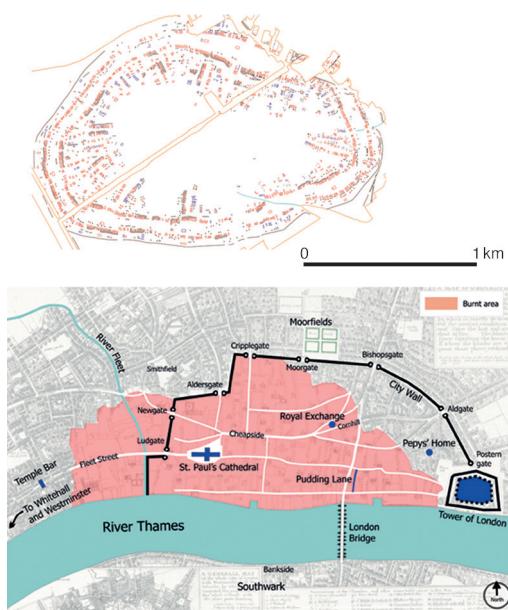


Bisserka Gaydarska & John Chapman

1 Introduction

In the first chapter, we introduce readers to the world of Central and East European prehistory and, in particular, the Cucuteni-Trypillia group, which covered up to 250,000km² and lasted over two millennia. This group was one of the largest networks ever to develop in European prehistory prior to the Bronze Age and one of the challenges is to identify mechanisms which enabled the survival of such a network. The key aspect of this massive network concerns settlement size, which reached a range of 1–5ha in the Cucuteni zone but expanded to the largest settlements yet known in 4th millennium Eurasia in one part of the Trypillia zone. The largest of these massive sites – known as ‘megasites’ – ranged from 100ha to 320ha and were comparable in size to the first Near Eastern cities.

The lack of a prior inter-disciplinary project to investigate Trypillia megasites led to the establishment of an agreement between the Institute of Archaeology NAS (Dr. Mykhailo Videiko) and the University of Durham Department of Archaeology (Professor John Chapman) for a four-year project funded by the AHRC. In this Chapter, we introduce the Project by way of a Project Biography, with an explanation of the origins and growth of the Project, the starting positions of all concerned and the ways in which our theoretical differences led to alternative interpretations. This monograph is the Project’s final report.



Bisserka Gaydarska & John Chapman

1.1 Introduction to the Trypillia Group

The time-place distribution of the Trypillia² – Cucuteni groups – over two millennia (5000–2800 cal BC) and between 225,000 and 250,000km² – makes them one of the largest and most long-lasting groups in Neolithic and Copper Age Europe (Figs. 1.1–1.2). The two names stem from the AD 19th century practice of naming a group of similar pottery after the first important site where such pottery was found. Thus, the distinctive painted ‘Cucuteni’ pottery was named after the promontory site ‘Cucuteni-Cetățuia’, some 60km West-North-West of Iași, Moldavia, North-East Romania, first excavated by N. Beldiceanu in 1885 (Monah D. & F. 1997, p. 21). Within 15 years, Vikentiy Khvoika had found broadly similar painted pottery in his excavations near the village of Trypillia, some 40km South of Kyiv, Ukraine (Khvoika 1901, 1904). Similar material was also found in a third country – Moldova – at the site of Petreni, where von Stern published a remarkable site plan and excavated a number of what he thought to be pottery kilns (von Stern 1907). It was not until 1932 that the analogous ceramic assemblages from the three areas of Moldavia, Moldova and Ukraine were recognised to derive from the same ‘culture’ – henceforth named the ‘Cucuteni-Trypillia culture’ (Schmidt 1932) (Figs. 1.3–1.4).

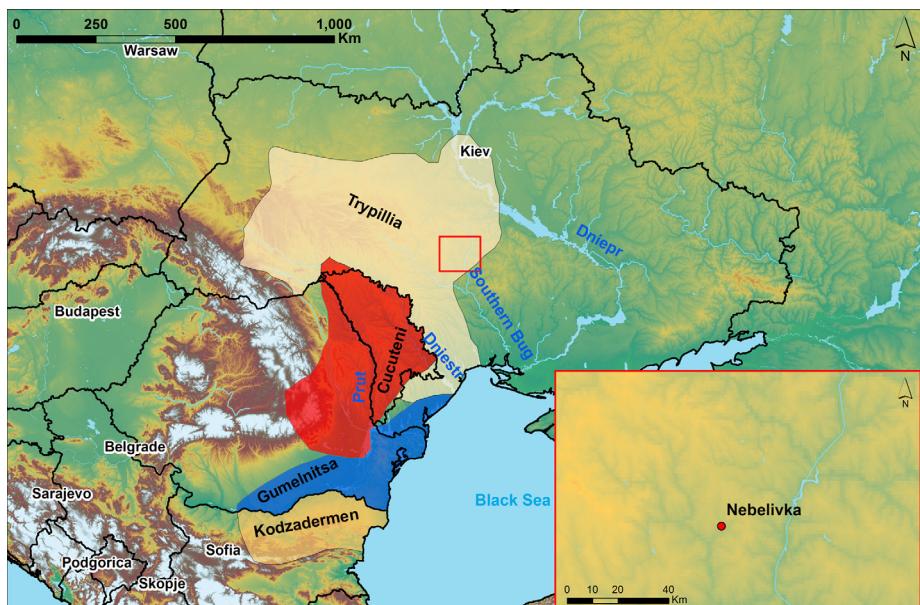


Figure 1.1: Map of Cucuteni-Trypillia distribution (by M. Nebbia).

² The term ‘Trypillia’ is the Ukrainian name for the group, as compared to the Russian ‘Tripolye’.

