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REVIEWS AND SHORT REVIEW NOTES

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(Review) Marcin Maciejewski, János Gábor Tarbay, Kamil Nowak (eds), *Hoards from the European Bronze and Iron Ages. Current research and new perspectives* (= *New Approaches in Archaeology* 4). Turnhout 2024: Brepols Publishers, 175 pp.

Recent years have witnessed the appearance of several volumes devoted to the analysis of metal deposition phenomena, including hoard finds, each characterised by a narrowly focused thematic approach. The editors of the reviewed volume set out to provide an overview of new trends in research on this phenomenon; consequently, despite the relatively modest size of the book (slightly over 160 pages of effective content), its thematic scope is quite broad. Nevertheless, the volume does not, of course, exhaust all aspects of contemporary reflection on deposition processes – such as new typofunctional approaches, analyses of compositional variability, or the chronological range within hoard assemblages.

The reviewed monograph consists of eleven chapters, each written by one (most often) to five authors. It was published as volume 4 of the freshly established series *New Approaches in Archaeology*. The publication opens with a concise introduction by the three editors, outlining the spectrum of both long-standing and recently emerging topics in hoard studies – a special manifestation of the universally attested historical phenomenon of depositing valuable goods. The authors describe the conventional dichotomy between ritual and non-ritual approaches to deposition as barren (p. 13). One also encounters the now-familiar call to 'go beyond the typo-chronology of hoarded artefacts': I would ask not to throw the baby out with the bathwater. The editors advocate for broadening methodological perspectives on hoard research, viewing this as a unique opportunity to create a pan-European research network centred on this universal phenomenon. Credit must, however, be given to the typological and chronological approach, which has so far produced the greatest degree of scholarly integration – most notably within the framework of the *Prähistorische*

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Bronzefunde series. That project, after all, encompassed the full spectrum of depositional practices (not only hoards). Establishing a similarly coherent network today, based on other, more diverse and individualised lines of inquiry, seems to be a challenging task at present.

The introductory chapter continues with a succinct overview of the individual contributions included in the volume and closes with reflections on future research perspectives. The editors primarily locate these developments in the advancement of archaeometric and instrumental analyses, as well as in the application of Big Data and AI-based tools. They express the ambitious hope for a pan-European database of hoards. Their postulate to expand the scope of deposition studies to include objects made of other raw materials (p. 16) could, moreover, be complemented by attention to so-called single finds, which have long attracted archaeological interest across Europe as a complementary phenomenon (*e.g.*, Kubach 1985; Blajer 2001; Becker 2013).

A well-considered editorial decision was to include two generalising papers by recognised scholars in the volume: Wojciech Blajer, whose contribution on the history of research opens the book, and Kristian Kristiansen, whose essay closes it with an attempt at a new conceptualisation of the phenomenon. Blajer's text, 'In an interpretive triangle. Main trends in research on hoards in the nineteenth and twentieth centuries: a Central European perspective' (pp. 21-29) is an excellent study of the evolution of views on the deposition of valuables. It presents a rich selection of literature – often now undervalued – acknowledging the achievements of numerous authors (most frequently from outside the Anglo-Saxon scholarly circle) who, decades ago, had already discussed certain phenomena that are now being 'rediscovered' and vigorously debated (such as the complementarity of metal deposition forms across time and landscape). From the reading, one may get the impression – which Blajer himself explicitly emphasises – that since the 1980s and 1990s, little that is truly new has emerged regarding conceptualisations of the motives behind hoard deposition. The text is so engaging that the reader may feel some disappointment that the author did not undertake an equally extensive commentary on the threads represented in hoard research during the first two decades of the 21st century. On the other hand, the very volume under review is meant to serve as such an overview.

