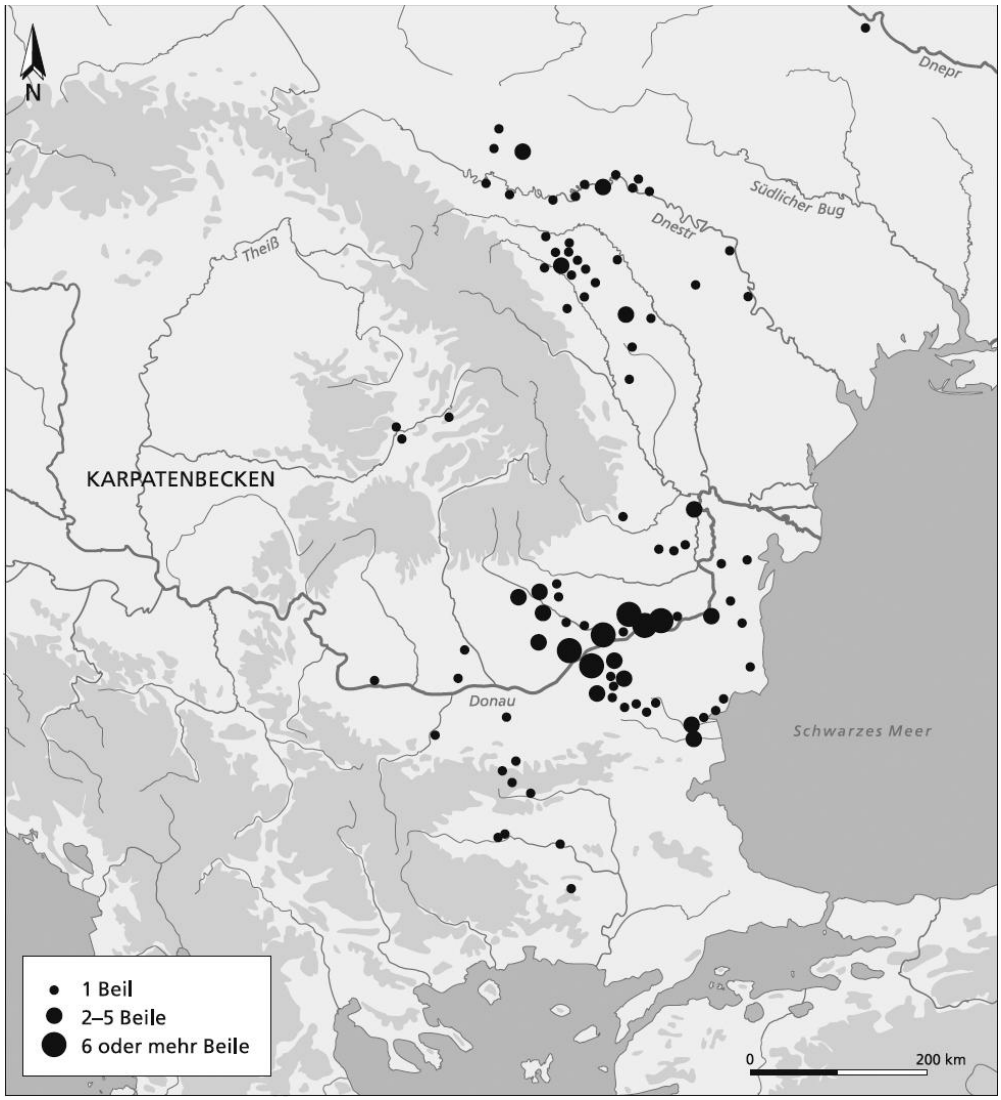

Fig. 6. Distribution of class III flint axes with a four-sided section between c. 4,600-3,800 BC (Klimscha 2007).

This is further stressed, when the respective weights of the axe-classes is compared: Since class I axe heads (ca. 20-90g) needed an antler sleeves (ca. 80-150g) for usage, this results in similar weights (ca. 100-240g) like those of class II-axes (ca. 110-270g). Still it is in both cases significantly less than that of class III-axes (ca. 250-500g). Therefore the only functional difference between class I and class II-axes is the width of the cutting edge, but both are significantly lighter than class III-axe heads. What function can be assumed for the class III-axe heads, then?

Both varieties were possessed by individual persons or households. The use-wear on flint axes, for example, enables us to differentiate between axes used by left-handed persons from such used by right-handed persons; ground stone axes were repaired and reduced in household-specific ways and thus also connected to a limited group of persons[39]. While there are connections of the ground stone axes to the preceding Karanovo V and Boian phases, the class III flint axes are an innovation during the time of KGK VI. Their manufacture is connected with new flint working techniques and the production of *superblades*; it is limited to the eastern Balkan region and starts around c. 4,600, from 4,500 onwards it can be seen in some settlements in the Cucuteni-Tripol'e area[40]. With the end of the KGK VI cultures, the production of flint axes stops in Balkan region, but continues in Moldova and Ukraine (Fig. 6); there is a clear concentration of these axes visible at the Lower Danube which is not caused by a higher research density, but seems to reflect a more intensive usage.

Thus, class III-flint axes were limited to a time-span of 500 years. Why was this innovation used then? Comparable tools are not known within the preceding Neolithic or the cultures following KGK VI. Since the archaeological record cannot highlight any differences in house-building or household economy that can be connected to class III-silex axes, I suggest that functional advantages were not responsible for their use. Even though postholes are known in Gumelniţa-settlements, houses were mainly built from clay. And even though experiments seem to suggest that flint axes were more efficient than those made from ground stone, the size of the class III-axes caused breakages at the cutting edge. Reduction sequences of flint axes show that this type of damage occurred frequently and that the large size was not advantageous during work (Fig. 8). Use-wear analysis on selected flint axes allows in combination with these reduction sequences to reconstruct large parts of the *châine opératoire* of the axes; most artefacts are not the result of the intentional creation of a 'type'. Instead, their shape was heavily influenced by repairing and recycling processes, until they were either protected from use, for instance under a collapsed housewall or deposited as cores, hammers or smaller flint tools like scrapers (Fig. 7).