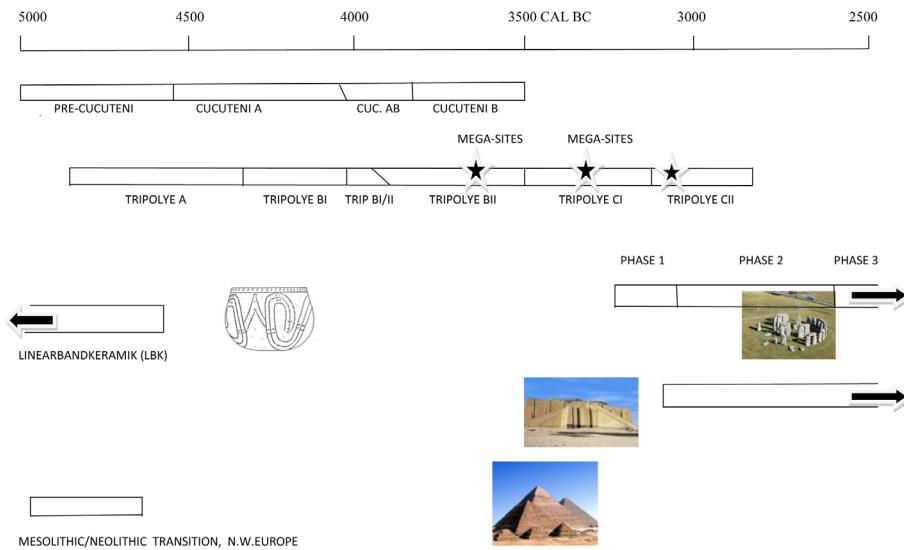


Figure 1.2: Timeline of Cucuteni-Trypillia group.

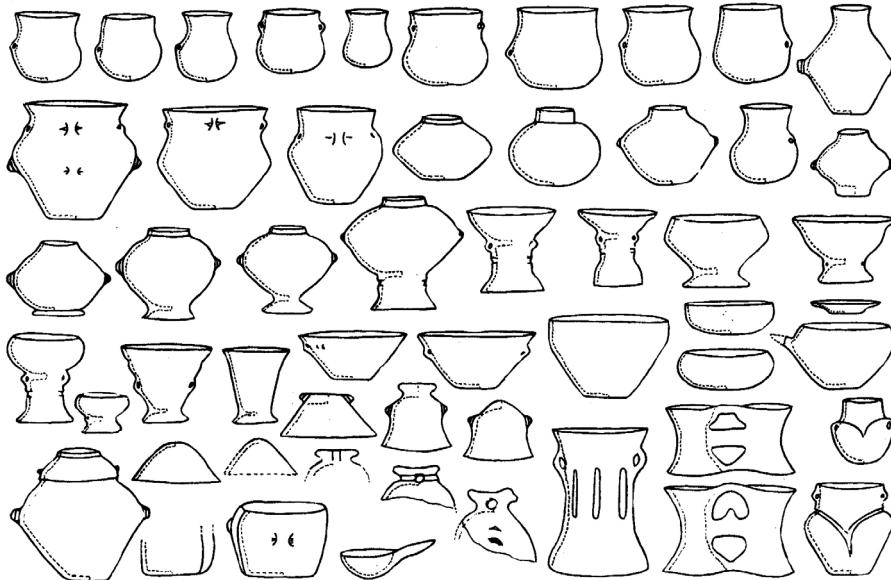


Figure 1.3: Cucuteni A pottery, Drăgușeni (by B. Gaydarska, based upon Crîșmaru 1977, Fig. 20).

