



Social Rules and Household Interactions Within the LBK: Long-Standing Debates, New Perspectives

Caroline Hamon, Louise Gomart

► To cite this version:

Caroline Hamon, Louise Gomart. Social Rules and Household Interactions Within the LBK: Long-Standing Debates, New Perspectives. Open Archaeology, 2021, 7 (1), pp.690-704. 10.1515/opar-2020-0158 . hal-03326733

HAL Id: hal-03326733

<https://hal.science/hal-03326733>

Submitted on 2 Dec 2021

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

Research Article

Caroline Hamon*, Louise Gomart

Social Rules and Household Interactions Within the LBK: Long-Standing Debates, New Perspectives

<https://doi.org/10.1515/opar-2020-0158>

received November 12, 2020; accepted June 18, 2021

Abstract: Within Linearbandkeramik (LBK) studies, several models of social structure and organisation have been debated since the 1960s, influenced by several major anthropological theories that even today guide the debates. We discuss here the notion of social interactions in LBK contexts by focusing on the primary form of LBK social unit: the household. Assuming that the solutions found by the LBK communities to navigate their ambivalent position regarding sedentism and mobility probably formed the basis of their social organisation, social networks would have played a crucial role in ensuring the longevity and spread of the LBK culture. The village pioneer stage crystallises several core mechanisms of LBK society and is particularly relevant for assessing the dynamic processes involved in the fundamental social interactions that structure LBK societies. Invoking rather the “hofplatz” or the “ward” models, the coexistence of different groups attached to specific expressions of identity within the same settlements was highlighted and led to several hypotheses of social organisation putting clan or lineage structures at the foreground. Differentiation or inequalities between individuals and groups were also debated, even recently based on new technological and bioarchaeological data. In the frame of the current ANR Homes project, our goal is to test the reliability of these models based on an evidence-based approach and deepen the economical model we recently proposed.

Keywords: linearbandkeramik, households, social interactions, pioneers, mobility, neighbourhood

1 Introduction

Within Linearbandkeramik studies, several models of social structure and organisation have been debated since the 1960s. As one of the first and most emblematic European cultures, which spread from Transdanubia to the Atlantic and the Pontic areas during the second half of the 6th millennium BC, the LBK culture was initially envisaged as a highly uniform network of people who shared a very reproducible form of settlement, sophisticated transmission of technological traditions, as well as strong codification of funerary and symbolic expressions.

Article note: Special Issue: THE EARLY NEOLITHIC OF EUROPE, edited by F. Borrell, I. Clemente, M. Cubas, J. J. Ibáñez, N. Mazzucco, A. Nieto-Espinet, M. Portillo, S. Valenzuela-Lamas, & X. Terradas

* **Corresponding author: Caroline Hamon**, CNRS, UMR 8215 Trajectoires, Centre De Recherche, 9, rue Mahler, 75004 Paris, France, e-mail: caroline.hamon@cnrs.fr

Louise Gomart: CNRS, UMR 8215 Trajectoires, Centre De Recherche, 9, rue Mahler, 75004 Paris, France, e-mail: louise.gomart@cnrs.fr

The narratives concerning social interaction patterns in the LBK culture have been influenced by several major anthropological theories that even today, more or less consciously, continue to guide the debates. First, social interpretations have focused on the unicity of the domestic area and its inhabitants. Following Sahlins' theories (1974), the members of a house unit produce for themselves and consume the products of their labour, especially subsistence goods. This system excludes the production of surplus for the benefit of individuals or groups of individuals. But far from considering completely independent and autonomous house units, this theory also underlines the fact that social and cultural structures regulate and transcend the productive structures in order to ensure the cohesion and a certain form of equality of the community at a larger scale. Other major works have stressed the fundamental role of exchange in the structuring of societies. For Polanyi (1968), the production, circulation and consumption of goods can be organised into three forms of economic integration: reciprocity, redistribution and exchange. Sahlins and Polanyi developed a classification system based on the degree of reciprocity (generalised, equilibrate or negative) between individuals and groups. In both works, the circulation of gifts is highly dependent on the nature of the social link between partners and groups of partners, at a kin or neighbourhood level. For Mauss (1973), exchanges are at the centre of social organisation, as stressed in his theory of reciprocal gift-giving. Groups of individuals are interconnected by these fundamental, and often implicit obligations to give, receive and reciprocate material goods with different functions and meanings. As a matter of fact, the notion of reciprocity is at the very heart of the main theories regarding the organisation of present and past societies.

These theories have deeply influenced the orientation of the debate on LBK societies and the main models that have been proposed over the last 50 years. Thus, van de Velde (1979) states that LBK societies were governed by several levels of production that might be exclusive, but more probably cumulative and interrelated. Beyond the *domestic mode of production* already described (Sahlins, 1974) and which makes the household the basic unit of production and consumption incorporating the major divisions of labour, Van de Velde suggests that two other modes of production, the lineage mode and the supralocal mode, could also have been applied within LBK societies. The *lineage mode of production* would generally have been superimposed upon the domestic one and would have consisted of local kin groups. The *supralocal mode of production* is co-extensive with the geographically largest kin system and would have ensured the cohesion of the whole community. In this model, these modes of production are not opposed but are combined to ensure a robust societal structure capable of resisting major crisis episodes. Recent debates have focused on evidence for "differentiation" among LBK societies. Two levels of interpretation were derived from this assumption: the consideration of the division of the social field into complementary role sets within the economic and symbolic spheres, or social inequalities and hierarchies affecting individuals (van de Velde, 1990). In this perspective, the focus has been put on rules of cooperation and competition governing relationships between the different groups within an LBK community. Given the complexity and diversity of socioeconomic flows, dynamic interpretations of LBK social interactions have long remained outweighed by more static interpretations, in which LBK social dynamics were mostly subjected to external conditions such as generational social reproduction or, in more recent models, specific ecological niches or major climatic events. Yet, the deep ambiguity of LBK social structure, which involves a strong attachment to sedentism (with a preconceived vision of the living space and its development) as well as the necessity for mobility (both for colonisation of new spaces and for maintaining intersite and interregional exchanges of goods and the circulation of people) has remained a pivotal research issue calling for elaborate anthropological models. The considerable body of bioarchaeological data collected over the last fifteen years in LBK contexts has finally brought the concept of interaction back to the centre of discussions and suggests the existence of particularly complex social mechanisms among LBK communities.

In this article, we discuss the notion of social interactions in LBK contexts by focusing on the primary form of the LBK social unit: the household. Assuming that the solutions found by the LBK communities to navigate their ambivalent position regarding sedentism and mobility probably formed the basis of their social organisation and that, in this context, social networks would have played a crucial role in ensuring the longevity and spread of the LBK culture, our goal is to explore on what basis and in what manner social interactions within and between households can be considered, interpreted and tracked within the LBK.

From a strictly archaeological point of view, LBK settlements are made up of houses with characteristic plans bordered by longitudinal refuse pits, which together form the basic housing unit; these are designated as domestic, residential or dwelling units. These housing units and their specificities are primarily characterised through qualitative and quantitative data resulting from the analysis of material found in secondary positions within the refuse pits (for a discussion on the representativeness of the material from waste pits see Allard et al., 2013; Květina, 2010; Stäuble, 2013). The notion of households comes into play at another level: it is an anthropological interpretation of the sum of data obtained at the level of the domestic unit which enables to characterise the inhabitants as well as their know-how, social identity and interactions.

2 Pioneer Households in the Starting Blocks: Towards the Foundation of the LBK Community

One of the main challenges for archaeologists studying LBK settlements is to identify pioneer houses, houses that functioned simultaneously and, finally, the houses that were rebuilt. Many LBK site plans feature a large number of superimposed buildings which renders them difficult to read; this is less of a problem on the margins of the LBK expansion area where settlements tend to be less dense. Nevertheless, teasing out the chronological relationships between houses constitutes the first and most basic level of archaeological interpretation on which all attempts at social interpretation are ultimately based. A large proportion of the literature dedicated to the LBK has specifically discussed house lifetimes, either from a theoretical or a typo-chronological perspective (see for an overview, Bickle, 2013).

