Bringing Down the Iron Curtain

Paradigmatic change in research on the Bronze Age in Central and Eastern Europe?

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Bringing down the Iron Curtain: paradigmatic changes in research on the Bronze Age in Central and Eastern Europe? Introductory thoughts

Oliver Dietrich, Laura Dietrich, Anthony Harding,
Viktória Kiss, Klara Šabatová

It has been a quarter of a century since the fall of communism in Central and Eastern Europe and the opening up of these areas to the West. With this process, archaeology saw a large influx of new projects and ideas. Bilateral contacts, Europe-wide circulation of scholars and access to research literature has fuelled the transformation processes. The aim of the present book is to explore the dimensions and depths of these changes regarding research on the Bronze Age, a period which for many years relied on conservative approaches with an emphasis on cultural-chronological studies.

The general impact of the rise and fall of the Iron Curtain on Central and Eastern European archaeology has been the topic of conferences in Poznań in 2000 and at the EAA Annual Meeting in Esslingen in 2001 (Gramsch 2011: 49–50). The resulting publications (Gramsch 2002; Sommer 2007; Gramsch and Sommer 2011) give overviews of the overall theoretical developments in this era and can be used – together with some other noteworthy studies – as a general framework for more specialised enquiries. The works by Mircea Anghelinu (2007) and Alexandru Dragoman and Sorin Oanţă-Marghitu (2006) for Romania, Martin Kuna (1993; 2000), Evžen Neustupný (2002), Eduard Krekovič and Martin Bača (2013) for the former Czechoslovakia, Predrag Novaković (2002) for Slovenia, Vassil Nikolov (2002) for Bulgaria, Jurij Rassamakin for Ukraine (2002), József Laszlovszky and Csilla Siklódi (1991) as well as László Bartosiewicz, Dóra Mérai, Péter Csippán (2011) and Vajk Szeverényi (2014) for Hungary, Staša Babić (2002) for Serbia; Andreas Northe, Heiner Schwarzberg and Rebecca Wegener (2002), and Stanisław Tabaczyński (2002) as well as Jacek Lech (1998) for Poland, must be mentioned here.

There is still no study regarding Bronze Age archaeology, and, as mentioned above, the cited texts focus largely on the general lines of theoretical developments. Our volume specifically tries to address the Bronze Age, and to discuss not only theoretical issues, but also current developments in all aspects of archaeological practice.

Pre-communist and Communist archaeology in the Central and Eastern European countries – a short overview

The developments of the Central and Eastern European communist archaeologies have their origins in the period before the war, a time when they were actively participating in the discourse of European archaeology. As with other young western and central European nation states, archaeology played an important ideological and political role in many countries, becoming an instrument to legitimate the new states and their borders. For example, for Romania Dragoman and Oanţă (2006: 61) have identified positivism and nationalism/patriotism as the two most important traits of Romanian archaeology at this time. Similar developments can be observed in other Eastern European archaeologies. The characteristic of the Romanian positivist archaeology as seen by them was to use – in an evolutionist and determinist sense – the concept of 'archaeological culture' to create territorially and typologically delimited style groups or 'entities' (Dragoman and Oanţă 2006: 65–67). As the methods of research were claimed to be objective and independent of modern political ideas or influences, studies were produced that were seen as an objective reflection of the past. Typological and chronological groups became independent entities, which were used as a part of the national discourse.

The most important source for these ideas can be found in the so-called German school of culture-historical archaeology that was heavily based on the 'Kulturkreislehre' developed by Leo Frobenius and further developed by the Austrian school of anthropology. Many Central and Eastern European countries had at that time strong political and historical liaisons with German speaking countries, not only due to their geographical position, but also due to the prevailing international climate. Although an important part of the cultural elite in these countries was traditionally oriented towards France, in the case of archaeology the German school had a larger influence. Some archaeologists

were students of German archaeological faculties and – after they returned to their home countries – taught at the newly founded universities what they believed to be a 'standardized approach to archaeology'. Numerous specialised departments of history and archaeology were founded in all Eastern European countries and – as in the rest of Europe – a scientific archaeology began to develop.

This development was interrupted by the Second World War and the subsequent rise of communism. The establishment of communism in 1945 in what became known as the Soviet bloc meant – at least in its first phase, until the death of Stalin – a harsh break with the old political, social and cultural structures in all Central and Eastern European countries. The new political ideology was very aggressive, often involving the imprisonment or elimination of the old cultural elite; the dimensions of the purge are becoming more and more apparent today. For archaeology in particular, this meant not only the disappearance of an important section of its exponents, but also the forced application of Marxist cultural ideology.