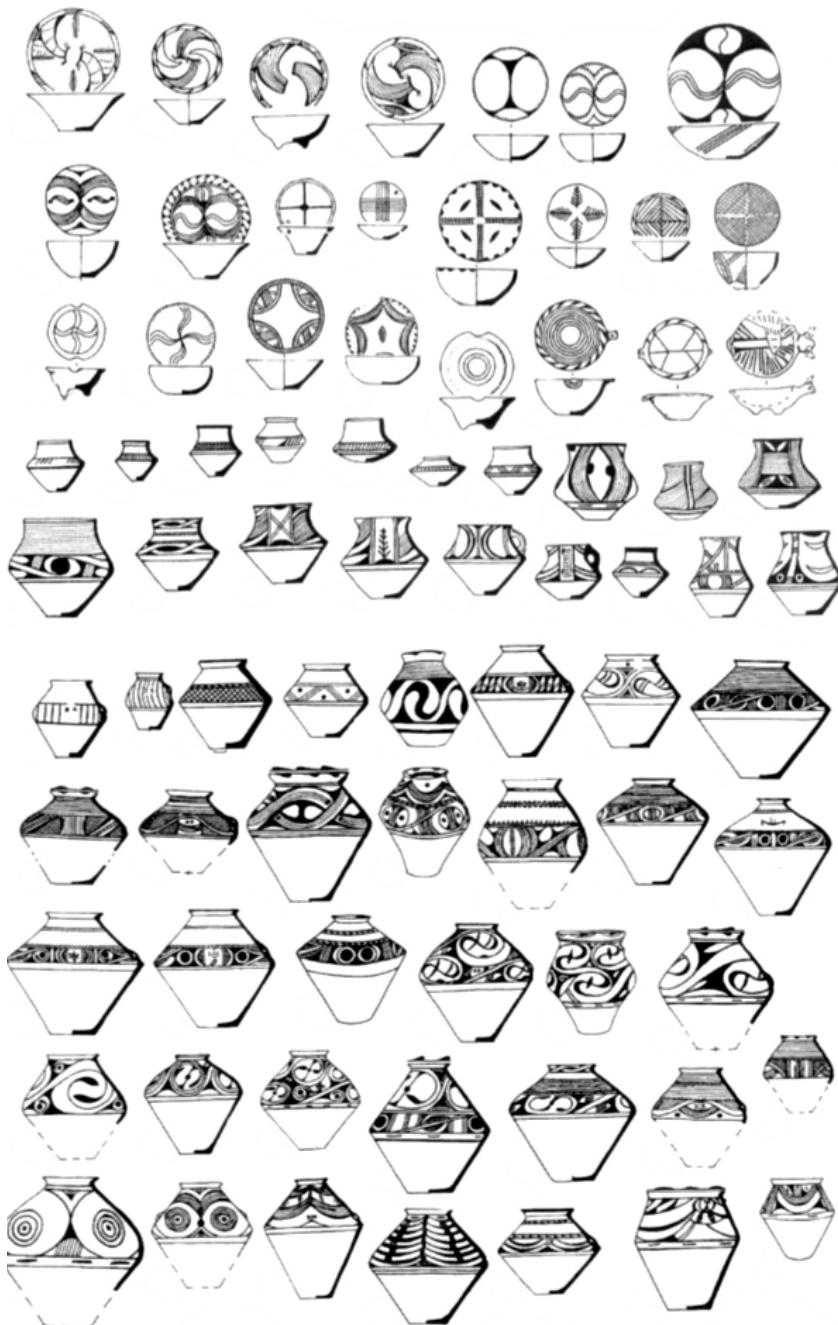


Figure 1.4: Trypillia BII – CI pottery, Bug-Dnieper Interfluve (by L. Woodard, based upon Ryzhov 2012, Figs. 6.4–6.5).

Those few syntheses of large regions that concern the prehistory of Central and Eastern Europe have often been written by outside specialists such as Gordon Childe (1929), Graham Clark (1969), Sarunas Milisauskas (1978), Marija Gimbutas (1982) and Jan Lichardus/Marion Lichardus-Itten (1985). In each case, the Cucuteni-Trypillia group has been considered as a major component of Late Neolithic/Chalcolithic 'Climax Society' (in Nandris' helpful term of 1978). While the Lichardus/Lichardus-Itten approach is a straightforward culture history, Milisauskas develops a thematic, processual approach to Trypillia. In her heavily gendered model of the Kurgan transformation of East European Climax society,³ Gimbutas (1982) recognises Cucuteni-Trypillia as the pinnacle of a matriarchal society, with female priests and temples where goddesses and gods were depicted by a wide range of fired clay figurines (Fig. 1.5). It has rarely been underlined that of all the figurine-rich, settlement-based Climax societies, Cucuteni-Trypillia continued for over a millennium after the transformations of all other such Balkan regional groups (e.g., the Kodzhadermen-Gumelnita-Karanovo VI group, which hardly lasted long into the 4th millennium BC) (Lazar, Chapter 5.2.3). Accepting that there were minor regional variations in the long-lived Cucuteni-Trypillia phenomenon does not deflect our attention from its immense stability and its conservative resistance to those major changes that had transformed all other Balkan Chalcolithic groups.

Three key points stand out from the long history of Trypillia-Cucuteni studies – the utter predominance of the domestic domain over the mortuary sector in both groups, the closely related near-absence of the materialization of hierarchies in either group and the differential development of massive sites (the so-called 'megasites') in certain zones of the Trypillia group but not in others and not at all in the Cucuteni sites. Indeed, the Trypillia megasites stand out from the rest of Eastern, South-East and Central European Neolithic and Chalcolithic settlement, which was normally limited in size to 10ha, whatever the settlement form – tells, open sites or enclosed sites (Fig. 1.6).

In European prehistory, there is a marked contrast between groups where the domestic domain was strong and groups with an often monumental mortuary zone (Chapman 1992). Regional sequences often show a change from one mode to the other, suggesting that an opposition to the previous dominant ideology is partly responsible for the change. There can be no doubt that the Trypillia-Cucuteni group is one of the most strongly household-oriented groups in European prehistory. Not only were extramural cemeteries absent, except in the latest stage of Trypillia in the North Pontic steppe zone and the Dniester valley, but there were hardly any intramural burials or fragmentary bone deposits in the hundreds of excavated settlements⁴. The

³ The term 'kurgan' is the Russian word for 'barrow'.

⁴ A striking exception concerns the Scânteia settlement, where House 9 was clearly a mortuary house containing the fragmentary remains of at least 33 individuals (111 bones or teeth: Bem 2007).