While village phases are assumed to have lasted between 25 and 100 years, depending on the models applied and the regions concerned (Lüning, 1997), LBK houses are estimated to have been occupied for 20–30 years, i.e., the scale of a generation (Modderman, 1970). Certain researchers (Ruck, 2009), however, have argued that a house could have survived for 75–100 years. Considering the important implications of such estimations for models of village evolution and organisation, such statements are open to much debate. A re-evaluation of this paradigm would undoubtedly significantly renew our perception of the internal evolutions of LBK villages (Lenneis, 2012; Marton & Oross, 2012). In this line of thought, comprehensive studies of the internal development of villages, involving cross-referencing of ceramic typologies and carbon 14 modelling, were recently proposed for the sites of Versend-Gilencsa (Jakucs et al., 2018) and Balatonszárszó-Kis-erdei-dűlő (Oross et al., 2020). On both sites, the authors tested several models to determine the occupation dynamics of the sites. They suggest possible chronological overlaps between distinct ceramic traditions, thus raising the question of possible biases in village development models. They question the accuracy of chronologies based on ceramic seriations alone and the viability of matching the average lifetime of each house with a phase of village occupation. As Stäuble (2013, pp. 239–240) stated, “as we expect variation in the behaviour of LBK people in time and space, we should not attempt to impose the same assumptions and the same model on sites over thousands of kilometres”. It is obviously more difficult to relate the material retrieved from pits to one single building in the very dense villages of Central Europe, which are generally characterised by rebuilding and cross-cutting of house-plans, than on the margins of the LBK expansion where dilatation of village plans provides a clearer view of the spatial distribution of domestic units (Hachem, 2011; Pyzel, 2019, pp. 337–341). The duration of time that pits remained open is also the subject of ongoing debate, although several authors now agree that these pits were used and filled over relatively short periods of time (Allard et al., 2013; Bosquet, 2013). Finally, we must not forget that the spatial organization of LBK villages is not uniform over the period of time in which they developed: we generally observe a small number of houses in the pioneer phase, followed by a rapid rise in numbers in the development phase, and finally a decrease in numbers by the end of the occupation (Dubouloz, 2008). However, these cycles of occupation are not uniform: abandonment phases and occupation hiatuses can occur (Denaire et al., 2017), such episodes being barely perceptible in the primary archaeological records,

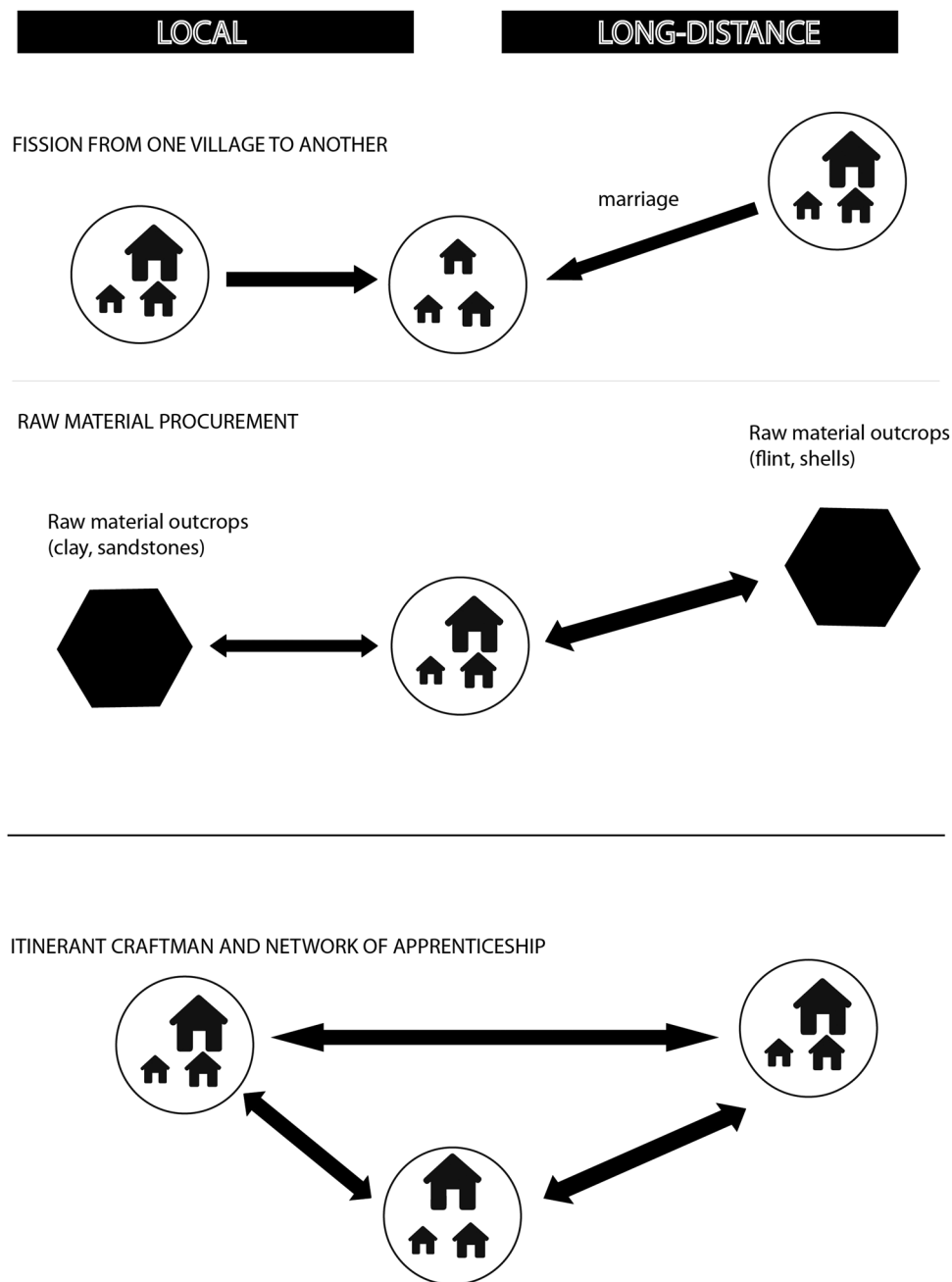


Figure 1: Schematic representation of different forms of LBK group and individual mobility.

especially if the reoccupation involved the descendants of the founding community (Hofmann, 2016, pp. 243–244).

The exploration of new territories is the very first step in the expression of LBK mobility (Figure 1). All villages could be considered as pioneer settlements, given the difficulty of identifying the very first “pioneer” stage of settlement on most sites. The founding core generally consists of one or two houses, spatially set apart from the subsequent development of the village core (Bosquet et al., 2008; Hachem, 2000). The corresponding households display specific economic behaviours: in particular, there is important evidence for forest exploitation and intensive exploitation of local mineral resources for ceramic and lithic production (Bosquet & Golitko, 2012; Bosquet et al., 2008). In the framework of repetitive processes of scission in households, the inhabitants of these pioneer houses share common features with the community that they

originated from (Dubouloz, Bocquet-Appel, & Moussa, 2017). It is now generally accepted that the demic diffusion and exploration stage prior to installation would not have been possible without the support of the source community, within what has been termed a “network of solidarity” (Hofmann, 2016, pp. 243–244). This network, or at least some form of privileged and mutual support between the source community and the new settlers, appears to have been a necessity to ensure the success of the exploration, installation and settlement stages. Such a mechanism might also be organised in the form of cooperation clusters specifically between pioneers (Petrash, 2012), favouring the development of privileged relationships between pioneer settlements and strengthening a kind of “partnership” between the communities throughout the subsequent development of the villages. These solidarity networks imply important flows of people which Hofmann (2020) categorises under the terms of mobility to describe temporary circulation between settlements on the one hand and migration to describe long-term or permanent displacements on the other hand. One could add to these categories a possible dichotomy between (i) long-term collective migration of groups along the pioneering front resulting in the dispersion of sites at the macro-regional scale and (ii) individual migrations within the framework of alliances, marriages or other specific social processes leading to scission mechanisms within existing households.

