

SHOULD WE CONSIDER DITCH ENCLOSURES AS AN ELEMENT OF THE NEOLITHIC PACKAGE?

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Abstract

The article presents the earliest Neolithic ditch enclosures that have been registered throughout the Near East and the Balkans. The history of research indicates gaps both in the publishing state of the ditches and the analyzing strategies. All this restricts the in-depth study of this phenomenon and results in tentative conclusions. The time and space distribution of the known so-far ditches helps however for the distinguishing of some regional patterns and/or interregional similarities. It appears that the ditch-digging practice existed since the time of the Pre-Pottery Neolithic (PPN) in the Fertile Crescent. There, single ditches were combined with stone walls. Around the mid-seventh millennium BC, ditches occurred sporadically in Western Anatolia and probably in Northern Greece. At the turn of the sixth millennium BC, ditch enclosures became a common feature for the architectural organization of settlements in the regions of Marmara, Thessaly, Macedonia, Thrace, the southeast parts of the Central Balkans, as well as in the Southern Caucasus. They differ significantly from the PPN enclosures, which suggests that the idea of their construction evolved in the course of time. The Early Neolithic enclosures in Thrace, for example, display elaborate circular or oval layout of multiple ditches where rich depositional activities have taken place.

If we are to assume that the ditch-digging practice originated in the PPN of the Levant and Mesopotamia, then its distribution should have been associated with the Neolithic dispersal westwards of the core area of formation. The final part of the paper is dedicated to the ambiguous concept of the Neolithic package, with a discussion on whether ditch enclosures can be considered as part of the assemblage.

Keywords: Early Neolithic – ditch enclosures – Neolithic package – Balkans – Anatolia.

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Introduction

The Neolithic way of life – its origin, development and establishment both in Anatolia and the Balkans – has been the subject of ongoing interest and debates ever since the

beginning of prehistoric studies in said regions. The various aspects associated with this new lifestyle, such as an agricultural economy, sedentism, pottery production, different toolkits, religious beliefs etc., are all embodied in the well-known term ‘Neolithic package’. Its ever-changing concept in spatio-temporal terms, and its content for that matter, provides a background for the dynamic processes of tradition, adoption, adaptation and acculturation that the first farmers underwent at one time or place or another.

Researchers have invested a lot of time in studying the diverse nature of the first Neolithic societies, and yet we are challenged with every new discovery. A good example for the latter is the phenomenon of ditch enclosures whose number increased sharply in the past decade, in the territories of South Bulgaria, North Greece, North Macedonia and Northwest Turkey. The ditches and their nature are a live topic in these neighboring areas, puzzling archaeologists with questions mostly regarding their purpose. And although enclosures are a relatively new aspect of the Neolithic in the Balkans, they have been thoroughly studied in the Central and Western European prehistory. Thus, some of the already well-established interpretative models have been adopted from the West. Most modern opinions reject the defensive function of ditch enclosures in favor of their symbolic and/or ritual character. Interpreting enclosures is beyond the scope of this study; the focus here is rather on ditches from the initial Neolithic stages found both in the primary and subsequent core areas of neolithization. Following the steps of their occurrence and distribution across Anatolia and the Balkans might be the path to identify enclosures as a long-term tradition or a new fashion for the respective regions.

Ditch enclosures in the early Neolithic stages

History of research and research problems

Ditch enclosures in the two regions of interest here – the Balkans and Anatolia – have been recorded mostly during the last two decades. This does not reflect the state of Neolithic research in the Balkans; a great part of the peninsula has been extensively studied throughout the past century, especially to the south and east. The reason behind the recent ‘boom’ of ditch appearances, apart from large-scale excavations and application of geomagnetic prospection, are the research strategies of the time. Settlement mounds with their thick deposits and residential facilities were mainly selected for excavations in the past. Less attention has been paid to the periphery of the sites where enclosures of various type could be identified. Fewer than ten Early Neolithic¹ (EN) ditches were known until the end of the twentieth century. Examples come from Thessaly (Soufli Magoula and Achilleion), Greek Macedonia (Nea Nikomedeia, Servia, and Giannitsa B), the Middle Struma Valley (Kovačevo), and the Lower Danube (Cârcea); however, only small sections of the mentioned ditches have been revealed (Theocharis 1973; Gimbutas et al. 1989;

¹ EN here refers to this period in Balkan terms; according to the periodization in Northern Greece, it includes the Initial, Early and the beginning of the Middle Neolithic. In chronological terms, this is the time from the middle/end of the seventh to the mid-sixth millennium BC.

Hurtley 1939, 43ff; Mould & Wardle 2000, 33; Pyke & Yiouni 1996; Chrysostó mou & Chrysostó mou 1993; Lichardus-Itten et al. 2002, 115f; Nica 1977). At the time, it was considered that such enclosures must have been built for defensive or drainage purposes (Andreou et al. 1996, 553ff; Demoule & Perles 1993, 370; Jacobsen 1981, 314; Perlès 2001, 175; Lazarovici 1990; Todorova & Vajsov 1986; Raduncheva 1992).

The Neolithic¹ research in Anatolia, the Levant, Mesopotamia, and the Zagros region developed differently in terms of timing, intensity and methodology. In the 1950s and 1960s, excavations were concentrated in the Southern Levant, North Mesopotamia (south of East Taurus) and partially at the Central Plateau. It was during the late 1980s when more systematic research began in Western and Northwestern Anatolia which increased in the twenty-first century (Karul 2022, 231ff; Özdoğan 2022, 6ff). Ever since the archaeological map of Turkey and the neighboring areas is being constantly expanded. Most of the ditches known so far are situated exactly in the northwestern part of Anatolia (mainly in the Marmara area), as well as in the Southern Caucasus; thus, they have been discovered in the last 20 years. Only three examples have been recorded earlier during the second half of the past century and it is worth noting that all are of different geographical and chronological position. These are from: the PPNA level of Tell es-Sultan in the Southern Levant (Kenyon 1957); the PPNB/C (?) period of Kalavassos-Tenta in Cyprus (Todd 1982 & 2001); and most probably from the archaic Fikirtepe phase at Pendik, south of Istanbul (Harmankaya 1983; Özdoğan 1983 & 2013). The PPN ditches have been interpreted as elements of fortification systems as both are combined with stone perimeter walls.

As I have already highlighted, the beginning of the new century came with the wide recognition of ditch enclosures. We are now aware of more than 100 EN (including PPN) ditches at about 50 sites, which cover the timespan roughly between the tenth/ninth and the mid-sixth millennium BC (fig. 1). Regardless of the considerable database of ditch sites, they are rarely and only partially published, often in dig reports. The most common information concerns dimensions and sometimes layout along with relative chronology and/or stratigraphic data. Usually, the chronology of the features is provisionally stated within broad timeframes (e.g., EN or Early/Middle Neolithic, and even just Neolithic). My intention here is not to criticize the excavators as most of the ditches have been revealed during rescue projects and thus the chronology of the sites is yet to be clarified. Although some of the ditches have been radiocarbon dated using bone/grain/charred wood samples from their backfills, the ¹⁴C dates from ditches are of tentative reliability. When dating such samples, one must be aware that a ditch fill was formed as the result of various processes including secondary interventions, and mixing of data shouldn't be ignored. Hence, materials of an earlier age may end up in the lower layers of the fill and vice versa. Generally, the samples are obtained as close to the ditches' bottoms as possible

¹ All stages of the Neolithic and the Early Chalcolithic according to the Anatolian periodization scheme.