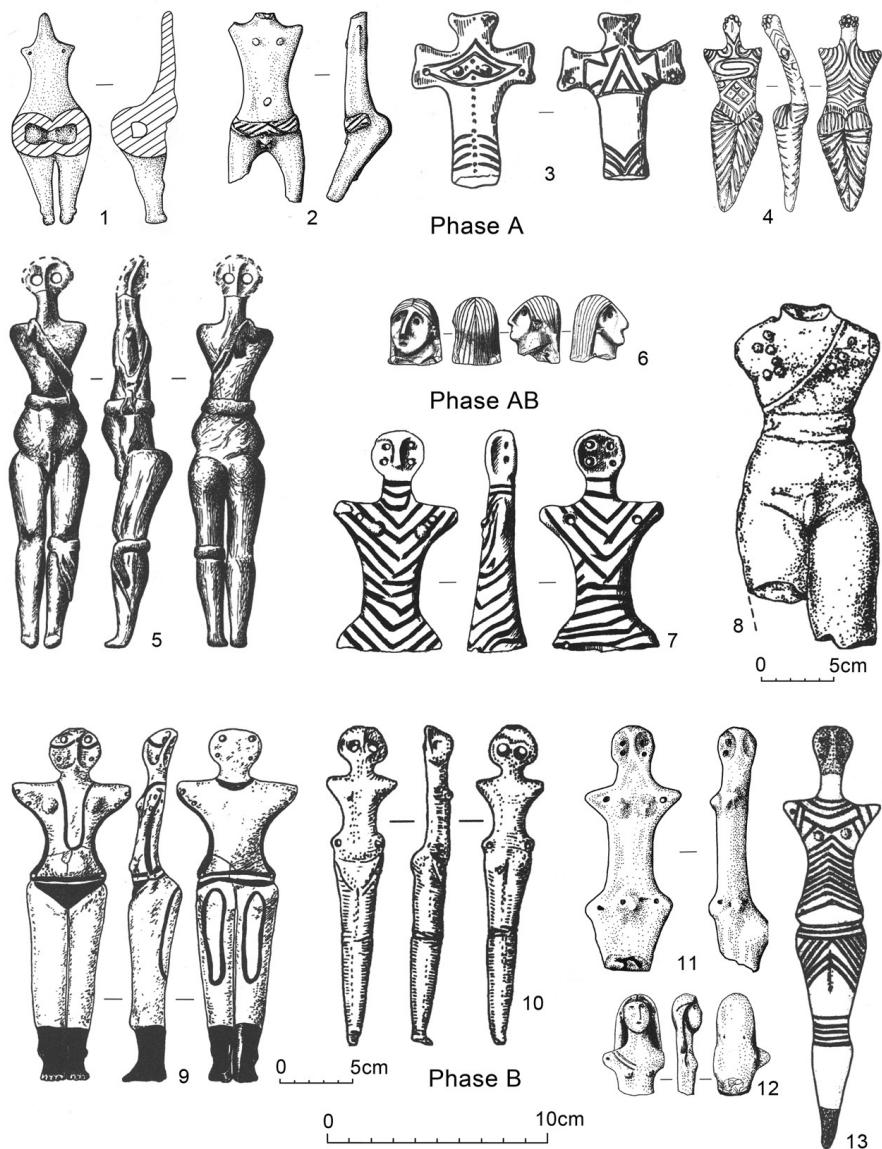


Figure 1.5: Cucuteni-Trypillia figurines (by Y. Beadnell, based upon Monah D. 1997).

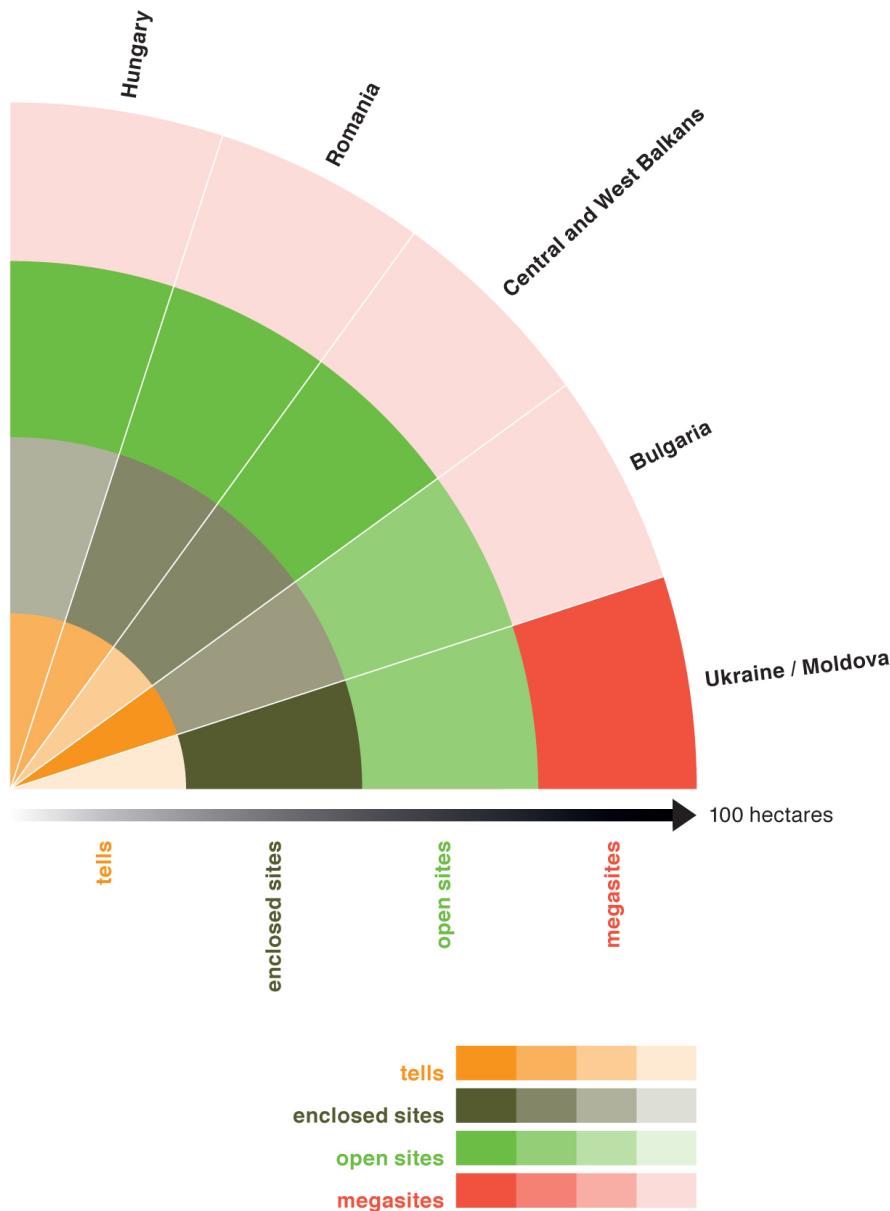


Figure 1.6: Settlement model for Central and Eastern Europe: key – darker shades show higher densities of a site type, lighter shades lower densities (by C. Unwin).

absence of human bone remains has been linked to both the ubiquity of figurines (Bailey 2010) and house-burning (Kruts 2003; Chapman 2015).