These different forms of population movement, which occur at different key moments of the LBK settlement dynamic, imply distinct modes of social interaction:

- At the pioneer stage, one group or several partner groups would have come together to form a new settlement. Some authors have proposed that the regionalisation of LBK material culture toward the west of its expansion area was, in fact, linked to the coming together of different social groups at the foundation of the LBK settlements (Dubouloz, 2012; Hofmann, 2020). Other authors, however, observe unity in the material culture of the first occupational phases of LBK sites, reflecting, according to them, a model in which the LBK villages were founded by one single group of migrants. For instance, this is the case at the site of Cuiry-lès-Chaudardes (Aisne valley), where the uniformity of ceramic technical practices at the very beginning of the occupation suggests that the village was founded by one socially related group belonging to the same learning network (Gomart, Constantin, & Burnez-Lanotte, 2017). In certain regions on the margins of the LBK expansion, some groups settling in new territories and maintaining upstream social ties with their area of origin or with other pioneering groups may also have created links downstream of colonisation with hunter-gatherer communities (e.g., Crombé, Sergeant, Perdaen, Meylemans, & Deforce, 2015; Vanmontfort, 2008).
- Shortly after the foundation of the settlement, the integration of newcomers would have guaranteed the renewal and transmission of the community’s heritage, from a biological and a cultural perspective. This mechanism, which ensures the “transmission and preservation of social ties and practice” (Bickle, 2016, p. 19), would have occurred through specific social alliances that varied in particular according to post-marital residency patterns (Bickle, 2019; Hrnčíř, Vondrovský, & Květina, 2020).
- Throughout the occupation of the site, interaction, and thus circulation, between villages would have occurred at many levels, and would probably have reinforced intersite solidarity networks: these interactions would have taken the form of diffusion of raw materials or finished products (Allard, 2005; Bonnardin, 2009; Hamon & Fronteau, 2018). In some cases, we even can assume the movements of itinerant craftsmen who produced specific objects, such as Limburg pottery for example (Gomart & Burnez-Lanotte, 2012).
- However, some village communities, notably on the margin of the LBK expansion area, chose to limit or at least control some of their interactions from the outset or during the occupation of the village by enclosing part or all of their settlement area (e.g., Jadin, 2003; Thevenet, 2016; Haack, 2020). In Vrábě, the enclosure is thought to have been built at a moment of tension between different communities within the settlement regarding access to raw materials and specific goods (Furholt, Müller-Scheesel, Wunderlich, Cheben, & Müller, 2020b).

To sum up, the pioneer stage crystallises several core mechanisms of LBK society and is particularly relevant for assessing the dynamic processes involved in the fundamental social interactions that structure LBK societies. Furthermore, the social ties between new settlers seem to form the basis of the mechanism of creation of new households within villages, at a pioneer or later stage of development. This assertion

reinforces the central role of households in the LBK social system and strengthens our conviction that they represent the key anthropological unit for understanding LBK social interactions.

3 Households in the Preconceived Planning of Buildings and Villages: Imprints of LBK Social Ties

As a major innovation of the LBK culture, the tripartite house, through its reproducibility, contributed to building a strong LBK identity and helped to deep-root its sedentary way of life throughout Europe. For Levi-Strauss (1982, revised by Borić, 2008), the concept of “house societies” describes a stage of social development marking societies transitioning from being kin-based to class-based, creating hierarchies and jostling for economic and social power and prestige. At the beginning of this transition, houses bear multiple levels of social significance. The partition of LBK houses is of course highly indicative of the division between social and public space (Coudart, 1998; Modderman, 1970; Stehli, 1989) made possible by this new type of shelter. But it also carries a more systemic meaning, especially when considering the economic basis of small and large size houses (Hachem & Hamon, 2014). Beyond the reproducibility or slight variations observed within house plans throughout the LBK, the house and the household are at the heart of the reflexion, from both an archaeological and an anthropological perspective.

3.1 The Houses and Their Inhabitants

The number and identity of the inhabitants within one single house have been the subject of much debate, principally due to the lack of consistent evidence. The funerary data do not appear to be relevant to discuss demographic aspects, considering the low number of tombs by comparison to the number of houses, even in Central Europe, where several necropolises have been excavated. Consequently, most of the discussions on the population aspects related to LBK villages are based on actual or modern demographic modelling. Different hypotheses have been proposed about local demographic evolutions and the number of familial or kin groups occupying a settlement (Bocquet-Appel & Dubouloz, 2004). The estimation of the number of inhabitants is generally calculated based on the house size, their internal partition and their ground plan surface area. Due to the uncertainty of the estimations, it is expressed in terms of intervals of maximum or minimum number of inhabitants (Dubouloz, 2008). Depending on the authors, the minimum number of inhabitants would correspond to a nuclear family of six persons including three generations, while the maximum number would include more than 40 persons comprising different familial ties and several generations. However, the social structure defining who belongs to the household, in terms of biological or social ties, remains at the centre of the debates though impossible to objectify. Other authors defend that variation in house size represents a social construction for and by the community itself (Coudart, 1998). Based on specific finds related to the longer houses (e.g., adzes) and ethnographic comparisons, van de Velde (1990) suggested that the size of the LBK houses was related to the status of their inhabitants, and their capacity to accumulate riches and to redistribute them. Ultimately, the house size can be seen as the most striking expression of several social identities within the group of social identity (Hofmann & Lenneis, 2017).

3.2 From Independent Farms to Structured Villages

The idea that village organisation and its evolution through time were preconceived is a major key to approaching LBK social structure and interaction. Several models have been proposed, from the individual

farmstead (Hofplatz model: Boelicke, 1982; Zimmermann, 2012) to the strict planning of neighbourhoods based on a model of allotments or plots (Lüning, 1997). Most of these models have been debated and criticised, mostly because they tend to focus on just one side of a more complex LBK reality (Hohle, 2017).

The Hofplatz model, developed on the basis of the work of several researchers (Boelicke, 1982; Boelicke, 1988; Lüning, 1982, 2005; Zimmermann, 2012), is understood as the coexistence of autonomous domestic units, each comprising a building, its external space and associated structures (pits, silos), grouped within a single “yard.” Each of these units possesses a garden, fields and forest areas for its own needs. The temporal continuity of these farms is manifested by their rebuilding in the same area and ensured by rules of intergenerational inheritance and transmission. In this model, each household is part of a larger network, structured according to several possible levels of lineage, clans and involving mobility patterns that tend to be local in scale. This model, which has had a significant impact on the history of LBK research, has been used by several authors in various LBK contexts as a means of interpreting their data; it has notably been applied on Central European sites characterised by very dense plans whose detailed analysis require an interpretive matrix (e.g., Pavlů, 2000).

Some authors have focused on paired houses or clusters of houses (Czerniak, 2016; Jackus et al., 2018), while other models have stressed the importance of the east/west and north/south axes in the structuring of settlements, either in a mirrored (Hachem, 2000) or row (Rück, 2013) configuration. These organisations might be accompanied by a displacement of the village core over the sequence of occupation (Hachem, 2000). A counter-clockwise rotation of house orientation over time has also been observed (Müller-Scheeßel et al., 2020). In addition, the data sets from some sites appear to indicate that different areas of production, particularly for craft activities, existed within sites. On the site of Brzezcie 17 (Poland, Rauba-Bukowska, 2013), pottery firing took place in two kinds of kiln, located in what is interpreted as a communal activity zone. Spatial analysis of activities attested by lithic use-wear analysis in Elsloo (van Gijn & Mazzucco, 2013) has suggested that hide processing was concentrated in one particular area of the settlement; this supports the hypothesis that, in addition to the standard domestic mode of production, an extensive mode of production also operated.

3.3 “Wards” as Evidence for Kin-Groups and Lineage?

The persistence of groups and their specific attributes or “differentiation” (van de Velde, 1979, 1990) over time throughout LBK villages has prompted certain researchers to identify what are termed “wards” (Czerniak, 2016; Louwe Kooijmans, van de Velde, & Kamermans, 2003; Modderman, 1970; Pavuk, 1994). These wards are defined as groups of houses or households that functioned together, and whose associations with each other were repeated over space and time, throughout the evolution of the village. This ward organization is interpreted as an expression of a persistent lineage mode of production and expression of identity through time. Furthermore, as Van de Velde has suggested (1979, p. 133), “a higher order organization existed in the lineage mode of production, in which individuals had a different status regarding the allocation of their group’s surplus production.”

