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tion in the region prior to the construction of the enclosure and the new opportunities for exchange offered by the site once chosen. Repetition of the same routes to Herxheim would have led to a formalisation of the movement into ‘processions’, in turn formalising the ritual practices at Herxheim into a form of pilgrimage. The importance of seasonal or annual repetition built the special deposits through growing place-value and expanding cultural memory, creating a deeper attachment to the history of this place. Decreasing exchange and the creation of an alternative (difficult to identify in the declining settlement network) congregation centre could have played a role in the decline of the Herxheim centre.

While bodily mobility is widespread in European prehistory, this practice has not been frequently invoked in the LBK, with its current total of over 3000 known burials, often in small groups in settlements and cemeteries. The alternative Herxheim model which we propose is ultimately grounded on two bodily practices – bodily dividuality and bodily *synecdoche*. Herxheim shows the massive effects of these two initially simple practices when worked through in a consistent, cumulative, and concentrated manner.

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Herxheim unchained: a reply to Chapman et al.

By Andrea Zeeb-Lanz and Alexander Gramsch

Following the publication of three important books about Herxheim in recent years (BOULESTIN / COUPEY 2015; ZEEB-LANZ 2016; 2019a), the discussion of the function and interpretation of this enigmatic Early Neolithic site has significantly died down. It is therefore very welcome that John Chapman, Bisserka Gaydarska, and Tina Jakob have undertaken a new attempt at deciphering the complex scenario at Herxheim. Based on their previous research on fragmentation and enchainment as a social mechanism in prehistory and recent debates on mobility of both living and dead bodies, they take up the notion of the “division of dead bodies for transport” (*Chapman / Gaydarska / Jakob p. 168*) to create a sequence of actions resulting in the archaeological and anthropological findings from Herxheim that is challenging, stimulating, and good food for thought.

The new narrative can perhaps be boiled down as follows: people from contemporary – though still undiscovered – *Linearbandkeramik* (LBK) sites (so-called ‘Home Communities’) chose body parts of their deceased, which they had been curating up until the “festival season” at Herxheim, and then carried them to Herxheim. Along the way, they probably stopped at other yet undiscovered

ered ‘Home Communities’ to exchange or donate body parts. Evidently, more upland communities brought ancestral body parts to Herxheim than lowland communities (cf. *Tab. 1*); the latter took fewer body parts, but ceramic vessels to Herxheim. There, these different groups met for larger feasts and mixed and deposited their souvenirs to enchain their various communities. This mixture of “biosocial material” was deposited in a double ring ditch system, the parts of which were excavated by the incomers. As stated above, this narrative integrates a number of elements for which archaeological evidence is missing, but which help to create a coherent picture (cf. *Fig. 8*) and a complete storyline with actors, requisites, and settings. A film is created in our minds, the plot of which is unfamiliar but not completely unthinkable. However, the rich data from the research of Herxheim provide evidence for many actions which cannot be easily integrated into this drama, if at all. In the following, we want to summarise some of these elements – some of them missing, others misinterpreted – that make the picture far less coherent.

Let us start with the central act – the treatment of the dead bodies. The most important and markedly over-represented skeleton parts at Herxheim, the calottes, are mentioned (“Special treatment was afforded to cranial material, with the production of calottes [skull-caps] and – in a few limited cases – their deposition in groups”, *Chapman/Gaydarska/Jakob, p. 173*), but not discussed in detail, although they certainly played an important and special role in the body-transformative practices. The narrative does not propose any explanation for the fashioning of these outstanding “artefacts” but treats them like all the other human bone fragments, despite the fact that there is a wealth of anthropological literature on the particular significance of head and / or skull in practices related to the transformation of bodies (be they ancestral, or enemy, or other) (e.g. BONOGOFSKY 2011; ROSENDAHL/WIECZOREK 2011; cf. BARLEY 1981 and below). Moreover, cutmarks are understood as aiming for the dissection of the dead body in order to facilitate transport and enchainment. However, many cutmarks all over the body and on the skulls in particular cannot be explained this way (e.g. cuts on a child’s clavicle, s. GRAMSCH/GROSSKOPF 2023, 109 fig. 5). Fewer and simpler cuttings would have been sufficient to remove the skull from the postcranial part of the body, to detach the scalp from the skull, and to dissect the postcranial body. The complexity of body-related practices is not at all reflected in the new model.

There is both a kind of standardisation of body treatment and a high degree of variation in the way bodies are transformed, leading to this complexity of body-transforming practices. This includes the observation that many bodies were dissected to such a degree that, as the authors rightly state, Silja Bauer, in her analysis of the remains from eight depositions which were uncovered in the rescue excavation, was unable “to re-fit a single complete long bone from these slots” (*Chapman/Gaydarska/Jakob, p. 173*) (BAUER 2019, 11), while an – albeit restricted – number of other deceased are still distinguishable as individuals, preserved as torsos, or almost complete skeletons. While the authors express that “even the few examples of articulated bones in the ditches could have been brought to the site” (*Chapman/Gaydarska/Jakob, p. 179*), we think it is very unlikely that these articulated parts – such as whole spinal columns, long bones from legs, and arms with feet and hands still attached to them – could retain their original anatomical association during transport from the ‘Home Communities’ on the long way to Herxheim (*Fig. 9*). Returning to the calottes, a closer look shows that quite a number of them have one, or even both, temporal scales (a thin bone formed like a scale that is very fragile and linked to the skull with only minimal connection) preserved. The temporal scales would never survive a journey from a ‘Home Community’ still adherent to the skull when the calottes were prepared weeks before their arrival at Herxheim. Therefore, these skull caps must have been produced on site. In our opinion, this suggests that the individuals in fact died in Herxheim (*contra Chapman/Gaydarska/Jakob, p. 179f.*).



Fig. 9. Herxheim. Central part of concentration K 6 (rescue excavation) with long bones intact and an arm with part of the hand in original connection.

Another striking element in the transformation of (dead) bodies is the age distribution of the excavated individuals. Chapman et al. refer to the strong over-representation of juveniles and young adults and the lack of infants, which is highly untypical for normal death communities of the time, as already established by Bruno Boulestin (BOULESTIN / COUPEY 2015, 104–114; esp. 114). They suggest this distribution “might be caused by osteological and taphonomic factors rather than representing the ‘true’ demographic picture” (Chapman / Gaydarska / Jakob, p. 173). However, they do not cite a single example of taphonomic processes leading to a significant loss of bones. And indeed, there is neither evidence of gnawing, nor are there animal traces in the ditches. The lime-rich loess at Herxheim definitely prevented decomposition of the bones, and there is even so much lime in the soil that it covered the majority of the bones with thin layers of lime or even sometimes thick and solid sinter concretions. Additionally, what kind of “osteological factors” should exist that lead to the disappearance of the bones of elder people and young children? The striking overhang of juveniles and young adults is one of the elements missing in or even contradicting the narrative of Chapman et al., whereas we consider it a clear indication of intentional killing of members from communities of the living.

It seems to us, then, that the first act outlined in the new plot for Herxheim does not correspond to the body-transformative practices that can actually be reconstructed from the evidence. But what about the second act, which is the mixing of body parts and pottery to enchain upland and loess communities? Chapman et al. selected inner ditch slot 282-139 as an example where allegedly “the placement of one fragment of a person’s body in a long pit with sherds from the Elster-Saale region linked the person to the vessel” (Chapman / Gaydarska / Jakob, p. 177). However, this slot comprises a total of 42 fragments of human bone and two calottes commingled with 74 sherds (18 decorated and 56 undecorated, none of which shows Elster-Saale-decoration). Again, the evidence suggests a far more complex series of actions that led to the archaeological record, rather than a specific enchainment as recognised by Chapman et al. Directly in the middle of a pottery sherd concentration in this slot we identified two sherds with early-LBK Flomborn decoration and two further ones dating from the middle to younger LBK. Fabian Haack figured correctly that the older sherds, which were found in various concentrations or singly in the backfill, were mixed into the concentra-

tions along with the soil in which the finds had been interspersed before deposition, as this was the original filling of the ditches which sometimes cut older pits (e. g. HAACK 2016b, 83; 94; 113). But if all the material in the concentrations stems from deliberate enchainment actions, it becomes very difficult to explain the chronologically much older pottery in quite a number of the concentrations; Chapman et al. conveniently omit these facts.

Their second example, the enchainment of “another bone fragment placed in another long pit with sherds from the Rhein-Main region” in slot 282-12 of the inner ditch (*Chapman/Gaydarska/Jakob, p. 177f.*) is not convincing either: The excavation database shows that in the vicinity of the sherds present that have Rhine-Main-hatching style decoration – which are not lying together – there is a huge number of various bone fragments, mandibulae, and more than 100 pottery sherds and stone implement fragments. There is even an intact skeleton in the classical flexed position in this slot, lying on the same level as quite a number of bone fragments and a huge variety of sherds with different decoration styles. It seems unlikely to us that so many dead individuals and so many ceramic vessels could have been enchainment in a single act, let alone the specific enchainment of a Rhine-Main vessel with an upland individual. Moreover, it remains open how the intact skeleton fits in the enchainment narrative. Again, by omission, Chapman et al. avoid evidence that is very difficult to work into their plot.