In other parts of Central and Eastern Europe, the appearance of formal intra-mural burial and, especially, cemeteries has often been related to the onset of richer, more diverse material culture, sometimes conceptualised as ‘elite’ or ‘prestige’ goods (Bailey 2000). A good example is the contrast between the Early Lengyel group, with little copper and no community group burials, and the Late Lengyel group, with many community group burials, often containing copper grave goods. The excavation of the huge Lengyel settlement-and-mortuary complex at Alsónyék supports this contrast, for copper ornaments appear early in the Lengyel burial sequence (Bánffy et al. 2016) and rarely if ever in such early settlements. Thus, a tenable position for the scarcity of prestige goods in the Trypillia-Cucuteni group is the rarity of human burials, whether intra-mural or extra-mural: Trypillia burials appeared late in the sequence. While prestige goods are more common in Cucuteni than in Trypillia, their context takes the form of the deposition of hoards, of which the most significant was the Karbuna hoard, dated to Trypillia Phase A and containing a rich assemblage of copper, *Spondylus* and red deer tooth pendant ornaments (Dergachev 1998). While the deposition of other ornament hoards and, indeed, also hoards of exotic long flint blades, occurred in Trypillia, they are notable for their rarity. As yet, not a single settlement hoard has been found on a Trypillia megasite, although a copper axe of Mareş’ Type A.B.10.1.4 (Mareş 2002, Pl. 51/8–10 & Harta 12) was found in House Zh-2 at Majdanetske (Shmaglij & Videiko 2001–2, Fig. 54/15 & 55/1). Moreover, the first gold find in Trypillia settlements was found at Nebelivka (see below, Section 5.2.8). Until the recent investigations of megasites, there was also a general rarity of architectural and ritual differentiation in Trypillia settlements. The current view identifies a paradox in Trypillia exchange networks – massive megasites with potential demand for huge resources, with possible hierarchical developments, in contrast to the paucity of exotic prestige goods.

The third characteristic of the Trypillia group – its megasites – is of central importance to this Project and deserves its own history of investigations.

Bisserka Gaydarska & John Chapman

1.2 History of Megasite Investigations

There are now several accessible accounts of the discovery and investigation of Trypillia megasites (chapters in Menotti & Korvin-Piotrovskiy 2012; Chapman et al. 2014b, 2015; Chapman & Gaydarska 2016; Kruts 2012; chapters in Müller et al. 2016b) to complement accounts in Russian or Ukrainian (e.g., Videiko 2012, 2013). In terms paralleling those first proposed by Thomas Kuhn (1970), the history of investigations comprises three phases of innovative fieldwork practices (viz., ‘scientific revolutions’) separated by two long periods of ‘normal excavation’ (viz., ‘normal science’), in which progress was dictated by the finances available for summer fieldwork.

The discovery of the eponymous site of Trypillia was made by Khvoika in the 1890s. The distinctive architectural remains of burnt houses defined by a mass of fired clay daub were first interpreted as ‘mortuary houses’ but were later given the correct designation of dwellings (Kruts 1990). It is important to acknowledge that Ukrainian prehistorians were the first in Europe to recognise the deliberate burning of wattle-and-daub houses as part of ritual practice. The elaborate and beautiful bichrome and polychrome painted pottery brought the Trypillia group into the European Neolithic family of painted pottery ‘cultures’ (Dimini, Butmir, etc.: von Stern 1907; Childe 1945). A succession of Trypillia sites was excavated using Khvoika’s techniques, which have been passed on to the fourth generation of those currently excavating megasites. The largest scale of excavation of a Trypillia settlement was reached by Pas sek in her post-WW2 excavations of Volodymyrivka and Kolomiishchina (Pas sek 1949, 1949a).

The second phase of innovation – termed ‘the first methodological revolution’ (Chapman et al. 2014b) – followed a 60-year period of ‘normal excavation’ of smaller and medium-sized Trypillia settlements. Given the normally tight restrictions on aerial archaeology in Eastern Europe (Braasch 1995), it was remarkable that Dudkin was able to use military photographs for the purposes of archaeological investigation (Dudkin 1978). These images revealed not only massive settlements but also hinted at regular concentric planning of the kind first noted by von Stern at Petreni (Dudkin 1978; first re-published in the West by Ellis 1984) (e.g., Yatranivka: Fig. 1.7a). Three stages of fieldwork were needed to confirm the association of the Trypillia group with the aerial images: (a) ground-truthing showed that Trypillia pottery was found in the areas covered by the aerial images; (b) a pioneering use of geophysical investigation pinpointed house-sized magnetic anomalies on the same sites (Fig. 1.7b); and (c) the excavation of a sample of these anomalies showed the typical Trypillia mass of burnt daub (the so-called ‘*ploshchadka*’). These innovations characterised the ‘first methodological revolution’ of the late 1960s – early 1970s. They form the basis for everything that later scholars achieved.

This cluster of innovations set a new agenda for the next 35 years – a period of ‘normal excavation’ which produced a mass of new fieldwork and excavation data from sites such as Majdanetske (Shmaglij & Videiko 2001–2) and Taljanki (Kruts 1990). This was a period of incremental growth in the understanding of many aspects of megasites, not least the planning principles underlying megasite spatial development, the way in which domestic houses were built and deliberately burnt down and the subsistence basis of the huge populations (Kruts 1990). Excavation of 43 structures at Majdanetske and almost 50 structures at Taljanki (Shmaglij & Videiko 2001–2; Kruts et al. 2005; cf. Burdo et al. 2013) has provided detailed architectural plans and offered reconstructions of 1- and 2-storeyed houses full of ceramics, figurines and animal bones. However, the excavation of houses on its own was not likely to provide an accurate or reliable internal site chronology. The cumulative results of fieldwalking projects attached to major excavations and the systematisation of Trypillia settlement data led to an early attempt by Linda Ellis (1984) to produce

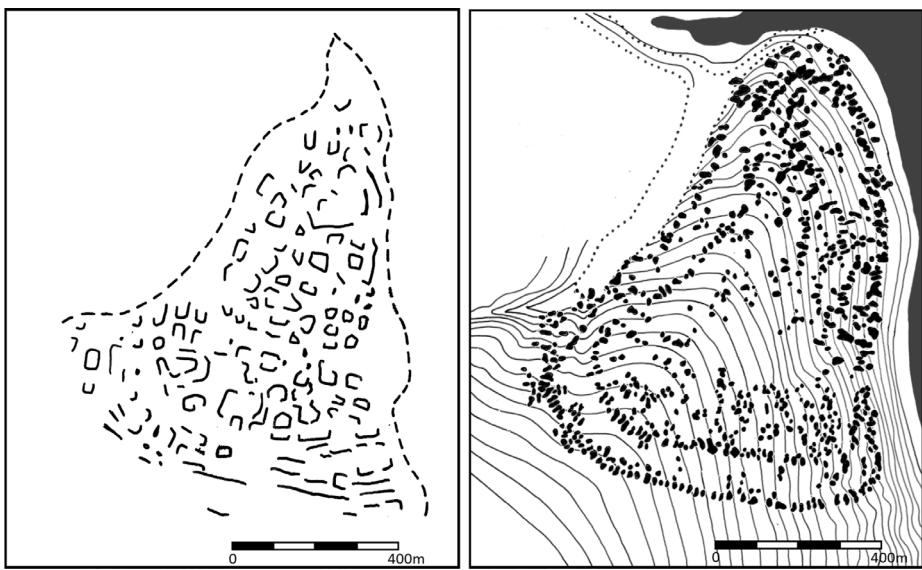


Figure 1.7: Early remote sensing of Yatranivka: (a) plot of air photograph; (b) geophysical plot (by L. Woodard, based upon Videiko 2013).

