

Mensch-Klima-Umwelt-Interaktionen am Ende der letzten Eiszeit und mobilisiert eine beeindruckende Datensammlung, die zukünftigen Untersuchungen zum Spätglazial nur Vorschub leisten kann. Die Achillesferse der Arbeit ist aber zweifelsohne in der fehlenden theoretischen Kontextualisierung von Fragestellung, Ansatz und Interpretation sowie in der unterentwickelten und oftmals zu kleinteiligen Diskussion der Ergebnisse zu suchen. Ein Teil des Problems ist hier m. E. auch die gewählte IMRaD-Gliederung, die einer monographischen Aufarbeitung nur selten gerecht wird. Nicht nur ist der Umfang von Einleitung, Hauptteil und Diskussion unausgewogen, was die Lektüre deutlich erschwert und die Destillation der Kernbefunde behindert, es fehlt ferner ein eigenständiger Theorieteil, der eine explizite Auseinandersetzung mit Resilienz, Vulnerabilität, Flexibilität, sozioökologischen Systemen, adaptiven Zyklen und komplexen Ungleichgewichtssystemen eröffnet und damit auch eine überzeugendere Interpretation späteiszeitlicher Transformationsdynamiken autorisiert hätte. Auffallend ist in diesem Zusammenhang auch die häufig ungenutzte Möglichkeit zur diskursiven Abarbeitung an einschlägigen Fachdiskussionen zu Mensch-Umwelt-Dynamiken im Untersuchungszeitraum (vgl. z. B. G. MARCHAND, *Préhistoire atlantique. Fonctionnement et évolution des sociétés du Paléolithique au Néolithique* [Paris 2014]; VALENTIN 2008) und der insgesamt sparsame, teils sehr selektive und oftmals allenfalls punktuelle Einsatz von Literaturverweisen. Allein eine Auseinandersetzung mit neueren archäologischen Arbeiten und Konzepten zur komplexen Heteronomie von Mensch, Umwelt und Klima hätte die Diskussion bereichert und die Einsichten fundiert (cf. S. T. HUSSAIN / F. RIEDE, *Paleoenvironmental humanities: challenges and prospects of writing deep environmental histories*. *WIREs Climate Change* 11,5, 2020, e667. doi: <https://doi.org/10.1002/wcc.667>). Dessen ungeachtet markieren die Ergebnisse von Grimms beachtlichem kompilatorischem Kraftakt einen Paradigmenwechsel von klimadeterministischen hin zu interaktiven und Eigendynamiken betonenden Erklärungsmodellen in der Erforschung von Mensch-Umwelt-Beziehungen in der Altsteinzeit. Es ist zu hoffen, dass dieser Impuls von anderen Arbeiten aufgenommen und weitergetragen wird. Auch wenn viele Fragen und Probleme am Ende unbeantwortet bleiben, lohnt sich eine Lektüre von Grimms 600 Seiten starkem Opus allein aus diesem Grund sowohl für Spätglazial-Expert\*innen als auch für all jene, die sich für eine *Deep History* der Interrelationalitäten von Mensch, Umwelt und Klima interessieren.

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**SILVIANE SCHARL, Innovationstransfer in prähistorischen Gesellschaften. Eine vergleichende Studie zu ausgewählten Fallbeispielen des 6. bis 4. Jahrtausends vor Christus in Mittel- und Südosteuropa unter besonderer Berücksichtigung temporärer Grenzräume.** Kölner Studien zur Prähistorischen Archäologie Band 10. Verlag Marie Leidorf GmbH, Rahden / Westf. 2019. € 54,80. ISBN 978-3-86757-370-2. 251 pages with 50 figures and 13 tables.

The theme of this book has become the focus of many culture-historical discussions and has been extended to the important turns of prehistory in the past decades, especially connected to the spread of metallurgy and in many cases connected to the advent of the Bronze Age. Silviane Scharl sets out from similar research questions, like the physical and mental path leading from invention to innovation and finally to the distribution and established state, in which the innovation becomes an everyday practice. Yet, she chose three case studies from earlier, “pre-Bronze-Age” prehistoric periods, of the turn of the 6<sup>th</sup> / 5<sup>th</sup> to the early centuries of the 4<sup>th</sup> millennia cal BC. The nature of the three case

studies is also fairly different: the innovations discussed include the spread of the copper metallurgy in the Carpathian basin and westwards; a special example of the belated Neolithic transition north of the loess area in Northern Central Europe; and, finally, the distribution of circular ditches in the Lengyel-Stichband-Gatersleben circle and its possibly shared social, ritual background. The declared research questions are to detect any patterns in the transfer and also possible causes for variations.