Concepts like class conflict, a periodization based on social-economic developments, functionalism or unilinear evolutionism, had to be forcefully introduced throughout archaeology. One way of pursuing this was through newly founded institutes (in the academy system) or new scientific journals. At the same time, financial investment increased considerably in order to transform archaeology into a propaganda tool. However, in-depth analysis of archaeological studies from this period reveals that the implementation of Marxist theory was rather superficial and did not follow the lines of the highly complex 'initial Marxism' but a more simplistic version, called 'dialectical-materialism' (e. g. Anghelinu 2007: 7–20, esp. 9). The high-range theory of Marxism (Trigger 1989: 22–23) and the ambitious research framework it involved would have needed a considerable degree of compulsion in order to gain acceptance (Anghelinu 2007: 9). In other words, what was implemented was more a static ideology than a new, logical-explanatory system.

Maybe this is one of the reasons why the implementation of Marxist ideology was very superficial in most Central and Eastern European countries.[1] Dragoman and Oanţă (2006: 63) and Anghelinu (2007: 17) found, in a deep analysis of Romanian archaeological literature of that period, that older positivist theories were in fact hidden under the 'Marxist approaches'. Nikolov (2002, 303–309) shares a similar opinion for Bulgaria, and this is also true for Hungary or the former Czechoslovakia (Neustupný 2002: 285). For Poland, Tabaczyński (2002: 72) asserts that Polish archaeology developed and to a large degree remained under the influence of German science, and that contacts with Russian archaeology were more formal than substantive. Novaković (2002: 340–343) witnessed only a formal 'Marxism' in Slovenia, where the national-oriented archaeology developed in parallel and coexists – as in most Slavic countries – with the ideology of a 'Slavic archaeology'. He even noted a continuing opposition of the 'old school' (cultural-historical) archaeology to the new 'Marxist' ideology, which would not have been able to provide 'conceptual tools applicable and operable in an archaeological context' (Novaković 2002: 341). Serbia is a special case, as here archaeology had a marginal role in the public perception of the past (Babić 2002: 309), but here too the German cultural-historical school was maintained despite the official existence of a dogmatic Marxism (Babić 2002: 313).

Most archaeological studies of this period were thus adapted to be 'officially accepted', either through evident statements at the beginning of the publications, or through a partial assimilation of only a few elements of Marxist historical sociology. A good example to illustrate this is the chronology of the Bronze Age, which in many Eastern European countries was based on the classical positivist criteria of classification, like the typology of objects or sites, still using the concept of 'archaeological culture' and not social and economic change to define different steps of social evolution toward communism.

This development continued until 1989 with an increasing revival of cultural-historical archaeology and a recession of the Marxist ideology, both in the official political discourse and in archaeology. The time after 1953 was politically marked by de-Stalinisation in the Khrushchev era, as also by the official dissociation of some Eastern countries from the Soviet bloc. In some countries, this meant new opportunities for western contacts. In the former Czechoslovakia, for example, in the liberal period of the late 1960s, some aspects of processual archaeology were incorporated into archaeological research (Neustupný 1975, 2002: 289). This period was interrupted by the occupation of Czechoslovakia in 1968 and the restrictive so-called 'normalization period' (Krekovič–Bača 2013: 267).

[1] This may also be related to the struggles to develop a Marxist explanatory model for prehistory within Soviet Archaeology, for which Marx and Engels, mostly preoccupied with the later stages of history, had left very few starting points: Trigger 1989, 215–243.

In many other countries, Soviet-like Marxism was officially replaced in the 1960s by a much more nationalist ideology. More regional institutions, like county museums, were founded; numerous new journals appeared at this time. Isolation was part of the new nationalist politics of these countries, the most eminent example being Romania. The result was restrictions on contacts with the West, restricted access to European archaeological publications and very limited possibilities to travel. As a consequence of the decline of Marxism, the development of positivist archaeology from before the war was cultivated, while the influx of new ideas decreased. Anghelinu (2007: 26) has characterized archaeological research in Romania from this period as 'severe descriptivism, accompanied by applied analysis produced in the neighbouring, 'auxiliary' disciplines'. His conclusions could equally be applied to other countries, like Hungary, Serbia or Bulgaria.