This example leads us to the matter of scale: Some “biosocial material clusters” are small and consist of fragments of only a few vessels and of body parts from 1–2 individuals, but the majority of the clusters comprised a huge amount of pottery and human bones mixed with soil, animal bones, stone tool fragments, and bone tools. For example, Concentration K 16 of the research excavation includes, in addition to animal bones in larger quantities, 4000 human bone fragments (including 13 skull caps), about 500 pottery sherds, and a smaller number of grinding stone and stone adze fragments (*Fig. 10*). It is quite impossible to imagine how many different ‘Home Communities’ must have been involved in order to create this set of enchainment landscape, pottery, and human individuals. Moreover, this and similar clusters are obviously not the result of a single depositional act: the commingled mass of soil, bone fragments, pottery sherds, and other artefacts shows that no clear-cut, closed “enchainment sets” were deposited in the ditches, but rather they were the result of a series of actions in which bones, sherds etc. were scattered, reassembled, mixed with soil, and spread into open sections of the ditches.

It has to be noted that a huge number of single sherds and bones were found in the backfill layers above and below the main concentrations of “biosocial” material. These numerous, but often individually lying sherds and bone fragments do not fit into the enchainment model either – or only if we assume that the enchainment consisted merely of a selection of smashed human bones and fragmented vessels – and the rest was simply discarded with the backfill material. The huge amount of material that eludes any kind of enchainment is ignored in the narrative by Chapman et al.

All in all, there are around 80 000 human bone fragments (including around 500 calottes), ca. 25 000 vessel units (many consisting of more than ten sherds), several thousand pieces of stone implements, hundreds of bone tools and ornaments, as well as a lot of animal bones. Imagine the number of people – several thousand probably – necessary to achieve the goal of enchainment all these objects with each other! The composition of the concentrations and the backfill layers do not suggest a repeated use of one and the same spot for deposition in subsequent years or at subsequent occasions – and the many pottery re-fits between freshly broken sherds lying in neighbouring concentrations suggest longer, simultaneously open ditch sections.

Aside from remains from butchered domestic and some wild animals, the concentrations in the ditch fillings also comprised animal remains such as the wing bones from a large wading bird, a

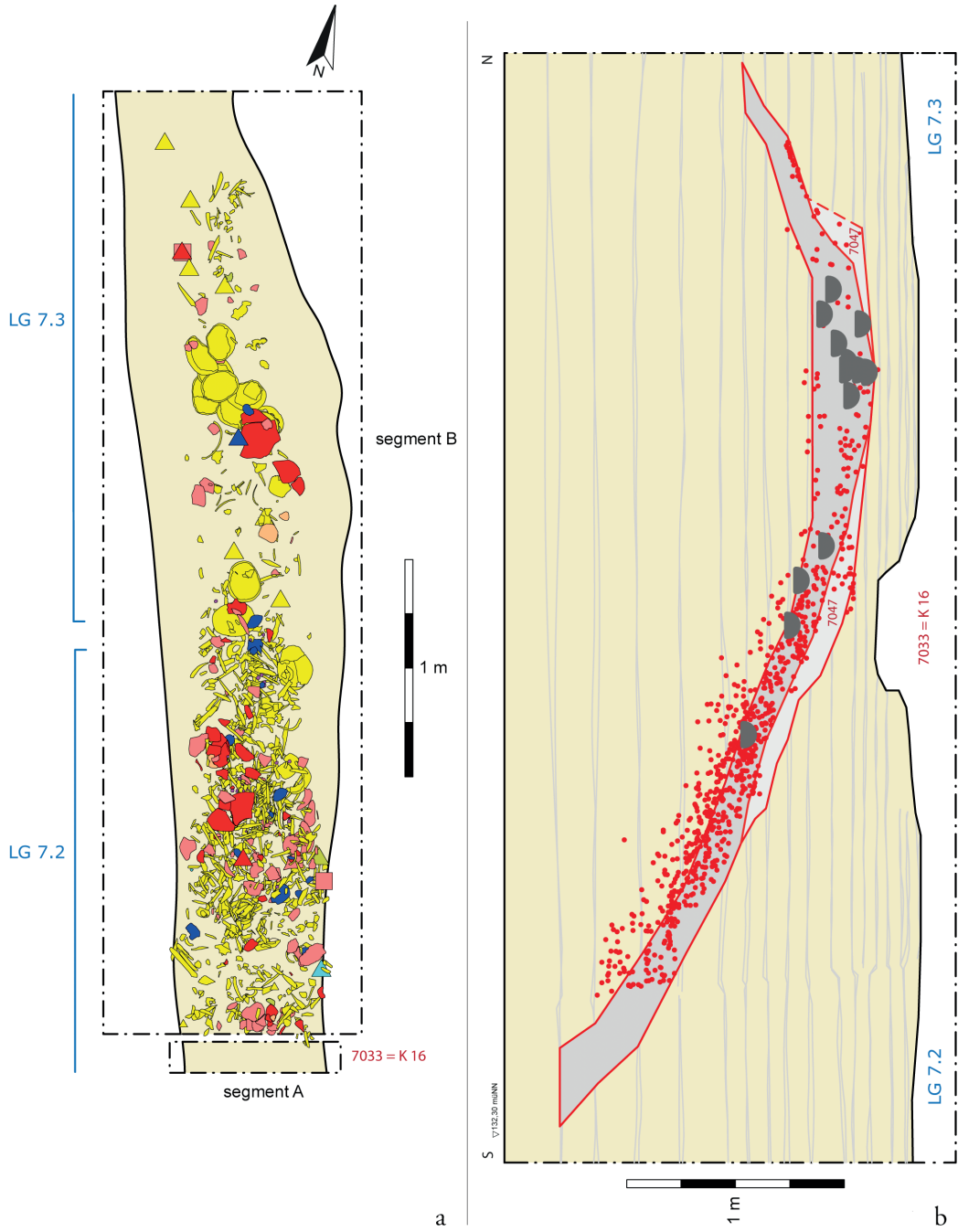


Fig. 10. Herxheim. Inner ditch ring, finds concentration K 16. a Planum 5 with finds horizons 5–19. b Longitudinal profile with finds horizons 5–19.

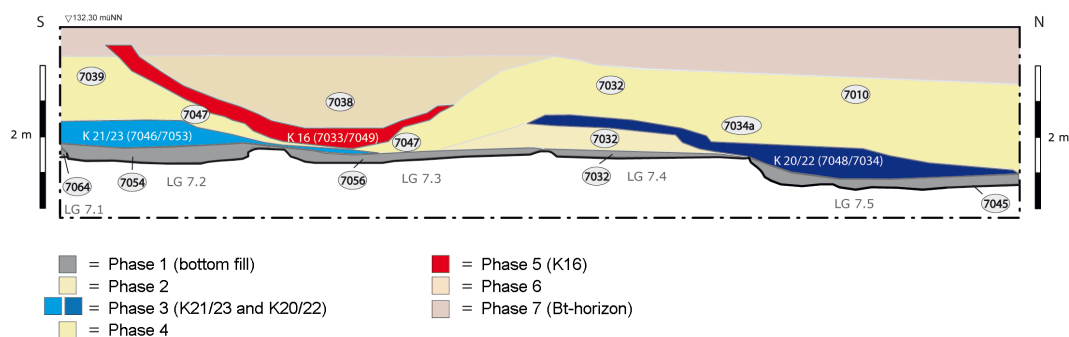


Fig. 11. Herxheim. Longitudinal profile from the east with schematic reconstruction of the backfilling phases in the area of the concentrations K 21/23, K 16 and K 20/22.

number of bucrania and aigicrania, as well as around 40 mandibles (mostly cut in half and sprinkled with ochre) from small carnivores like marten, polecat, or wild cat. These special and elaborately treated animal bones add to the complexity of the practices resulting in the deposition of “biosocial” clusters as well as to the symbolic dimensions of the site, neither of which is accounted for by Chapman et al.

And what about the final act outlined in this plot, the digging of pit sections for depositing mixed “biosocial material”? Chapman et al. sketch a picture where each ‘Home Community’ digs a special pit for their enchainment material and speak of “the choice of a specific long pit for deposition” (*Chapman/Gaydarska/Jakob, p. 177*). This directly contradicts the results of the analysis of the filling history of the ditches of Herxheim and the placement of the find concentrations. The ditch system has undergone a thorough, meticulous examination based on the enormous data set resulting from both the research excavation and the previous rescue excavation (HAACK 2016b). On the basis of his detailed and conclusive research on the double ditch, Fabian Haack concludes that although a long pit is the primary architectural unit for both ditches, several long pits were always open at the same time and formed long, open ditch segments. This is proven by the fact that the concentrations and other backfill layers can usually be traced over the length of several of the long pits (*Fig. 11*), the latter being recognisable only via the steps in the ditch bed, as evidenced by the large number of existent long profiles. This fact, cemented by the meticulous presentation of plans and profiles in Haack’s dissertation, much of which was published in the first Herxheim volume (HAACK 2016b), vitiates the vision of specific areas, namely distinct long pits, into which each group of uplanders deposits the enchained bones and sherds of their specific bonds with selected lowland communities.

We thus conclude that the plot sketched by Chapman et al. excludes much of the evidence, reduces the complexity of the practices, and cannot account for what really led to the various transformations and mixing of human and animal bodies, pottery, and other material (*Fig. 12*). Additionally, it seems to us that the plot itself is contradictory; it lacks an explanation for why upland communities sent human remains but no artefacts (or at least evidence is lacking for upland produced artefacts), while loess communities sent pottery but only very few body parts (a small amount of bones comes from other lowland regions or even from Herxheim; see *comment by Turck and TURCK 2019, 364, 370–375 with fig. 40*). It seems unlikely that communities would never pick up practices of such a high symbolic value which were practised by other enchained communities. Furthermore, there is a lack of evidence for a Herxheim-based network that existed before the use of body parts and that involved upland communities in large-scale trans-regional feasting.