The existence of wards has been highlighted by archaeological evidence from various parts of the LBK occupation area. In Ludwinowo (Poland), groups of houses, which display no intercutting, have been isolated according to chronological and building phases (Pyzel, 2019). A spatial division into quarters, which was maintained throughout the occupation of the site, has also been proposed at Cuiry-les-Chaudardes based on the over-representation of specific hunted and domesticated animal remains in three different areas of the village (Aisne valley, Hachem, 2011). After initial excavation campaigns at Vrábce (Slovakia, Furholt et al., 2020a), three groups of households have been defined based on their access to lithic raw materials, cultural practices and ceramic traditions. The authors suggest that they belong to different wards, defined by a common and shared space perceptible in the settlement’s organisation. This division into wards does not preclude a collective level of interactions, orientated towards solidarity or subject to internal tensions. The reproduction of this model over generations “indicates a lineage-based inheritance system at the level of the farmstead” (Furholt et al., 2020b).

To sum up, in the models built around the ward concept, rules of social transmission and cohesion were upheld by each household separately and collectively. As underlined by van de Velde (1990, p. 11), “The continuous reproduction over time of the local units or wards testifies to an established or ‘permanent’ social structure.” However, the very nature of these lineages and their structure of transmission (e.g., matrilineality, patrilocality, etc.) has been the subject of intense debate and speculation (for an overview see e.g., Bentley et al., 2012; Hrnčír et al., 2020) and will probably remain so for a long time to come.

3.4 Coexisting Groups of Households and “Neighbourhoods”: The Temptation of Clans

The idea that the sites were spatially organised by groups of houses is at the base of several modelling proposals. Brunn, Stadler and Kotova (2010) tried to model neighbourhoods based on network maps to identify immediate neighbours. In Vráble, the three different concentrations of houses are interpreted as different coexisting settlement areas named neighbourhoods (Furholt et al., 2020a).

Considering that the spatial coexistence of different groups was attached to specific expressions of identity within the same settlement, several authors argue that LBK communities were ruled by clan structures. Hachem (1999, 2018) thus proposed that the site of Cuiry-les-Chaudardes was divided into quarters, each of them consuming higher proportions of given animals bearing special symbolic significance. Each quarter would therefore have been inhabited by a clan represented by totemic animal species, whose domestic and wild forms mirrored each other; these species are systematically associated with the domestic space, as well as the funerary and ceremonial spheres. Pechtl (2015) discusses the possible existence of “ethnic groups” within the LBK and defends the idea that a household structure alone could not explain the functioning of LBK society. He points to examples in southern Bavaria of boundaries between entities that remained constant over 300 years and suggests that the unicity of these groups attests to some form of kin structures with the long-term transmission, perhaps lineages or clans. Clan divisions have also been proposed in the case of Vaihingen, Germany (Bogaard, Krause, & Strien, 2011). Here, the organisation of cultivation plots is interpreted in terms of traditions of land ownership, while slight variations in secondary ceramic motifs (e.g., U- versus V-shaped motifs) are considered as expressions of different identities. Their correlation led the authors to define several groups, interpreted as different coexisting clans, within the village community.

4 Tracking Individuals Within Households: Differentiation and Inequalities?

Unravelling the scales of interactions between individuals, households and larger groups is a crucial issue when considering social models within the LBK. The rules governing the cohesion and longevity of the LBK communities certainly affect different levels of personal and collective interactions.

In fact, interactions and the status of individuals can rarely be ascertained, except in three main fields:

- (1) Funerary anthropology, in which the social status of individuals can be compared based on burial contexts and associated grave goods (Jeunesse, 1997; Hofmann & Bickle, 2011). Recent studies (Bickle, 2019; Masclans Latorre, Bickle, & Hamon, 2021) also reveal a degree of gender organisation in the distribution of tasks and the systems of representations within the funerary world.
- (2) Bioarchaeology, through which an individual’s origin, general trends in their diet, and possible geographical trajectories can be assessed and which has revealed evidence of greater mobility amongst the female population (e.g., Bentley et al., 2012; Bickle & Whittle, 2013; Hedges et al., 2013) in at least some LBK post-marital models (Hrnčír et al., 2020) (Figure 1).

- (3) Technological analyses, which can reveal specific technical practices or skills that are indicative of the work of individual craftspeople (Gomart, Constantin, & Burnez-Lanotte, 2017; Gomart & Ilett, 2017; Pavlu, 2000; Van Berg, 1996). Most commonly, the technological analysis yields evidence at the second level of interaction, i.e., groups of producers, which are identified through the transmission over time of technical traditions that allow to perceive the extents of apprenticeship networks (Allard, 2005; Gomart, 2014; Hamon, 2006). For this level of interaction, it is also possible to identify groups of consumers from household or neighbourhood/lineage perspectives through the waste arising from their daily consumption (Hachem, 2000; Hachem & Hamon, 2014; Salavert, 2010). A third level can be explored through the study of exchange and distribution networks of raw materials and objects between sites or settlement areas (e.g., Allard, 2005; Bonnardin, 2009; Constantin & Vachard, 2001; Hamon & Fronteau, 2018; Zimmermann, 1995). Although it is difficult to assess the way in which raw materials and objects circulated through archaeological evidence, these movements must have involved interactions between suppliers and acquirers at a regional scale (Figure 1). This may contribute, at least partially, to circulation and interaction patterns.

In his 1990 publication (p. 1), Van de Velde stated that “although the villages in a region may all be of similar small size and politically independent of one another, internally there may be a fair amount of hereditary vertical inequality, in some cases even stratification, as is well attested by ethnography (...) I will conclude that at least in some places of Bandkeramia the existence of hereditary chiefs can be traced”. Using this argument, a pattern of social inequality emerges in the Dutch LBK, and beyond. However, in the same publication, the author clearly pointed out the key to addressing the question of inequalities in the LBK, by distinguishing horizontal differentiation from the vertical hierarchy. While individual vertical hierarchy cannot be elucidated through LBK archaeological evidence, an apparent horizontal differentiation of economic tasks is apparent. In a rather egalitarian system expressed at the ward level, only economic tasks undertaken by households would display differences. This idea has recently been outlined in detail: “neither the villages nor the graveyards of that culture show any sign of centralization beyond the narrow family sphere (...) at least in some places there even seems to have been a conscious avoidance of centralizing practices” (van Wijk & van de Velde, 2020, p. 151).

The notion of status encompasses two concepts: “social position” and “prestige”. Social status is a set of rights and obligations socially determined by the values prevailing in a given cultural group. Hofmann (2020) underlines the fact that the migration process itself could enable pioneers to gain status, as they become references for those who have remained in the area of origin. Migration could thus have been a means to gain individual status while maintaining general equality at the scale of communities (Manen & Hamon, 2018) in which house sizes and burials give little indication of significant differentiation.

5 The HOMES Project: A Systemic Evidence-Based Approach to the LBK Social Structure

In fact, LBK archaeological remains can be considered as a “palimpsest” produced by different levels of social interactions, ranging from individual to more collective interactions. Ongoing debates on the LBK social system all stress the existence of multiple levels of social interactions in which households play a fundamental role in ensuring the stability and the transmission of social rules. Initially, the Hofplatz model focused on defining the domestic unit as the basic component of LBK settlements. As part of this model, each domestic unit was considered as an autonomous farmstead, housing one group of inhabitants (Lüning, 2000). In the model we proposed in Hachem and Hamon (2014) and Gomart et al. (2015), we took up this idea of the general autonomy of each domestic unit, but characterised it as self-sufficiency. Along with self-sufficiency, we observed a second level of interaction between contemporary domestic units in the form of exchanges resulting from surplus production. This second level of interaction, whose