Typology and chronology became the objective of archaeological practice, not methods for understanding economic and social processes. Finds were analysed only stylistically and ultimately interpreted according to predefined concepts, like cultures or groups. Pots were often perceived as the cultural markers of people, the dispersal of new types consequently understood as a possibility to write history for non-literate times. Changes in material culture were explained mostly through migrations or diffusion. The installation of ever finer chronologies based on meticulous typological studies is one key example for the archaeology of this period. The lack of palaeoeconomic studies was accompanied by a very low level of application of multi-disciplinary research (Anghelinu 2007: 24). Anghelinu (2007) concludes in his analysis for Romania that the development of 'neo-Marxism' in the Western European countries (summarized by Trigger 1989: 340–347) as well as the development of processualism, neoevolutionism, ecological determinism, systems theory and positivist epistemology, had no impact on the development of archaeology in Romania until after 1989.

The Istanbul session[2]

The question of the depth of the changes, and if there really are changes, constituted the main topic of our session with the title 'Bringing down the Iron Curtain: paradigmatic changes in research on the Bronze Age in Central and Eastern Europe'. Researchers of different generations from twelve countries (Hungary, Romania, Czech Republic, Slovakia, Serbia, Croatia, Ukraine, United Kingdom, Germany, USA, Canada, Austria) participated in the session. The talks tried to address the question of change in the approaches to Bronze Age research in the Eastern European countries from different points of view. One group of researchers (no. 1 below) followed the general lines of developments after 1989 in larger regions. The other group of studies (no. 2) approached the topic through well-delimited case studies, offering insights into developments in today's multiple sub-disciplines in Bronze Age research.

1. General trends

Gabriella Kulcsár, Viktória Kiss, *'Europe without walls': new vistas of Bronze Age research in Hungary*

Gabriella Kulcsár and Viktória Kiss had a close look at the analysis of Middle Bronze Age tell and non-tell settlements in Hungary. After a detailed presentation of ongoing multidisciplinary research projects, they pinpointed the changes in methodology and interpretation in recent years. They concluded that the traditional typo-chronological method has been completed, but not replaced, by modern absolute chronological, bioarchaeological and other multidisciplinary research allowing us to discern social development, large-scale interaction zones and the action of cultural networks in the 3rd and 2nd millennia BC.

Neculai Bolohan, *Almost bringing down the Iron Curtain: studying the Bronze Age in Eastern Romania*

Neculai Bolohan presented a statistically based analysis to highlight how Bronze Age research in Eastern Romania (Moldavia) went through the hardship of modernisation, and how this is reflected in archaeological discourse. He concluded that methodological change and new approaches are visible, although coherent regional research programmes and a firm methodological foundation are still absent.

Klára Šabatová, Change or no change? *Archaeology of the Middle and Late Bronze Age in Moravia*

Klára Šabatová discussed the development of Bronze Age archaeology in Moravia over the last quarter century, centring on the Middle and Late Bronze Age. Large-scale rescue excavations together with new technological approaches have made important contributions to Bronze Age research and changed old views on cultural phenomena. She concluded that elements of processual and post-processual research paradigms did not completely change the

[2] The following summaries of the presentations are partially based on the abstracts submitted by the contributors.

old cultural-historical approach, but are about to be organically integrated into interpretations.

Luboš Jiráň, Ondřej Chvojka, Tereza Šálková, *Methodological changes and new approaches to the research of the Bronze Age in Bohemia since 1990*

Luboš Jiráň, Ondřej Chvojka and Tereza Šálková analysed the changes in Bronze Age research in Bohemia. Planned research programmes have been widely substituted by large-scale rescue excavations and surveys. In combination with new scientific methods and non-destructive investigation of sites by geophysical research, aerial archaeology, and airborne laser scanning, a new database for the interpretation of the Bronze Age has been formed. The benefits of the now frequent use of metal detectors are ambivalent, as non-documented detecting destroys important contexts. The new data acquired has led to changes in perspective on many phenomena.

Klára P. Fischl, Tamás Pusztai, *From typochronology to postprocessualism – Regional settlement research in the northern part of the Carpathian Basin*

Klára P. Fischl and Tamás Pusztai used the BORBAS (Borsod Region Bronze Age Settlements) project as a case study to highlight the impact of detailed regional landscape studies on our image of the Bronze Age. They emphasized methodological transformations that result in new approaches to and interpretations of archaeological evidence, away from 'traditional' settlement archaeology centring on typo-chronological questions towards an analysis of social and cognitive aspects of the Middle Bronze Age world.