The article by Tiffany Treadway, 'The cognitive development of prehistoric wetland deposition tradition through mnemonics. Case studies of Iron Age Wales and Scotland' (pp. 31-39) is one of the most inspiring yet provocative studies in the book. Research on deposition conducted within the current of cognitive archaeology should focus on the role that acts of deposition played in social processes – in the internalisation of the rules governing a given human group, as well as in the process of adaptation to the natural and political environment. In this approach, hoards themselves constitute a kind of prop, token, and at the same time, a mnemonic sign, accompanying social transactions of which they are, of course, not the essence, but rather a means. Following Joanna Brück, the author states that in the study of deposition rituals, 'archaeologists should not focus on unknown aspects

of ritual (*i.e.*, its meaning), but rather on the implications of tradition which are key foundations of social bonding and identity' (p. 32). In other words, our pursuit of motives is somewhat futile, since we lack the tools (*e.g.*, insight into intangible culture) to approach them directly. We can, however, uncover the construction of the ritual – its individual stages and material correlates. The mnemonic aspect of hoards would be emphasised by the choice of only certain places within the landscape, something indeed highlighted by many contemporary archaeologists, not only in this volume (Treadway focuses on wetlands). Indeed, there is no reason why deposition should be excluded from the rules of social learning, with all its consequences. One of them may be that, as in the transmission of style, not all copied elements will be understood by all actors, which over time leads to the forgetting of the original role and to elaboration – the process of endowing the ritual with increasingly rich meanings. In performative events, participation is, after all, more important than understanding. Conversely, after periods of interruption in performance, certain changes may occur in the structure of the ritual (in this case, deposition), which may be discernible in the structure of the finds. Once tested, this attractive middle-range theory could help determine whether deposition was a repetitive activity regulated by strict rules and forming part of a habitus, or merely an exceptional event in the life of a community, governed by only general prescriptions (such a diachronic test, incidentally, the author does not provide). This is precisely what constitutes the provocative feature of the 'memory-based' theory, for as archaeologists we often a priori assign to acts of deposition individual meanings conditioned by specific motives assumed to be comprehensible to all actors (motives that we still seek, for instance by examining the arrangement of objects within a hoard). The mass character, repetitiveness, and structuring of deposition, as revealed by recent research (*cf.*, Fontijn 2020; Gauthier and Piningre, in the reviewed volume), compel us to reconsider the very foundations of such views.

In the empirical part of her article, Treadway focuses on testing another concept – the *method of loci* – and convincingly demonstrates a correlation between specific types of deposited objects and particular landscape types in Iron Age Wales and Scotland (pp. 34-36). Equally accurate is the author's remark that wetlands appear inaccessible and isolated (marginal) only from our modern perspective – they could have held entirely different meanings for participants of those ancient cultures, who utilised their abundant resources and distinctive features (such as valley edges as communication routes, sources of reeds, fauna, *etc.*).

Another interesting observation is that the psychological rules of cognitive processes can be applied when attempting to reconstruct the act of deposition itself: for such an event to become part of collective memory and to be transmitted across generations as a repeated practice, it should have a low-stimulus, repetitive, and co-participant character (p. 35). In her conclusions, the author somewhat retreats from her earlier arguments, acknowledging that functional aims (specific motives) might have played a role as significant as traditionalist ones – that is, repetition grounded in cognitive schemata developed by

individual members of the community and reinforced by mnemonic devices. Most researchers of the phenomenon will more easily accept this middle-ground position.

The next chapter, authored by Martina Blečić Kavur ('There is a light that never goes out! New and old hoards from the Northern Adriatic', pp. 41-52), opens the series of regional studies in the volume and concerns northeastern Croatia, Istria, and the islands of the Kvarner Gulf. This is yet another area in Europe where, thanks to recent discoveries, it has become necessary to revise the earlier view that the region lacked evidence of bronze deposition during the Late Bronze Age (LBA) – although such regions, in specific periods, do still exist. The intensity of this phenomenon remains low (fewer than ten hoards), and the region lacks a distinct local stylistic identity, being characterised instead by intersecting influences from Pannonia and the Apennine Peninsula. The area under discussion belongs to those where deposition at the beginning of the LBA was clearly more pronounced than at its end, similarly to southern Bohemia (Chvojka *et al.* in the reviewed volume). As one might expect from a regional rather than thematic study, the presentation has something of the character of a survey of curiosities: these include ceremonial Ansciano-type axes with low tin content and no traces of use, as well as fishhooks – items rarely encountered in hoards (p. 46). The phenomenon of fragmentation, so typical of Alpine and Transdanubian regions, appears here only at the threshold of the Early Iron Age (the hoard from Malinica) (p. 49).