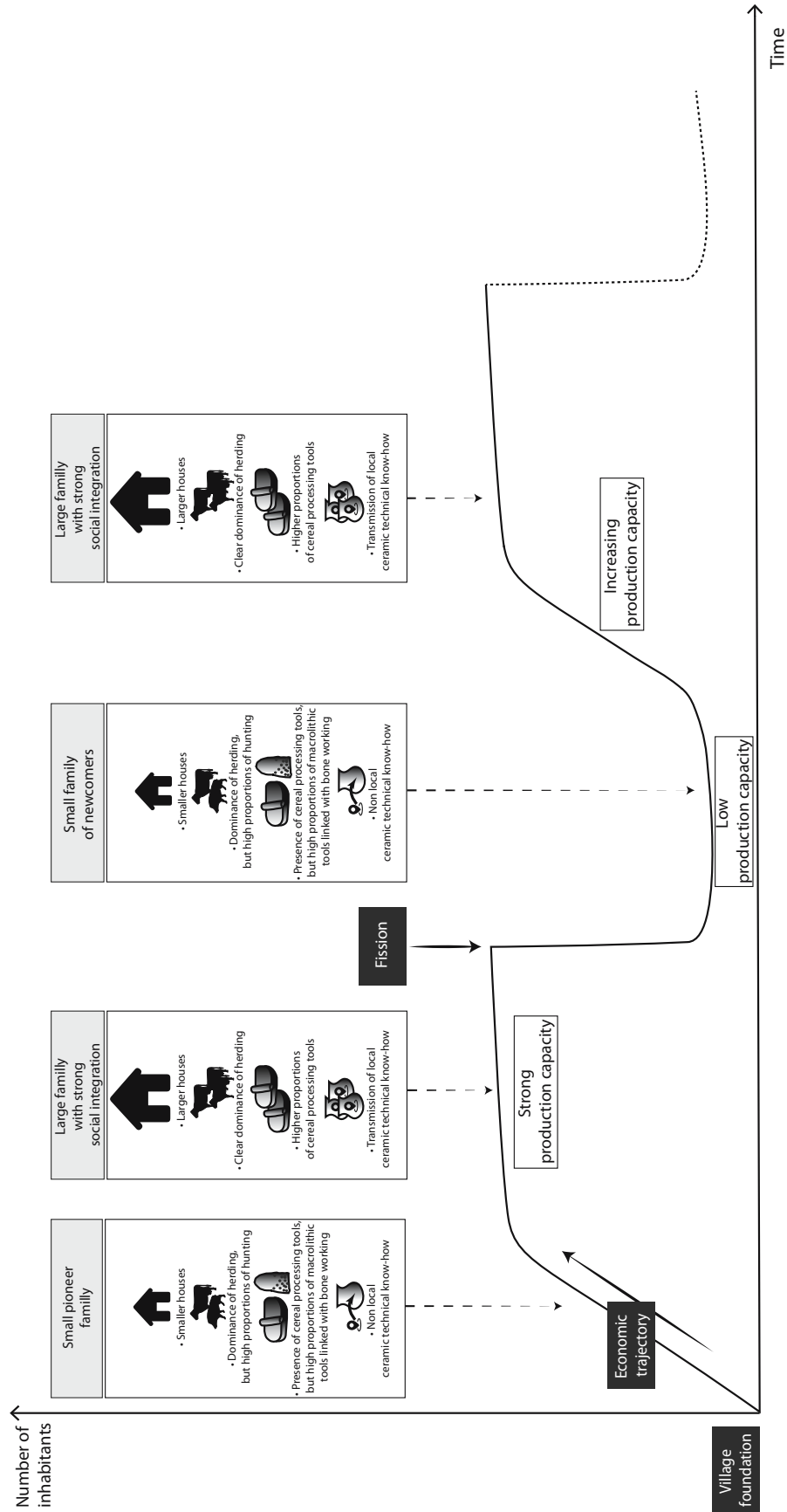


Figure 2: Model of LBK household socio-economic cycles, after Gomart et al. (2015).

complexity and spatial resolution remain to be untangled, and which is the subject of our current investigations, suggests that we should not strictly superimpose the notion of household and the notion of co-residence. We rather consider the household in terms of a group of activities revolving around production and consumption (Wilk & Rathje, 1982); these activities may involve one or more groups, which together might form one single household.

While in several models LBK social interactions are understood through the prism of increasing hierarchisation, especially among individuals, archaeological evidence tends instead to suggest individual equality along with group differentiation (also understood under the term inequality) at the household and/or clan/lineage levels. We argue that the very notion of household status is in fact directly related to their integration within socio-economic cycles (Figure 2). Based on architectural, subsistence and technological data, we proposed that small houses of either pioneer families founding a new village or young families of newcomers settling in the course of a village occupation (i) have low production capacity, (ii) are in the process of social integration, (iii) are strongly dependent on other local or extra-local households and are thus positioned at the lower end of the socio-economic trajectory. After an increase in (i) their production capacity, (ii) their local social integration and (iii) their number of inhabitants, these same houses reach the higher end of the socio-economic trajectory (Gomart et al., 2015). Within these large houses, episodes of fission occur, leading to the creation of new small houses starting again at the lower end of the socio-economic trajectory. This model, which suggests that LBK kin-groups probably had moving status in the course of their life, matches the palaeodemographic model proposed by Dubouloz for the LBK (2008, 2012a, 2012b), where population growth is seen as the driving force for settlement fission. The smaller houses are thought to have been built and occupied by a “nuclear” family (a couple with their children), whereas the larger houses would contain extended families comprising up to three or four generations.

The aim of the ongoing HOMES project, which focuses on the LBK settlements of the Aisne valley that were intensively studied in the last 40 years, is precisely to tease out the place of each household within the broader organisation and preconception of villages, by combining technological, bioarchaeological and archaeometric methods in a multiscale approach. We will address several major questions that structure village organisation and households’ relationships. It will first focus on the organisation of craft production and transmission network of know-how. The degree of reciprocity and interdependence between households will also be explored through food production and consumption. Finally, the rules and rhythms of individuals integration will be explored to discuss the mechanisms of cultural links perpetuation. In this interdisciplinary framework, the crucial pioneering phases will be tracked to obtain the most precise and dynamic image of the mechanisms of establishment and development of these long-lasting communities at each step of the colonization of new territories.

6 Conclusion

The abundant literature on LBK households and villages offers a unique insight into the sociology of the early farming communities, with a resolution that remains unprecedented for European Prehistory. It now seems clear that several schemes of a settlement organisation, and indeed several forms of social organisation, coexisted throughout the LBK (Hofmann, 2016; Furholt et al., 2020b). In other words, the evolutions that are perceptible between the Early and the Late LBK should echo changes in social ties and interactions. Ultimately, the cultural recomposition processes visible in the formative stages of the LBK in Hungary (e.g., Bánffy & Oróss, 2010) do not operate in the Early LBK settlement areas further east, which are characterised by long occupations, cycles of densification and rebuilding and possible centralised sites. Likewise, such patterns do not appear to operate fully on the margins of the later LBK expansion, where a dilatation of village plans (Pyzel, 2019) and a progressive loss of a number of the most identitarian aspects of the early LBK material culture and funerary customs are clearly visible (Jeunesse, 1997; Hamon, 2020). Keeping this background in mind, the HOMES project aims to provide an accurate vision of the key role of the household in the striking stability and resilience of LBK society on the western margins of its territorial expansion.

Funding information: This work was funded by the ANR HOMES “Modelling Households: Economy and Sociology of Europe’s first farmer populations”, dir. C. Hamon, ANR-18-CE27-0011.

Author contributions: All authors have accepted responsibility for the entire content of this manuscript and approved its submission.

Conflict of interest: Authors state no conflict of interest.

Data availability statement: Data sharing is not applicable to this article as no datasets were generated or analysed during the current study.