*Figure 1. Map showing the distribution of the earliest ditches in the study area.
Image Credit: Microsoft Encarta 2009 and N. Nikolova.*

so their initial phase of use could be determined. When it's possible to rule out the mixed character of a fill, such a date should be considered as a *terminus ante quem* for the digging of the ditch. And in theory, the *terminus post quem* for the abandonment or the end of a ditch's functioning should be a date derived from the uppermost layer of the fill. Ideally, dates from the bottom and top fill layers should display the lifespan of a ditch. Ditches that have been dated in the described manner are still rare examples. At the same time, when ditch fills have been dated, the particular dates are published mostly in calibrated BC years and not as raw radiocarbon BP dates. This presents an obstacle when trying to pinpoint the exact time of a ditches' existence. Accordingly, this does not allow a precise comparative analysis of the enclosures' chronological aspects.

In relation to the publishing state of ditches is the lack or the scarce information about the content of their backfills, i.e., sediment characteristics, finds including ceramic sherds and various objects, faunal and plant remains, etc. With few exceptions, the data regarding different depositional practices associated with the ditches is nearly absent. Moreover, the phases of ditches' use and their maintenance activities – such as cleanings and repairs – are rarely discussed. Topics about digging the ditches including methods and techniques, used tools, strategies and labor organization are yet to be explored. Such re-

search problems and gaps in publications restrict the in-depth characterization and above all the interpretation of the specific ditches and ditch enclosures as a phenomenon.

Time and space distribution

The available evidence allows the identification of more than 100 ditches across the Balkans, Anatolia, the South Caucasus, the Levant, and North Mesopotamia. For the most part, they are considered to be of an EN age, including the PPN in the Near East and the Early Chalcolithic in Anatolia. In respect to the timespan, the EN extends to the mid-sixth millennium BC in some regions of the Balkans (e.g., Thrace, the Struma River Valley, and the Lower Danube). Here I will briefly present the spatio-temporal distribution of the ditches as their general description follows in the text. There might be more examples not listed here, as it is not the purpose of the article to present a detailed catalogue of the ditches, but rather the most and best studied sites have been considered for this review.

(1) *Northern Mesopotamia, the Levant, and Southeast and Central Anatolia.* The evidence of ditches in this area – considered as the primary core area of Neolithic formation (Özdoğan 2022, 11) – is scarce (fig. 2.1–3). The earliest ditch is found in the western part of Tell es-Sultan and is associated with its PPNA level (Kenyon 1957, 67ff). A stone wall runs parallel to the ditch's inner side. Later, during the PPNB level of the mound, a new and more massive stone wall replaced the former 'fortification enclosure' as interpreted by Kathleen Kenyon. Another ditch comes from the site of Mezraa-Teleilat in the Upper Euphrates Basin (Özdoğan, E. 2010; Özdoğan et al. 2011, 49, 62, fig. 21). A deep cut interpreted as a ditch was excavated within a test trench in the western periphery of the mound. It might have been associated with a stone wall uncovered in another test trench. The exact time of the use of the ditch has not been clarified but an interval between the PPNB and the early Ceramic Neolithic has been proposed. Another stone wall and a ditch outside of it was revealed at the site of Kalavassos-Tenta in Cyprus (Todd 1982, 46). The fortification system bounds the settlement to the south and probably to the southwest and southeast. The dating of the ditch is debatable but either the PPNB or the beginning of PPNC has been suggested.

(2) *The Southern Caucasus.* A cluster of ditch enclosures is situated along the Kura River Valley in Georgia and Azerbaijan, mostly at the right bank of the river's middle course (fig. 2.4–9). The sites are both tells and flat settlements. They belong to the Shulaveri-Shomu/Šulaveri-Šomutepe cultural group and date to the first half of the sixth millennium BC (Hamon 2008; Hansen et al. 2013). There are at least six sites at which single enclosures or two to fourteen non-contemporaneous ditches were identified. Most ditches were excavated over a short length and/or within narrow trenches; therefore, published information is limited. The ditches are thought to have partially or, less commonly, completely enclosed the settlement area and existed for a relatively short time (Ioseliani 2017). The best-studied site, which impresses with the number of ditches recorded there, is the settlement mound of Aruchlo. At least 14 ditches that have various directions and

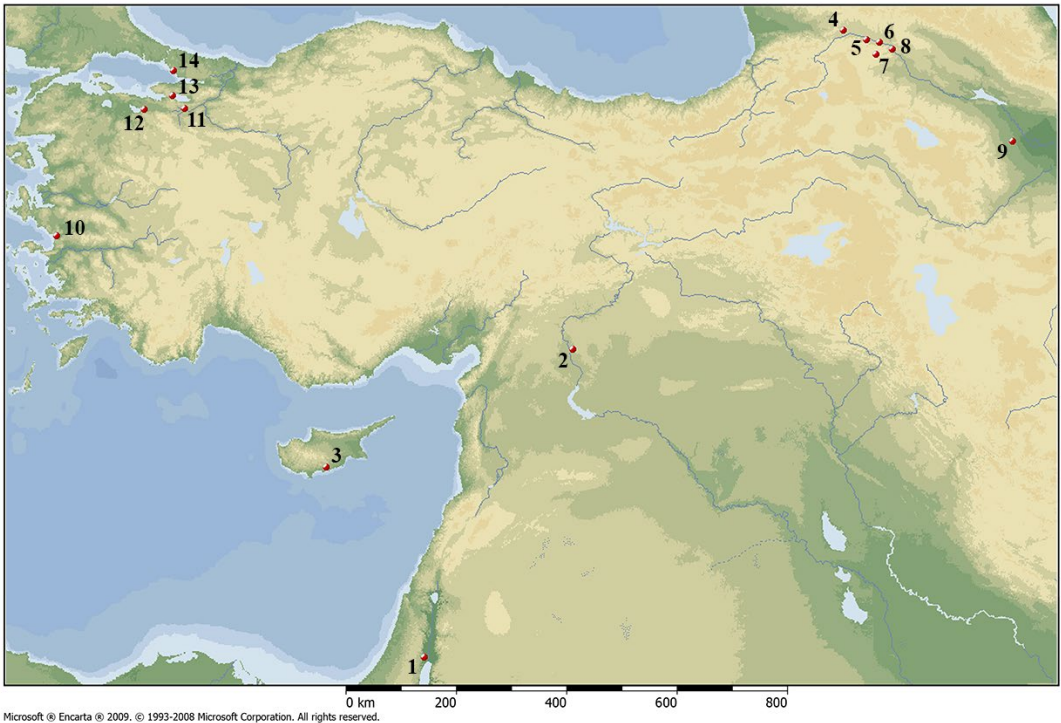


Figure 2. Map showing the distribution of Pre-Pottery Neolithic and Pottery Neolithic ditches in the Near East: (1) Tell es-Sultan; (2) Mezraa-Teleilat; (3) Kalavassos-Tenta; (4) Aruchlo; (5) Imiris Gora; (6) Khramis Didi Gora; (7) Toire tepe; (8) Šomutepe; (9) MPS 4; (10) Çukuriçi Höyük; (11) Barcın Höyük; (12) Aktopraklık; (13) Ilıpınar; (14) Pendik. Image Credit: Microsoft Encarta 2009 and N. Nikolova.

positions within the settlement plan, cut each other (Hansen & Ullrich 2017, 210, fig. 23; Ioseliani 2017, 224). Some are located at the periphery of the mound and others run at its core area. Small parts of them have been exposed and thus it is not possible to determine an overall layout. The excavators believe that the ditches did not have protective or drainage functions, nor were they a source of building material, but rather were dug as part of ritual practices (Hansen et al. 2017, 297ff). Small sections of ditches were also studied at several other sites in the region, e.g., Imiris Gora, Khramis Didi Gora, Šomutepe, Toire tepe, and MPS 4 (Ioseliani 2017, 228ff). During a large-scale geophysical survey project in the Mil Plain (Azerbaijan), more ditch enclosures were recorded, the dating of which is still unclear (Fassbinder & Becker 2017).