The next macro-region, southern Bohemia, is examined by a team of Czech researchers – Ondřej Chvojka, Jan John, Jiří Kmošek, and Tereza Šálková – in their paper 'The Urnfield-period metal hoards in South Bohemia. Find circumstances, topography, and analyses' (pp. 53-67). A chronological analysis of numerous LBA finds, indicating a distinct decline in deposition toward the end of the Bronze Age, as in the discussed region of the northern Adriatic, as well as, for example, in the French Jura (Gauthier and Piningre, in the reviewed volume) and in Lesser Poland (Dzięgielewski *et al.* 2024), once again suggests that the rhythm of the hoarding phenomenon was influenced not only by global trends but also, to a large extent, by local dynamics requiring explanations that go beyond the pendulum paradigm (the general decline in hoard deposition during periods of intensified grave goods deposition). Other areas within the Urnfield cultural complex experienced a peak in the phenomenon at the same time (*cf.*, Blajer 2001; Dzięgielewski 2023).

The microregional studies from the project referred to in this article provide further examples of 'mountains saturated with hoards', such as Paseky (p. 63). A phenomenon once considered exceptional (*e.g.*, Štramberk-Kotouč in the Moravian Gate region) now appears, with the increase of both systematic and amateur prospection, to have been a constant feature of Bronze Age cultural landscapes in areas with complex topography. In areas lacking natural landscape dominants, such features were created by human activity (*cf.*, Maciejewski, in the reviewed volume). In the conclusion of this interesting, multifaceted study, the authors venture to propose a classification of the analysed hoards into four categories: (1) commercial/production-related, (2) prestige-related, (3) substitute of funerary gifts,

and (4) votive offerings. Surprisingly, only the latter are described as 'permanent', thereby referring to older concepts concerning the 'retrievable nature of dry-land deposits' (*cf.*, Blajer, in the reviewed volume). In the context of 'prestige' hoards, the authors draw attention to the association of fortified settlements with elites – an assumption whose obviousness has been increasingly questioned in recent scholarship.

The article by Estelle Gauthier and Jean-François Piningre, 'An active search for hoards? Contributions of a systematic field survey to the knowledge of Bronze Age metal hoarding: The case study of Salins-les-Bains, Jura, France' (pp. 69-90), written with the collaboration of numerous volunteer archaeologists, again concerns a specific region but addresses a narrower range of issues (whereas the previous study discussed both landscape and hoard typology, as well as isotopic provenance). Here, the authors focus on presenting a geographically smaller but certainly more targeted and intensive field project carried out since the early 21st century in a region previously known mainly for its prehistoric salt production, located on the northwestern foothills of the Alps. In close cooperation with amateur metal detectorists, a systematic and goal-oriented survey has been conducted there for over two decades, covering about 52,000 hectares (of which roughly 5,000 hectares have been explored) around the hillfort of Camp du Château and Mont Poupet hill. The spectacular and highly comprehensive results of this ongoing project have almost convinced me – a person generally sceptical of unrestricted, invasive treasure-hunting activity – to consider selective applications of such an approach. For scientific purposes, a pilot study of this kind would indeed be desirable at least once in every 'archaeoregion' (to use the conceptual framework adopted in the Dutch heritage protection system), even though its consequence – this must be explicitly stated – would be the total and irreversible depletion of a region's potential archaeological value in terms of metal deposits. It is, however, difficult to understand why such an undertaking in the Salins-les-Bains area was not tied to heritage protection objectives. As the authors themselves state, the survey focuses on forested areas – *i.e.*, those not threatened (p. 71) – rather than on exposed arable land, where the destruction and displacement of archaeological remains progress most rapidly and where the detection and recovery of artefacts would be most meaningful and necessary from a heritage-management perspective. The scientific rationale for the project is, of course, legitimate, yet it is not fully realised if exposed areas are neglected.