References

- Allard, A. (2005). *L'industrie lithique des populations rubanées du Nord-Est de la France et de la Belgique*, *Internationale Archäologie* 86. Rahden: Verlag Marie Leidorf.
- Allard, P., Hamon, C., Bonnardin, S., Cayol, N., Chartier, M., Coudart, A., ... Thevenet, C. (2013). Linear pottery domestic space: Taphonomy, distribution of finds and economy in the Aisne valley settlements. In C. Hamon, P. Allard, & M. Ilett (Eds.), *The domestic space in LBK settlements* (pp. 9–28). Rahden: Verlag Marie Leidorf GmbH.
- Bánffy, E., & Oróss, K. (2010). The earliest and earlier phase of the LBK in Transdanubia. In D. Gronenborn & J. Petrasch (Eds.), *The spread of the Neolithic to central europe. International symposium, Mainz 24 June–26 June 2005* (pp. 255–273). Frankfurt am Main: Römisch-Germanisches Zentralmuseum Forschungsinstitut für Vor- und Frühgeschichte.
- Bentley, R., Bickle, P., Fibiger, L., Nowell, G., Dale, C., Hedges, R., ... Whittle, A. (2012). Community differentiation and kinship among Europe’s first farmers. *Proceedings of the National Academy of Sciences of the United States of America*, 109(24), 9326–9330.
- Bickle, P. (2016). Varied mobility in the Neolithic: The Linearbandkeramik on the move. In J. Leary & T. Kador (Eds.), *Moving on in Neolithic studies. Understanding mobile lives* (pp. 14–27). Oxford: Oxbow.
- Bickle, P. (2013). Of time and the house: The early Neolithic communities of the Paris Basin and their domestic architecture. In D. Hofmann & J. Smyth (Eds.), *Tracking the Neolithic house in Europe. Sedentism, architecture, and practice* (pp. 151–181). New York: Springer.
- Bickle, P. (2019). Thinking gender differently: New approaches to identity difference in the central European Neolithic. *Cambridge Archaeological Journal*, 30(2), 201–218. doi: 10.1017/S0959774319000453.
- Bickle, P., & Whittle, A. (2013). *The first farmers of central Europe: Diversity in LBK lifeways*. London: Oxbow Books.
- Bocquet-Appel, J.-P., & Dubouloz, J. (2004). Expected paleoanthropological and archaeological signal from a Neolithic demographic transition on a worldwide scale. *Documenta Praehistorica*, 31, 25–33.
- Boelicke, U. (1982). Gruben und Häuser: Untersuchungen zur Struktur bandkeramischer Hofplätze. In J. Pavúk (Ed.), *Siedlungen der Kultur mit Linearkeramik in Europa* (pp. 17–28). Nitra: Archäologisches Institut der Slowakischen Akademie der Wissenschaften.
- Boelicke, U. (1988). Die Gruben. In U. Boelicke, D. von Brandt, J. Liining, P. Stehli & A. Zimmermann (Eds.), *Der bandkeramische Siedlungsplatz Langweiler 8, Gemeinde Aldenhoven, Kreis Düren* (Rheinische Ausgrabungen, 28, pp. 300–359). Köln: Rheinland-Verl.
- Bonnardin, S. (2009). *La parure funéraire au Néolithique ancien dans les Bassins parisiens et rhénans: Rubané, Hinkelstein et Villeneuve-Saint-Germain* (Mémoire 49). Paris: Société Préhistorique Française.
- Bogaard, A., Krause, R., & Strien, H.-C. (2011). Towards a social geography of cultivation and plant use in an early farming community: Vaihingen an der Enz, south-west Germany. *Antiquity*, 85(328), 395–416.
- Borić, D. (2008). First households and ‘house societies’ in European prehistory. In A. Jones (Ed.), *Prehistoric Europe: Theory and practice* (pp. 109–142). Oxford: Wiley-Blackwell.
- Bosquet, D., Golitko, M., Salavert, A., Avec la collaboration de Beugnier, V., Deligne, F., Jadin, I., ... Quick, R. S. (2008). Une phase pionnière à l’origine du peuplement rubané de la Hesbaye liégeoise (Belgique). In L. Burnez-Lanotte, M. Ilett, & P. Allard (Eds.), *Fin des traditions danubiennes dans le Néolithique du Bassin parisien et de la Belgique (5100–4700 BC). Autour des recherches de Claude Constantin, Actes du colloque de Namur, 24–25 novembre 2006* (Mémoire 44). Paris: Société Préhistorique Française.
- Bosquet, D., & Golitko, M. (2012). Highlighting and characterizing the pioneer phase of the Hesbayen linear pottery culture (Liege province, Belgium). In R. Smolnik (Ed.), *Siedlungsstruktur und Kulturwandel in der Bandkeramik. Beiträge der internationalen Tagung “Neue Fragen zur Bandkeramik oder alles beim Alten?!”*, Leipzig 23–24 September 2010 (pp. 91–106). Leipzig: Landesamt für Archäologie Sachsen.

- Bosquet, D. (2013). Chronological signification of linear pottery waste assemblages and waste management at the village scale: Spatial analysis of Remicourt “En Bia Flo” II (Liège province, Belgium). In C. Hamon, P. Allard, & M. Ilett (Eds.), *The domestic space in LBK settlements* (pp. 29–42). Rahden: Verlag Marie Leidorf GmbH.
- Constantin, C., & Vachard, D. (2001). Anneaux d'origine méridionale dans le Rubané récent du Bassin parisien. *Bulletin de la Société préhistorique française*, 101(1), 75–83.
- Coudart, A. (1998). *Architecture et société néolithique: L'unité et la variance de la maison danubienne*. DAF, Paris: Editions De La Maison Des Sciences De L'homme.
- Crombé, P., Sergeant, J., Perdaen, Y., Meylemans, E., & Deforce, K. (2015). Neolithic pottery finds at the wetland site of Bazel-Kruike (Prov. Oost-Vlaanderen/B), Evidence of long-distance forager-farmer contact during the late 6th and 5th millennium cal BC in the Rhine-Meuse-Scheldt area. *Archäologisches Korrespondenzblatt*, 45, 21–38.
- Czerniak, L. (2016). House and household in the LBK. In L. Amkreutz, F. Haack, D. Hofmann, & I. Van Wijk (Eds.), *Something out of the ordinary? Interpreting diversity in the early neolithic linearbandkeramik and beyond* (pp. 33–64). Newcastle: Cambridge Scholars Publishing.
- Denaire, A., Lefranc, P., Wahl, J., Bronk Ramsey, C., Dunbar, E., Goslar, T., ... Whittle, A. (2017). The cultural project: Formal chronological modelling of the early and middle Neolithic sequence in Lower Alsace. *Journal of Archaeological Method and Theory*, 24, 1072–1149. doi: 10.1007/s10816-016-9307-x.
- Dubouloz, J. (2008). Impacts of the Neolithic demographic transition on linear pottery culture settlement. In O. Bar Yosef & J. P. Bocquet-Appel (Eds.), *The Neolithic demographic transition and its consequences* (pp. 207–235). New-York: Springer.
- Dubouloz, J. (2012a). Interdépendance et cohésion des différents niveaux de territorialité au Néolithique Rubané en bassin parisien. In V. Carpentier & C. Marcigny (Eds.), *Des hommes aux champs. Pour une archéologie des espaces ruraux du Néolithique au Moyen Âge* (pp. 23–34). Rennes: Presses Universitaires de Rennes.
- Dubouloz, J. (2012b). À propos d'implantation, de démographie et de scission villageoises au Néolithique rubané. *Les nouvelles de l'archéologie*, 127, 30–34. doi: 10.4000/nda.1328.
- Dubouloz, J., Bocquet-Appel, J.-P., & Moussa, R. (2017). Modélisation, simulation et scénarios d'expérimentation. La colonisation néolithique de l'Europe tempérée par la culture à Céramique Linéaire (LBK) (5550–4950 avant notre ère). In L. Manolakis, N. Schlanger, & A. Coudart (Eds.), *European archaeology - identities & migrations. Hommages à Jean-Paul Demoule* (pp. 315–339). Leiden: Sidestone Press.
- Furholt, M., Cheben, I., Müller, J., Bistáková, A., Wunderlich, A. M., & Müller-Scheeßel, N. (2020a). *Archaeology in the Žitava valley I. The LBK and Želiezovce settlement site of Vráble*. Leiden: Sidestone Press.
- Furholt, M., Müller-Scheeßel, N., Wunderlich, M., Cheben, I., & Müller, J. (2020b). Communality and discord in an early Neolithic settlement agglomeration: The LBK site of Vráble, southwest Slovakia. *Cambridge Archaeological Journal*, 30(3), 469–489. doi: 10.1017/S0959774320000049.
- Gomart, L. (2014). *Traditions techniques et production céramique au Néolithique ancien. Étude de huit sites rubanés du nord est de la France et de Belgique*. Leiden: Sidestone Press.
- Gomart, L., & Burnez-Lanotte, L. (2012). Techniques de façonnage, production céramique et identité de potiers: Une approche technologique de la céramique de style non rubané du site du Staberg à Rosmeer (Limbourg, Belgique). *Bulletin de la Société Préhistorique Française*, 109(2), 231–250.
- Gomart, L., Constantin, C., & Burnez-Lanotte, L. (2017). Ceramic production and village communities during the early Neolithic in France and Belgium: Questions about tempers and forming processes. In L. Burnez-Lanotte (Ed.), *Workshop “Matières à Penser”: Raw materials acquisition and processing in early Neolithic pottery productions,” Proceedings of the workshop of Namur (Belgium), 29–30 May 2015* (Vol. 11, pp. 111–132). Paris, Société préhistorique française: University of Namur, Belgium. Séances De La Société Préhistorique Française.
- Gomart, L., & Ilett, M. (2017). From potters' hands to settlement dynamics in the early Neolithic site of Cuiry-lès-Chaudardes (Picardy, France). *Archeologické Rozhledy*, 69, 209–226.
- Gomart, L., Lamys, H., Hamon, C., Giligny, F., Ilett, M. (2015). Household integration in Neolithic villages: A new model for the Linear Pottery Culture in west-central Europe. *Journal of Anthropological Archaeology*, 40, 230–249. doi: 10.1016/j.jaa.2015.08.003.
- Haack, F. (2020). Tracing LBK ritual traditions: The depositions at Herxheim and their origins. In D. Hofmann (Ed.), *Magical, mundane or marginal? Deposition practices in the early Neolithic Linearbandkeramik culture* (pp. 53–83). Leiden: Sidestone Press.
- Hachem, L. (1999). Apport de l'archéozoologie à la connaissance de l'organisation villageoise rubanée. In F. Braemer, S. Cleuziou, et A. Coudart (Eds.), *Habitats et sociétés. XIXème Rencontres Internationales d'Archéologie et d'Histoire d'Antibes, 1998*, (pp. 325–38). Antibes: éditions ACPDA.
- Hachem, L. (2000). New observations on the Bandkeramik house and social organization. *Antiquity*, 74, 308–312.
- Hachem, L. (2011). *Le site néolithique de Cuiry-lès-Chaudardes – I. De l'analyse de la faune à la structuration sociale, Internationale archéologie 120*. Rahden: Verlag Marie Leidorf.
- Hachem, L. (2018). Animals in LBK society: Identity and gender markers. *Journal of Archaeological Science Report*, 20, 910–921.
- Hachem, L., & Hamon, C. (2014). Linear pottery culture household organisation: An economic model. In A. Whittle & P. Bickle (Eds.), *Early farmers: The view from archaeology and science. Proceedings of the British academy* (Vol. 198, pp. 159–180). London: OUP/British Academy.
- Hamon, C. (2006). *Broyage et abrasion au Néolithique ancien. Caractérisation technique et fonctionnelle des outillages en grès du Bassin parisien* (BAR international series 1551). Oxford: Archaeopress.