Magdolna Vicze, M. L. Sørensen, Joanna Sofaer, *The SAX Project – The Changed World of Tell Archaeology*

Magdolna Vicze, Marie Louise Sørensen and Joanna Sofaer analysed the introduction of new practices into research on the Bronze Age in Hungary on basis of the international Százhalombatta Archaeological Project (SAX). They argued that prior to 1990, prevailing scientific paradigms in Hungarian archaeology were deeply embedded in the cultural-historical method. They traced a tendency to use simple, predictive models in interpretations of social organisation rather than accepting that these were poorly understood. Access to theoretical and interdisciplinary approaches, methods, and literature that had not been accessible would have led to considerably broader research questions. In the SAX project, a range of scientific techniques and methods have been introduced to enable detailed excavation and analysis of how the tell worked. The authors emphasised on the other hand that there is no brusque paradigm shift; new approaches are a result of a dynamic process between innovation and tradition.

Michal Ernée, *The investigation of prehistoric occupation layers – an integral part of archaeological excavation or an unreasonable luxury*

Michal Ernée analysed the significance of modern, detailed excavation methods for research into the Bronze Age in the Czech Republic. He argued that the value of the excavation of settlement layers in this region has been undervalued for many decades in favour of swift mechanical excavation of complexes visible in the virgin soil. The failure to investigate and gain an understanding of settlement layers amounts to a considerable distortion of archaeological sources. Acquired information remains a mere fraction of the knowledge that could be collected by archaeological excavation.

2. Case studies

Csaba Bodnár, Needle in the haystack? – Material variability and social complexity among the Early and Middle Bronze Age communities in the middle part of the Carpathian Basin. A methodological approach

Csaba Bodnar ventured into an analysis of Early and Middle Bronze Age communities by use of network theory. He was especially concerned with the concept of 'archaeological culture'. A comparative analysis of the material assemblages of settlements and cemeteries generally associated with the term 'Nagyrév culture' and situated along the rivers Tisza and Danube, shows a much higher degree of variability in material culture both on an inter- and intra-site scale than was previously supposed. By isolating patterns in the archaeological data, and investigating the spatial distribution, relative frequency and multivariate statistical coherences of different pottery, metal and other artefact types, the complexity of material interconnectedness among these EBA societies was revealed.

Laura Dietrich, *The mobile archer: an innovation in warfare in the Late Bronze Age of the north Pontic regions*

Laura Dietrich dealt with paradigmatic change in the description of prehistoric conflict by analysing weapon finds of the Late Bronze Age in the North

Pontic regions. She argued that the traditional understanding of conflict was based in many cases only on the stylistic analysis of bronze weapons from hoards. Battle-axes and swords, spears and daggers have shaped the image of foot warriors and only to a certain extent dynamic battle tactics. This image is incomplete not only because other archaeological sources are neglected, but also through the lack of consideration of the various social and economic dimensions of warfare. Settlement research, however, proves that projectile points are an integral part of Late Bronze Age weaponry. They are produced mostly of bone and appear together with horse gear in large numbers. Metrical analysis points at their improved efficiency in comparison to earlier projectile points of flint. More mobile battle tactics seem to become visible behind this find group and imply a very different type of armed conflict than hitherto believed.

Oliver Dietrich, ***Invisible objects and technologies. The impact of selective deposition on the formation of Bronze Age metalwork assemblages of the Carpathian Basin***

Oliver Dietrich highlighted changes in our understanding of hoard finds and their implications. Hoard finds have long been seen as complexes deposited in connection with historical events like invasions, warfare etc, and have thus been perceived as closed complexes consisting of mainly contemporaneous artefacts that can easily be arranged in 'hoarding horizons'. The problems with this picture have been discussed in several studies in recent years. Selective deposition due to ritual intentions has been identified as a key concept governing the formation of Bronze Age metalwork assemblages. Especially in regions like the Carpathian Basin, where the transmission of metalwork depends heavily on deliberate decisions on the inclusion of certain object classes in hoards and the exclusion of others, severe repercussions for the interpretability of the archaeological record can be expected. The earliest appearance of socketed axes in south-eastern Europe was presented as a case study, arguing that selective non-deposition of socketed axes obscures their pre-Late Bronze Age history, which can, however, be reconstructed by taking into account settlement finds whose deposition is governed by a different set of rules.