The focus, for understandable reasons, has been placed on locations most promising according to the previously identified regional deposition pattern – namely, elevated and prominent sites. By systematically covering only about 10% of the total area, the survey has already expanded the corpus of hoard finds from seven (in 2001) to seventy-four (in 2021). In terms of object count, the overwhelming majority of these are small hoards comprising fewer than twenty items, while in terms of total bronze weight, two clear groups emerge: small deposits (from a few grams up to 300 g) and large ones (above 1 kg) (p. 73). Chronological attribution produces an interesting result: a clear peak at the transition

between the Middle and Late Bronze Age (Br C2-D1) and an almost total disappearance of typologically identifiable assemblages in the final Bronze Age. It must be noted, however, that one-third of the assemblages consist of undatable scrap fragments. The inventories themselves also differ significantly in composition: earlier hoards include fragments of ingots and casting waste, axes, and sickles, more rarely individual personal ornaments, while deposits from the Br D2-Ha A1 phase contain a greater proportion of fragmented finished objects (pp. 73, 74). The authors' observations concerning the hoards' stratigraphic position are equally interesting: most were found at depths of 0-25 cm, which, based on the preceding remarks, seems to reflect their initially shallow deposition (or perhaps even placement on the surface) rather than later disturbance by ploughing. The dispersion of bronzes over several square meters in such contexts (excluding secondary effects of ploughing or erosion) suggests, in the authors' view, that the hoards were deposited initially on the surface or even on above-ground structures (p. 77). This naturally invites association with L. Nebelsick's (2000) concept of ritual, ecstatic deposition. From a landscape perspective, it is clear that topography played a crucial role: the deposition sites were visible from afar – especially assuming a lower degree of forest cover – and, in a strikingly high proportion of cases, they were intervisible with one another as well as with the fortified site at Camp du Château (pp. 79-81).

This valuable and, in many respects, groundbreaking study in landscape archaeology also provides a range of additional detailed observations – for example, the very low rate of conjoining fragments (20 out of 2,500 pieces). This constitutes a strong argument in favour of their 'premonetary' function (*cf*., below; Ialongo and Lago 2024), while at the same time offering direct evidence of recycling and of the *pars pro toto* principle.

In the following study, authored by Marcin Maciejewski, 'Ice-marginal valleys and hoards: Natural landscapes, cultural practices, and their amazing convergence in different regions of Central Europe (Poland)' (pp. 91-106), the landscape aspect of depositions is once again of primary importance. It must be admitted that, after reading the preceding article on the Jura and its 'active hoard-hunting' methodology, the distribution maps of deposits in this and subsequent papers (as well as in most other microregional analyses of deposition phenomena) inevitably cause some concern, given that they often contain only three or four deposits discovered over a span of 150 years (what corresponds to stage 1, up to year 2000, in the study by Gauthier and Piningre). One is somewhat reassured, however, by the realisation that most of our syntheses – not only those concerning hoards – are based on datasets constructed in precisely this way. Maciejewski, moreover, conducts his research in areas with entirely different conditions from those studied by the aforementioned French scholars. As he himself observes, the past cultural landscapes of this part of Europe – specifically, the eastern section of the North European Plain – are only minimally accessible to investigation, since their physical features have been obscured by centuries of intensive agricultural activity. At the same time, collective memory has been repeatedly disrupted by population displacements. What remains as reference points are only the

truly enduring and large-scale features – ice-marginal valleys and their edges (p. 93). These must have been ascribed exceptional meanings in the past, and they may still embody and reveal those meanings today. The contextually analysed concentrations of metal deposition sites along these valley edges – illustrated here by two clusters of hoards from Rosko in the Noteć Valley and Karmin in the Barycz Valley – fully substantiate this perspective. This paper also raises another insightful research question, bringing us back to the issue of the individual versus replicable nature of deposition acts: did the ritual of deposition always convey the same cultural message and hold the same social meaning, given the differing compositions of the hoard? (p. 103).