- Hamon, C. (2020). Isn't it strange? Grinding tool deposits and deposition in the north-western LBK. In D. Hofmann (Ed.), *Magical, mundane or marginal? Deposition practices in the early Neolithic Linearbandkeramik culture* (pp. 33–52). Leiden: Sidestone Press.
- Hamon, C., & Fronteau, G. (2018). Linear pottery culture sandstone supply strategies in north-western Europe: The example of macrolithic tool production in the Aisne Valley, France (late 6th millennium BCE). *Journal of Archaeological Science: Reports*, 19, 301–311.
- Hedges, R. E. M., Bentley, R. A., Bickle, P., Cullen, P., Dale, C., Fibiger, L., ... Whittle, A. (2013). The supra-regional perspective. In P. Bickle & A. Whittle (Eds.), *The first farmers of central Europe. diversity in LBK lifeways* (pp. 343–384). Oxford: Oxbow.
- Hofmann, D., & Bickle, P. (2011). Culture, tradition and the settlement burials of the Linearbandkeramik (LBK) culture. In B. Roberts & M. Vander Linden (Eds.), *Investigating archaeological cultures: Material culture variability and transmission* (pp. 183–200). New York: Springer.
- Hofmann, D., (2016). Keep on walking: The role of migration in Linearbandkeramik life. *Documenta Praehistorica*, 43, 235–251.
- Hofmann, D., & Lenneis, E. (2017). Size matters? Exploring exceptional buildings in the central European early Neolithic. In P. Bickle, V. Cummings, D. Hofmann, & J. Pollard (Eds.), *The Neolithic of Europe. Papers in honour of Alasdair Whittle* (pp. 145–158). Oxford: Oxbow.
- Hofmann, D. (2020). Not going anywhere? Migration as a social practice in the early Neolithic Linearbandkeramik. *Quaternary International*, 560–561, 228–239. doi: 10.1016/j.quaint.2020.04.002.
- Hohle, I. (2017). Social dynamics and mobility: Discussing 'households' in linear pottery culture research (6ML BC). In C. Heitz & R. Stapfer (Eds.), *Mobility and pottery production. Archaeological & anthropological perspectives* (pp. 115–140). Leiden: Sidestone Press.
- Hrnčíř, V., Vondrovský, V., Květina, P. (2020). Post-marital residence patterns in LBK: Comparison of different models. *Journal of Anthropological Archaeology*, 59, 101190. doi: 10.1016/j.jaa.2020.101190.
- Jadin, I. (2003). *Trois petits tours et puis s'en vont... la fin de la présence danubienne en moyenne Belgique*. Liège: ERAUL.
- Jakucs, J., Oross, K., Bánffy, E., Voicsek, V., Dunbar, E., Reimer, P., ... Whittle, A. (2018). Rows with the neighbours: The short lives of longhouses at the Neolithic site of Versend-Gilencsa. *Antiquity*, 92(361), 91–117. doi: 10.15184/aqy.2017.218.
- Jeunesse, C. (1997). *Pratiques funéraires au Néolithique ancien. Sépultures et nécropoles danubiennes (5500–4900 av. J.-C.)*. Paris: Éditions Errance.
- Květina, P. (2010). The spatial analysis of non-ceramic refuse from the neolithic site at Bylany, Czech Republic. *European Journal of Archaeology*, 13(3), 336–367.
- Lenneis, E. (2012). Zur Anwendbarkeit des rheinischen Hofplatzmodells im östlichen Mitteleuropa. In F. Krienbrink, M. Cladders, H. Stäuble, T. Tischendorf, & S. Wolfram (Eds.), *Siedlungsstruktur und Kulturwandel in der Bandkeramik. Beiträge der internationalen Tagung "Neue Fragen zur Bandkeramik oder alles"* (pp. 47–52). Dresden: Landesamt für Archäologie.
- Levi-Strauss, C. (1982). *The way of the masks* (translated by S. Modelski, first published 1972). London: Jonathan Cape.
- Louwe Kooijmans, L. P., van de Velde, P., & Kamermans, H. (2003). The Bandkeramik settlement of Geleen-Janskampveld: Its intrasite structure and dynamics. In J. Eckert, U. Eisenhauer, & A. Zimmermann (Eds.), *Archäologische Perspektiven, Analysen und Interpretationen im Wandel: Festschrift für Jens Lüning zum 65. Geburtstag* (pp. 373–397). Rahden: Marie Leidorf.
- Lüning, J. (1982). Forschungen zur bandkeramischen Besiedlung der Aldenhovener Platte im Rheinland. *Siedlungen der Kultur mit Linearkeramik in Europa. Koll. Nové Vozokany*, 1981, Nitra.
- Lüning, J. (1997). Wohin mit der Bandkeramik? Programmatische Bemerkungen zu einem allgemeinen problem am Beispiel Hessens. In C. Becker, M.-L. Dunkelmann, & C. Metzner-Nebelsick (Eds.), *CHRONOS. Beiträge zur prähistorischen Archäologie zwischen Nord- und Südosteuropa, Festschrift für Bernhard Hänsel. Internationale Archäologie, Studia Honoraria 1* (pp. 23–57). Espelkamp: VML.
- Lüning, J. (2000). *Steinzeitliche Bauern in Deutschland. Die Landwirtschaft im Neolithikum*. Universitätsforschungen zur prähistorischen Archäologie. Bonn: Habelt.
- Lüning, J. (2005). Bandkeramische Hofplätze und die absolute Chronologie der Bandkeramik. In J. Lüning, Ch. Frirdich, A. Zimmermann (Eds.), *Die Bandkeramik im 21. Jahrhundert. Symposium in der Abtei Brauweiler bei Köln vom 16.9.–19.9.2002* (pp. 49–74). Rahden/Westf.: VML.
- Manen, C., & Hamon, C. (2018). Les mécanismes de la Néolithisation de la France. In J. Guilaine & D. Garcia (Eds.), *La Protohistoire de la France* (pp. 11–26). Paris: Hermann.
- Marton, T., & Oross, K. (2012). Siedlungsforschung in Linienbandkeramischen Fundorten in Zentral- und Südtransdanubien – Wiege, Peripherie oder beides? In F. Krienbrink, M. Cladders, H. Stäuble, T. Tischendorf, & S. Wolfram (Eds.), *Siedlungsstruktur und Kulturwandel in der Bandkeramik. Beiträge der Internationalen Tagung "Neue Fragen zur Bandkeramik oder alles beim Alten?!" Leipzig 23 bis 24 September 2010. Arbeits- und Forschungsberichte zur sächsischen Bodendenkmalpflege Beiheft 25* (pp. 220–239). Dresden: Landesamt für Archäologie.
- Masclans Latorre, A., Bickle, P., Hamon, C. (2021). Sexual inequalities in the early neolithic? exploring relationships between sexes/genders at the cemetery of vedrovice using use-wear analysis, diet and mobility. *Journal of Archaeological Method and Theory*, 28, 232–273. doi: 10.1007/s10816-020-09453-y.
- Mauss, M. (1973). *Essai sur le don: Forme et raison de l'échange dans les sociétés archaïques, Sociologie et Anthropologie, Collection Quadrige*. Paris: PUF.
- Modderman, P. J. R. (1970). *Linearbandkeramik aus Elsloo und Stein*. Nederlandse Oudheden. 3 Amerfoort: R.O.B.