the first regional settlement plans, interpreted as a 3-level, size-based site hierarchy in the Uman area. Twenty years later, continuing accumulation of field data led to an important synthesis – the ‘Encyclopaedia of Trypillia civilization’ (Videiko 2004; for critical analysis, see Chapter 3.3).

A division among Trypillia specialists emerged on the fundamental nature of megasites – proto-urban or urban and comparable to the first cities in the Near East (Videiko 1996) or ‘large villages’ that fell far short of urban status (Kruts 2003; Korvin-Piotrovskiy 2003). This debate has been recently critically reviewed (Gaydarska 2015). However, this debate remained at a classificatory level – what to call the megasites – rather than a model of how they developed or functioned. There was general acceptance of the diffusionist process of site populations moving from one megasite to another in succession, itself rooted in Ryzhov’s generally accepted, complex typology of Trypillia painted pottery (Ryzhov 1990, 1999, 2012, 2012a).

The ‘second methodological revolution’ of the late 2000s and the 2010s (Chapman et al. 2014b) came on the heels of a decadal reduction in excavation of megasites, following the funding cuts suffered by archaeology after the fall of the Soviet Union. The key element in the second revolution was geophysical investigation, which was now capable of producing more accurate plans at a much greater rate (Chapman et al. 2014a, 2014b; Hale et al. 2017; Rassmann et al. 2014). Cesium magnetometry on vehicle-drawn carts was used effectively at Taljanki, Majdanetske and Apolianka (Rassmann et al. 2016), while Archaeological Services (Durham University) produced the only complete plan of a megasite so far, using

pedestrian fluxgate gradiometry (Hale et al. 2017; Chapman et al. 2014b; see Chapter 4.2). Mikhail Videiko's response to the 2009 magnetometric plan of part of Nebelivka (Fig. 1.8) summed up the change – "it looks like an excavation plan!" (John Chapman, witness statement). The 'new geophysics' enabled the recognition of new types of individual features – including larger-than-usual structures termed 'Assembly Houses', unburnt houses, pits, perimeter ditches, kilns and perhaps paths – as well as the study of new relationships between individual features, whether as groups of houses ('Neighbourhoods'), groups of Neighbourhoods ('Quarters') or clusters of pits. But, even more significantly, the complete plan of Nebelivka permitted the detailed analysis of the constituent parts of the overall plan in terms of the divergences from, as much as the accordances with, the overall plan. It is this advance which has enabled a clearer picture of the growth of a megasite which was simply not possible with the older geophysical plans.



Figure 1.8: Geophysical plan of the 2009 season overlain on satellite image of Nebelivka (by M. Nebbia, based on Hale et al. 2010).

In comparison with these methodological advances, there has been little concurrent development of the Trypillia megasite theoretical research agenda (but see Diachenko 2016, 2016a), despite its ultimate aim of the identification of explanations for the origins, maintenance and decline of the largest settlements known in 4th millennium BC Europe. It has long been maintained, if recently published (Chapman & Gaydarska 2018), that the gains of the 2nd methodological revolution would be forfeited unless comparable theoretical developments were made in the next decade. Such developments soon became central to the AHRC project.

John Chapman & Bisserka Gaydarska

1.3 Project Biography

Perhaps the most successful, and certainly the most entertaining, account of the development of an archaeological project was Andrew Fleming's (1988, 2008) publication on his 'Dartmoor Reaves' project, South-West England. Fleming gave a sensitive treatment of the moor which he investigated while integrating moorland places into the story of daily project routines and the 'academic' results. While we cannot emulate Andrew's success, which won him the Book of the Year award in 1990, instead, in this short section, we shall evaluate the intellectual journey⁵ which we took while leading the Project, from its inception in 2003 to the present.

Our good friend Dan Monah – a great Moldavian prehistorian who died in 2013 – managed to wangle Bisserka and John an invitation to a 2003 conference about the Trypillia megasites to be held in the home village of the largest – Taljanki. The best way to recover from an epic 18-hour trip from Iași to the conference, shared by three Romanian and one Moldovan colleague⁶, was to join the conference host Alexei Korvin-Piotrovskiy in a vast feast for all the delegates. One Ukrainian colleague at the conference stood out for his vigour, knowledge and English skill – Dr. Mykhailo Videiko. During our conference discussions, we decided to try to put together a project focussing on the Ukrainian megasites.

As often happens, one thing did not lead to another and so it was not until 2007 that we were stimulated by the visit of Professor Roland Fletcher as a Visiting Fellow of the Durham University Institute of Advanced Study to renew our plans to work on the megasites. Reminding us that the Trypillia megasites were the only exceptions in the world to his global 100ha limit to agrarian settlements (Fletcher 1995), Roland urged us to develop the Trypillia contacts and to create a project to investigate these extraordinary sites. These sites, he believed, would be the earliest examples of a new

⁵ To which Andrew Fleming may well reply: "Pretentious - *toi??!!*"

⁶ The details of this trip would fill a chapter which perhaps deserves a separate publication.

class of urban site – the low-density urban site – which he was researching during his Durham Fellowship (Fletcher 2009).