The study by János Gábor Tarbay, 'Twin hoards and hoard selection from Late Bronze Age Transdanubia' (pp. 107-129), constitutes a recapitulation of the findings presented in the same author's book published two years earlier (Tarbay 2022). It discusses fascinating cases of hoards – or groups of hoards – discovered during systematic searches (again!), which, being exceptionally well contextualised, paradoxically open up new research avenues instead of answering long-standing questions. Within this framework, Tarbay examines the problem of so-called 'twin hoards' – instances where two separate sets of bronze objects are found in proximity (for example, Budakeszi-Őzvölgy-tető, Hoards A and B, just 11 cm apart). Under traditional circumstances, without a fully documented context, such deposits would almost certainly have been treated as parts of a single large hoard. However, they differ significantly in both typology and treatment: the bulk of Hoard A consists of (at the bottom) fragments of 'cake ingots', above which lay other large, fragmented items, mostly 'as-cast' or unused; in contrast, Hoard B is a small group of relatively undamaged, complete objects showing heavy signs of use (pp. 108-116). A similar pattern recurs several times in Transdanubia and beyond. The discussion is illustrated with clear, well-designed infographics – now something of a hallmark of Tarbay's work. He proposes several interpretive models for this phenomenon, including: (1) simultaneous deposition of the entire assemblage by different groups of people, (2) deposition of individual parts in short succession, and (3) return to the same location after a longer interval (effectively forming special cases of 'multi-hoard sites'). The last scenario seems somewhat less convincing, as it would require precise relocation of the first deposit and spatial referencing to it – would that not necessitate its uncovering or disturbance? However, given the shallow depth of deposition and the possibility of surface markers, even this cannot be entirely ruled out (*cf.*, the Late Bronze Age/Early Iron Age doubled hoard marked by an erratic boulder at Kaliska, Pomerania – Szczurek and Kaczmarek 2022).

Tarbay, inclining toward the view that the fragmentation of raw material ('cake ingots') occurred not immediately before deposition but earlier, supports his argument with evidence of worn fracture edges – traces that must have developed well before the act of deposition. However, this reasoning is documented only with examples of fragmented finished objects (such as axes), not with 'cake ingots' themselves. A particularly noteworthy result of the author's multivariate statistical analyses – conducted on a sample of about 30 hoards

from Transdanubia dated to the Ha A-B1 phase, and focusing on the share of different categories of artefacts (ingots, foundry waste, as-casts, finished probably unused products, used products) – is the finding that hoards displaying different combinations or dominance of these categories do not cluster microregionally. Instead, they are dispersed across the entire study area. This observation suggests that particular deposition patterns were not the expression of localised cultural traditions but rather manifestations of complementary depositional needs, each carried out under distinct but repeatable circumstances. Thus, we return once again to the central question around which many contributions in this volume revolve: is deposition an individual, uniquely motivated act, or the realisation of a universal pattern? Tarbay's answer is concise – though his paper is anything but short – and unequivocal: deposition *is* a profoundly individual act. Despite recurring formal patterns, we must bear in mind that, as he reminds us, no two identical hoards are known to date (p. 124).