- Müller-Scheeßel, N., Müller, J., Cheben, I., Mainusch, W., Rassmann, K., Rabbel, W., ... Furholt, M. (2020). A new approach to the temporal significance of house orientations in European early Neolithic settlements. *PloS One*, 15, e0226082. doi: 10.1371/journal.pone.0226082.
- Oross, K., Cramp, L. J. E., Gortva, G., Jakucs, J., Lyubyanovics, K., Marton, T., ... Whittle, A. (2020). 'It's still the same old story': The current southern Transdanubian approach to the Neolithisation process of central Europe. *Quaternary International*, 560–561, 154–78. doi: 10.1016/j.quaint.2020.05.049.
- Pavlu, I. (2000). *Life on a Neolithic site: Bylany – Situational analysis of artefacts*. Prague: Institute of Archaeology.
- Pavuk, J. (1994). Zur relativen Chronologie der alteren Linearkeramik. *Jósa András Muzeum Évkönyvi*, 36, 135–149.
- Pechtl, J. (2015). Linearbandkeramik pottery and society. In C. Fowler, J. Harding, & D. Hofmann (Eds.), *The Oxford handbook of neolithic Europe* (pp. 555–572). Oxford: Oxford University Press.
- Petrash, J. (2012). Ausgrabungspläne, die Bewohner bandkeramischer Häuser und die Sozialstruktur des mittelmitteluropäischen Früh-neolithikums. Ein Modell zur Erklärung bandkeramischer Siedlungspläne. In S. Wolfram, H. Stäubli, M. Cladders, & T. Tischendorf (Eds.), *Siedlungsstruktur und Kulturwandel in der Bandkeramik. Beiträge der internationalen Tagung Neue Fragen zur Bandkeramik oder alles beim Alten?! Leipzig 23 bis 24 September 2010* (pp. 53–67). Dresden: Landesamt für Archäologie.
- Polyani, K. (1968). *Primitive, archaic and modern economics*. Boston: Beacon Press, Dalton G.
- Pyzel, J. (2019). *Ludwinowo, stanowisko 7. Osada neolityczna na Kujawach/Ludwinowo, site 7. Neolithic settlement in Kuyavia*, Ocalone Dziedzictwo Archeologiczne 8, Pękowo – Gdańsk: Profil-Archeo, University of Gdańsk Publishing House.
- Rauba-Bukowska, A. (2013). New data on the distribution of pottery finds in the linear pottery settlement at Brzezine 17 in southern Poland. In C. Hamon, P. Allard, & M. Ilett (Eds.), *The domestic space in LBK settlement* (pp. 9–28). Rahden: Verlag Marie Leidorf GmbH.
- Ruck, O. (2009). New aspects and models for Bandkeramik settlement research. In D. Hofmann & P. Bickle (Eds.), *Creating communities. New advances in central European Neolithic research* (pp. 159–185). Oxford: Oxbow.
- Rück, O. (2013). From yard to house row: The Bandkeramik village-layouts in rows and feature-free areas provide a new view on settlement structure. In C. Hamon, P. Allard, & M. Ilett (Eds.), *The domestic space in LBK settlements* (pp. 201–230). Rahden: Verlag Marie Leidorf GmbH.
- Sahlins, M. (1974). *Stone age economics*. Chicago and New-York: Aldine-Athertone.
- Salavert, A. (2010). *Apport de l'archéobotanique à la compréhension des sociétés néolithiques: Analyses anthracologiques et carpologiques de neuf sites rubanés de Moyenne-Belgique, 5200–5000 Av. J.-C. s.* (PhD thesis). Paris: Université de Paris 1.
- Stadler, P., & Kotova, N. (2010). Early Neolithic settlement from Brunn Wolfholz in lower Austria and the problem of the origin of the (Western) LBK. In J. Kozłowski & P. Raczky (Eds.), *Neolithization of the Carpathian basin: Northernmost distribution of the Starcevo/Körös culture* (pp. 325–348). Kraków: Polish Academy of Arts and Sciences.
- Stehli, P. (1989). Merzbachtal. Umwelt und Geschichte einer bandkeramischen Siedlungskammer. *Germania*, 67(1), 51–76.
- Stäubli, H. (2013). What you see is what it was? In C. Hamon, P. Allard, & M. Ilett (Eds.), *The domestic space in LBK settlements* (pp. 9–28). Rahden: Verlag Marie Leidorf GmbH.
- Thevenet, C. (2016). L'enceinte rubanée de Menneville "Derrière le Village" et les structures associées (Aisne, France): De la diversité du traitement des défunts à la cohérence d'un système. *Gallia Préhistoire*, 56, 29–92.
- Vanmontfort, B. (2008). Forager-farmer connections in an 'unoccupied' land: First contact on the western edge of LBK territory. *Journal of Anthropological Archaeology*, 27, 149–160.
- Van Berg, P.-L. (1996). Gauches, joueurs et apprentis. In P. Duhamel (Ed.), *La Bourgogne Entre Les Bassins Rhénan, Rhodanien et Parisien: Carrefour Ou Frontière? Actes Du XVIIIe Colloque Interrégional Sur Le Néolithique, Dijon, 25–27 Oct. 1991* (Supplément, 14, pp. 29–53). Dijon: Revue archéologique de l'Est.
- van Gijn, A., & Mazzucco, N. (2013). Domestic activities at the Linear Pottery site of Elsloo (Netherlands): A look from under the microscope. In C. Hamon, P. Allard, & M. Ilett (Eds.), *The domestic space in LBK settlements* (pp. 111–126). Rahden: Verlag Marie Leidorf GmbH.
- van Wijk, I., & van de Velde, P. (2020). House societies or societies with houses? Bandkeramik kinship and settlement structure from a Dutch perspective. In M. V. Klinkenberg, R. M. R. van Oosten, & C. van Driel-Murray (Eds.), *A human environment. Studies in honour of 20 years Analecta editorship by prof. dr. Corrie Bakels* (pp. 143–152). Leiden: Sidestone Press.
- van de Velde, P. (1979). On Bandkeramik social structure: An analysis of pot decoration and hut distributions from the central European neolithic communities of Elsloo and Hienheim. *Analecta Praehistorica Leidensia*, XII.
- van de Velde, P. (1990). Bandkeramik social inequality. A case study. *Germania* 68, 19–38.
- Wilk, R., & Rathje, W. (1982, July/August). Archaeology of the household: Building a Prehistory of domestic life. *American Behavioral Scientist*, 25(6), 617–639.
- Zimmermann, A. (1995). *Austauschsysteme von Silexartefakten in der Bandkeramik Mitteleuropas* (Universitätsforschungen zur prähistorischen Archäologie 26). Bonn: Habelt.
- Zimmermann, A. (2012). Das Hofplatzmodell – Entwicklung, probleme, perspektiven. In S. Wolfram & H. Stäubli (Eds.), *Siedlungsstrukturen und Kulturwandel in der Bandkeramik. Beiträge der Internationalen Tagung, Neue Fragen zur Bandkeramik oder Alles beim Alten? Leipzig 23 - 24. September 2010. Arbeits- und Forschungsberichte zur sächsischen Bodendenkmalpflege, Beiheft 24* (pp. 11–19). Dresden: Landesamt für Archäologie.