Fig. 12. Herxheim. Detail of the huge concentration K 9/18 with lots of highly fragmented human bones, calottes, and other finds.

Moreover, Chapman et al. rightly point at the social efficacy of practices that transform and transfer bodies, but if we give these aspects a different weight, we may understand the practices performed at Herxheim (and possibly elsewhere before) as aiming for the dissolution of (most, but not all) individuals – no matter where they previously lived. Similar to secondary burial practices as described by Nigel Barley for the Dowayo of Cameroon, the disintegration of individual bodies, the special treatment of skulls, and their final deposition together with other skulls and other singularised body parts “have a common theme – the change from differentiation to undifferentiation” (BARLEY 1981, 157), from individual to community. The manifold practices of manipulation of the human body visible at Herxheim (whole skeletons in regular burial posture, torsi of rump and partly treated skull, extremities with hands and feet, spine column parts, whole skulls, skull caps...) that transform the bodies into new entities or dissolve them completely can indeed be understood as a means to create community or “social bonding”, e.g. in a scenario of “extreme processing” (e.g. OSTERHOLTZ 2018) – but the question is: What are the groups that bond here? Like Chapman et al., we think that the actors at Herxheim (or perhaps at other places involved prior to the depositions in the double ditch) are groups from various regions of the LBK world, visible through the different regional pottery decoration styles. These groups have ancient ties through clan-bonds or old lineages. However, the nature of such ties and such bonding practices is much less peaceful, and social relations are far from being as harmonious and conflict-free as the new narrative suggests. Whoever engaged in the practices discussed here, it is unlikely that all social and / or regional groups at any time had the same communal goal, namely the creation and maintenance of enchainment. Feasting very often is not just integrative, but has a competitive nature (e.g. DIETLER 2011, 180). Feasting aims not only to create or maintain social bonds, but also to negotiate, challenge, and change positions of individuals and groups; it is a central mechanism to negotiate or establish

emerging hierarchies, especially in societies where these are rather weak, or which undergo fundamental social change (BENZ/GRAMSCH 2006, 425 f.). We think that this also applies to late LBK society, as it is both in transition and low in hierarchy; however, enchainment here is described not only as free of conflict, but as a very technical, sober, matter-of-fact, processual procedure – without regard to the probably involved emotions such as grief or irritation, or to ambitions such as wanting to outplay other feasting participants.

We appreciate the attempt of Chapman et al. to revive the discussion about Herxheim and to merge at least some of the evidence into a new narrative. We agree with them that it “is difficult to summarise the Herxheim findings without oversimplifying what is clearly an enormously complex sequence of operations” (Chapman/Gaydarska/Jakob, p. 176). One certainly positive implication of the new narrative is the demonstration that peri- or post-mortal treatment of human bodies and their disintegration does not necessarily need to be considered negative, derogatory, or punitive (cf. GRAMSCH/GROSSKOPF 2023, 107) – one might even go further and state that the killing of individuals can be positively connoted, such as in the instance of self-sacrifice. We support their relational approach which considers persons as “both individuals with specific identities restricted to themselves ... but also individuals, whose relations with all the other persons, places and objects to whom they were linked contributed to their identities” (Chapman/Gaydarska/Jakob, p. 178). However, more attention needs to be paid to the question of whether and how body-transformative practices are related to personal identities (GRAMSCH/GROSSKOPF 2023). We suggest that the active disintegration of bodies as well as of lavishly produced pottery visible in Herxheim is part of a physical, as well as social, process of dissolution of individuals and of social transformation in a society in transition. We also welcome the strong focus on practices, as Herxheim provides a lot of evidence for these. However, the new model integrates the evidence only where it blends well into the narrative. In their plot, every action at the site is meaningful and fits together with the other actions – but there are many more practices involved here than are taken into account and many elements such as the sheer amount of material involved, as well as the unusual age distribution of the dead, which contradict the narrative of John Chapman, Bisserka Gaydarska, and Tina Jakob.

An archaeometrical perspective on “New perspectives on deliberate fragmentation and bodily mobility” by John Chapman, Bisserka Gaydarska and Tina Jakob

By Rouven Turck

In their discussion paper, John Chapman, Bisserka Gaydarska and Tina Jakob present a new perspective on the treatment of human remains at Herxheim at the end of the *Linearbandkeramik* (LBK). How these human remains came to the late LBK settlement and what happened to them prior to their deposition in the double ring ditch is still a matter of debate. Based on their own numerous studies on fragmentation and enchainment as a means of establishing social interregional ties, the authors look for evidence that allows the fragmented dead from Herxheim to appear in a secondary burial context as already discussed by Jörg ORSCHIEDT and Miriam Noël HAIDLE (2006).

A central argument of the authors is the regional origin of the dead. By means of strontium and oxygen isotope analyses, very high proportions of the individuals were identified as of nonlocal origin (TURCK 2019). These individuals mostly originate from geological formations that clearly deviate from the settlement landscapes on loess postulated so far for the LBK. The assumption that

References

- ALAIMO 2010
ST. ALAIMO, *Bodily Natures. Science, Environment, and the Material Self* (Bloomington 2010).
- ANDERMANN 2021
K. ANDERMANN, *Transindividuality. The affective continuity of the social in Spinoza*. In: H. Rosa/Ch. Henning/A. Bueno (eds), *Critical Theory and New Materialisms. Routledge Stud. Social and Political Thought* 161 (London 2021) 84–94.
- ARBOGAST 2019
R.-M. ARBOGAST, *Analysis of the faunal assemblages of the LBK site of Herxheim: the larger mammals*. In: ZEEB-LANZ 2019a, 139–232.
- BÁNFFY et al. 2016
E. BÁNFFY/A. OSZTÁS/K. OROSS/I. ZALAI-GAÁL/T. MARTON/É. Á. NYERGES/K. KÖHLER/A. BAYLISS/D. HAMILTON/A. WHITTLE, *The Alsónyék story: towards the history of a persistent place*. *Ber. RGK 94, 2013 (2016)*, 283–318. doi: <https://doi.org/10.11588/berrgk.1938.0.37156>.
- BARLEY 1981
N. BARLEY, *The Dowayo dance of death*. In: S. C. Humphreys/H. King (eds), *Mortality and Immortality: The Anthropology and Archaeology of Death* (London 1981) 149–159.
- BAUER 2019
S. BAUER, *Human bones from the research excavation 1996–1999. Examination of selected material (excavation slots 282–100 to 282–107)*. In: ZEEB-LANZ 2019a, 3–24.
- BAYLISS et al. 2016
A. BAYLISS/N. BEAVAN/D. HAMILTON/K. KÖHLER/É. Á. NYERGES/CH. BRONK RAMSAY/E. DUNBAR/M. FECHER/T. GOSLAR/B. KROMER/P. REIMER/E. BÁNFFY/T. MARTON/K. OROSS/A. OSZTÁS/I. ZALAI-GAÁL/A. WHITTLE, *Peopling the past: creating a site biography in the Hungarian Neolithic*. *Ber. RGK 94, 2013 (2016)*, 23–91. doi: <https://doi.org/10.11588/berrgk.1938.0.37150>.
- BEAUMONT/MONTGOMERY 2015
J. BEAUMONT/J. MONTGOMERY, *Oral Histories: a simple method of assigning chronological age to isotopic values from human dentine collagen*. *Ann. Human Biology* 42,4, 2015, 407–414. doi: <https://doi.org/10.3109/03014460.2015.1045027>.
- BENTLEY 2006
R. A. BENTLEY, *Strontium isotopes from the earth to the archaeological skeleton: a review*. *Journal Arch. Method and Theory* 13, 2006, 135–187. doi: <https://doi.org/10.1007/s10816-006-9009-x>.
- BENZ/GRAMSCH 2006
M. BENZ/A. GRAMSCH, *Zur sozio-politischen Bedeutung von Festen. Eine Einführung anhand von Beispielen aus dem Alten Orient und Europa*. *EAZ* 47, 2006, 417–437.
- BICKLE/WHITTLE 2013
P. BICKLE/A. WHITTLE (eds), *The First Farmers of Central Europe. Diversity in LBK Lifeways* (Oxford, Oakville 2013).