The next study is perhaps the only true case study in the volume. The paper by Kamil Nowak and Nicola Ialongo, 'Late Bronze Age hoard from Nowe Kramsko. Is there a method in fragments?' (pp. 131-148), goes beyond an in-depth micro-analysis of a single hoard to address the widely debated issue of metal fragmentation in the LBA, using as its example an exceptionally well-suited case – the Nowe Kramsko hoard from western Poland. This assemblage, weighing 14 kilograms, comprises 512 artefacts, including 243 fragments. The original publication (Michalak and Orlicka-Jasnoch eds 2019) of this assemblage, which unfortunately lacks contextual documentation such as that available for the hoards discussed earlier, together with subsequent traceological analyses, allowed the authors to concentrate here exclusively on a combination of two analytical approaches: use-wear analysis and statistical analysis of the weight of deliberately fragmented artefacts. Most complete of them (*e.g.*, 39 of 43 sickles) were deposited in an as-cast state. Interestingly, this also seems to apply to most fragments – use-wear traces were observed on only 23 of the 195 pieces. The fragmentation patterns differed by artefact type: sickles were incised with a chisel or saw to predetermine the size of the fragment, and then broken off, leaving a characteristic straight edge on one side and a jagged one on the other. Axes, by contrast, were simply smashed. Bracelets were also fragmented, though in this case the documentation of saw marks is not entirely convincing (*cf.*, Garbacz-Klempka *et al.* 2022, fig. 15.6: 1, 2).

Both as-cast and used products were intentionally fragmented. The observation that fragments do not conjoin confirms, on a microscale (similar to the mesoscale observation for the French Jura discussed earlier), the same pattern identified by N. Ialongo and G. Lago (2021; 2024) in hoards spanning a broad Central European transect from Italy to Jutland. All this supports the hypothesis that fragmentation was not always about ritual 'killing' of objects or reducing them for remelting, but rather about creating new economic and symbolic value. The weight analysis of the fragments from Nowe Kramsko provided an opportunity to test the money hypothesis, regarding the function of copper-alloy fragments as a form of 'hacksilver' of the European Bronze Age (Ialongo and Lago 2024), on a sample

originating from a single depositional act – thus chronologically unified, though not necessarily random, as it clearly represents a selected portion of circulating raw material.

At this point, a digression is necessary to situate the discussed study within the framework of the aforementioned hypotheses. Although the economic aspect of fragmentation – including its weight dimension – has long been widely discussed in the literature (*e.g.*, Sommerfeld 1994; Brandherm 2018; 2019), it was only when this phenomenon was linked with the parallel research on weights and weighing systems that N. Ialongo, G. Lago, and L. Rahmstorf (2021) managed to break the deadlock in the study of prehistoric metric systems in Europe. Previously, metal fragments – sometimes suggested as an alternative to a dead end of searching for regularity in the weights of whole objects (including ingots) – had never been systematically studied on a large scale. In 2024, Ialongo and Lago further developed the concept, demonstrating that the weight structure of fragments (and thus their value) follows a log-normal distribution. This means that the average transaction using them involved amounts slightly higher than the smallest ones, while larger transactions were rare. Based on this, they proposed that Bronze Age European societies exhibited economic behaviour similar to that seen in modern household economies (Ialongo and Lago 2024). This is a tempting hypothesis, though one that few specialists would accept uncritically, given that religious and social interpretations of the hoarding phenomenon currently dominate the discourse. Yet, the underlying idea – that various forms of human behaviour, even those that appear 'irrational', are governed by universal economic mechanisms – is not far removed from the principles of evolutionary ecology or human behavioural ecology (HBE). This well-established school in anthropology and archaeology encompasses both biologically oriented concepts (*e.g.*, fulfilling energy needs) and microeconomic theory (economic decision-making based on rational, predictable principles, such as the law of marginal costs) (*e.g.*, Smith and Winterhalder eds 1992; Przybyła 2014; Walsh *et al.* 2019). Attributing such 'rational behaviours' to prehistoric societies does not in any way deprive them of their cultural 'otherness', a point made clearest when examining the reverse side of economic action – not acquiring but consuming goods. Here, the application of modern systems of value becomes practically impossible. Hoarding is the best example: even if the composition of hoards mirrors the structure of circulating material value, this still tells us little about the reasons behind their deposition.