(3) *Western and Northwestern Anatolia.* Several sites where ditches have been excavated to varying extents are located immediately to the south and east of the Marmara Sea (fig. 2.11–14). They are mostly from the archaic and classical phases of the Fikirtepe culture in the region. The earliest one seems to be the ditch exposed in the northern end of the excavated area of Barcın Höyük phase VIe that is dated to the mid-seventh millennium

BC (Gerritsen & Özbal 2016). During the next phase, the ditch had been replaced by a wooden wall that enclosed a row of buildings to the south (Gerritsen & Özbal 2019, 60, fig. 2). A possible ditch was documented at the western periphery of the site of Pendik belonging to the archaic phase of Fikirtepe or ca. the late seventh and the early sixth millennium BC (Özdoğan 2013, 217, fig. 24). During its initial phase X/1, the settlement mound of Ilipınar was delimited to the north by a ditch or a so-called channel. The phase is dated to 6000–5900 cal. BC. After a short period of time, the ditch had been filled and houses appeared above it (Roodenberg 2008, 2f). The ditches at Aktopraklık have been more extensively studied. A ditch enclosed the oval-shaped area of Aktopraklık B, probably at one of its latest phases, ca. 5750–5600 cal. BC (Karul 2020). The inner side of the ditch was flanked by the backside of a row of buildings, thus resembling a wall. Another ditch was registered north of the former one, but only a small part of it was excavated. It has been suggested that the settlement area had been divided into separate enclosed units (Karul 2017, 130ff). Aktopraklık A is the latest area of habitation at the site. It was enclosed by a circular ditch – as shown by the geomagnetic prospection – of which a trench has been excavated. This area has been dated roughly to ca. 5600–5500 cal. BC (Karul 2017, 104–107).

A depression at the northern periphery of the site of Çukuriçi Höyük, close to the eastern Aegean coast (fig. 2.10), has been assumed to represent a filled ditch. It was not excavated yet as some houses built above it had sunk partially in it. This feature probably belongs to the time before level X or before 6400 cal. BC (Brami et al. 2016, 5, 10; Horejs 2017).

(4) *Thessaly and Greek Macedonia*. Thus far, no ditch enclosures have been recorded south of Thessaly, most probably due to the terrain characteristics as well as the state of research in the region. All known ditches are situated in Thessaly and predominantly in Macedonia (fig. 3). Ditches were dug less frequently in the initial stages of the Neolithic, while during the Middle and especially the Late Neolithic, they became a typical element of the settlement organization. They enclose both tells and flat settlements – entirely or partially, and sometimes run through the center of the sites. Besides ditches, stone enclosures are also a common enclosure type for the Western Aegean coast.

Several examples come from Thessaly (fig. 3.1–6); they were all excavated in small areas and usually no thorough information has been given. The earliest one is probably the ditch from Soufli dated to the second phase of the EN (Perlès 2001, 175; Toufexis 2017, 387). Other ditches in the region were found at Neraidas, Makrychori I (ditch II), Elateia, Agia Varvara, and Achilleion (Gimbutas et al. 1989; Reingruber et al. 2021; Souvatzi et al. 2021, 1184; Toufexis 2017, 168ff, 392ff). Several more ditch enclosures have been mapped by geophysical surveying in Eastern Thessaly but their dating remains uncertain (Kalayci et al. 2017; Simon et al. 2015).

A greater number of ditches has been recorded in the western and central parts of Macedonia (fig. 3.7–18). Most of the sites are flat settlements that have been enclosed by one to four successive ditches. The earliest ones seem to have been dug in the beginning of

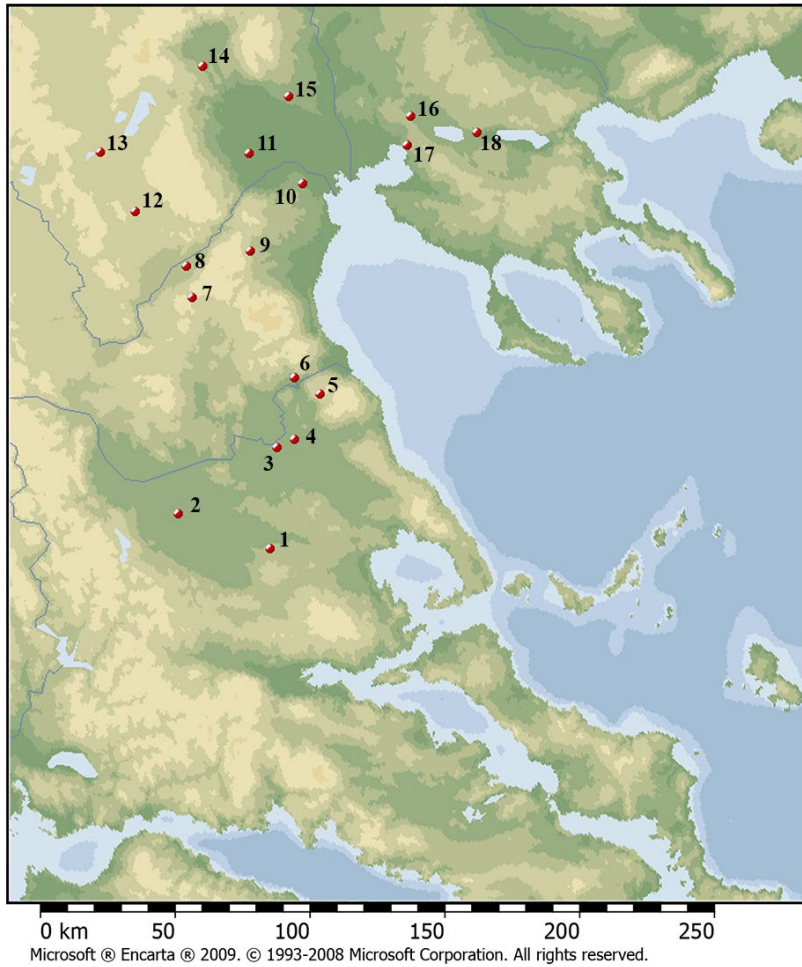


Figure 3. Map showing the distribution of ditches in the Early and the beginning of the Middle Neolithic in Thessaly and Greek Macedonia: (1) Achilleion; (2) Agia Varvara; (3) Neraidas; (4) Soufli; (5) Elateia; (6) Makrychori I; (7) Servia; (8) Kriovrisi; (9) Agios Nikolaos; (10) Paliambela Kolondros; (11) Nea Nikomedeia; (12) Pontokomi; (13) Anarghiri XI; (14) Apsalos–Grammi; (15) Giannitsa B; (16) Lete I; (17) Stavroupoli; (18) Koroneia. Image Credit: Microsoft Encarta 2009 and N. Nikolova.

the Neolithic in the area, although probably not at its initial phase, e.g., Nea Nikomedeia, Giannitsa B, and Agios Nikolaos in Rhitini (Pyke & Yiouni 1996; Chrysostóμου 2003; Toufexis 2017, 411). However, most of the ditches date to the end of the EN and the beginning of the (Greek) Middle Neolithic: Servia, Kriovrisi, Apsalos–Grammi, Anarghiri XI, Pontokomi, Paliambela, Lete I, and Koroneia (Karamitrou-Mentessidi et al. 2013; Kotsakis 2020; Ridley et al. 2000; Chondrogiánni-Metóki 1995; Chrysostóμου et al. 2003; Chrysostóμου & Giankoúlís 2018; Pappá & Tzanavári 2014; Kótsos 2017, 53ff).