- BLÖCHER et al. 2019
J. BLÖCHER/S. FIGARSKA/J. BURGER, Genomic analysis of early Neolithic samples from Herxheim, Germany. In: ZEEB-LANZ 2019a, 305–312.
- BOETHIUS et al. 2022
A. BOETHIUS/T. AHLSTRÖM/M. KIELMAN-SCHMITT/M. KJÄLLQUIST/L. LARSSON, Assessing laser ablation multi-collector inductively coupled plasma mass spectrometry as a tool to study archaeological and modern human mobility through strontium isotope analyses of tooth enamel. *Arch. and Anthr. Scienc.* 14,97, 2022. doi: <https://doi.org/10.1007/s12520-022-01556-9>.
- BOGAARD et al. 2011
A. BOGAARD/R. KRAUSE/H.-CH. STRIEN, Towards a social geography of cultivation and plant use in an early farming community: Vaihingen an der Enz, south-west Germany. *Antiquity* 85,328, 2011, 395–416. doi: <https://doi.org/10.1017/S0003598X00067831>.
- BOGAARD et al. 2016
A. BOGAARD/R.-M. ARBOGAST/R. EBERSBACH/R.A.FRASER/C.KNIPPER/CH.KRAHN/M. SCHÄFER/A. STYRING/R. KRAUSE, The Bandkeramik settlement of Vaihingen an der Enz, Kreis Ludwigsburg (Baden-Württemberg): an integrated perspective on land use, economy and diet. *Germania* 94, 2016 (2017), 1–60. doi: <https://doi.org/10.11588/ger.2016.39068>.
- BONOGOFSKY 2011
M. BONOGOFSKY, Contextualizing the human head: an introduction. In: M. Bonogofsky (ed.), *The Bioarchaeology of the Human Head: Decapitation, Decoration, and Deformation* (Oxford 2011). doi: <https://doi.org/10.5744/florida/9780813035567.003.0001>.
- BOOTH 2016
TH. J. BOOTH, An investigation into the relationship between funerary treatment and bacterial bioerosion in European archaeological human bone. *Archaeometry* 58,3, 2016, 484–499. doi: <https://doi.org/10.1111/arcm.12190>.
- BOULESTIN/COUPEY 2015
B. BOULESTIN/A.-S. COUPEY, *Cannibalism in the Linear Pottery Culture: The Human Remains from Herxheim* (Oxford 2015).
- BOULESTIN et al. 2009
B. BOULESTIN/A. ZEEB-LANZ/CH. JEUNESSE/F. HAACK/R.-M. ARBOGAST/A. DENAIRE, Mass cannibalism in the Linear Pottery Culture at Herxheim (Palatinate, Germany). *Antiquity* 83,322, 2009, 968–982. doi: <https://doi.org/10.1017/S0003598X00099282>.
- BRITNELL/WHITTLE 2022
W. BRITNELL/A. WHITTLE (eds), *The First Stones: Penywyrlod, Gwernvale and the Black Mountains Neolithic Long Cairns of South-East Wales* (Oxford 2022).
- BRITTAIN/HARRIS 2010
M. BRITTAIN/O. J. T. HARRIS, Enchaining arguments and fragmenting assumptions: reconsidering the fragmentation debate in archaeology. *World Arch.* 42,4, 2010, 581–594.
- BRÜCK/BOOTH 2022
J. BRÜCK/TH. J. BOOTH, The power of relics: the curation of human bone in British Bronze Age burials. *European Journal Arch.* 25,4, 2022, 440–462. doi: <https://doi.org/10.1017/ea.2022.18>.
- BUDD et al. 2000
P. BUDD/J. MONTGOMERY/B. BARREIRO/R. G. THOMAS, Differential diagenesis of strontium in archaeological human dental tissues. *Applied Geochemistry* 15,5, 2000, 687–694. doi: <https://doi.org/10.1016/s0883-2927%2899%2900069-4>.
- CALASTRENC et al. 2020
C. CALASTRENC/F. BALEXU/N. POIRIER/CH. RENDU, Thermographie aéroportée par drone. Nouvelle procédure pour la détection archéologique en haute montagne. *Archeo-Scienc.* 44,1, 2020, 81–96. doi: <https://doi.org/10.4000/archeosciences.7426>.
- CARVALHO et al. 2019
A. F. CARVALHO/D. GONÇALVES/F. ALVES CARDOSO/R. GRANJA, Till death us do part? Human segmentation in funerary practices in the Middle Neolithic cemetery cave of

- Bom Santo (Montejunto Mountain range, Portugal). In: VALERA 2019, 71–83.
- CHAPMAN 1996
J. CHAPMAN, Enchainment commodification and gender in the Balkan Copper Age. *Journal European Arch.* 4, 1996, 203–242. doi: <https://doi.org/10.1179/096576696800688114>.
- CHAPMAN 2000
J. CHAPMAN, Fragmentation in Archaeology. People, Places and Broken Objects in the Prehistory of South Eastern Europe¹ (London 2000).
- CHAPMAN 2010
J. CHAPMAN, ‘Deviant’ burials in the Neolithic and Chalcolithic of Central and South Eastern Europe. In: K. Rebay-Salisbury/M. L. Stig Sørensen/J. Hughes (eds), *Body Parts and Bodies Whole. Changing Relations and Meanings* (Oxford 2010) 30–45.
- CHAPMAN 2016
J. CHAPMAN, The negotiation of place value in the landscape. In: J. K. Papadopoulos/G. Urton (eds), *The Construction of Value in the Ancient World* (Los Angeles 2016) 66–89. doi: <https://doi.org/10.2307/j.ctvdjrrxf.8>.
- CHAPMAN 2020
J. CHAPMAN, Forging Identities in the Prehistory of Old Europe. *Dividuals, Individuals and Communities 7000–3000 BC* (Leiden 2020).
- CHAPMAN 2022
J. CHAPMAN, The fragmentation of place: towards an integrated theory of fragmentation. In: M. Grygiel/P. J. Obst (eds), *Walking among Ancient Trees. Studies in Honour of Ryszard Grygiel and Peter Bogucki on the 45th Anniversary of their Research Collaboration* (Łódź 2022) 635–648.
- CHAPMAN 2023
J. CHAPMAN, Fragmentation research and the fetishisation of independence. In: A. Sörman/A. Noterman/M. Fjellström (eds), *Broken Bodies, Places and Objects* (London 2023) 289–309. doi: <https://doi.org/10.4324/9781003350026>.
- CHAPMAN/GAYDARSKA 2007
J. CHAPMAN/B. GAYDARSKA, *Parts and Wholes. Fragmentation in Prehistoric Context* (Oxford 2007).
- CHAPMAN/GAYDARSKA 2019
J. CHAPMAN/B. GAYDARSKA, The pilgrimage model for Trypillia mega-sites: the case of Nebelivka, Ukraine. In: V. Stîrbu/A. Comşa (eds), *Digging in the Past of Old Europe. Studies in Honor of Cristian Schuster at his 60th Anniversary* (Târgu Jiu, Brăila 2019) 73–102.
- CHAPMAN/GAYDARSKA 2022
J. CHAPMAN/B. GAYDARSKA, The meaning of deliberate figurine fragmentation: insights from the Old and New Worlds. In: G. Miniaci (ed.), *Breaking Images: Damage and Mutilation of Ancient Figurines 2* (Oxford 2022) 14–50.
- CHAPMAN et al. in press
J. CHAPMAN/B. GAYDARSKA/T. JAKOB, New perspectives on deliberate fragmentation. In: M. Gligor/D. Diaconescu (eds), *The Prehistory of Central and South-Eastern Europe: Chronology, Settlements, Artefacts and Cultural Networks. In honorem Florin Draşovean for the Celebration of the 65th Anniversary* (Alba Iulia 2023).
- CHAPMAN et al. 2010
J. CHAPMAN/M. GILLINGS/R. SHIEL/E. MAGYARI/B. GAYDARSKA/CH. BOND, *The Upper Tisza Project. Studies in Hungarian Landscape Archaeology. Book 3: Settlement Patterns in the Zemplén Block*. BAR Internat. Ser. 2088 (Oxford 2010).
- CHAPMAN et al. 2013
J. CHAPMAN/R. WALLDUCK/S. TRIANTAPHYLLOU, Disarticulated human bone disposal during the Mesolithic, Neolithic and Chalcolithic in the Balkans and Greece. In: M. Gligor (ed.), *Archaeoethanatology: An Interdisciplinary Approach on Death from Prehistory to the Middle Ages*. Ann. Univ. Apulensis. Ser. Hist. 18,2, 2013, 11–46.
- COFFIN et al. 2022
J. COFFIN/A. E. DOLPHIN/M. JACKES/CH. YAKYMCHUK/TH. PERRIN, Exploring child-