Nevertheless, this promising research idea, when applied to bronze, must eventually confront some specific issues – for example, the diversity of alloys: if metal fragments functioned as money, then the tin or lead content in the alloy would surely have mattered. Another key question concerns regional differences in fragmentation during the Late Bronze Age. Was this merely the result of a selectivity bias (*i.e.*, fragments as 'money' were used everywhere but only entered deposits where such deposition was a culturally sanctioned practice)? Or does it instead reflect varying degrees of integration of European communities into the metal circulation system?

The authors of the reviewed article on Nowe Kramsko draw attention to the universality of 'hackbronze'. Both pieces of raw material, as-cast objects, and used items could serve as carriers of value. Moreover, the conversion between the functions of value storage and raw material was remarkably simple, since these two functions were not mutually exclusive (p. 145) – just as the utilitarian and religious roles of deposits containing fragments could also coexist (Brandherm 2018, 58). The weight analysis of fragments from Nowe Kramsko (n=168) indicates that their pattern closely corresponds to the weight structure of fragments from hoards found in eastern Germany and western Poland (n=761), previously examined by Ialongo and Lago (2021). Both datasets show a concentration of positive values in the Cosine Quantogram Analysis within the 8-12 g range. A subsequent Frequency Distribution Analysis (regrettably, the authors did not include the relevant graph) revealed clusters of positive results around 10 g, 19-22 g, and 31 g, thereby confirming that the fragmentation pattern from Nowe Kramsko aligns with the Pan-European weight unit of approximately 10 g (p. 144). The article concludes that the motives behind deposition, despite results supporting the monetary hypothesis, remain open to interpretation.

The paper authored by Szilvia Gyöngyösi, Péter Barkóczy, Julianna Cseh, Laura Juhász, and Géza Szabó, titled 'Comparative technological analysis of Middle Bronze Age bronze objects from hoards and burials' (pp. 149-169), is the only contribution in the volume with a strictly archaeometallurgical focus. It opens with remarks concerning the context of the analysed artefacts. The authors' concept of a methodologically consistent comparison between bronzes from hoards and burials belonging to the same cultural context – the Transdanubian Encrusted Pottery Culture – deserves full recognition, even though the comparative analysis itself occupies merely the last two paragraphs of the paper (the majority of the article consists of excellent micrographs and their detailed descriptions). Although the sample size is modest (14 bronzes from the Vértesszőlős and Zalaszabar hoards, and 11 from the Bonyhád cemetery burials), the methodological approach renders the results valuable, above all because of the rare opportunity to perform invasive metallographic examinations on polished sections of bronze ornaments, a practice now seldom undertaken. The authors do not observe any technological criteria in the selection of bronzes for particular contexts; instead, the observed differences appear to be typological, implying that the end of a 'life cycle' of the artefact varied depending on its type. However, the lack of use-wear analyses to test this hypothesis is somewhat regrettable. The study clearly demonstrates the limitations of assessing manufacturing technology in the case of cremation burials, since exposure to the funeral pyre has an enormous impact on the acceleration of grain boundary corrosion (pp. 163, 164).

Overall, the analysis revealed that within the group of ornaments – even those functioning as garment appliqués, from which one would not expect enhanced hardness or flexibility (*e.g.*, crescent-shaped pendants) – the dominant operational sequence consisted of treating a cast precursor through cold hammering/deformation, followed by heat treatment. Only three artefacts (omega-shaped pendants) were left unworked after casting. No

chemical 'fingerprint' characteristic of a given assemblage was identified; instead, the authors were able to distinguish alloys typical for certain artefact types. This raises a key question: did this reflect the maintenance of different alloy types within the same workshop, each used for specific object categories (p. 168), or rather an intentional alloying strategy?