The book consists of six chapters. It starts with the introductory part (pp. 11–19), setting the research questions, the goals, the history of research into knowledge transfer in cultural history, ethnography, sociology, and archaeology – the latter cross-checked with the meaning and contemporary use of ‘archaeological culture’, all in some thirty pages. The consequences and summaries take the last twenty pages (pp. 210–217), so the core body of the text is taken by the three case studies. The first part of Chapter five part devotes 50 pages for the innovation and the spread of copper artefacts in the 5<sup>th</sup> millennium cal BC in the eastern and western Carpathian basin (pp. 40–97). The remaining hundred pages are divided between the second case study, the formation of the Funnel beaker community out of the Mesolithic Ertebølle groups (pp. 98–143), and the third example, the emergence of the circular ditches in southern Germany, their possible origin and contacts (pp. 144–180).

The author was certainly free to choose the topics: these three very different examples, innovations that originated from social processes and then enhanced further social changes, seem to be fruitful and promising to be studied. The sequence of them, though, raises questions. If the geographic regions were taken as basis, e. g. from the southeast to the northwest, case study 3 on circular ditches should be placed in between the Carpathian basin and the northern glacially shaped landscape. In case the chronological order would be followed, the earliest phenomenon of the ditches, starting at the turn of the 6<sup>th</sup> to 5<sup>th</sup> millennium cal BC, could have been discussed first, the Lengyel and Tisza-Tiszapolgár processes were to set second and the late 5<sup>th</sup>, early 4<sup>th</sup> millennium changes in the north as last. If the nature of the innovation had been set in focus, so the turn to sedentary life and food production in the northern German plateau were to set first. But possibly, the longest and most detailed case study on a more conventional theme of innovation has a special stress in the text, and also, in the argumentation of the author.

The targets and the research questions are summarised in Chapters 2 and 3. The focus has been set on the distinction between invention and innovation, all embedded in a rather complex social (and sometimes even ritual) context, with a short research historical background. For the author, not only the geographic situation, transfer routes and the contacts that made the transfer possible, were important, but also barriers, called “temporary borders”. These are regions, through which the innovation transfer became difficult, or was even halted for a certain period of time.

Chapter 4 is devoted to methodology, with distinguishing constant, independent and dependent variations of the possible transfer of innovation. The flow of information might well be influenced by the actual demographic situation of a given area, where a higher density on population is always a positive factor, although it is more effective when combined with a certain cultural complexity. Higher mobility is certainly also a triggering effect. So is previously existing information, perhaps also an acceptance of the values that eventually became transferred and adapted in the recipient community.

This factor, the mobility among knowledgeable individuals (“agency”), and the resulting exchange between people, smaller or larger groups, up to the grade of mobility among whole population groups are considered to be key factors, which are underpinned with rich sets of examples. As it is highlighted, the author accepts the view by Colin RENFREW (*Approaches to Social Archaeology* [Cambridge 1984] 396), that knowledge alone rarely leads to the spread of any innovation. The circumstances must match a certain chain of information, which, however, is more effective when it

is bound together with prestige and social gain (p. 33). Signs of high value and prestige go together with the desire for taking over, accepting the given new technology, and the author cites good examples for these: e. g. making copies, replacements of the original object prepared with the new technology are interpreted as signs for the community getting ready for adopting the innovation. S. Scharl agrees with those who consider peers, family ties or a network by extended families to be the most important agents for knowledge transfer (pp. 33–39).

Chapter 5, the core part of the volume, contains the three case studies mentioned above. The first study concentrates on the spread of copper metallurgy over Central Europe (pp. 40–97). The earliest finds, as Scharl emphasises, are clearly connected to, and rooted in the southerly Vinča copper sources and early metallurgy (p. 65). Setting out from this fact, it is no surprise that copper metallurgy (i. e. besides the finds of traces for local copper melting) reaches the northwards and westwards lying Lengyel distribution area with a certain delay. In order to explain this delay, the hypothesis of barriers, “temporary borders” in between Eastern Hungary and the Transdanubian Lengyel culture on the one hand, and between the Lengyel culture and its neighbours in Moravia, Eastern Austria, and Bavaria on the other, is understandable.