Regardless of their chronological position, however, most ditches belong to the earliest occupational phases of the respective settlements. They had been filled shortly after the initial digging and the area above them was built upon, i.e., they were not of vital importance for defensive or other similar purposes (Demoule & Perles 1993, 370).

(5) *Vardar, Mesta, and Struma River Valleys, Sofia and Zlatitsa-Pirdop Basins*. Ditch enclosures in this wide area are concentrated mostly in the Upper Vardar and Middle Struma Valleys. The middle and upper courses of the Vardar River run in what is now the Republic of North Macedonia (fig. 4.1–4). Only small segments from three ditches have been excavated there – at Cerje–Govrlevo and Tumba–Brvenitsa, both dated within the first two centuries of the sixth millennium BC (Abazi & Tolevski 2019; Fidanoski 2015). Several ditch enclosures were detected recently as a result of magnetic prospection projects. These are single or multiple concentric ditches enclosing settlement mounds and are situated almost exclusively in Pelagonia (Naumov et al., 2014; 2017; Rujak et al. 2019). Even though most of them are considered to be of an EN age, when archeological excavations have not been conducted, the date remains conjectural and is yet to be verified. The dating of the single circular enclosure ditch at Vrbjanska Čuka appears to be unquestionably attributed to the EN, as excavations take place within the enclosed area and the prehistoric occupation of the mound dates exclusively to the beginning of the Neolithic (Naumov et al. 2016 & 2018).

There is only one recorded ditch along the upper course of the Mesta River (fig. 4.10), at the site of Eleshnitsa, and it was used at the very beginning of the sixth millennium BC (Raduncheva & Nikolov 1985, 22). The ditches in the Middle and Upper Struma Valley are located mostly along its right bank and date mainly to the later phases of the EN in the region, roughly between 5700 and 5500 BC (fig. 4.5–9): Kovačevo Ic, Ilindentsi, Brezhani, and Drenkovo–Garleshki nivi (Grębska-Kulow 2017, 253f; Grębska-Kulow & Zidarov 2020, 175ff; Lichardus-Itten et al. 2002, 115f). The ditch at Bersin might be of a slightly older age, probably towards the beginning of the sixth millennium BC (Vandova 2020). Only small segments of the listed features' length or circumference were excavated.

Immediately to the north and northwest of the Upper Struma Valley are situated the Sofia and Zlatitsa-Pirdop Basins. The best-studied ditch enclosure in the whole area presented here comes from the site of Slatina-Sofia in the Sofia Basin (fig. 4.11). The calibrated radiocarbon dates from the two parallel ditches and the houses built above them are concentrated within the first century of the sixth millennium BC (Nikolov & Takorova 2021, 17f). If we assume that these dates determine a *terminus ante quem* for the digging of the ditches and that they are part of the organizational plan of the initial settlement there, then a date at the end of the seventh millennium BC seems reasonable.

There are two probable ditches in the Zlatitsa-Pirdop Basin – one around the settlement mound of Mirkovo and another at the site of Chavdar (fig. 4.12–13) – both of which should be dated to the end of the EN in the area (Dumanov et al. 2013; Georgiev 1981, 69).

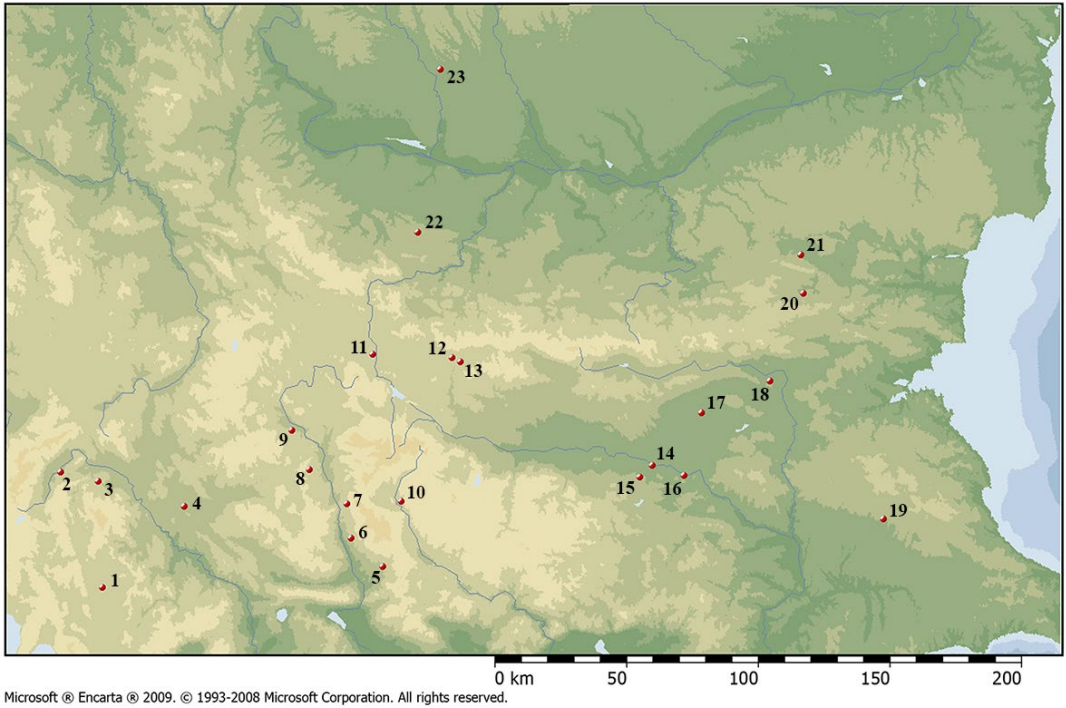


Figure 4. Map showing the distribution of Early Neolithic ditches in the Eastern and Southwestern Balkans: (1) Vrbjanska Čuka; (2) Tumba–Brvenitsa; (3) Cerje–Govrlevo; (4) Anzabegovo; (5) Kovačhevo; (6) Ilindentsi; (7) Brezhani; (8) Drenkovo–Garleshki nivi; (9) Bersin; (10) Eleshnitsa; (11) Slatina–Sofia; (12) Mirkovo; (13) Chavdar; (14) Yabalkovo 1; (15) Yabalkovo 2; (16) Nova Nadezhda; (17) Pilyov kaynak; (18) Kazlacha; (19) Aşağı Pınar; (20) Varbitsa; (21) Ovcharovo–Gorata; (22) Ohoden; (23) Cârcea–Viaduct. Image Credit: Microsoft Encarta 2009 and N. Nikolova.