Renewed contact with Mikhailo Videiko led to a visit to Ukraine in summer 2008 to discuss a project, examine museum collections and visit a number of Trypillia sites to identify a potential megasite or perhaps two (!!!) for intensive, multi-disciplinary investigation. After discussions in Videiko's home Institute in Kyiv, we decided that the site of Nebelivka, in Kirovograd Oblast, would make an excellent choice. British Academy Small Research Grant funding was obtained for a trial season in summer 2009, in which we tested our abilities to work together (viz., make necessary compromises) and tried out approaches to field archaeology in the Ukrainian forest-steppe. This included several firsts – intensive, systematic fieldwalking of Soviet-scale fields, gridded collection within a megasite, dry-sieving and bucket flotation of a Trypillia house excavation, modern geophysical prospection – as well as intensive post-excavation finds processing and sediment coring at newly-discovered wetland sites in the region.

The results of the 2009 season were promising enough to submit an application to the AHRC for a four-year project, which failed in 2010 but was funded in 2011, with a start-up date of March 2012. At this stage, we hired a Post-Doctoral Research Assistant (Dr. Bissanka Gaydarska – the only person on the Durham team with an excellent grasp of Russian) and a Project Ph.D. student (Mr. Marco Nebbia – a remote sensing and GIS specialist). The first major Project field season was planned for July – August 2012, during which we gave ourselves the immense challenge of excavating the whole of the largest known structure in the Trypillia world – the so-called Mega-structure (56 x 20m, including a built-up area of 36 x 20m) – in one 8-week season⁷. This decision implied a change of direction, since nowhere in the Project application had we even mentioned 'finds'. The first planned strategy for recovering samples for AMS dating had involved daub coring, with very limited finds recovery, rather than test excavation, which produced masses! Further major fieldwork seasons in the summer (2013 and 2014) alternated with winter and spring post-excavation recording seasons of the huge ceramic assemblages that we recovered from House A9 (2009), the Mega-structure (2012) and the over 80 test pits which contained often large ceramic assemblages (2013–4). The happenstance of taking a mature Durham student with building experience – Stuart Johnston – on the 2013 season led to the idea that the Project could begin an experimental programme under Stuart's leadership, in which we would build (2014), burn (2015) and excavate (2017) the burnt remains of, two smaller-scale 'Trypillia' houses – both of floor plan 4 x 3m, one 1-storey and the other 2-storey (Fig. 1.9). This led to an international conference visit to Nebelivka village in

⁷ The Ukrainian side was convinced that we had to complete the excavation in one season, for fear of extensive looting of the Mega-structure in the months after September 2012. Supplementary funding for the Mega-structure excavation was kindly provided by National Geographic Society.

2015 for the burning of the 2-storey house⁸, as well as a one-week season in 2017 to excavate part of the experimental burnt house remains.



Figure 1.9: Two experimental ‘Trypillia’ houses in the process of construction (by S. Johnston).

As time went on, our views on the interpretation of our common field results⁹ increasingly diverged from those of our Ukrainian colleagues, making it harder to write joint articles and book chapters and, ultimately, explaining why the current monograph contains regrettably few contributions from the Ukrainian specialists who worked on the Project.

Every team member brings some previous intellectual baggage – positive and negative – to a new Project. The Ukrainian side brought an unrivalled knowledge of Trypillia, accumulated over many years of research experience but which inevitably introduced an element of prior certainty about what the Project would achieve. They also brought a traditional way of excavating and recording Trypillia burnt houses,

⁸ For reasons of village politics, it was not possible to burn both houses for a comparative experiment.

⁹ Perhaps the most startling example was published in the *Journal of Neolithic Archaeology*, when the two sides’ conflicting interpretations of the Mega-structure were published side by side (Chapman et al. 2014.).

which had originated with the first excavator, Khvoika, and has been passed down to each successive generation of prehistorians (now the fourth!). By comparison, the Durham team was less well-grounded in knowledge about Trypillia, which gave them a more open field in which to develop ideas and alternatives to the dominant narrative. This meant the risk that some of the alternative interpretations were off the rails – but perhaps some were not ... The Durham team did, however, bring a wider knowledge about the Balkan Neolithic and Chalcolithic, as well as a deeper theoretical perspective grounded in the last three decades of British theoretical debate – a debate which has largely bypassed Eastern Europe. Lastly, the Durham team introduced specialist skills and methods which were often new to Ukrainian prehistory and could generate unexpected results.

In addition, an important element in the Project's ongoing research was the development from 2013 onwards of an Ukrainian-German project at the nearby megasites of Taljanki (20km from Nebelivka) and Majdanetske (23km from Nebelivka). This Project in turn brought its own contributions to megasite research – in particular, the vehicle-based geophysical data capture which covered so much ground at Majdanetske, Taljanki, Dobrovodi and Apolianka. Many of the preliminary results of this parallel project have been published in an EAA Monograph and subsequent book (Müller et al. 2016b, 2017). It goes without saying that the research goals of the Ukrainian-German project and their insights into Trypillia megasites have proved to be a major stimulus to the evolving research interests of this Project.

The Project began with a title which set the overall agenda in terms of the question 'Were Trypillia megasites urban in nature?' Although many facets of our understanding have changed in the last decade, that question still resonates, albeit in a very different way from in our earliest formulation. We also naturally accepted the starting-point of our Ukrainian colleagues – that megasites were permanently occupied by a very large population, which meant that we had to explain the management of resources such as food, salt and lithics¹⁰ and the avoidance of environmental degradation. We also accepted Linda Ellis (1984) claims for a three-level settlement hierarchy in the Uman region – a region which included Nebelivka (!) – and looked favourably on the claims for secondary products usage at Trypillia sites. To the extent that we were initially paid-up members of the Ukrainian model for megasites, it was relatively easy to frame new data so as to conform with the current thinking. As late as the Arizona workshop of 2014¹¹, we were invoking Ellis' settlement model, ploughing and large-scale, long-distance salt exchange to account for megasite growth and survival. But four

10 Chapman remembers vividly the conversation with Videiko in which the latter claimed that 2 tons of exotic flint were being exchanged into the Majdanetske megasite *per annum*!