Scharl goes one step further and states that the depopulation of large and concentrated settlements, which is part of a series of changes parallel with the spread of copper metallurgy, happened in the Alföld considerably earlier than with Lengyel settlements in Transdanubia. Yet, also the late phase of the Lengyel cultural circle, characterised by unpainted pottery, seems to reveal – one can admit, in a less spectacular way – some hidden but definite traces of the changes towards “Chalcolithisation”, i. e. a more mobile society and a settlement pattern consisting of many small sites instead of large centres. This happened practically coeval with the eastern part of the Carpathian basin. Signs of a cultural change (and possible genetic impact from the south) can be observed within the late (III.) Lengyel phase (4300 cal BC), and continuously onward in the Middle Copper age. Here, differences were caused only in the intensity of the southern impacts that reached Transdanubia: stronger in the south (Balaton-Lasinja culture), moderate in the Balaton Upland, and weak in the north (Ludanice or Lengyel V phase – e. g. p. 75). This is discussed in detail in works also cited by the author several times (e. g. E. BÁNFFY, South-west Transdanubia as a mediating area. On the cultural history of the Early and Middle Chalcolithic. *Antaeus* 1995, 157–196), yet, Scharl’s interpretations of these studies are apparently different. She even gives absolute dates to underpin this alleged chronological difference, the delayed “Chalcolithisation” of the Western Carpathian basin: 4500 cal BC for the Alföld and 4100 cal BC (pp. 76; 206) for the end of the Lengyel culture. The consequence is clearly a large gap regarding communication, connections, and networks, and also the emergence of copper metallurgy in the western Carpathian basin. However, the absolute dates seem to be mistaken and thus the main pillar of her argumentation fades away. The late Lengyel settlements are dated to the 44<sup>th</sup> century cal BC and the Balaton-Lasinja and Ludanice settlements are dated to 4300–4220 (e. g. K. Oross et al., Die Siedlung der Balaton-Lasinja-Kultur in Balatonszárszó-Kis-Erdei-dűlő. In: J. Šuteková et al. [eds], *Panta rhei. Studies on the Chronology and Cultural Development of South-Eastern and Central Europe in Earlier Prehistory. Presented to Juraj Pavúk on the occasion of his 75<sup>th</sup> birthday* [Bratislava 2010] 379–405), and so the temporary difference between these and the Alföld (Tiszapolgár-Bodrogkeresztúr culture) is not meaningful. Thus, a possibility emerges which is different from the temporary borders and delay. This calls for more attention to the Northern Balkans and the Vinča culture and its complex long-distance networks which reached the southern part of the Carpathian basin again and again in the 6<sup>th</sup>–5<sup>th</sup> millennium BC. Notably, the above drafted process is impressively depicted in Figure 16 (p. 92).

The next case study is a special Neolithisation story in the northern Central European plain. The main question discussed here is the long-lasting (personal) contact between the hunter-gatherer

communities and the southerly settled farmers, before the spread of the innovation (in this case, the sedentary lifestyle and food production) happened. The result has an enormous impact on Central European prehistory, since the one-time fishing communities, who eventually became cattle breeders, the people of the Trichterbecher (TRB, Funnel Beaker) culture, distributed south in the heartland of modern Germany and became later the communities leaving magnificent megalithic monuments behind.

Scharl leads the reader into fine details of e.g. palaeobotany for seeking the first domesticated plant remains in the early TRB sites, to detect the first signs of food production – or even preceding that, the traces of the vivid contacts with farming communities. For the irreversible changes in the life of these groups, the author discusses issues of climate change and also, the demographic estimations and calculations, so that the issue of the density of the population becomes important in the possible scenarios discussed, for a better understanding of hunter-gatherers adopting the Neolithic “package”. Figure 18 (p. 99) is a good summary of the chronology beginning with the final Ertebølle and Swifterband to the end of the 3<sup>rd</sup> millennium cal BC between the Low Countries and Jutland. Unfortunately, culture names occur only in the Abbreviations, not in the chart itself.

The third case study focuses on the concentration of circular ditches in the first half of the 5<sup>th</sup> millennium cal BC, especially on its western distribution area, the Großgartach culture. This region receives a special attention with the detailed presentation of the ditch found in Ippenheim (DE), and the Bavarian development of the post-LBK societies where the enclosures mostly occur (pp. 146–151). This time, the impressively meticulous discussion on the southern German Danubian area concentrates on the transfer of innovation that belongs to the ideological – according to the author, ritual – sphere. Beyond this particular case study, the mechanism, the ways (and possible halts) of the innovation getting adopted is strikingly similar in terms of time and pace, with those of other nature.