Hrvoje Kalafatić, ***Predicaments of chronology-oriented archaeology: the example of the Barice–Gređani Group***

Hrvoje Kalafatić examined the way in which chronology-oriented paradigms have influenced disciplinary ideas of 'cultural mobility', 'continuity' and 'culture' in Bronze Age societies in the southern Carpathian Basin. He used the definition of the last stage of the Vinkovci-Somogyvár Culture (the Barice-Gređani group) as a case study to show how a preconception of a tripartite chronological scheme (early, classical, late) predetermined chronological modelling. The Barice-Gređani group was re-examined within a larger framework based on large-scale excavations, systematic research and radiocarbon dating of recent finds, and a new chronological setting was proposed.

Dmytro Teslenko, ***The Pit Grave/Yamnaya Culture in the space of changing paradigms***

Dmytro Teslenko discussed the general lines of development along the roughly 100 years of research history into the Yamnaya Culture. He described how Soviet archaeology developed its very own theoretical approach with a mix of ethnography and archaeology, in isolation from western developments. The main changes in recent years are not theoretical, but rather relate to the scale of investigations, with detailed studies of single contexts now being preferred instead of large-scale excavations.

Marianne Mödlinger, ***Bronze Age defensive armour in Eastern Europe: analyses and archaeological studies***

Marianne Mödlinger presented new information on defensive armour in Eastern Europe, which had hitherto mostly been analysed typologically and through distribution patterns. The use of surface and microstructure analyses of bronze alloys allowed new insights into the production processes of helmets, greaves and cuirasses. Insights were gained into the practical use of armour in combat as well as in the peculiarities of different production regions.

Julia Giblin, Paul R. Duffy, László Paja, Györgyi Parditka, ***Reexamining human mobility during the Hungarian Bronze Age: Preliminary isotope results from the BAKOTA project***

Julia Giblin, Paul R. Duffy, László Paja and Györgyi Parditka showed how the classical concept of 'migration' can be set into a new perspective by isotope studies. They presented the research design and preliminary isotope results from a multidisciplinary project focused on a Middle Bronze Age cemetery, Békés Jégvermi-kert, in south-eastern Hungary. Within the framework of the Bronze Age Körös Off-Tell Archaeology Project (BAKOTA), data from archaeology and biological anthropology were in-

tegrated using multiple techniques (ceramic analysis, radiocarbon dating, aDNA, isotope analysis, GIS, and remote sensing) to examine the relationships between the people buried in these cemeteries, their relative statuses, and their identity as locals or newly arrived.

János Dani, Ernst Pernicka, Gábor Márkus, *The Hajdúsámson treasure – Revisited.*

János Dani, Ernst Pernicka and Gábor Márkus re-examined the important hoard from Hajdúsámson in Hungary. Going beyond typo-chronological approaches, they used metal analysis to show how the Hajdúsámson treasure tells different stories at different levels. Starting from the relationship between find and findspot, they highlighted the integration of the find on a regional level into cultural, settlement and social networks. On a global level, the distribution of Hajdúsámson-Apa type implements was set in perspective by new data on the sourcing of raw materials for the objects.

Valerii Kavruk, Anthony Harding, *The joint British-Romanian Project, Ancient Salt Production in Transylvania*

Valerii Kavruk and Anthony Harding used the impressive recent finds from the large-scale salt production site at Băile Figa, Transylvania, to discuss the establishment of a whole new field of Bronze Age research in the Carpathian Basin through an international and multidisciplinary research project. Results included the discovery of thousands of timbers that will allow – for the first time in south-eastern Europe – the construction of a dendrochronological framework.

Dragan Jovanović, *Result from renewed research in Vatin*

Dragan Jovanović presented recent research at the Vatin type-site to showcase how new approaches can change views on places presumed to be well known. After rescue excavations conducted by Felix Milleker at the end of the 19th century and the beginning of the 20th century, it was long assumed that the eponymous site of the Vatin Culture was completely destroyed. Systematic survey, aerial photography, digital elevation models in addition to small-scale excavations allowed new insights into the site and its catchment, the results completely transforming the previously known picture.

Peter Toth, Jozef Bátora, *Turning ages – On the problem of continuity/discontinuity of Early and Middle Bronze Age civilizations*

Peter Toth and Jozef Bátora analysed the problem of the transformation of the Early Bronze Age civilization into the Tumulus cultures, long studied mainly from a typological-chronological perspective. GIS based approaches shed new light on this topic. In combination with traditional data sources, high mobility, changes in burial rite and the abandonment or destruction of fortified settlements, as a result of deep transformations of society, became visible as important factors in these transformation processes.