11 The "Cities or Big Villages? New Approaches to 'Anomalous Great Sites' workshop was organised by Roland Fletcher and Kırriy White and involved four days of discussions of large, mostly low-density, sites in the idyllic surroundings of the Amerind Foundation.

anomalies led us to operationalise the archaeological version of what Hemingway termed 'a built-in shock-proof shit-detector' – the most important element in any Project's armoury.

The first was the discussion of what became known as 'Anomalous Great Sites' – massive nucleated sites, usually low-density in character, which had a patchy global distribution (e.g., Angkor, Co Loa, Kelheim and Cahokia). We started to engage in these discussions at the SAA 2013 meetings in Hawaii and continued in an intensive one-week workshop at the Amerind Foundation's Dragoon Centre in Arizona. Here, Roland Fletcher had assembled a global team of archaeologists who were working to understand massive low-density sites (urban or not) in all their heterogeneity. During this workshop, we learnt not only that low-density urbanism (LDU) was a diverse global phenomenon of uncertain origins but also that Trypillia megasites were its earliest manifestation in the world. This helped us to counter the 'large village' interpretation of megasites and led to Gaydarska's challenges to conventional urban thinking (2016, 2017, 2019a).

The second starting-point was the new geophysical investigations at megasites such as Nebelivka, Taljanki, Majdanetske and Dobrovodi, as much as the completion of the Nebelivka plan in October 2013. The high-resolution detail of the Durham University Archaeological Services plan enabled us to go beyond the overall planning principles of megasites defined in the 1970s and 1980s and confront the variability of the layouts and local differences at each scalar level (house size, character of Neighbourhoods, nature of Quarters) which pointed to a bottom-up element in what had previously been conceived of as a top-down settlement plan¹². But this insight could still be consonant with Kruts' idea of 40 separate settlements coalescing into a single megasite (see below, p. 39).

The third element in our re-thinking came from the results of the Nebelivka Core P1 pollen analysis produced by Bruce Albert in 2015. What we expected from the multi-proxy analyses was signs of a massive human impact from a very large population of tens of thousands of Nebelivkans – after all, the coring site was only 250m downwind of the megasite. However, to everyone's surprise, there was no such massive human impact – in fact, most of the minor impact peaks were dated to before the settlement of the megasite. There is no doubt that the dating of pollen diagram has its problems – strong criticism on this ground was the main reason why the paper submitted to *The Holocene* in 2016 was rejected¹³. Nonetheless, it is a fact that there was no major human impact peak in the entire diagram, so wherever the megasite occupation is placed in relation to the pollen core, a modest human impact was all that was caused. We clearly needed to find an explanation for this absence.

¹² There is surely a parallel here between post-WWII Soviet planned economies and post-Soviet bottom-up economic growth, with its booms and busts.

¹³ A revised version has been accepted for *Vegetation History and Archaeobotany* (Albert et al. 2020).

The fourth insight came from the Project's only major addition to the initial nine objectives – the development of an experimental programme of house-building, house-burning and the excavation of the experimental burnt house remains. Stuart Johnston organised the building programme of two 4 × 3m 'Trypillia houses – one 1-storey and the other 2-storey – in the 2014 season, while the 2-storey house was burnt down as part of the Kirovograd-Nebelivka international conference in May 2015. Despite initial opposition from a financially prudent co-director, Johnston persuaded the Project to purchase 30m³ of timber to fill the house before firing. Together with the good weather, this fuel was one of the principal factors in achieving what is believed to be the first creation of a Trypillia look-alike *ploshchadka* and the production of genuine vitrified daub (A. Diachenko, pers. comm.; Burdo 2011). But the implication for house-burning was far-reaching – a Trypillia household would have needed much more firewood to burn their house than to build it – perhaps as much as 10 times more. Given that over a thousand houses had been burnt at Nebelivka, this made the expectation of a major human impact even greater.

This finding was linked to all of the other data which had hitherto been broadly supportive of the current 'maximalist' hypothesis to define a 'tipping-point' in our thinking about megasites. The implications of the tipping-point were developed in 2015 and 2016, too late for the Project-organised EAA Session on "Re-assessing urbanism in pre-Roman Europe" in Istanbul in September 2014. This session had two published outcomes, which neatly reflected the diverging interests of the Ukrainian, German and Durham teams. While Johannes Müller co-ordinated a data-rich EAA monograph on Trypillia megasites (Müller et al. 2016b), Bisserka Gaydarska (2017) guest-edited a special issue on Urbanism in the *Journal of World Prehistory*. Here, a critique of current approaches to urbanism framed the implications of the tipping-point for Trypillia megasites. But if it was now logical to reject the maximalist position, what would take its place?

The Arizona workshop was the crucible in which alternative 'minimalist' or 'middle-way' explanations were forged¹⁴ in the spirit of Gaydarska's 'relational' approach to urbanism. Another important strand in our thinking developed from our meetings with David Wengrow, whose novel insights into the earliest stages of Near Eastern urbanism (Wengrow 2015) helped us to make appropriate comparative comments for megasites. These interactions led to theorising three different models for a smaller megasite, two using seasonal dwelling and the third a smaller but permanent settlement approach. The operationalisation of these models began in 2016, with presentations at the Southampton TAG (December 2016) and the Vancouver SAA meetings (April 2017). Their full evaluation continues in recent publications and is summarised in this monograph.

¹⁴ The 'pilgrimage' model was actively discussed at Arizona.

Meanwhile, what has become of urbanism and, especially, low-density urbanism? To put it baldly, (how) can a ‘pilgrimage centre’ or an assembly site be called a ‘city’? Can even a slimmed-down, permanent ‘middle-way’ model of Nebelivka be called a ‘city’? Perhaps this last is the only model where the term low-density urban is appropriate? Escaping from the domain of pinheads and angels, we can only emphasise that it depends what you mean by a ‘city’. The remainder of this monograph is a complex attempt to answer these questions.