(6) *Thrace*. Six ditch enclosures are known altogether in the upper and eastern parts of Thrace (fig. 4.14–19). There is no evidence for such sites in Aegean Thrace at this time. All of the examples represent multiple (but, for the most part, non-contemporaneous) enclosure ditches – up to five at one enclosure, entirely or partially surrounding the residential area. Most of the sites are relatively extensively studied by large-scale excavations – e.g., Nova Nadezhda (fig. 5), Yabalkovo (figs. 6 and 7), and Aşağı Pınar – or geomagnetic prospection projects such as at Kazlacha and Pilyov kaynak (cf. references in Nikolova 2018 & 2021). The enclosed sites seem to have existed for a long time: from ca. three centuries (Yabalkovo 1 and 2) through 450 years (Nova Nadezhda), to the impressive timespan of more than a millennium (Aşağı Pınar),¹ although the latter case displays changes

¹ The Early Neolithic ditch enclosures in Thrace, including all the available radiocarbon dates from the sites, is the topic of the author's unpublished PhD thesis (Nikolova 2022). For the published radiocarbon dates from Nova Nadezhda, Yabalkovo and Aşağı Pınar see: Bacvarov et al. 2016, table 2; Roodenberg 2014, table 1; Özdoğan 2013, 186; Thissen & Reingruber 2017, 154f.

Should we consider ditch enclosures as an element of the Neolithic package?

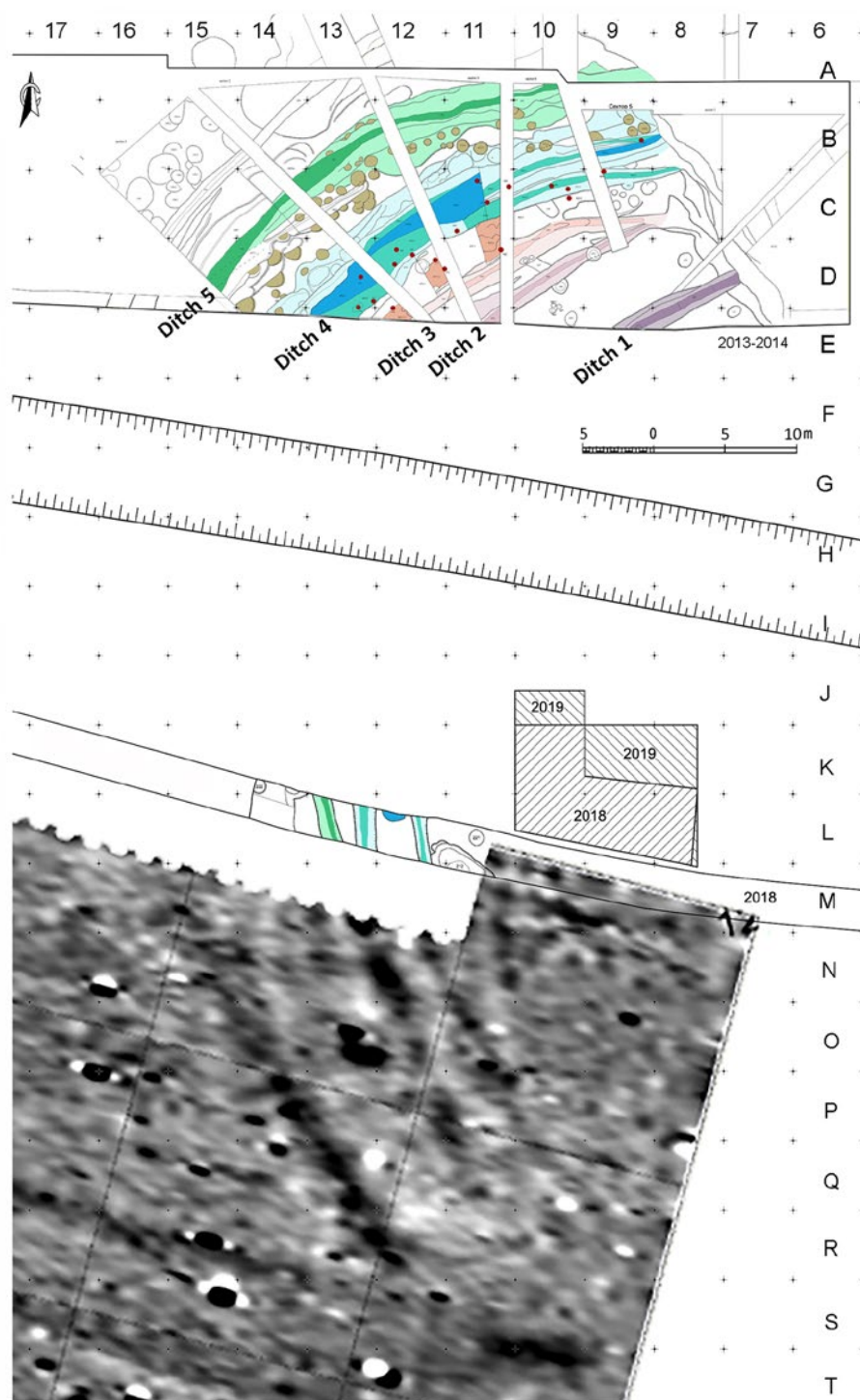


Figure 5. The enclosure at Nova Nadezhda. Image Credit: Bacvarov et al. 2020 and N. Nikolova.

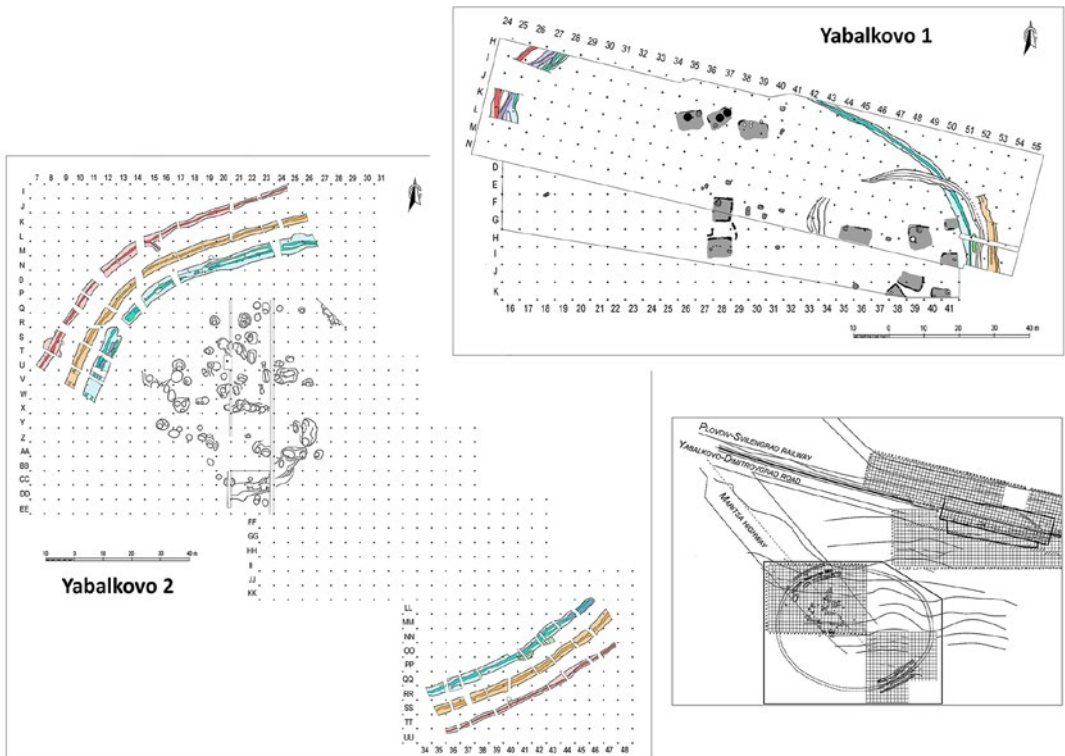


Figure 6. The enclosures of Yabalkovo 1 and 2. Image Credit: Roodenberg et al. 2013, fig. 1 and N. Nikolova.

in the house and enclosure construction as well as in the settlement layout during the different occupational phases (Özdoğan & Schwarzberg 2020). Obviously, the ditches were dug immediately or shortly after the settling of the respective locations. And the tradition of constant re-digging of the old and digging of new ditches seems to have lasted until the places had been left for good or a new enclosure tradition was adopted (evident only at Aşağı Pınar).