In the closing essay, 'Re-theorising deposition in Bronze Age Europe' (pp. 171-175), Kristian Kristiansen neatly recapitulates several of the key insights presented throughout the volume, embedding them within his broader vision of European Bronze Age societies as representatives of decentralised, sacrificial economies. He recalls the important observation made by the late David Fontijn, namely that the unprecedented scale of deposition in the Bronze Age demands historically specific conceptualisations (p. 172) and explanations, rather than mere anchoring in general anthropological or palaeo-economic models. By thus calling for historical contextualization – and later proposing that, for various reasons, most hoards were initially intended as temporary deposits, possibly also associated with periods of unrest, while the hoards we know today constitute only the visible tip of an iceberg of once-existing but later retrieved deposits (p. 173) – Kristiansen in fact returns full circle to the starting point of interpretive tradition: political readings of hoarding phenomena (*cf.*, Blajer, in the reviewed volume). While I share the view that some of the so-called 'hoards', especially those discovered under particular circumstances, are closer in character to 'stores' than 'deposits' (*cf.*, Dzięgielewski 2024), Kristiansen's image of the iceberg tip seems to me a little bit exaggerated. The growing intensity of field surveys and the increasing number of discoveries instead suggest that we are indeed dealing with an iceberg's tip – but of the hoards which were, however, deposited without any intention of recovery. However, the openness to the diversity of motives behind deposition and storage – views that a mere decade ago were explicitly rejected (I still recall the atmosphere at the EAA session in Vilnius in 2016) – should be attributed to the wider availability of contextual analyses, conducted at scales ranging from individual hoards to entire landscapes, as well as to archaeologists' growing awareness that economic value not only does not contradict, but is in fact inseparably intertwined with the ritual and social value of metal.

Reading this carefully edited volume is only rarely disturbed by minor editorial slips – such as the poor legibility of charts in figures 3.4 and 3.5 in Treadway's chapter, likely resulting from the conversion of colour graphics to black and white at the printing stage, or the repeated mention of the administrative affiliation of sites in Tarbay's text. The foreign reader may also feel a certain quiet satisfaction upon noticing the several misspellings of the place name Vértesszőlős in the contribution by Gyöngyösi *et al.* – a reminder that the tongue-twisting spelling of Hungarian toponyms poses challenges even to native speakers, who must have seen the text for proofreading.

On the substantive level, the hypotheses and interpretations proposed by all contributors are generally well grounded – the chapters are neither short nor superficial, which deserves emphasis and appreciation. Only a few points caught my attention. One is the

commentary to the figure 5.15 in the paper by Chvojka *et al.* While their observation that the lead content (Pb) in 'cake ingots' is slightly lower than in finished objects from the Krtely hoard is valid, can this really be interpreted as evidence of intentional alloying or recycling, given that the average Pb concentration in the finished items is around 0.1%? It would suffice that those objects had been made from a different batch of metal – even if extracted from the same ore source – to explain such variation. Another point of contention concerns the classification of the dagger from the Karmin IV hoard in Maciejewski's article as belonging to the North Caucasian Kabardino-Pyatigorsk type. The entirely different shape of the guard and pommel suggests instead a closer analogy with the Klein Neundorf type, likely bearing Italian rather than Eastern European steppe connections.

To sum up, what we have here is a solid collective work that offers not only a comprehensive overview of current trends in the study of European Bronze Age hoards (and, to a lesser extent, those from the Iron Age), but also stimulates reflection and provides new arguments for ongoing debates concerning the interpretation of metal deposition in prehistory. A recurring theme – echoing throughout the volume – is that of motivation: were the acts of deposition driven more by universal principles or by individual intentions? Each contribution, depending on its analytical perspective, offers fresh confirmations or refutations of one or the other viewpoint. The same can be said of the cultural meaning of hoards depending on their composition and contextual setting. At this point, one must agree with the editors' assessment that the study of deposition phenomena holds great promise for the future – or perhaps is still in its early phase, as suggested by the limited integration of depositional landscapes into settlement studies to date.

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