Anthony Harding, Concluding remarks

Anthony Harding reviewed the papers from the EAA session with a view to establishing some general patterns in the changes visible in official and unofficial archaeologies in central and eastern Europe since the fall of the Iron Curtain. He pointed to the relative speed with which processual and post-processual approaches have been adopted in different countries, and the extent to which new paradigms really have taken hold since 1989.

The poster session comprised contributions by Mădălina Voicu (Finds of the Wietenberg culture along Pianu Valley (Alba County, Romania)); Annamaria Priskin (The development of Bronze Age food Processing in Hungary: A Lithic Perspective); Susanne Stegmann-Rajtár and Petra Kmeťová (Research of Late Bronze Age and Early Iron Age hillforts in Tribeč Mountains in Western Carpathians, W Slovakia); Viktória Kiss, Zsolt Bernert, János Dani, Klára Pusztainé Fischl, Julia Giblin, Tamás Hajdu, Kitti Köhler, Gabriella Kulcsár, Géza Szabó, Ildikó Szathmári and Vajk Szeverényi (Changing populations or changing identities in the Bronze Age of the Carpathian Basin? Migrations and/or transformations during the 3rd And 2nd millennia BC); Corina Borş, Luciana Irimuş and Vlad Rumega (New data about the Late Bronze Age on the Middle Mures Valley. The site Aurel Vlaicu – Obreza (Hunedoara County)); Ionuţ Bocan and Mădălina Voicu (A new Bronze Age site on the Middle Mureș Valley: Pianu De Jos – Lunca Pârâului; László Paja) as well as Julia I. Giblin, Györgyi Parditka and Paul R. Duffy (Micro-stratigraphic analyses of Middle Bronze Age cremation urns at Békés, Jégvermi-kert, Hungary).

The book

The first part of the present volume contains papers by some of the participants of the Istanbul session. In an attempt to mirror the open atmosphere of discussion in Istanbul in the published proceedings, we have left it to the authors to make changes to the focus of their studies and decided against

a peer review. All papers thus mirror the personal opinons of their authors. Some are longer versions of the original talks, while others approach their topics in depth. As a counterpart to these papers, which in several cases are engaged with research history on a detailed, more or less theoretical, level, the second part of the book comprises a selection of personal statements of western archaeologists about working behind the Iron Curtain, and how and if 1989/1990 affected short-term perceptions and long-term projects or research agendas. These papers were not part of the Istanbul session, they mirror personal experiences and points of view of their authors, which makes them important documents for a comprehensive history of research of these decades, yet to be written.

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Part 1

Paradigmatic change? Views from the subdisciplines of Bronze Age studies

The Hajdúsámson hoard – revisited

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Abstract: The Hajdúsámson Bronze hoard – which is one of the most emblematic finds of the European Bronze Age – has always been a focus of research. Despite the fact that so many scholars have studied the famous sword and the 12 axes, some basic questions remain unanswered.
This paper tries to answer some of these questions using both the original, forgotten documentation of the finding, and new methods and approaches (for example: PIXE, edXRF, lead, isotope analysis). The Hajdúsámson hoard tells different stories on different levels. The first is a local stage connected to the findspot and its surroundings. The second, regional level means the cultural, settlement and social network behind the deposition. The third level is a global approach: a 'grand narrative' which is intensively researched from northern Europe to the Aegean thanks to generations of archaeologists from V. Gordon Childe and Nils Åberg up to the present... But on this level we can demonstrate the existence of another network that can be reconstructed on the basis of the source of the raw materials (copper, tin).

Introduction

With no detailed research history (Zoltai 1908, 1909, 1926; Mozsolics 1967: 121–123, 139–140, Taf. 9–11; Bóna 1992: 55–58; David 2002: 3–78; Sz. Máthé 1996; Dani *et al.* 2013; Dani 2015), the Hajdúsámson hoard (Fig. 1) is one of the most emblematic, well--known and most frequently published and cited assemblages of the European Bronze Age, as well as of European prehistory, from Vere Gordon Childe (1929: 273, Fig. 147) and Nils Åberg (1935) through Amália Mozsolics (Mozsolics 1967) to Helle Vandkilde (2014: 611–625).

Fig. 1: The Hajdúsámson hoard 1 (found in 1907, Photo: Ákos Jurás, Déri Museum, Debrecen).