- hood mobility in Neolithic Southern France (Roquemissou) using incremental analyses of Sr isotope ratios in tooth enamel. *Journal Arch. Sci. Reports* 42, 2022, 103417. doi: <https://doi.org/10.1016/j.jasrep.2022.103417>.
- DE BECDELÈVRE et al. 2020
C. DE BECDELÈVRE/J. JOVANOVIĆ/Z. HOFMANOVÁ/G. GOUDE/S. STEFANOVIĆ, Direct insight into dietary adaptations and the individual experience of Neolithisation: comparing subsistence, provenance and ancestry of Early Neolithic humans from the Danube Gorges, c. 6200–5500 cal BC. In: K. J. Gron/L. Sørensen/P. Rowley-Conwy (eds), *Farmers at the Frontier. A Pan-European Perspective on Neolithisation* (Oxford 2020) 45–75.
- DE LANDA 2006
M. DE LANDA, *A New Philosophy of Society. Assemblage Theory and Social Complexity* (London, New York 2006).
- DEMJÁN / PAVÚK 2020
P. DEMJÁN/P. PAVÚK, Clustering of calibrated radiocarbon dates: site-specific chronological sequences identified by dense radiocarbon sampling. *Radiocarbon* 63,2, 2020, 429–438. doi: <https://doi.org/10.1017/RDC.2020.129>.
- DENAIRE 2019
A. DENAIRE, Pottery refits and connections from Herxheim. In: ZEEB-LANZ 2019a, 25–40.
- DENAIRE et al. 2017
A. DENAIRE/PH. LEFRANC/J. WAHL/CH. BRONK RAMSEY/E. DUNBAR/T. GOSLAR/A. BAYLISS/N. BEAVAN/P. BICKLE/A. WHITTLE, The cultural project: formal chronological modelling of the Early and Middle Neolithic sequence in Lower Alsace. *Journal Arch. Method and Theory* 24,4, 2017, 1073–1149. doi: <https://doi.org/10.1007/s10816-016-9307-x>.
- DEPAERMENTIER et al. 2020
M. L. C. DEPAERMENTIER/A. OSZTÁS/E. BÁNFFY / K. W. ALT / M. KEMPF, Neolithic land-use, subsistence, and mobility patterns in Transdanubia: a multiproxy isotope and environmental analysis from Alsónyék-Bátaszék and Morágy-Tűzkődomb. *Journal Arch. Sci. Reports* 33, 2020, 102529. doi: <https://doi.org/10.1016/j.jasrep.2020.102529>.
- DÍAZ-ZORITA BONILLA et al. 2018
M. DÍAZ-ZORITA BONILLA/J. BECK/H. BOCHERENS/P. DÍAZ-DEL-RÍO, Isotopic evidence for mobility at large-scale human aggregations in Copper Age Iberia: the megasite of Marroquíes. *Antiquity* 92,364, 2018, 991–1007. doi: <https://doi.org/10.15184/aqy.2018.33>.
- DÍAZ-ZORITA BONILLA et al. 2020
M. DÍAZ-ZORITA BONILLA/J. BECK/G. ARANDA JIMÉNEZ/L. MILESI GARCÍA/M. SÁNCHEZ ROMERO/A. LOZANO MEDINA/J. ESCUDERO CARRILLO/C. KNIPPER, The deposition of human remains inside Chalcolithic ditched enclosures: ditch 5 at Marroquíes (Jaén, Spain). *European Journal Arch.* 23,3, 2020, 330–355. doi: <https://doi.org/10.1017/ea.2020.4>.
- DIETLER 2011
M. DIETLER, Feasting and fasting. In: T. In-soll (ed.), *The Oxford Handbook of the Archaeology of Ritual and Religion* (Oxford, New York 2011) 179–194. doi: <https://doi.org/10.1093/oxfordhb/9780199232444.013.0014>.
- EBERSBACH et al. 2017
R. EBERSBACH/TH. DOPPLER/D. HOFMANN/A. WHITTLE, No time out. Scaling material diversity and change in the Alpine foreland Neolithic. *Journal Anthr. Arch.* 45, 2017, 1–14. doi: <https://doi.org/10.1016/j.jaa.2016.10.001>.
- ELSTER et al. 2016
E. S. ELSTER/E. ISETTI/J. ROBB/A. TRAVERSO, The Archaeology of Grotta Scaloria. Ritual in Neolithic Southeast Italy. *Mon. Arch.* 38 (Los Angeles 2016). doi: <https://doi.org/10.2307/j.ctvdjrqn4>.
- ENSOR 2021
B. E. ENSOR, The not very Patrilocal European Neolithic. Strontium, aDNA, and Archaeological Kinship Analyses (Oxford 2021).

- EVANGELISTA/VALERA 2019
L. S. EVANGELISTA/A. C. VALERA, Segmenting and depositing: the manipulation of the human body in ditched enclosures seen from Perdigões. In: VALERA 2019, 47–70.
- FERNÁNDEZ-GÖTZ et al. 2023
M. FERNÁNDEZ-GÖTZ/C. NIMURA/PH. W. STOCKHAMMER/R. CARTWRIGHT (eds), Rethinking Migrations in Late Prehistoric Eurasia. *Proc. British Academy* 254 (Oxford 2023).
- FETSCH 2012
S. FETSCH, Herxheim bei Landau – Bandkeramik außerhalb der Grubenanlage. *Arch. Korrbbl.* 42, 2012, 15–30. doi: <https://doi.org/10.11588/ak.2012.1.18558>.
- FIBIGER et al. 2023
L. FIBIGER/T. AHLSTRÖM/CH. MEYER/M. SMITH, Conflict, violence, and warfare among early farmers in northwestern Europe. *Proc. Nat. Acad. Sci. USA* 120,4, 2023, e2209481119. doi: <https://doi.org/10.1073/pnas.2209481119>.
- FOWLER 2004
CH. FOWLER, The Archaeology of Personhood. *An Anthropological Approach. Themes in Arch.* 1 (London, New York 2004).
- FOWLER 2008
CH. FOWLER, Fractal bodies in the past and present. In: D. Borić/J. Robb (eds), *Past Bodies. Body-centered Research in Archaeology* (Oxford 2008) 47–57.
- FREDENGREN 2021
CH. FREDENGREN, Bodily entanglements: gender, archaeological sciences and the more-than-ness of archaeological bodies. *Cambridge Arch. Journal* 31,3, 2021, 525–531. doi: <https://doi.org/10.1017/S0959774321000226>.
- FREI/PRICE 2012
K. M. FREI/TH. D. PRICE, Strontium isotopes and human mobility in prehistoric Denmark. *Arch. and Anthr. Sciences* 4, 2012, 103–114. doi: <https://doi.org/10.1007/s12520-011-0087-7>.
- GALLOWAY et al. 2014
A. GALLOWAY/L. ZEPHRO/V. L. WEDEL, Diagnostic criteria for the determination of timing and fracture mechanism. In: A. Galloway/V. L. Wedel (eds), *Broken Bones: Anthropological Analysis of Blunt Force Trauma*² (Springfield, IL 2014) 47–58.
- GAYDARSKA 2020
B. GAYDARSKA (ed.), *Early Urbanism in Europe. The Trypillia Mega-sites of the Ukrainian Forest-steppe* (Berlin 2020). doi: <https://doi.org/10.1515/9783110664959>.
- GAYDARSKA et al. 2021
B. GAYDARSKA/A. BAYLISS/V. SLAVCHEV, Contemporary Copper Age burials from the Varna mortuary zone, Bulgaria. *Ant. Journal* 101, 2021, 1–15. doi: <https://doi.org/10.1017/S0003581521000032>.
- GAYDARSKA/CHAPMAN 2009
B. GAYDARSKA/J. CHAPMAN, The fragmentation premise in archaeology: from the Paleolithic to more recent times. In: W. Tronzo (ed.), *The Fragment. An Incomplete History* (Los Angeles 2009) 131–153.
- GAYDARSKA/CHAPMAN 2022
B. GAYDARSKA/J. CHAPMAN, *Megasites in Prehistoric Europe. Where Strangers and Kinsfolk Met.* Cambridge Elements: Arch. Europe (Cambridge 2022). doi: <https://doi.org/10.1017/9781009099837>.
- GEHLEN et al. 2022
B. GEHLEN / J. AFFOLTER / W. SCHÖN / S. SCHARL/F. SIEGMUND/A.-L. FISCHER/M. GRUNERT/CH. MEIBORG/D. MISCHKA/E. TREUDE/TH. UTHMEIER, A diachronic perspective on lithic raw material procurement strategies and mobility: case studies from the Final Palaeolithic, Mesolithic and Neolithic in Central Europe. *Journal Maps* 18,4, 2022, 686–696. doi: <https://doi.org/10.1080/17445647.2022.2150572>.
- GILLIS 2019
R. E. GILLIS, Age-at-death analysis of animals from the ditches and settlement pits at Herxheim. In: ZEEB-LANZ 2019a, 257–266.
- GOVIER/STEEL 2021
E. GOVIER/L. STEEL, Beyond the ‘thingification’ of worlds: archaeology and the new materialisms. *Journal Mat. Culture* 26,3, 2021, 298–317. doi: <https://doi.org/10.1177/13591835211025559>.

GRAMSCH 2012

A. GRAMSCH, Prestige durch rituelle Handlungen – *cui bono?* In: B. Christiansen / U. Thaler (eds), Ansehenssache. Formen von Prestige in Kulturen des Altertums (München 2012) 355–384.

GRAMSCH / GROSSKOPF 2023

A. GRAMSCH / B. GROSSKOPF, Das "Itinerarium des menschlichen Körpers". Eine interdisziplinäre Spurensuche. In: N. Balkowski / K. P. Hofmann / I. A. Hohle / A. Schülke (eds), Mensch – Körper – Tod. Der Umgang mit menschlichen Überresten im Neolithikum Mitteleuropas (Leiden 2023) 91–117. doi: <https://doi.org/10.59641/kaf31bd9>.

GREEN / SCHULTZ 2017

A. E. GREEN / J. J. SCHULTZ, An examination of the transition of fracture characteristics in long bones from fresh to dry in central Florida: evaluating the timing of injury. *Journal Forensic Scien.* 62,2, 2017, 282–291. doi: <https://doi.org/10.1111/1556-4029.13260>.

HAACK 2016a

F. HAACK, The early Neolithic ditched enclosure of Herxheim – architecture, fill formation processes and service life. In: ZEEB-LANZ 2016, 15–118.

HAACK 2016b

F. HAACK, The early Neolithic ditched enclosure of Herxheim – plates and tables. In: ZEEB-LANZ 2016, 153–end.

HAACK 2020

F. HAACK, Tracing LBK ritual traditions: the depositions at Herxheim and their origins. In: HOFMANN 2020a; 53–82.

HAJDAS 2019

I. HAJDAS, Radiocarbon dating of human bones from Herxheim. In: ZEEB-LANZ 2019a, 277–283.

HARRIS 2014

O. J. T. HARRIS, Revealing our vibrant past: science, materiality and the Neolithic. In: A. Whittle / P. Bickle (eds), *Early Farmers: The View from Archaeology and Science* (Oxford 2014) 327–346. doi: <https://doi.org/10.5871/bacad/9780197265758.003.0017>.

HELMS 1998

M. W. HELMS, Access to Origins. *Affines*,

Ancestors and Aristocrats (Cambridge 1998). doi: <https://doi.org/10.7560/731196>.

HIRSCHAUER 2008

ST. HIRSCHAUER, Die Empiriegeladenheit von Theorien und der Erfindungsreichtum der Praxis. In: H. Kalthoff / St. Hirschauer / G. Lindemann (eds), *Theoretische Empirie. Zur Relevanz qualitativer Forschung* (Frankfurt a. M. 2008) 165–187.

HOFMANN 2012

D. HOFMANN, Bodies, houses and status in the Western Linearbandkeramik. In: T. L. Kienlin / A. Zimmermann (eds), *Beyond Elites. Alternatives to Hierarchical Systems in Modelling Social Formations*. *Universitätsforsch. Prähist. Arch.* 215 (Bonn 2012) 183–196.

HOFMANN 2020a

D. HOFMANN, Not going anywhere? Migration as a social practice in the early Neolithic Linearbandkeramik. *Quaternary Internat.* 560–561, 2020, 228–239. <https://doi.org/10.1016/j.quaint.2020.04.002>.

HOFMANN 2020b

D. HOFMANN, LBK structured deposits as magical practices. In: D. Hofmann (ed.), *Magical, Mundane or Marginal? Deposition Practices in the Early Neolithic Linearbandkeramik Culture* (Leiden 2020) 113–147.

HONCH et al. 2013

N. V. HONCH / T. HIGHAM / J. CHAPMAN / B. GAYDARSKA / H. TODOROVA / V. SLAVCHEV / Y. YORDANOV / B. DIMITROVA, West Pontic diets: a scientific framework for understanding the Durankulak and Varna I cemeteries, Bulgaria. *Interdisciplinaria Arch.* 4,2, 2013, 147–162. doi: <https://doi.org/10.24916/iansa.2013.2.2>.

HUJIC 2009

A. HUJIC, Paläodontologische Untersuchungen an menschlichen Skelettresten der bandkeramischen Grubenanlage von Herxheim / Pfalz. In: R. de Beauclair / S. C. Münzel / H. Napierala (eds), *Knochen pflastern ihren Weg. Festschrift für Margarethe und Hans-Peter Uerpmann*. *BioArch.* 5 (Rahden / Westf. 2009) 113–122.

INGOLD 2011

T. INGOLD, *Being Alive: Essays on Movement, Knowledge and Description* (London, New York 2011).

JANJUA/ROGERS 2018

M.A. JANJUA/T. L. ROGERS, Bone weathering patterns of metatarsal v. femur and the postmortem interval in Southern Ontario. *Forensic Scien. Internat.* 178,1, 2018, 16–23. doi: <https://doi.org/10.1016/j.forsciint.2008.01.011>.

JANSENS et al. 2019

L.A.A. JANSSENS/R.-M. ARBOGAST/A. ZEEBLANZ, Dogs of the final Bandkeramik at Herxheim: refitting and pathology. In: ZEEBLANZ 2019a, 233–246.

JERVIS 2019

B. JERVIS, *Assemblage Thought and Archaeology* (London, New York 2019).

JEUNESSE 2011

CH. JEUNESSE, Enceintes à fossé discontinu et enceintes à pseudo-fossé dans le Néolithique d'Europe central et occidentale. In: A. Denaire/Ch. Jeunesse/Ph. Lefranc (eds), *Nécropoles et enceintes danubiennes du V^e millénaire dans le Nord-Est de la France et la Sud-Ouest de l'Allemagne*. Rhin, Meuse, Moselle (Strasbourg 2011) 31–72.

JOHNSON 2019

E. JOHNSON, Taphonomic analysis of the animal remains in the settlement pits and enclosure ditches at Herxheim. In: ZEEBLANZ 2019a, 247–256.

JONES 2012

A. M. JONES, *Prehistoric Materialities. Becoming Material in Prehistoric Britain and Ireland* (Oxford 2012). doi: <https://doi.org/10.1093/acprof:osobl/9780199556427.001.0001>.

JOYCE/GILLESPIE 2015

R. A. JOYCE/S. D. GILLESPIE, Making things out of objects that move. In: R. A. Joyce/S. D. Gillespie (eds), *Things in Motion. Object Itineraries in Anthropological Practice* (Santa Fe 2015) 3–19.

KIENLIN/BUSSMANN 2022

T. L. KIENLIN/R. BUSSMANN (eds), *Sociality – Materiality – Practice / Sozialität – Ma-*

terialität – Praxis. *Universitätsforsch. Prähist. Arch.* 377 (Bonn 2022).

KING 2003

M. P. KING, *Unparalleled Behaviour: Britain and Ireland during the 'Mesolithic' and 'Neolithic'*. *BAR British Ser.* 356 (Oxford 2003).

LAFFOON et al. 2017

J. E. LAFFOON/T. F. SONNEMANN/T. SHAFIE/C. L. HOFMAN/U. BRANDES/G. R. DAVIES, Investigating human geographic origins using dual-isotope (⁸⁷Sr/⁸⁶Sr, δ¹⁸O) assignment approaches. *PloS one* 12,2, 2017, e0172562. doi: <https://doi.org/10.1371/journal.pone.0172562>.

LEARY 2014

J. LEARY, Past mobility: An introduction. In: J. Leary (ed.), *Past Mobilities. Archaeological Approaches to Movement and Mobility* (Farnham 2014) 1–19.

LEFRANC et al. 2021

PH. LEFRANC/J. AFFOLTER/R.-M. ARBOGAST/F. CHEVAL/F. JODRY/M. MAUVILLY/E. ROLLINGER/N. SCHNEIDER, Achenheim: a fortified settlement from the last third of the fifth millennium (Bruebach-Oberbergen group) in Lower Alsace. *Gallia Préhist.* 61 (Online), 2021, doi: <https://doi.org/10.4000/galliap.2625>.

MATHIESON et al. 2018

I. MATHIESON/S. ALPASLAN-ROODENBERG/C. POSTH/A. SZÉCSÉNYI-NAGY/N. ROHLAND/S. MALICK/I. OLALDE/N. BROOMAND-KHOSHBAHT/F. CANDILIO/D. REICH et al., The genomic history of southeastern Europe. *Nature* 555, 2018, 197–203. doi: <https://doi.org/10.1038/nature25778>.

MARCINIAK et al. 2022

A. MARCINIAK/J. PYZEL/M. KRUEGER/M. LISOWSKI/CH. BRONK RAMSEY/E. DUNBAR/A. BARCLAY/A. BAYLISS/B. GAYDARSKA/A. WHITTLE, A history of the LBK in the central Polish lowlands. *Præhist. Zeitschr.* 97,2, 2022, 377–408. <https://doi.org/10.1515/pz-2022-2041>.

MCANANY 2014

P. A. MCANANY, *Living with the Ancestors. Kinship and Kingship in Ancient Mayan So-*

- ciety² (Austin, TX 2014). doi: <https://doi.org/10.1017/CBO9781139017190>.
- MECKING 2019
O. MECKING, Clay analysis of the pottery from Herxheim. In: ZEEB-LANZ 2019a, 41–54.
- MERTON 1968
R. K. MERTON, *Social Theory and Social Structure* (New York 1968).
- MONTGOMERY et al. 2000
J. MONTGOMERY / P. BUDD / J. EVANS, Reconstructing the lifetime movements of ancient people: A Neolithic case study from southern England, *European Journal Arch.* 3, 2000, 370–385.
- MONTGOMERY 2010
J. MONTGOMERY, Passports from the past: investigating human dispersals using strontium isotope analysis of tooth enamel. *Ann. Human Biol.* 37, 2010, 325–346. doi: <https://doi.org/10.3109/03014461003649297>.
- MORIN et al. 2021
E. MORIN / A. BOILEAU / E. READY, A refitting experiment on long bone identification. *Internat. Journal Osteoarch.* 31,4, 2021, 650–662. doi: <https://doi.org/10.1002/oa.2980>.
- MUNTONI et al. 2022
I. M. MUNTONI / F. MICHELETTI / N. MONGELLI / M. PALLARA / P. ACQUAFREDDA, First evidence in Italian mainland of Pantelleria obsidian: highlights from WD-XRF and SEM-EDS characterization of Neolithic artefacts from Galliano necropolis (Taranto, Southern Italy). *Journal Arch. Scien. Reports* 45, 2022, 103553. doi: <https://doi.org/10.1016/j.jasrep.2022.103553>.
- NEHLICH et al. 2009
O. NEHLICH / J. MONTGOMERY / J. EVANS / S. SCHADE-LINDIG / S. L. PICHLER / M. P. RICHARDS / K. W. ALT, Mobility or migration: a case study from the Neolithic settlement of Nieder-Mörlen (Hessen, Germany). *Journal Arch. Science* 36,8, 2009, 1791–1799. doi: <https://doi.org/10.1016/j.jas.2009.04.008>.
- NEIL 2022
S. NEIL, ‘Local’ or ‘non-local’? Interpreting isotope results from the Black Mountains long cairns. In: BRITNELL / WHITTLE 2022, 207–214.
- OLALDE et al. 2018
I. OLALDE / S. BRACE / M. E. ALLENTOF / I. ARMIT / K. KRISTIANSEN / TH. BOOTH / N. ROHLAND / S. MALLICK / A. SZÉCSÉNYI-NAGY / D. REICH et al., The Beaker phenomenon and the genomic transformation of north-west Europe. *Nature* 555, 2018, 190–196. <https://doi.org/10.1038/nature25738>.
- ORSCHIEDT / HAIDLE 2006
J. ORSCHIEDT / M. N. HAIDLE, The LBK enclosure at Herxheim: theatre of war or ritual centre? References from osteoarchaeological investigations. *Journal Conflict Arch.* 2,1, 2006, 153–167. doi: <https://doi.org/10.1163/157407706778942330>.
- ORSCHIEDT / HAIDLE 2012
J. ORSCHIEDT / M. N. HAIDLE, Violence against the living, violence against the dead on the human remains from Herxheim, Germany. Evidence of a crisis and mass cannibalism? In: R. Schulting / L. Fibiger (eds), *Sticks, Stones, and Broken Bones: Neolithic Violence in a European Perspective* (Oxford 2012) 121–138. doi: <https://doi.org/10.1093/acprof:osobl/9780199573066.003.0007>.
- OSTERHOLTZ 2018
A. J. OSTERHOLTZ, Interpreting and reinterpreting sacred ridge: placing extreme processing in a larger context. *Journal Southwestern Anthr. and Hist.* 84,4, 2018, 461–479. doi: <https://doi.org/10.1080/00231940.2018.1533197>.
- OSZTÁS et al. 2016
A. OSZTÁS / I. ZALAI-GAÁL / E. BÁNFFY / T. MARTON / Á. É. NYERGES / K. KÖHLER / K. SOMOGYI / Zs. GALLINA / CH. BRONK RAMSEY / E. DUNBAR / B. KROMER / A. BAYLISS / D. HAMILTON / P. MARSHALL / A. WHITTLE, Coalescent community at Alsónyék: the timings and duration of Lengyel burials and settlement. *Ber. RGK* 94, 2013 (2016), 179–282. doi: <https://doi.org/10.11588/berrgk.1938.0.37154>.

PECHTL 2020

J. PECHTL, Constant change of LBK settlement in the upper Danube region. *Quaternary Internat.* 560–561, 2020, 240–247. doi: <https://doi.org/10.1016/j.quaint.2020.04.016>.

PÉTREQUIN et al. 2017

P. PÉTREQUIN / E. GAUTHIER / A.-M. PÉTREQUIN (eds), *Jade. Objets-signes et interprétations sociales des jades alpins dans l'Europe néolithique*. Tomes 3–4 (Ledoux 2017).

RADOVANOVIĆ 1996

I. RADOVANOVIĆ, The Iron Gates Mesolithic. *Internat. Monogr. Prehist., Arch. Ser.* 11 (Ann Arbor, MI 1996).

REGENYE et al. 2020

J. REGENYE / E. BÁNFFY / P. DEMJÁN / J. EBERT / A. OSZTÁS / CH. BRONK RAMSEY / E. DUNBAR / R. FRIEDRICH / A. BAYLISS / N. BEAVAN / B. GAYDARSKA / A. WHITTLE, Narratives for Lengyel funerary practice. *Ber. RGK 97*, 2016 (2020), 5–80. doi: <https://doi.org/10.11588/berrgk.2016.0.76630>.

RENFREW 2015

C. RENFREW, Evidence for ritual breakage in the Cycladic Early Bronze Age. The special deposit south at Kavos on Keros. In: K. Harrell / J. Driessen (eds), *THRAVSMA: Contextualising the Intentional Destruction of Objects in the Bronze Age Aegean and Cyprus* (Louvain 2015) 81–98.

RENFREW et al. 2013

C. RENFREW / O. PHILANIOTOU / N. BRODIE / G. GAVALAS / M. J. BOYD (eds), *The Settlement at Dhaskalio. The Sanctuary on Keros and the Origins of Aegean Ritual Practice 1* (Cambridge 2013).

RENFREW et al. 2015

C. RENFREW / O. PHILANIOTOU / N. BRODIE / G. GAVALAS / M. J. BOYD (eds), *Kavos and the Special Deposits. The Sanctuary on Keros and the Origins of Aegean Ritual Practice 2. The Excavations of 2006–2008* (Cambridge 2015).

RIEDHAMMER 2019

K. RIEDHAMMER, The radiocarbon dates from Herxheim and their archaeological interpretation. In: ZEEB-LANZ 2019a, 285–303.

ROSELL et al. 2019

J. ROSELL / M. MODESTO-MATA / M. C. FERNÁNDEZ-LASO / M. MODOLO / R. BLASCO, Refitting bones to reconstruct the diversity in Middle Palaeolithic human occupations: the case of the Abric Romaní site (Capellades, Barcelona, Spain). *Arch. and Anthr. Scien.* 11, 2019, 4601–4619. doi: <https://doi.org/10.1007/s12520-019-00887-4>.

ROSENDAHL / WIECZOREK 2011

W. ROSENDAHL / A. WIECZOREK (eds), *Schädelkult. Kopf und Schädel in der Kulturgeschichte des Menschen. Begleitband zur Sonderausstellung „Schädelkult – Kopf und Schädel in der Kulturgeschichte des Menschen“*. Publ. REM 41 (Regensburg 2011).

SCHADE-LINDIG 2002

S. SCHADE-LINDIG, Idol- und Sonderfunde der bandkeramischen Siedlung von Bad Nauheim – Nieder-Mörlen “Auf dem Hempeler” (Wetteraukreis). *Germania* 80,1, 2002, 47–114. doi: <https://doi.org/10.11588/ger.2002.60517>.

SCHADE-LINDIG / SCHWITALLA 2003

S. SCHADE-LINDIG / G. SCHWITALLA, Die Kreispalisadenanlage des bandkeramischen Zentralortes Bad Nauheim-Nieder Mörlen (Wetteraukreis). In: J. Eckert / U. Eisenhauer / A. Zimmermann (eds), *Archäologische Perspektiven. Analysen und Interpretationen im Wandel. Festschrift für Jens Lüning zum 65. Geburtstag*. *Internat. Arch. Stud. Honorary 20* (Rahden/Westf. 2003) 351–358.

SCHILZ 2006

F. SCHILZ, *Molekulargenetische Verwandtschaftsanalysen am prähistorischen Skelettkollektiv der Lichtensteinhöhle / Molecular genetic kinship analyses of the prehistoric skeletal collective from the Lichtenstein cave*. PhD thesis, University of Göttingen (Göttingen 2006). doi: <http://dx.doi.org/10.53846/goediss-638>.

SCHIMMELPFENNIG 2019

D. SCHIMMELPFENNIG, The lithic material from Herxheim with special emphasis on the 2005–2008 excavations and the latest LBK phase (the “ritual phase” at Herxheim). In: ZEEB-LANZ 2019a, 81–138.

SCHREIBER 2018

ST. SCHREIBER, *Wandernde Dinge als Assemblagen. Neo-materialistische Perspektiven zum ‚römischen Import‘ im ‚mitteldeutschen Barbaricum‘*. Berlin Stud. Ancient World 52 (Berlin 2018). doi: <https://doi.org/10.17171/3-52>.

SCHREIBER 2022

ST. SCHREIBER, *Die Praxis der Materialität. Zur Kontroverse nicht-menschlicher Handlungsfähigkeit (nicht nur) in den Archäologien*. In: KIENLIN/BUSSMANN 2022, 337–374.

SCHREIBER/ROTERMUND 2023

ST. SCHREIBER/S.-M. ROTERMUND, *Transkorporalität in der Archäologie: Subjektkörper diesseits und jenseits ‚des Menschen‘*. In: M. Renger/St. Schreiber/A. Veling (eds), *Theorie Archäologie Reflexion 1. Kontroversen und Ansätze im deutschsprachigen Diskurs*. Theoriedenken Arch. 1 (Heidelberg 2023) 249–291. doi: <https://doi.org/10.11588/propylaeum.1092.c15027>.

SEREGÉLY 2012

T. SEREGÉLY, *Neolithic settlements and forgotten finds. News about the Jungfernhöhle near Tiefenellern*. In: F. Falkenstein (ed.), *Hohler Stein, Rothensteine and Jungfernhöhle. Archaeological Research on the Prehistoric Use of Naturally Sacred Places on the Northern Franconian Alb (Scheinfeld 2012)* 64–73.

SINGER 1984

C. A. SINGER, *The 63-kilometer fit*. In: J. E. Ericson/B. A. Purdy (eds), *Prehistoric Quarries and Lithic Production* (Cambridge 1984) 35–48.

SMITH 2012

K. SMITH, *From dividual and individual selves to porous subjects*. Australian Journal Anthr. 23,1, 2012, 50–64. doi: <https://doi.org/10.1111/j.1757-6547.2012.00167.x>.

SMITH/BRICKLEY 2009

M. SMITH/M. BRICKLEY, *People of the Long Barrows. Life, Death and Burial in the Earlier Neolithic* (Stroud 2009).

SMITS et al. 2013

E. SMITS/A. R. MILLARD/G. NOWELL/

D. G. PEARSON, *Isotopic investigation of diet and residential mobility in the Neolithic of the Lower Rhine Basin*. European Journal Arch. 13,1, 2013, 5–31. doi: <https://doi.org/10.1177/1461957109355040>.

STEEL 2022

L. STEEL, *Agencement, matter flows and itinerary of object in the Bronze Age East Mediterranean. A new materialities approach to globalization*. In: S. Autiero/M. A. Cobb (eds), *Globalization and Transculturality from Antiquity to the Pre-Modern World* (Abingdon, New York 2022) 81–102.

STRATHERN 1988

M. STRATHERN, *The Gender of the Gift. Problems with Women and Problems with Society in Melanesia*. Studies Melanesian Anthr. 6 (Berkeley 1988).

SYMES et al. 2012

ST. A. SYMES/E. N. L'ABBÉ/E. N. CHAPMAN/I. WOLFF/D. C. DIRKMAAT, *Interpreting traumatic injury to bone in medicolegal investigations*. In: D. C. Dirkmaat (ed.), *A Companion to Forensic Anthropology* (Oxford 2012) 340–389. doi: <https://doi.org/10.1002/9781118255377.ch17>.

TAFURI et al. 2016a

M. A. TAFURI/T. CH. O'CONNELL/J. ROBB/CH. KNÜSEL/P. FULLAGAR, *Mobility, landscape and the function of the cave: evidence from strontium isotopes*. In: ELSTER et al. 2016, 139–144.

TAFURI et al. 2016b

M. A. TAFURI/T. CH. O'CONNELL/E. SOUTER/N. LIBIANCHI/J. ROBB, *Diet during life: paleoeconomic studies of human diet using stable carbon and nitrogen isotopes*. In: ELSTER et al. 2016, 131–138.

TURCK 2019

R. TURCK, *Where did the dead from Herxheim originate? Isotope analyses of human individuals from the find concentrations in the ditches*. In: ZEEB-LANZ 2019a, 313–421.

VALERA 2019

A. C. VALERA (ed.), *Fragmentation and Depositions in Pre And Proto-Historic Portugal* (Lisbon 2019).

VALERA et al. 2020

A. C. VALERA/I. ŽALAITÉ/A. F. MAURER/

- V. GRIMES/A. M. SILVA/S. RIBEIRO/J. F. SANTOS/C. BARROCAS DIAS, Addressing human mobility in Iberian Neolithic and Chalcolithic ditched enclosures: the case of Perdigões (S. Portugal). *Journal Arch. Scien. Reports* 30, 2020, 102264. doi: <https://doi.org/10.1016/j.jasrep.2020.102264>.
- VELING 2022
A. VELING, Outline of an archaeology of practices. In: KIENLIN/BUSSMANN 2022, 151–162.
- VODANOVIĆ et al. 2011
M. VODANOVIĆ/J. DUMANČIĆ/I. GALIĆ/I. S. PAVIČIN/M. PETROVEČKI/R. CAMERIERE/H. BRKIĆ, Age estimation in archaeological skeletal remains: evaluation of four non-destructive age calculation methods. *Journal Forensic Odonto-Stomatology* 29,2, 2011, 14–21.
- WALKER et al. 1988
PH. L. WALKER/J. R. JOHNSON/P. M. LAMBERT, Age and sex biases in the preservation of human skeletal remains. *Am. Journal Physical Anthr.* 76,2, 1988, 183–188. doi: <https://doi.org/10.1002/ajpa.1330760206>.
- WALLDUCK 2013
R. WALLDUCK, The Iron Gates Mesolithic – Neolithic. In: CHAPMAN et al. 2013, 15–23.
- WHITTLE 1996
A. WHITTLE, *Europe in the Neolithic. The Creation of New Worlds* (Cambridge 1996).
- WHITTLE 2018
A. WHITTLE, *The Times of Their Lives: Hunting History in the Archaeology of Neolithic Europe* (Oxford 2018).
- WIEBERG/WESCOTT 2008
D. A. M. WIEBERG/D. J. WESCOTT, Estimating the time of long bone fractures: correlation between postmortem interval, bone moisture content, and blunt force trauma fracture characteristics. *Journal Forensic Scien.* 53,5, 2008, 1028–1034. doi: <https://doi.org/10.1111/j.1556-4029.2008.00801.x>.
- WITMORE 2014
CH. L. WITMORE, Archaeology and the New Materialisms. *Journal Contemporary Arch.* 1, 2014, 203–224. doi: <https://doi.org/10.1558/jca.v1i2.16661>.
- WYSOCKI 2022
M. P. WYSOCKI, Neolithic people of the Black Mountains: human remains from Penywyrlod, Pipton and Ty Isaf. In: BRITNELL/WHITTLE 2022, 157–206.
- ZEEB-LANZ 2009
A. ZEEB-LANZ, Gewaltszenarien oder Sinnkrise? Die Grubenanlage von Herxheim und das Ende der Bandkeramik. In: A. Zeeb-Lanz (ed.), *Krisen – Kulturwandel – Kontinuitäten. Zum Ende der Bandkeramik in Mitteleuropa. Beiträge der Internationalen Tagung in Herxheim bei Landau (Pfalz) vom 14.–17.06.2007*. *Internat. Arch.* 10 (Rahden/Westf. 2009) 87–102.
- ZEEB-LANZ 2016
A. ZEEB-LANZ (ed.), *Ritualised Destruction in the Early Neolithic – the Exceptional Site of Herxheim (Palatinate, Germany)*. Vol. 1. *Forsch. Pfälzische Arch.* 8,1 (Speyer 2016).
- ZEEB-LANZ 2019a
A. ZEEB-LANZ (ed.), *Ritualised Destruction in the Early Neolithic – the Exceptional Site of Herxheim (Palatinate, Germany)*. Vol. 2. *Forsch. Pfälzische Arch.* 8,2 (Speyer 2019).
- ZEEB-LANZ 2019b
A. ZEEB-LANZ, The Herxheim ritual enclosure – a synthesis of results and interpretative approaches. In: ZEEB-LANZ 2019a, 423–466.
- ZEEB-LANZ 2019c
A. ZEEB-LANZ, Anthropomorphic and theriomorphic figurine fragments and other small clay finds from the ritual enclosure of Herxheim. In: ZEEB-LANZ 2019a, 55–80.
- ZEEB-LANZ/HAACK 2016
A. ZEEB-LANZ/F. HAACK, History of research at Herxheim – an “interpretative thriller”. In: ZEEB-LANZ 2016, 1–13.
- ZEEB-LANZ/HAACK 2020
A. ZEEB-LANZ/F. HAACK, Ritual und Gewalt in Herxheim (Pfalz). In: H. Meller/R. Risch/K. W. Alt/F. Bertemes/R. Micó (eds), *Rituelle Gewalt – Rituale der Gewalt/Ritual Violence – Rituals of Violence. Tagungen Landesmus. Vorgesch. Halle 22 (Halle/Saale 2020)* 181–196.

ZEEB-LANZ et al. 2007

A. ZEEB-LANZ / F. HAACK / R.-M. ARBOGAST / M.N. HAIDLE / CH. JEUNESSE / J. ORSCHIEDT / D. SCHIMMELPFENNIG, Außergewöhnliche Deponierungen der Bandkeramik – die Grubenanlage von Herxheim. *Germania* 85,2, 2007, 199–274. doi: <https://doi.org/10.11588/ger.2007.95473>.

ZEEB-LANZ et al. 2016

A. ZEEB-LANZ / R.-M. ARBOGAST / S. BAUER / B. BOULESTIN / A.-S. COUPEY / A. DENAIRE /

F. HAACK / CH. JEUNESSE / D. SCHIMMELPFENNIG / R. TURCK, Human sacrifices as “crisis management”? The case of the Early Neolithic site of Herxheim, Palatinate, Germany. In: C. A. Murray (ed.), *Diversity of Sacrifice. Form and Function of Sacrificial Practices in the Ancient World and Beyond*. SUNY Ser., Inst. European and Mediterranean Arch. Distinguished Monogr. Ser. 5 (New York 2016) 171–189. doi: <https://doi.org/10.1515/9781438459967-011>.

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References of figures

Fig. 1: J. Chapman/B. Gaydarska/T. Jakob. – *Fig. 2:* re-drawn by L. Woodard from authors' multiple sources. – *Fig. 3:* B. Gaydarska. – *Fig. 4:* ZEEB-LANZ/HAACK 2016, fig. 2. – *Fig. 5:* HAACK 2016a, pl. 66. – *Fig. 6:* DENAIRE 2019, fig. 10. – *Fig. 7a:* re-drawn by L. Woodard from ZEEB-LANZ 2019b, fig. 6. – *Fig. 7b:* re-drawn by L. Woodard from TURCK 2019, fig. 56, modified by L. Hies (RGK). – *Fig. 8:* re-drawn by L. Woodard from original by J. Chapman, B. Gaydarska and T. Jakob. – *Fig. 9:* A. Häußler, GDKE Außenstelle Speyer. – *Fig. 10:* HAACK 2016b, pl. 66,1; 67,2. – *Fig. 11:* HAACK 2016b, pl. 71,3. – *Fig. 12:* A. Zeeb-Lanz, GDKE Außenstelle Speyer. – *Fig. 13:* TURCK 2019, fig. 59. – *Fig. 14:* TURCK 2019, fig. 51. – *Tab. 1:* J. Chapman/B. Gaydarska/T. Jakob, layout: L. Hies (RGK).