There might be only one interesting shortcoming of this third case study on innovations, and it is related to the origin of circular ditches, connected to the chronology given by the author. According to this, the emergence of the idea of building circular enclosures happened in the post-LBK world, beginning with 4850/4750 cal BC, with centres in Bavaria, called “Middle Neolithic” in Austria and Germany, with “further ditches” occurring in Eastern Germany, Poland, and Hungary (p. 144). The fact is that several circular ditches already can be found in the LBK world ca. 5300 cal BC. To name some from its area of origin: Becsehely, Balatonszárszó; moreover, circular enclosures were found in the Vinča-related Sopot culture, dated to the turn of the 6<sup>th</sup>/5<sup>th</sup> millennium cal BC (K. OROSS et al., Midlife changes: the Sopot burial ground at Alsónyék. *Ber. RGK* 94, 2013 [2016], 151–178. doi: <https://doi.org/10.11588/berrgk.1938.0.37153>; J. P. BARNA, The Formation of the Lengyel Culture in South-Western Transdanubia [Budapest 2017]). Further east and south, beginning with the 6<sup>th</sup> millennium cal BC, tell settlements were surrounded with circular ditches of the same or very similar kind, beginning with a well-known example in Okolište (Z. KULJUNDŽIĆ-VEJZAGIĆ et al., Okolište – Grabung und Geomagnetik eines Zentralbosnischen Tells aus der ersten Hälfte des 5. vorchristlichen Jahrtausends. In: B. Hänsel [ed.], *Parerga Praehistorica. Jubiläumsschrift zur Prähistorischen Archäologie. 15 Jahre UPA. Univforsch. Prähist. Arch.* 100 [Bonn 2004] 69–81). The late 6<sup>th</sup> millennium LBK enclosures and also the 5<sup>th</sup> millennium cal BC post-LBK ditches are built outside of settlements, and probably by an effort of communities coming from more than one settlement. The tracking of demographic trends and contact networks are convincing and open interesting avenues as compared to the examples of the other case studies.

It is exactly the aforementioned comparison of the three case studies that brings novel inferences, mainly based on the phenomena triggering innovation in their complexity. One of the conclusions is that no innovation would be transferred at the time of the first contact, be this personal or

achieved by migrating groups. Yet, this prior knowledge is necessary for an information transfer at a much later stage. Common mechanisms are mentioned which all contain this triggering effect such as a favourable situation leading to demographic increase. Also, climatic circumstances can foster the process. The ways of innovation transfer itself can be varied in terms of how and when they become daily practice, but in all the cases the outcome influences the society at large and leads to a certain transformation of the innovation itself (p. 214).

The volume is illustrated with several maps; some of these are very informative (e.g. fig. 8, pp. 66–67). Yet, it must be noted that some of these seem to be far from being correct. For example, Figure 4 (p. 46) is supposed to show the oldest copper finds in Central Europe and Italy; in the text in the given section mentions ample and justified examples of finds from western Hungary, Czechia, and Slovakia (pp. 46–52), yet these are completely missing from the map (and from the tables, although latter with right, since the table claims to contain only finds from the northern and southern Central Europe). Figure 7a and b is essential, if interpreted the right way, since it shows the Kernel density estimation of copper mining centres in southeast and Central Europe before and after 4200 BC. Alas, the figure caption is not aware of the map cut and claims to show Eurasia. Figure 11 (p. 70) showing cultural formations of the early 5<sup>th</sup> millennium cal BC has a legend that does not fully correspond with the depicted distribution areas. A thorough checking of the orthography would have done good to the text.

Despite some factual uncertainties and uncertain inferences drawn, this approach, i. e. comparing cases of different innovations, taken from different temporal and chronological backgrounds, seem to be innovative itself. Thus, details may be argued, but the frames are rightly drawn and, in most cases, thoroughly underpinned with relevant literature. In the end, the reader may have more questions than answers, but as I am sure, Silvine Scharl would take these questions as exciting and triggering effects for further research. Hopefully including her own further research.

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**NICO FRÖHLICH, Bandkeramische Hofplätze. Artefakte der Keramikchronologie oder Abbild sozialer und wirtschaftlicher Strukturen?** Frankfurter Archäologische Schriften Band 33. Verlag Rudolf Habelt GmbH, Bonn 2017. € 129.00. ISBN 978-3-7749-4012-3. XIX + 682 pages with 412 figures, 1 CD-ROM with 2 appendices and 3 inserts.

This massive volume is in the author's words a "slightly edited" version of his 2016 Frankfurt dissertation. The driving force behind the work is the *Hofplatz* model and its relevance for our understanding of Neolithic *Linearbandkeramik* (LBK) settlement and socio-economy, a theme succinctly expressed in the book's subtitle. Indeed, ceramic chronology and social interpretation are closely intertwined in this model, since it was originally devised – on the basis of presuppositions about the organisation of domestic space and residence practices – as a procedure for working out internal settlement chronology. Ideally, a LBK house is dated through the decorated ceramics from its lateral pits (*Längsgruben*), enabling a relative chronology of houses to be established through seriation of the various house assemblages. The *Hofplatz* model, however, dates houses with few or no finds from lateral pits by assigning other more distant pits to these houses. It also provides a convenient way of fitting completely undatable houses into a site sequence, since the model stipulates that a