The hoard was found in 1907 by four farmers at the northern periphery of the town of Hajdúsámson in north-east Hungary (Hajdú-Bihar County) (Zoltai 1908: 133). Based upon the description given by these farmers and Lajos Zoltai, the first presenter of the find, it appears that the hoard was originally arranged in a special way: the axis of the sword was orientated north-south, its tip pointing toward the south, and the axes were placed in a kind of line along the sword blade with their blades pointing to the west (Fig. 2). This arrangement was definitely not accidental: it was most likely a special gift, an offering or a sacrifice to the divine powers, or maybe to a particular or personalized god (for example the god of warfare) (cf. Kristiansen 1984, 1999, 2002; Fontijn 2002: 5, 18, 31, 226, 268–269, 276).

Interpretation

Following previous attempts, we might make progress with an interpretation, if we examine the hoard in separate stages, with various meanings at different levels, following the ideas of Daniel Neumann (Neumann 2010: 244).

Fig. 2: Reconstruction of the arrangement of the Hajdúsámson hoard 1 (MBA weapon hoard, Photo: Ákos Jurás, Déri Museum, Debrecen).

1st level: The Smith and the Chief

In this respect we need to consider the biography of the objects. As a starting point, a very important question arises: who was the master or smith of the sword and the axes?

Thanks to the work of Wolfgang David, it has been confirmed, that the Hajdúsámson-Apa 'Circle' (*Kreis*, i.e. artistic sphere) was concentrated on the Upper Tisza – North Transylvanian region (David 1993: 79, Abb.1, 2002: Karte 1). Further to David's analysis, we can say that the master of the Hajdúsámson hoard was not a simple person but a very talented craftsman with outstanding skills and knowledge. This master was also a real inventor who made one of the first metal (bronze) swords known in European prehistory. At the same time, he could presumably have been a powerful 'magician' with the ability to transform materials: from ore to metal; from a piece of an ingot to a beautiful sword; from solid state to liquid metal; then from this state back to solid metal, simply by means of the application of fire (Eliade 1978). However, it is quite possible that the finely crafted prestige weapons of the assemblage and the shaft-hole axes showing heavy use-wear patterns were made by different craftsmen.

If we look carefully at the ornamentation under a stereo-microscope, we can observe – in contrast to the observation made on the bronze axe-hammer from Petrova Ves (Furmánek *et al.* 2013) – that the decoration was made on a wax model before casting; thus the objects were made by the *cire perdue* technique. On some microscope photos (Fig. 3: 1–4) we can observe details attributable to the casting technology: little nuggets of bronze in the ornamentation patterns; confluent patterns; lines without interruption and with rounded (not sharp) edges.

After considering the maker of the sword, it is logical to go on to the next question: who was the owner of the sword and the hoard?

PIXE analysis carried out by the Laboratory of Ion Beam Applications in Debrecen provides important and useful information about both the Hajdúsámson and the Téglás hoards (Tab. 3). With these analyses it has been possible to divide up the Hajdúsámson hoard in a new way, which is at variance with the typological subdivision. Beside this, interesting details are clearly visible on the two radiographs made by Dr. Péter Bágyi (Fig. 4), indicating technological and functional differences between the two swords. The use-wear analyses of the Hajdúsámson and Téglás swords suggest that they would have fundamentally different functions: the Hajdúsámson sword might be primarily an insignia of power, but the Téglás piece was heavily used, perhaps in combat.

These examinations have naturally made it possible to compare the two hoards, and to draw archaeological conclusions. On the dendrogram derived from the hierarchical cluster analysis of the PIXE results (Dani *et al.* 2013: 11. ábra), we can say that the Hajdúsámson assemblage started with the decorated sword and a decorated disc-butted axe. This was the typical group of personal weaponry of a man of high social status in the Bronze Age. Given the typological and compositional variability of the hoard,