Most of the ditches in Thrace were dug, used, and filled within an interval of around 200 years: between 5900/5850 and 5700/5650 cal. BC (the circular enclosure at Yabalkovo 2; Aşağı Pınar; most of the ditches at Nova Nadezhda; enclosure E at Kazlacha). One of the earliest features is the innermost ditch at Nova Nadezhda which dates to the very beginning of the sixth millennium BC. Probably, the use of some or all the ditches at Yabalkovo 1 should be dated around the same time.

The site of Kazlacha presents a specific case as there, five different enclosures (A to E) – consisting from a single or up to four concentric ditches – cut each other. The site has been studied through geomagnetic prospection, electrical resistivity tomography and small-scale trench excavations (Petrova et al. 2016; Petrova & Zidarov 2012; Zidarov



*Figure 7. Aerial photograph of the enclosure of Yabalkovo 2.
Image Credit: Leshtakov 2014, 213, fig. 76.*

et al. 2015 & 2016). The latest enclosure (A) seems to belong to the beginning of the Late Neolithic in the area (Petrova & Valchev 2021). Enclosure E provides ceramic sherds typical for the white-on-red painted phase of the EN in Thrace (Petrova et al. 2016). In respect to the geomagnetic map, two of the enclosures (B and C) appear to be overlapped by enclosure E and thus are probably earlier. Their exact chronological position is yet to be clarified but a date within the first century of the sixth millennium BC or even a bit earlier can be proposed.

The distribution of EN ditch enclosures north of the Balkan Range is somewhat poorly represented at the current state of research (fig. 4.20–23). There are some features with debatable ditch interpretation south of the Danube (Ohoden, Ovčarovo-Gorata, and Varbitsa). There are a couple of examples situated north of the river as well (Cârcea-Viaduct and Ostrovu Golu). No thorough analysis is possible until further information about these and more ditch sites is acquired.

General description

As the presented review clearly shows – despite the scarce evidence in some of the regions – ditches enclose tell, flat-extended and stratified sites. Enclosed tell sites are predominant in the Levant, Northern Mesopotamia, Thessaly and along the Upper Vardar. Settlement mounds and flat sites are both enclosed in Western/Northwestern Anatolia, Central and Western Macedonia. And finally, ditches in Thrace and in West Bulgaria usually surround flat and stratified sites. In rare cases, the residential type of the sites is yet to be confirmed, e.g., Kazlacha. Most of the ditches surround the settlement area only partially – from one or more sides – or there is no information about their overall layout due to the small excavated areas. Only about ten percent of the ditches enclose entirely the habitation areas; they have a round or an oval layout, recorded mostly in Northern Greece and in Thrace (fig. 8.1a–c). Some enclosures form a C-shape or an almost complete circle but are open at one side usually towards a small river, a ravine or another topographic feature, e.g., Nova Nadezhda (fig. 8.2a–b). Sometimes arch-shaped or linear ditches (fig. 8.3a and b) run through the inhabited space, i.e., enclosing or blocking certain areas within the settlements, e.g., Aruchlo, Imiris Gora, Khramis Didi Gora, Achilleion, and Servia. According to the enclosed area, the sites can be divided into three major groups: 0.1 to 0.5 ha (Aruchlo, Kalavastos-Tenta, Aktopraklık A, Apsalos-Grammi, Anarghiri XI, and all five ditches at Nova Nadezhda); 1 to 2 ha (Aktopraklık B, Vrbjanska Čuka, ditch II at Aşağı Pınar, Yabalkovo 1, Kazlacha, Brezhani, Drenkovo – Garleshki nivi, and Mirkovo); and areas between 2.5 and 4 ha that have been documented at Yabalkovo 2 where the three circular ditches enclose 2.5 to 3.8 ha respectively.

The most common enclosure type is the so-called continuous ditch that is either a straight line, arc-shaped, a circle, or an oval around the site (fig. 8.1–3). Rarely, one or two entrances in the forms of breaks are identified along the ditch (the inner circular ditch at Yabalkovo 2 and ditch II at Aşağı Pınar). Less common are the segmented ditches (or interrupted ditches) that consist of separate cuts of various size but similar shape (the

segmented ditch at Yabalkovo 2, ditch I at Aşağı Pınar, and Lete I). The available information until now indicates that such ditches enclose only partially the respective areas (fig. 8.4a–b).

More than a half of the enclosures are made up of single ditches; one third of them, however, are combined with a contemporaneous enclosure element, mostly palisades (e.g., Govrlevo and Ilindentsi). The multiple enclosure type consists of two to six ditches that usually functioned one after another and for the most part, consecutively from the innermost towards the outermost. Just in five cases, a ditch from multiple enclosures was used simultaneously with a different type of enclosing feature, again mostly wooden walls (e.g., the inner ditch at Slatina and the outermost ditch at Nova Nadezhda). Sometimes stone or mudbrick walls were erected parallel to the inner or rarely to the outer sides of the ditches (e.g., Kalavassos-Tenta, Aktopraklık A, ditch II at Makrychori I, and ditch 2 at Agia Varvara). The site of Aruchlo is an exception as 14 ditches have been documented there in various parts of the settlement.

The larger part of the ditches – when such information is available – have a V and/or U-shaped cross section with relatively narrow bottoms. This refers mainly to the examples from Thrace and Northern Greece, and partially from Northwest Anatolia and the Southern Caucasus. The trapezoidal cross section with a wide flat bottom is more common for the ditches in the Struma Valley and Sofia Basin. The depth of the ditches is quite often damaged by construction activities in later periods or due to modern agricultural cultivation. When the ditches are considerably well preserved, they measure 3.50 to 5 m deep (two ditches at Aruchlo, Apsalos–Grammi, the middle and outer circular ditches

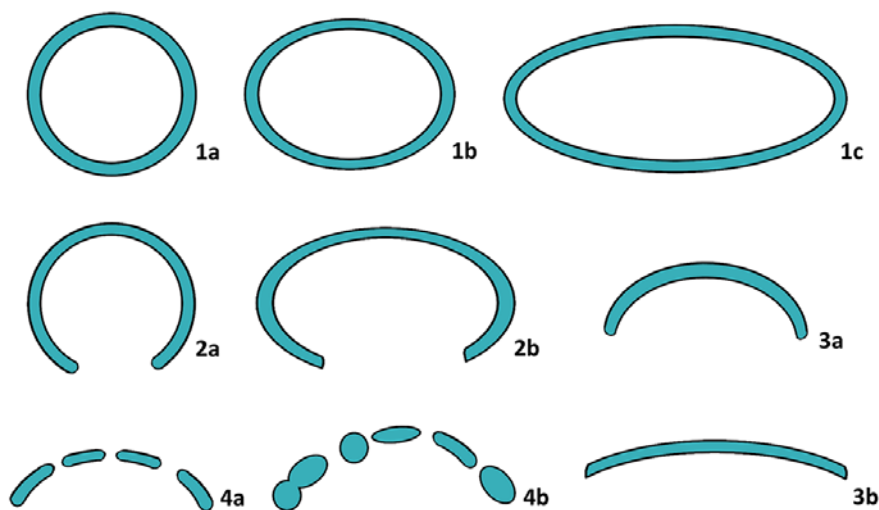


Figure 8. Major types of ditch enclosures: (1–3) continuous ditches; (4) segmented ditches. Image Credit: N. Nikolova.

at Yabalkovo 2). The average depth of most ditches, however, varies between 1 and 2.50 m, and their width varies from 1/1,50 to 4–6 m; only rarely the width reaches between 9 and 12 m (two ditches at Aruchlo, Aktopraklık B, and Apsalos–Grammi). Generally, the shape of the bottom is related to the cross section of the ditch, i.e., flat or sometimes pointy narrow bottoms are common for the V-shaped profiles, U-shaped profiles result in rounded and somewhat wider bottoms, and trapezoidal profiles go usually with wide and leveled bottoms. The bottoms of the V- and U-shaped ditches measure 0.20–0.40 to 0.60–1 m wide and in just few cases reach 1.50 or 2 m. The bottom width of the trapezoidal ditches is between 2 and 3.50–4 m.

There is no apparent relation between the ditch type and the chosen construction shape, i.e., both continuous and interrupted ditches can be of various size and shape and the same applies to the enclosure type; the size doesn't determine whether it would surround the settlement area completely or partially.

The character of the backfills of enclosure ditches is a rarely discussed topic. Usually, attention has been paid to the presence of burnt house debris and human skeletal remains but not to the nature and the formation processes of the fills themselves. Burnt house debris in the form of separate daub pieces or compact layers and heaps have been documented mostly in Thrace (Yabalkovo 2, most of the Nova Nadezhda ditches and especially ditch 4) and Northern Greece (ditch II at Makrychori I, Achilleion, Servia, Apsalos–Grammi, Agios Nikolaos, Pontokomi, one of the ditches at Paliambela, ditch 2 at Lete I), but also in other regions (Tumba–Brvenitsa, Aktopraklık A). Separate and/or disarticulated human bones were found within the fills of some ditches (Achilleion, three of the ditches at Paliambela, the inner ditch at Slatina, Cârcea–Viaduct, the triple ditch system at Yabalkovo 2). Primary and secondary burials are dug into the fills of the enclosures at various levels and depths (Kalavassos–Tenta, Aktopraklık B, Ilipinar, Koroneia, ditch 4 at Nova Nadezhda, the three circular ditches in Yabalkovo 2). All of the burials known so far were dug in the partially or completely filled ditches, mostly within their boundaries or close to their sides. The use of ditches as places for funerary activities is the next or the final phase of their function, even though their initial form and purpose had obviously changed.

The dynamic concept of the Neolithic package

Ever since the introduction of Childe's Neolithic package of traits – describing the main results of the new way of life arranged in an assemblage of ten essential elements – the diffusionists have been in a constant attempt to identify its components and to improve its content. Childean components can be summarized as follows: agricultural economy based on domesticates (plants and animals); sedentism; surplus storage; population growth; household and community level organization; ritual activity and iconography; trade network; ceramic production; weaving (Childe 1958, 59ff). M. Zeder (2009, 18) studied these elements and argued that they had appeared in different ways at different

times and places in the Near Eastern Epipaleolithic, PPN and early PN, and thus evidence diverse processes.

An extensive review of the use of the term, its contents and changes in the course of time, has been published by Ç. Çilingiroğlu (2005) who emphasized its ambiguity and concluded that ‘there is no ultimate list for the Neolithic Package’, but it rather encompasses technological, economic, social and ideological aspects of the Neolithic. Çilingiroğlu focused on the small finds, rather than on domesticates, dividing the group into technological tools, prestige objects and symbolic items. And in order to define the origin of the package, she traced back the temporal and spatial appearance of the respective finds in Southwest Asia, Anatolia and the Balkans.

M. Özdoğan broke down the homogenous Neolithic package into distinct packages of specific time and space frameworks. He defined 94 components of the assemblage arranged into more than 10 major groups: subsistence, settlement and architecture, symbolic representations, imported raw materials, technological tools, status objects, special tools and objects, special crafts, etc. (Özdoğan 2010). The distribution patterns of the different components were then traced, resulting in the differentiation of seven geographical zones that show similar traits during the initial stages of neolithization (Özdoğan 2014, 35ff). The first zone A is the primary core area of Neolithic formation where the new way of life begun as early as the eleventh or tenth millennium BC, i.e., the Zagros region, the Upper Euphrates – Tigris Basin, the Southern Levant and Central Anatolia (Özdoğan 2022, 11). The six other zones follow the westward expansion of the Neolithic from Anatolia, the Aegean and the Balkans, to the Central and Western Mediterranean and Central Europe. I will not go into more detail about all the conclusions of this study; what is important here is to highlight some of its results that relate to this paper. All the items from zones B to D – which cover Western and Northwestern Anatolia, the Aegean, and parts of the Balkans including Greece, North Macedonia, Bulgaria, and eastern Serbia – have parallels in some areas of zone A but in different ratios. For example, an item that might be very rare in zone A may turn out to be a common item in any of the other zones or vice versa. It also turned out that most objects were transferred from the eastern parts of the primary core area, rather than from Central Anatolia (Özdoğan 2014, 36ff). The apparent mixed pattern of origins suggests that there must have been various paths, diverse models and different timings of the Neolithic dispersal. According to the evidence from the Neolithic packages, the new way of life in zones B to D was introduced by demic diffusion of which three major ‘waves’ can be traced. The appearance of the Neolithic in zones E and F – further from the core area of neolithization – was the result of interaction or cultural contacts (Özdoğan 2014, 47).

I. Hodder (2012, 195ff), on the other hand, prefers the term ‘entanglement’ rather than ‘package’. He believes that over a long period of time, the various elements became dependent on each other but also changed in a certain direction. B. Erdoğan (2017, 40) shares the latter opinion and discusses a ‘web of complex relations’ instead of a package.

The interactions between different societies resulted in their diverse identities and changes in their material culture.

It is now clear that the concept of the Neolithic package develops in time and, more importantly, with the increase of new evidence. It serves as a tool of encompassing similar cultural and material traits over wide geographic regions and thus displays how the new way of life adapted and changed after its arrival at the secondary cores of Neolithic formation.

Discussion

Since the focus of this paper is on the question of whether ditch enclosures should be added to the Neolithic package(s) list, it is time to put the evidence for this theory to a test. In doing so, I chose to follow the methodology introduced by M. Özdoğan (2010 & 2014). The necessary requirement here is that any element of the packages must have its antecedents somewhere in the primary core area of the Neolithic formation. In addition, this precise component should appear in most, if not in each, of the assemblages from the secondary core areas. The degree to which the element is represented may vary from region to region or even from site to site. And lastly, it is essential to trace whether the element of interest existed at the so-called initial settlement sites in the respective regions. As it was already commented in the 'history of research and research problems' section earlier, the lack of systematic dating of the ditches together with their unclear chrono-stratigraphic position at the sites – of course, there are several exceptions to this – sets the limits of the approach. Nevertheless, the available data allow some provisional results.

The spatial distribution of ditch enclosures demonstrates that there are in fact such features originating from the core area of neolithization, with examples from the Upper Euphrates Basin (Mezraa-Teleilat), the Southern Levant (Jericho), and Cyprus (Kalavassos-Tenta). It is unlikely that these are all the cases in the core area but we should keep in mind that most sites have been investigated in the past century; their peripheral areas have rarely been excavated and no geophysical prospection has been used. However, the three ditches from the primary core of neolithization are all considered to be of a PPN age. It is thus possible to suggest that these were some of the ditch enclosures' forerunners.

Going westwards into the secondary cores of Neolithic formation, it is hard to miss out the wide blank spot of Central, Northern and Western Anatolia, where no ditches have been recorded up until now. Again, this might be considered the result of research strategies. Thinking about the routes and stages of the Neolithic dispersal, as described by M. Özdoğan (2011 & 2022) but also by V. Nikolov (1987 & 2011), it is in that direction that enclosures should be sought. Two sites shed light on the process of early Neolithic dispersal to the west and northwest, towards the Aegean coast and Northwest Anatolia. The evidence come from Barcın Höyük and possibly from Çukuriçi Höyük. Both sites are considered as initial settlements of migrants from the core area. The ditch at Barcın delimits the first occupational phase at ca. 6600–6500 cal. BC, and the feature at Çukuriçi

is thought to have existed sometime before 6400 cal. BC. These two sites display different cultural traditions and their inhabitants most probably have different origin within the core area. Thus, the ditch digging practices were adopted and transferred separately from and into diverse regions. Later on, during the Fikirtepe culture in the Marmara region, more enclosures were made. It seems reasonable to suggest that this tradition was brought there by the Barcin inhabitants, since this is the earliest example in the area. In such a scenario, the ditches as an element of the packages are presented worse in the core area of neolithization but became common for the secondary core.

The next step is to trace the ditch occurrence throughout the west Aegean coast and mainland Greece. In the light of the new radiocarbon dates for Thessaly and Greek Macedonia, the initial phases of the Neolithic there are set at ca. 6600/6500 cal. BC (Maniatis 2014; Reingruber et al. 2017; Thissen & Reingruber 2017, 129ff). There is no definite evidence of ditch digging during that time. Admittedly, enclosures have been attested at some of these early sites (e.g., Nea Nikomedeia, Paliambela Kolindrou, and Giannitsa B) but it is yet to be clarified whether the dates correspond to the ditches. However, in the last two or three centuries of the seventh and the early sixth millennium BC, ditch enclosures were already a common trait for the region, having been dug up with the settling of the sites. This might have been the result of another Neolithic dispersal wave, probably caused by the 8.2 ka BP event (Weninger et al. 2006 & 2014). Should we consider that these were new people coming from different points in the core area or its immediate neighborhoods, e.g., the western parts of Central Anatolia or the eastern Aegean? And if so, were those the people who brought the enclosure-related practices to Northern Greece? Even though such questions will remain unanswered for the time being, the idea of ditch enclosures developed considerably in the Western Aegean and was probably then transferred to the west and northwest.

Following the Struma route of neolithization (Nikolov 1987), one could identify a dense enclosure network concentrated along the middle course of the river. These enclosures, however, seem to belong to later stages of EN in the region. This is not to say that ditches were not known since the introduction of the Neolithic there. A double ditch system at Slatina in the Sofia Basin seems to date back to the late seventh millennium BC. The site of Slatina-Sofia appeared with a fully developed Neolithic assemblage that in many ways could be traced back to Central Anatolia. And since the ditches were dug in its earliest phase of occupation, the enclosure should be considered a part of this initial culture and a Near Eastern origin should be suggested.

The final region of examination here is Thrace. Three major routes for the introduction of the Neolithic have been proposed over the years: (1) following the Mesta River and then from the west to the east along the Maritsa River (Nikolov 2000, 9); (2) from the north to the south as population from north Central Bulgaria crossed the Balkan Range passages (Todorova & Vajsov 1993, 62); (3) and from the south to the north along the Maritsa and Tundzha Rivers (Boyadzhiev 2006; Özdoğan 2022a, 411). The inten-

tion of this paper is not to go into details about the neolithization process, which no doubt is the needed background for the Neolithic-packages-related research, but it rather concerns only the EN enclosure evidence. I will just note here that the Struma route has widely been acknowledged, but the passing from Eastern to Upper Thrace and vice versa is worth considering as well, although probably not in the initial Neolithic stages. The ditches in the two distinct parts of Thrace display many similarities (e.g., Yabalkovo and Aşağı Pınar); furthermore, their ceramic assemblages share common traits. It seems that the ditches are part of the tradition there since the very beginning of the Neolithic, as is shown by radiocarbon dates from Nova Nadezhda, Yabalkovo 1, and probably Kazlacha. They appeared in an already developed form of great variety and complicated layouts: circular systems, multiple ditches, multiple enclosure systems, and segmented ditches. It thus seems obvious that this must have been a transferred knowledge, and it is only a question of its origin. Two possible answers come to mind. Firstly, the know-how was somehow directly transferred from the core area of Neolithic formation and since no such elaborate examples are recorded there, it seems to have evolved and/or adapted to the new environment. And secondly, the enclosure building knowledge was adopted earlier in the central and western parts of Anatolia (even though no ditches have been discovered in Central Anatolia thus far) and then transmitted to the Balkans. It was during that dispersal that the idea developed through time. An alternative to the latter route could be explained by the insular model proposed by C. Perlès (2001). According to this scenario, groups of people traveling both by the sea route and the inlands arrived at the shores of the Western Aegean. The mainland areas of Thessaly and Greek Macedonia were subsequently settled. If we take into account the described route, then the ditch digging should have been distributed from the east (the core area) to the west (Greece) and then to the northern parts of the Balkans along the Vardar, Struma and Mesta River Valleys. This will provide the time for the enclosures to change considerably until their arrival in Thrace in a whole different form.

With all that being said, and if we adhere to the concept of the Neolithic package(s), it seems that the theory in question stood the test, i.e., most of the necessary requirements for a specific element to be considered a part of the package have been met. Enclosure ditches exist in the primary Neolithic formation area, although in a limited number. They are present in different ratios in all the neighboring secondary cores of neolithization. When radiocarbon dates are available, it seems that ditches have been dug since the initial stages of the Neolithic in the respective regions, however only rarely. Usually, the enclosures are part of the earliest settlement layouts, and with the time the ditch-digging practice became a common feature for the Balkan Neolithic.

At the end, I will emphasize again the provisional character of these results. This paper's focus was on the distribution and possible origin of the EN ditch digging based on the scarce published evidence. However, the ditch enclosures might have been a much more common element of the settlement pattern than one would expect them to be. This

is apparent when the research strategies include excavation at the sites' periphery and geo-physical prospection. Hence, the accumulation of new evidence will contribute significantly to this initial investigation of the EN ditch enclosures.

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