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[39] Cf. Klimscha 2010 for a detailed description.

[40] Klimscha 2007.

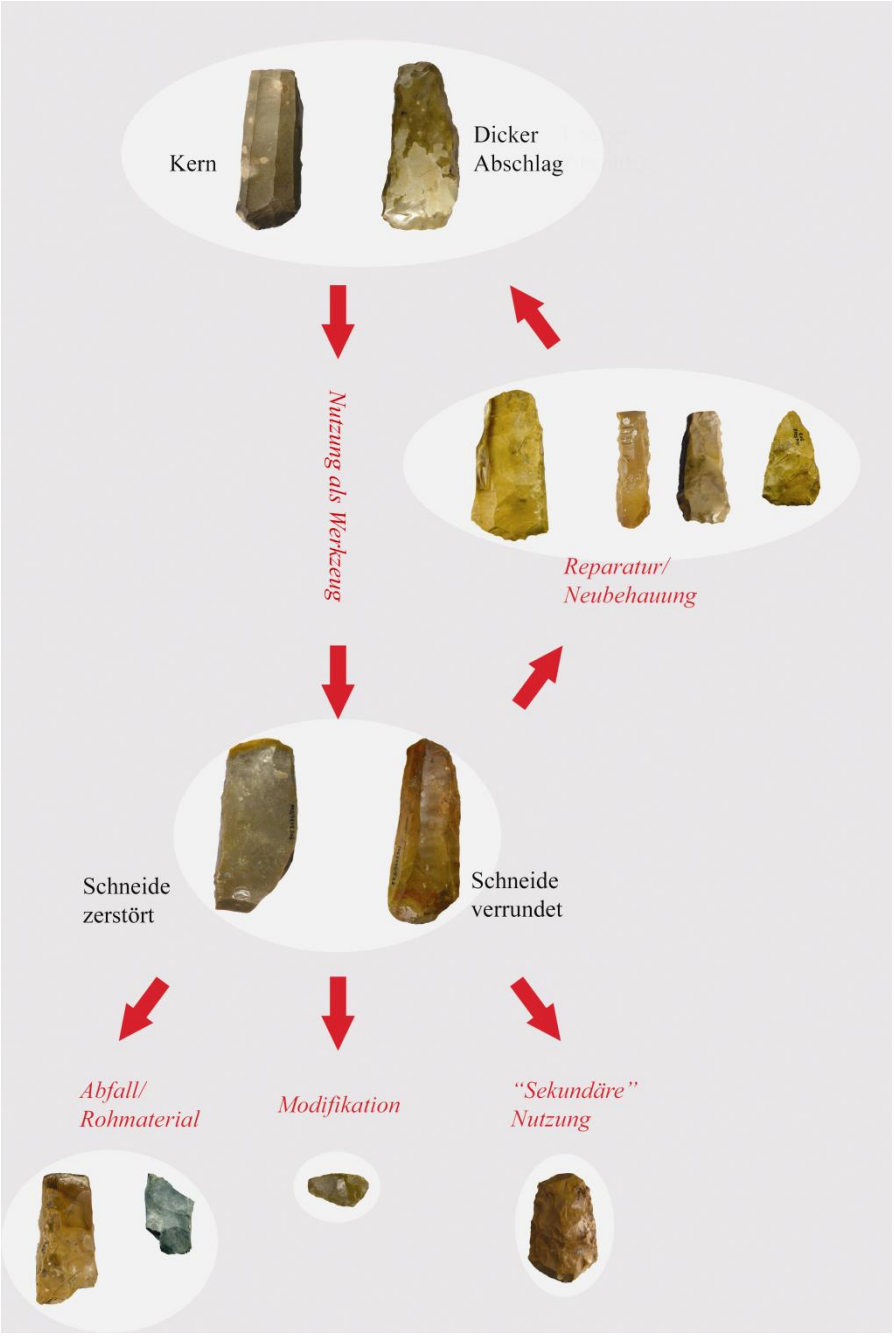

Fig. 7. Use, repair and recycling of class III flint axes shown with finds from Pietrele, Giurgiu county (Klimscha 2009b).

As functional reasons fail to explain the use of large flint axes satisfactorily, I suggest searching for social reasons, which made the KGK VI cultures unique from both the preceding and following times. This will be done further below in this paper, when the contexts of axes in the copper age are analysed.

Fig. 8. Reduction sequence of a class III flint axe shown with finds from Pietrele, Giurgiu county (Klimscha 2009b).

Battle-Axes

Stone axes with a shaft hole are often referred to as battle-axes; they have a blunt edge and are therefore certainly not used for wood cutting and possibly a specialised close combat weapon (Fig. 9). Perforated battle-axes are also found in rich graves in Varna, for instance in grave 4[41] or grave 43[42] as well as in the hoard from Karbuna[43]. They would be perfectly suited for personal combat as has been suggested for similar Central European and Anatolian pieces[44]. The earliest battle-axes appear in the younger Boian, Karanovo V, Precucuteni and older Lengyel phases, that means before 4,600 BC[45]. They are not limited to the eastern Balkans, and can be found from 4,600/4,500 on in the complete KGK VI complex and within the older Cucuteni-Tripol'e, Tiszapolgár, Bodrogkeresztúr, Lengyel III and Sălcuţa/Krivodol cultures[46]. Slightly later, the battle-axes are found in the circumalpine area, the Polish Funnelbeakers, and also within the Eastern Baltic[47]. The central European finds start

41 Fol, Lichardus 1988, 53, Fig. 23.
42 Fol, Lichardus 1988, 59, Fig. 29.
43 Sergeev 1963.
44 Winiger 1999; Schmidt 2002.
45 Marinescu-Bîlcu 1974; Nikolov 1974; Comşa 1974; Dombay 1960.
46 Patay 1978, 39; Ohrenberger 1969, Fig. 2, 3; Todorova 1982, Abb. 47; Radunčeva 1976, Taf. 44, 8.
47 Klimscha 2009b.

before 4000 BC, but their boom is in the first half of the 4th millennium[48]. Their western route is roughly corresponding with the distribution of the axes of type F[49], while in the eastern route seems to be connected with the type K[50]. The chronological relationship between both types is not sufficiently analysed and there can be some changes expected in the future. They are connected to both the battle-axes and the copper hammer axes from Southeast Europe: while there are several similarities from the technological point of view between both groups from stone, the size of the Central European Battle-axes compares much better to that of the hammer-axes.

Fig. 9. Shafthole axes made from ground stone ("battle axes") from Pietrele, Giurgiu county, Romania (photos: S. Hansen / DAI modified and arranged by author).

Apart from axes made of various lithic raw materials, there exist also flat and perforated copper axes and axe-adzes. These are easily accessible thanks to a number of synthetical studies[51], and will not be discussed in detail here. However their chronology is of major relevance for the relationship to their counterparts in stone.

48 Ebbesen 1998; Zápotocký 1992.

49 *flat* Battle-axes *sensu* Zapotocký 1992.

50 *Knaufhammer*-axes *sensu* Zapotocký 1992.

51 e.g. Schubert 1965; Todorova 1981; Vulpe 1975, Novotná 1970; Patay 1984.

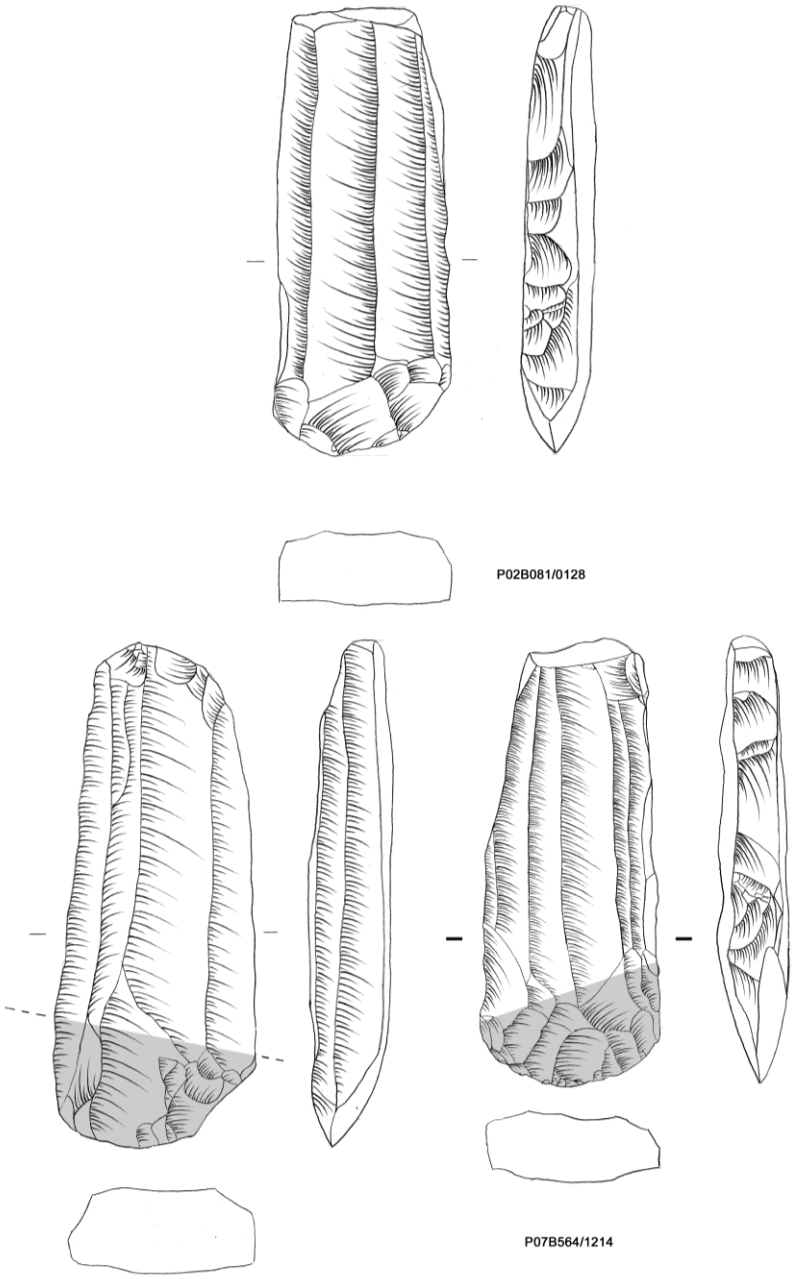

Fig. 10. Class III flint axes with negatives from a previous production of superblades on one surface. Pietrele, Giurgiu county (Klimscha 2009b).

Flat axes, hammer axes and axe-adzes made from copper

The earliest stage of the use of smelted and melted copper can be documented in the settlement of Pločnik, ca. 300km south of Belgrad. There small chisels made from smelted copper were found in a context which can be dated after 4,850 BC[52]. A comparable age can be assigned to a surface find from Făracaşul-de-Sus, com. Fărcaşele, which was found at the border of a Boian settlement[53]. Flat copper axes are then regularly found in contexts dating to the Gumelniţa-, Karanovo VI-, Varna- and Sălcuţa III-cultures as well as those of the Cucuteni A-Tripol'e BI, late Lengyel-, and Bodrogkeresztúr-cultures[54], while hammer axes of the Pločnik-type continue until at least the third quarter of the fifth millennium.

The end of the Vinča culture is a *terminus ante quem* for the appearance of the copper axes of the *Pločnik* type (Fig. 11) and the absolute datings of several relative chronologies. Since this date is very important for the exact sequence of copper artefacts, a further look into the details of the late Vinča chronology is necessary. In Orăştie-Dealul Pemilor three C14-dates help to date the settlement, which can be classified as Vinča C, between 4,800-4,500 BC[55]. In Deva-Tăulaş two chronological phases can be differentiated; while Tăulaş I seems to correspond to Vinča B2, Tăulaş II is synchronous to Vinča B2/C and included imports from the Bükk- and Precucuteni-cultures[56]. The identification of Precucuteni elements would involve a dating of Tăulaş II before c. 4,600 BC, while Bükk is traditionally parallelised with Vinča B2[57]. Also a connection with Alba Iulia-Lumea Nouă was discussed[58], which thus would also have be dated to Vinča B2-C. The anchor-shaped 'amulets' from the Turdaş-layer of Tărtăria were compared with Lumea Nouă in Alba Iulia[59]. C.M. Mantu assigns a date of c. 4,950-4,700 BC for the Dudeşti-Vinča C layer in Cârcea-Viaduct[60]. Pit no. 4 from the Vinča C1-settlement of Hodoni provided a find from the Herpály culture[61]; the summed C14-datings place the site between c. 4,850-4,650 BC, while the radiocarbon record of the typologically slightly younger settlement Foeni varies between 4,800-4,590 BC[62]. So while there was some discussion about the ending, a final point was

52 Šlijvar, Kuzmanović-Cvetković, Jacanović 2006, 251ff.
53 Vulpe 1975, nr. 298A.
54 Todorova 1981, 24; Patay 1984, 36; Novotná 1970, 17f-18.
55 Luca 1997, 75.
56 Lazarovici, Dumitrescu 1985-1986, 19, 26.
57 Kalicz, Raczky 1990, 30.
58 Lazarovici, Dumitrescu 1985-1986, 20.
59 Lazarovici, Draşovean 1991, 98-99.
60 Mantu 1999-2000, 85.
61 Draşovean 1995, 53.
62 Mantu 1999-2000, 91.

made by Borič. He discussed the C14-datings from Serbia thoroughly, and his conclusion is, that the end has to be seen around 4,650/4,600 BC[63]. A Pločnik axe from the Karbuna hoard, which can be dated to Precucuteni/Tripol'e AII because of a vessel in the hoard[64], and another axe from the hoard from Pločnik which dates to the phase Vinča-Pločnik[65], also demonstrate that this type was produced before 4,600 BC. This is further substantiated by the dating of Varna grave 43, which included a Pločnik type axe, to the time around 4,700/4,600 BC[66]. This in turn means that at the current state of research hammer axes of the Pločnik type appear already around 4,700/4,600. Many other hammer axe types are difficult to fix chronologically, but the most important types shall be shortly discussed[67].

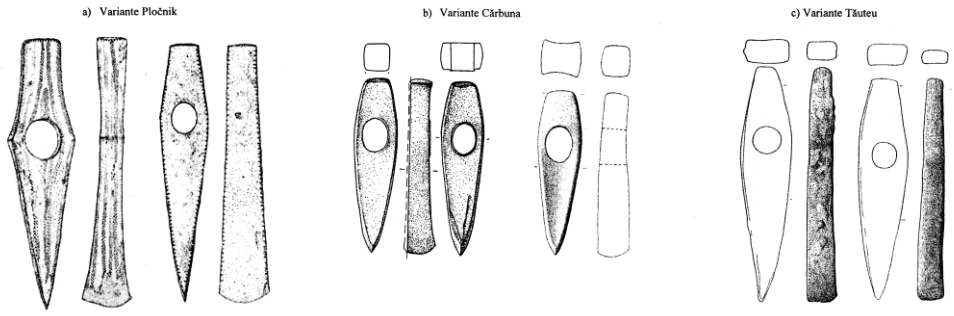

Fig. 11. Typology of the type Pločnik copper shaft-hole axes (Govedarica 2010).

The *Vidra* type axes are dated by graves and settlement finds from Hotnica and Goljamo Delčevo into the older part of Karanovo VI[68]. The date of find from Vidra itself is not clear, but probably connected with the Gumelniţa A-style phase[69]. The finds from a Cucuteni A-house from Reci and from the Cucuteni A3-phase of Cucuteni itself have similar or slightly younger age[70]. The type continues until the end of the Gumelniţa culture, for instance in Teiu[71], which means c. 4,250 BC[72].

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63 Borič 2009.

64 Vulpe however stressed that similar vessels were found still in Cucuteni A3-contexts; cf. Vulpe 1975, 20.

65 Vulpe 1975, 20.

66 Higham *et alii* 2007.

67 For definitions of the various type cf. Schubert 1965; Vulpe 1975.

68 Todorova 1981, 39.

69 Vulpe 1975, 22; Nestor 1933, 78; Rosetti 1934, 29, Abb. 42.

70 Vulpe 1975, 22; Petrescu-Dîmboviţa 1966, 23 Abb. 7.

71 Vulpe 1975, 2f.

Fig. 12. Inventory of axes of the "lower unburnt house" in trench F. Pietrele, Giurgiu county (photo: S. Hansen/DAI, modified and rearranged by author).

The *Crestur* type is found in the hoard of Luica which included a flat axe which can be compared to those in the Karbuna hoard; Vulpe also stressed that Crestur axes only appear in Gumelniţa and Sălcuţa contexts, but never in Cucuteni AB or B[73], which would mean that Crestur axes can be dated between c. 4,600 and 4,200 BC. A similar dating could be assumed for the find from Vasmegyer, if the simultaneous registration in the museum with an axe-adze of the Jászladány type is seen as suggesting a common context[74]; Vulpe also refers to a context in which a Crestur axe was found together with a flat axe of the type Coteana, which suggest a similar age[75].

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72 Cf. Weninger *et alii* 2010 for a precise chronology.

73 Vulpe 1975, 25.

74 Patay 1984, 42.

75 Vulpe 1975, 5.

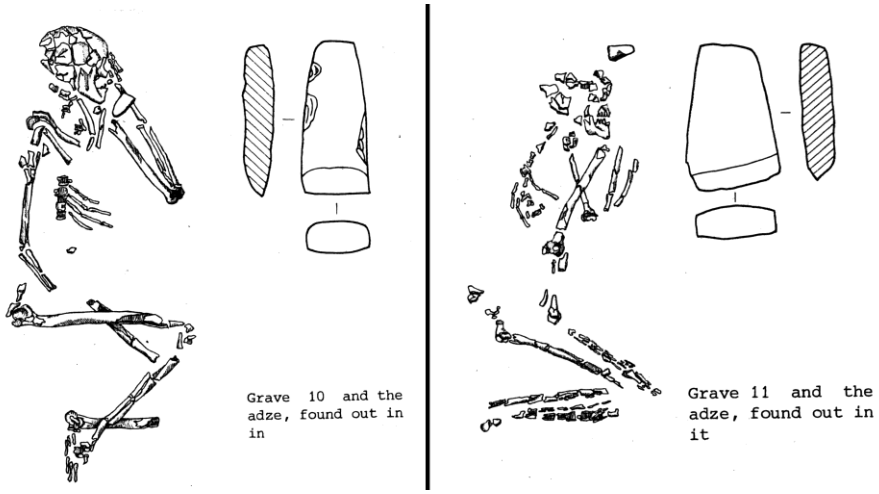

Fig. 13. Graves and the axes used as grave goods from Târgovište, Bulgaria (rearranged and modified after Angelova 1986, 59-60, Figs. 12-13).

The axes of the type *Čoka* are found in the Varna cemetery and in settlement layers of the later Karanovo VI-phase; in Slovakia these axes are found in graves of the Tiszapolgár culture which should have a similar age[76].

A similar time-span can be assumed for the *Codor* axes which only happen to be found in Gumelniţa A2 and B1[77]. A *Mezökeresztes* type axe was found together with an axe-adze of the Jászladány type (see below) in the hoards from Hajduhdház, Tarcea and Ciubance, and this suggests a dating into the Bodrogkeresztúr time[78]. The type *Szendrő* is dated by Patay into the Tiszapolgár time[79], and Novotná argues for the same age when she refers to Tibava grave 7/55[80].

Most *Székely-Nadudvar* type axes cannot be dated. In the hoard of Székely, for instance, there are only axes of the same type[81]. The axe from Dorog possibly belonged to a hoard which also included a chisel and a flat axe which lead Patay to date it into the Bodrogkeresztúr-culture[82]. A similar date was proposed by Vulpe, who referred to contexts in which also Jászládany type axe-adzes were found[83], while there are also

76 Todorova 1981; Novotná 1970, 20.

77 Vulpe 1975, 24.

78 Vulpe 1975, 70f., nr. 64-66; Roska 1942, 35, Abb. 33; Novotná 1970, 25.

79 Patay 1984.

80 Novotná 1970, 3.

81 Patay 1984, nrs. 187-9.

82 Patay 1984, 54.

83 Vulpe 1975, 26.

finds found with Tiszapolgár pottery, which suggest a slightly earlier date[84], and the same is true for a find from a Cucuteni A house from Drăguşeni[85].

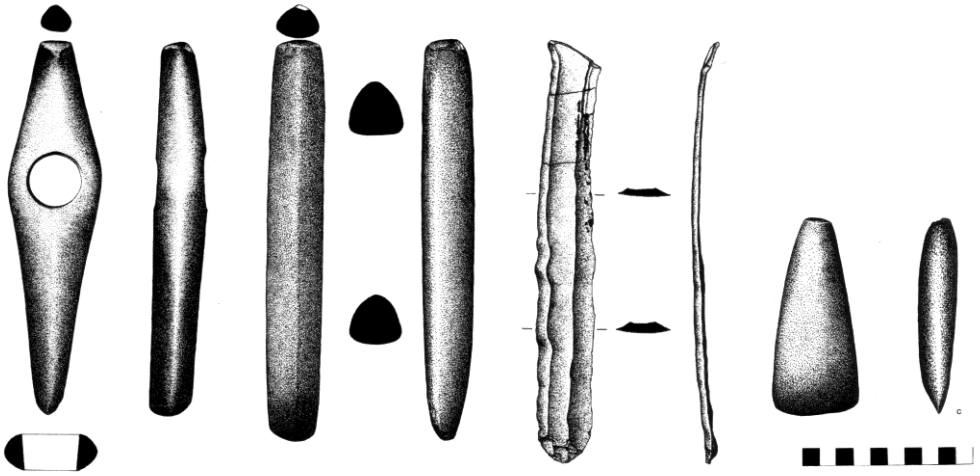

Fig. 14. Selection of the inventory of the grave 3060 at Alsónyék grave 3060, Hungary (re-arranged from: Zalai-Gaál *et alii* 2011, 73, fig. 17; 74, fig. 19; 73, fig. 18; 75, fig. 22).

The *Agnita* type, which can be typologically connected to the Jászladány axe-adzes seems to have a similar age as these, because in the hoard from Cetatea-de-Baltă both types were found together. Also the axes of the type Şiria can be mostly dated into the late Bodrogkeresztúr-culture[86].

As has been shown, several hammer axes are closely connected with the axe-adzes of the *Jászladány* axe-adzes type. According to F. Schubert they can be attributed to Bodrogkeresztúr and the younger phases of Cucuteni[87]. In the Carpathian Basin, all variations of the Jászladány type are found in the transition of Tiszapolgár to early Bodrogkeresztúr and the late Bodrogkeresztúr culture[88]. The hoards from Brad (Cucuteni AB) and Horodnica (Cucuteni AB or B) also include this type[89]. Except for the find from Holíč all Slovakian finds are singe finds and therefore undateable[90], while in Bulgaria axe-adzes seem to be connected with

84 Patay 1984, nrs. 216-7.
85 Vulpe 1975, 34.
86 Patay 1984, 66; Vulpe 1975, 32.
87 Schubert 1965, 285.
88 Patay 1984, 86f.
89 Vulpe 1975, 457f; Sulimirski 1961, 96.
90 Novotná 1970, nr. 123.

KSBh[91]. The dating of various other types of axe-adzes is closely connected with the Jázladány type, for instance the Kladari type which was found together with Jázladány axe-adzes twice[92]. Other types like *Tîrgu-Ocna* cannot be dated at all because they all were found as single finds. The axe-adzes of the type *Nógrádmarcal* are labelled by a special copper type of the same name. A Nógrádmarcal axe-adze from the hoard of Malé Levaré is dated into the phase Cucuteni B[93]. A find from Hotnica was found near the settlement Hotnica-Vodopada which belongs to the Pevec-culture[94], and also Vulpe refers to some Cucuteni B and Usatovo contexts[95].

The appearance of copper axes can be described today with much more precision than in the 1970s or 1980s when the last major syntheses were written. While some types are possibly even from the time of the Baden culture[96], and the Nógrádmarcal and Jázladány axe adzes are certainly in use until the time of Cucuteni B (c. 3,700-3,400/3,300 BC), there are several types of hammer axes which seem to have been in use between 4,700 and 4,200 only. The earliest hammer axes are still those of the Pločnik type starting from around 4,700/4,600 BC. These were followed by the Vidra type between c. 4,600-4,250 BC, the Crestur type between c. 4,600-4,200 BC, and the Codor type (c. 4,500-4,250 BC). Around 4,500 the Székely-Nadudvar axes also start, and while they could end at 4,200 BC, too, there is still the unclear dating of Bodrogkeresztúr which makes it impossible to come to a final date at the moment. The Čoka and Szendrő types which seem to be exclusively from the Tiszapolgár culture would fall into the second half of the 5th millennium, maybe starting a little bit earlier, but the age of the Mezökeresztes and Agnita types which were used during the Bodrogkeresztúr time cannot be determined for the same reason (currently there is much, yet unpublished, research, which seems to indicate that Bodrogkeresztúr is considerably older than previously thought and ends already in the 5th millennium; personal communications with Prof. Dr. Blagoje Govedarica, Berlin and Prof. Dr. Wolfram Schier, Berlin).

Thus, after the first objects from smelted copper around 5000 BC[97], two centuries later the first flat axes are cast, and another 100-150 years later there is a massive production of copper hammer axes and a large variety of flat axes. The flint axes, the battle-axes and at least a part of the axe-adzes can also be dated into the fifth millennium, and we have a drastically changed picture in which many of those

91 Todorova 1981, 44-45.
92 Patay 1984, 90.
93 Novotná 1970.
94 Todorova 1981, nr. 194.
95 Vulpe 1975, 50-51.
96 Patay 1984, 42/59; Vulpe 1975, 27.
97 Borič 2009.

finds which until a few years ago were dated c. 4,500-3,500 are now 'squeezed' into a slightly earlier and considerably shorter timeframe between c. 4,600-4,200 BC. The societies of the Copper Age were able to remove substantial amounts of copper from the circulation. Apart from some 'miniaturised' hammer axes and axe-adzes, the majority of finds is larger than 30 cm and weights more than 2.5 kg. A chronological development cannot be seen, because from the dated artefacts only 17 were published including their weight. However it is clear, that nearly all copper axes belong to the weight class III when being compared with stone axes (or are very much larger). The question of the function of those new types of flint axes, battle-axes, copper flat axes, hammer axes and axe-adzes almost suggests itself.

Larger and smaller axes in the Gumelniţa culture

Only copper and flint axe heads are found in weight class III. This is of importance, because there are many sites which lack class III axes at all, but are otherwise not economically different[98]. Therefore, if there is no visible functional difference between class III and class I-II axes, other possibilities must be sought. I strongly argue for a special social usage.

Various authors pointed out that the main purpose of early copper items was social display[99]. A similar interpretation should also be considered for the flint pieces. Since flint axes are however extremely effective at cutting wood as experiments have shown[100], their practical use should not be underestimated. Perhaps it can even be argued that the prestigious meaning of large flint axes derived from their effectiveness. In KGK VI settlements only ca. 10% of all axes can be assigned to class III and nearly all axes from that group are made from flintstone. Flint axes are found in considerable higher numbers at sites at the Danube than in those in the *hinterland*.

Generally the flint is described as 'special'[101]; the size of the axes is too large to be produced from surface flint deposits and therefore an unknown flint mine has to be assumed[102]. Such high quality flint was also used to produce *superblades* of more than 20 cm length[103], and indeed some class III axes show negatives of the production of superblades on one surface (Fig. 10). Thus both class III flint axes and

98 Cf. for instance the site of Okolište in Bosnia, where only class I and II axes were found: Hoffmann *et alii* 2006.

99 Vandkilde 2007, 55.

100 Jørgensen 1985.

101 Comşa 1973-1975.

102 Lech 1991.

103 Manolakakis 2002.

superblades can be identified to be part of the same *châine opératoire*. Since *superblades* are a defining criterion for rich and very rich graves in Varna and other contemporary graveyards, the same connotation should be true for class III flint axes. These axes were not only larger and probably more efficient than their counterparts from ground stone, but they were also highly valued prestige goods.

The contexts of the axes

Flint axes are found most often in layers with burnt houses. The collapsed roof of a house in Pietrele sealed the inventory of the household and seems to be complete (Fig. 12). Seven persons died when the burning house broke down, and were buried under the rubble. Inside the house nine large axes made from flint could be salvaged and were completed by another twelve smaller axes and five fragments. This amount of axes is rarely found inside Neolithic or Copper Age houses. The best comparisons for such high numbers are found in some of the lake dwellings in southern Germany and Switzerland[104], which would mean that terms of preservation are mainly responsible for the quantity of finds. However on sites of the Cucuteni-Tripol'e culture it can be demonstrated that the number of axes can also vary drastically within the houses of the same settlement. In Drăguşeni[105] and Tîrpeşti[106] 50% of the houses had no axes found inside them while 45% of the households possessed one to three axes and six or more axes were found in 5% of the houses. Comparable studies for KGK VI houses do not exist yet. Detailed data about the find contexts are present for only very few axes. It seems certain however, that complete pieces are found almost exclusively inside houses. Only smaller axe heads are sometimes found in the alleys of tell settlements.

Apart from finds inside settlements, axes of all types are often found in KGK VI graves. In Varna mostly battle axes and copper axes were found while from the Lower Danube a grave find of a flint axe is also known[107]. Flint axes are missing in Varna but superblades are found in several of the very rich graves in the Varna cemetery[108]. Both superblades and flint axes were spread within KGK VI but the latter are scarcer south of the Danube. In fact certain materials were preferred over others when producing very large axe heads: At the lower Danube large axe heads are mostly made from flint; while copper axes cluster at the Varna region and east of the Iron Gates.

But does this mean that only large flint axes and copper axes had social meaning during the Copper Age? The contrary seems to be true: A number of

104 Schyle 2006.

105 Marinescu-Bîlcu, Bolomey 2000.

106 Marinescu-Bîlcu 1981.

107 Comşa 1962.

108 Fol, Lichardus 1988, 181ff.

Gumelnița graves, which in contrast to those at Varna are rather poor, included flat axes of weight class I or II (Fig. 13). With reverence to the Gumelnița burial customs, these graves are *relatively* rich and could simply reflect a special group of people in a cultural group which favoured more egalitarian burial customs than at the Black Sea coast. And even in some of the richest Varna graves, class II axes or battle-axes were among the grave goods. Therefore, and according to the aforementioned ethnographical analogies, one should take into account, that axes of all sizes and materials were used to distinguish a person's status during the Copper Age. However, the social meaning of an axe heavily depended on the cultural context. Flint axes for instance were found more often in the settlements along the lower Danube, while in Dobrudja and the Carpathian Basin heavy copper axes and axe-adzes have seemed to fulfill the same role.

But even within a certain 'culture', that is region which shared a ceramic style, the meaning was context specific. In the settlements of the Gumelnița culture, one can differentiate household (families?) according to the number and quality of axes they possessed[109]. The same communities smoothed these differentiations in their burial grounds, where only ceramics and smaller class I-II axes hint at the social status of buried persons. I propose that a similar social group can be seen in rich graves and in rich households. This, in turn, means that a similar social differentiation existed also in those settlements, which lacked richly furnished graves. The visibility of this group is bound to cultural codes unidentifiable to us. However a close analysis of the archaeological record reveals not only similar groups of wealth in settlements and graveyards, but also allows tracing a comparable structure of showing off one's status from the Black Sea coast into the Carpathian Basin and Moldova.

The technical substructure of the production and distribution of *superblades* was just one connection between the various local cultural groups of South-eastern Europe[110]. Closely connected with this is the organisation of flint mining. This in turn is connected with the distribution of the finished items and also the necessary technique to produce axes and flint blades and their ideological backgrounds. The resulting contacts helped to diffuse a package of signs for personal power. Rich graves like in Varna are not confined to the Black Sea cost, as can be seen, for instance with grave 1 from Vel'ké Raškovce in eastern Slovakia which included 14 ceramic vessels, copper jewellery, a perforated gold disc, a copper chisel and a copper hammer axe[111]. The parallel existence of very rich, rich and common graves

[109] Klimscha 2010.

[110] Klimscha 2010; Klimscha 2011c.

[111] Vizdal 1977.

allows suggesting similar hierarchies like in Varna. In the Carpathian Basin a small group of burials with copper axes and daggers can also be seen as a local elite[112]; Tibava grave 10/56 included 13 ceramic vessels, nine flint blades, one super blade, one stone axe, one copper bracelet, a copper axe and a gold disc[113]. The mentioned examples use the same cultural code for power as in Varna, including shafthole axes, copper, flat axes, gold, flint blades and several pots.

Another example but with the objects of power made from stone was recently excavated in grave 3060 at Alsónyék, southern Transdanubia and belongs to the Tiszapolgár culture[114]. It includes a typical battle-axe as it is known from the Gumelniṭa-culture, and even though the dating was not completed at the time of writing this paper, it seems to confirm the very early dates for Vinča D discussed above[115]. Even though gold is lacking in Alsónyék and copper is only included in the form of a few small beads, the battle-axe, the stone axes and the *superblade* are all attributes of the richest graves in Varna (Fig. 14). Such precious inventories are a way of showing off personal status and a way of highlighting social differences like those seen in the houses at Pietrele during cultic ceremonies.

The Modes of Exchange

Ethnoarchaeological studies as well as the contextual analysis of the various forms of axes suggest the use of axes as prestigious objects[116]. The objects enabled a small group of the Copper Age population between 4,600 and 4,200 to show off their social status[117], but especially the flint axes were also connected with practical use. Their repartition allows tracing various lines of connection between the Balkan region, the Carpathian Basin and Moldova. If large axes can be identified as prestigious objects in similar contexts in such a vast area, then they have to be understood as being the result of intensified connections. This means they were either exchanged in gift-giving relations or their design was made popular via gift giving. Since the respective raw materials were limited, I opt for the first option, but do not exclude the latter. This means that the possession of axes allowed manipulating gift-giving, and the accumulation of axes was desirable. The structural requirements of a pre-industrial societies based primarily on personal relationships make it difficult to gain surplus from labour, because abstract, alienable and divisible values are lacking. Metal changes this situation slightly in that

112 Lichter 2001, 280-295.
113 Šiška 1964, 327, Fig. 15/6-32.
114 Zalai-Gaal *et alii* 2011.
115 Personal communication from Prof. Dr. István Zalai-Gaál.
116 Højlund 1973-1974; Højlund 1981.
117 Cf. Bourdieu 1979.

1stly its raw material can only be mined at limited places and requires special know-how and 2ndly it can be recycled and thus disturbs traditional gift-giving circles which are based on reciprocity. The access to prestigious goods, therefore, is to a lesser extent caused by personal diligence than by the ability to create a network of exchange relations. Since prestigious objects are essential for gaining status, achieving marriage and manipulate exchange networks in balance of one's own favour, the possession of prestigious objects can be defined as the possession of power *sensu* Luhmann[118]. In archaic societies, the gift implies not only its acceptance but also the return[119]. Gift-giving is connected with a variety of social interactions, like marriages, rites de passage, trade, political alliances etc. The gift is a total phenomenon[120]. Since status in Copper Age graves was largely based on the possession of axes, these axes were surely valuable gifts. Therefore the ownership of axes and making them a gift, limits not only the possible courses of action of those who have to accept and return them. But, those individuals which could afford to 'lose' axes in an exchange were able to control social actions.

While copper axes were in use during the whole Copper Age and some types even in the following centuries, it is striking that only a handful reached Central and Northen Europe[121], while shortly after the first copper axes appear, large amounts of stone battle-axes, which were also influenced by hammer axes from copper, and flint axes are produced in the Funnelbeaker culture[122]. The social and practical usage of copper axes would have been possible in Central Europe, too. It seems that the exchange networks responsible for the distribution of copper axes were limited by, roughly speaking, the northern Carpathians. This in turn implies that the exchange conditions were not valid anymore further north. The distribution of the elite burials of the Varna-Alsónyék type seems to confirm this, as we are yet missing comparably rich finds from northern central Europe. Either copper hammer axes were mainly exchanged between the owners of copper axes or societies from the north rarely had gifts which were acceptable as a return. The repartition of battle-axes and flint axes shows that there were contacts between both regions[123], but only a part of the material culture was transferred. Central European societies from c. 4,100 onwards were keen to get perforated axes (hammer axes and battle-axes). But for producing copper hammer axes technical know-how, raw-material as well as exchange partners were lacking. Thus this innovation which reaches the north as early as during the Ertebølle culture (c. 4,500-4,100 BC) failed to take off. Nevertheless, it created various forms of *imitations*.

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118 Luhmann 2003, 21-28/47.

119 Mauss 2007; Godelier 1996.

120 Mauss 1989, 16.

121 e.g.: Klassen, Pernicka 1998; Klassen 2000; Klassen 2004.

122 Klimscha 2007; Klimscha 2009b.

123 Cf. Klimscha 2011a for a summary.

Summing up the evidence, we can see several groups of prestigious items, the most important of which were axes, circulated in the Balkan area between 4,700 and 4,200 for half a millennium, starting consecutively until c. 4,500. All these cultures collapse before the last quarter of the 5th millennium or in the first few decades of it. The reasons for it are unclear. While older theories favoured invasions[124], this has shifted to see climatic change as the major factor. However, this paper tried to emphasise the importance the exchange of prestigious objects had for various aspects of prehistoric politics and the stability of the social system. Connected with the date of 4,200 is also the break off of the production of most prestigious items. Cause and effect are difficult to explore in a short contribution like this, and the existence of a real 'collapse' is doubted in some recent analyses[125]. The economical basis of most Copper Age communities remains largely unexplored, but at least along the lower Danube depletion of the natural resources, slight pollution and climatic instability *could* have caused a population turnover in the nearby lake which thus limited the subsistence of the settlement. If such a process lead to a change in the settlement strategy of several communities, this would have lead to the breaking off of exchange partners and perhaps also the production of prestigious goods. This would have lead to a disturbance in the various overlapping exchange networks and could in a domino effect caused other populations to change their way of life. The blurring of our dates would let this look like being all simultaneous, even if it was a process of 100-200 years, and without major catastrophes or invasions a social system which was stable for half a millennium could end and leave us thinking about the reasons for its end.

[124] Critically discussions of the most influential works: Häusler 1995; Meskell 1995; Parzinger 1998; Klimscha 2012c.

[125] Link 2006.

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