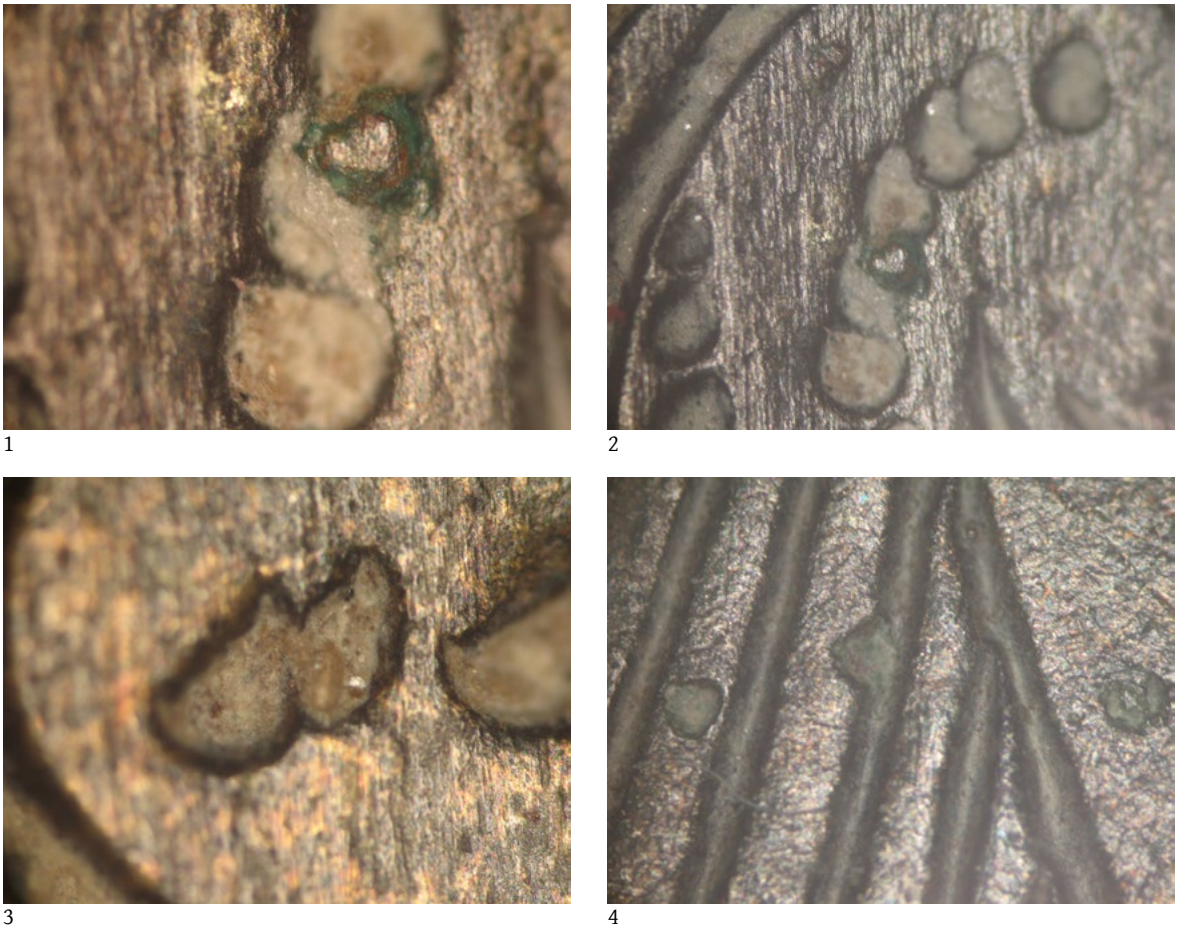

Fig. 3: 1–4: Details from the blade of the Hajdúsámson sword (microscopic photos made on a Nikon stereomicroscope by László Csedreki, Institute for Nuclear Research of HAS, Debrecen).

we can assume that assembling the components of the hoard took a longish period, perhaps even generations.

Behind the act of deposition there is probably a symbolic social meaning, and/or a special intention, as might be the case with the Dystrup hoard (Wincentz Rasmussen and Boas 2006: 107). This practice embodies '*the symbolical capital, concurrently the power over and the interdependencies between different socially, familiarly or religiously conceptualized groups*' (Neumann 2010: 239–240). Thus it may at the same time symbolise the unity of a particular group of armed men (the so-called *Männerbund*) with the leadership of a chief, who possessed enhanced power. In this respect the deposition, which took place on the surface of a sand dune, might have been not just a ritual, but a complex community performance.

In itself the quantity (i.e. the number of pieces) and the composition of the hoard (twelve axes and one exceptionally decorated sword) may have had a special symbolic meaning in Bronze Age mythology and cosmology (based on ethnographic and culture-historical parallels: Hoppál *et al.* 1990: 196; Jankovics 1997: 330).

2nd level: The magic of the landscape

At this point we have to look at the microregion of the Hajdúsámson hoard, because it is obvious that there must have been a relationship between the place of deposition, the human perception of the space, and the contemporary landscape (Neumann 2010: 240–243). The exact findspot was identified by georeferencing a hand-drawn historical map from the 18th century (Fig. 5). Examination of the immediate area revealed some interesting facts. First of all, the finders had dug out an urn filled with ashes, which was completely destroyed and absent from reports of the find. However, based on the oral report of the farmers, Zoltai was able to make a sketch of its form: