Romanian Academy – School of Advanced Studies (SCOSAAR)

Doctoral School of History and Archaeology

"Vasile Pârvan" Institute of Archaeology

THE EARLY NEOLITHIC (STARČEVO-CRIȘ) BETWEEN THE CARPATHIANS AND THE DANUBE (MUNTENIA, OLTENIA, BANAT)

ABSTRACT OF PhD THESIS

PhD Supervisor:

DR. HABIL. ADINA ELENA BORONEANȚ

PhD Candidate:

BOIA CONSTANTIN ADRIAN NISTOR

2025

THE EARLY NEOLITHIC (STARČEVO-CRIȘ) BETWEEN THE CARPATHIANS AND THE DANUBE (MUNTENIA, OLTENIA, AND BANAT)

Keywords: catalogue, Banat, Oltenia, Muntenia, Mesolithic substratum, Neolithisation, paleoclimate, relative chronology, absolute chronology.

Introduction

This doctoral thesis focuses on the Early Neolithic Starčevo-Criș culture in southern Romania (Banat, Oltenia, and Muntenia), a region that has so far benefited from few dedicated syntheses. The aim of this research is to clarify the current state of research and to contribute to a more comprehensive understanding of this phenomenon by integrating the area into the broader context of the Balkan and South-Danubian Neolithic.

The necessity of this study stems from the fact that the existing information is fragmented and often poorly correlated, being largely the result of earlier research that remains incompletely published. The thesis highlights the difficulties related to site identification, inconsistent terminology, and the lack of monographic studies for many important sites, such as those in the Iron Gates area. It also discusses the main hypotheses regarding the origins of the Early Neolithic, presenting the theories of local Mesolithic population neolithisation, migration of Neolithic groups, and combinations of these processes.

The essential contribution of this thesis lies in the development of a detailed repertoire of Starčevo-Criș sites, clearly defined by precise geographic coordinates and a coherent, standardized structure for the site records, accompanied by maps. This facilitates the researchers' access to relevant information and provides a clear foundation for future studies.

Chapter I. The Early Neolithic Starčevo-Criș: A Brief Historical Perspective

Chapter I reviews the history of research into the Early Neolithic Starčevo-Criș culture in the regions of Banat, Oltenia, and Muntenia, analyzing both the development of the field and the major contributions of key researchers.

In Banat, systematic investigations began as early as the 19th century, with the work of Felix Milleker and Gyula Kisléghi Nagy, and intensified during the construction of the Iron Gates I dam (1961–1971). This period saw the identification and salvage excavation of numerous sites, most of them located on the Danube terraces. More recent research (1980s–1990s), coordinated by specialists such as Gheorghe Lazarovici and Sabin Adrian Luca, helped consolidate the chronological and cultural framework of the Early Neolithic in this area.

In Oltenia, archaeological research was initially driven by salvage excavations occasioned by the construction of the Iron Gates dam. Later studies were dominated by prominent figures such as Marin Nica, who laid the foundation for systematic excavations at the settlement of Cârcea. Neolithic settlements in Oltenia are predominantly located in the plains and along the Danube floodplain.

In Muntenia, research began later, with the first discoveries dating to the 1950s. Most excavations were of a rescue nature, and many sites remain insufficiently investigated and difficult to place within a secure chronological framework. The most significant Neolithic settlements in Muntenia are situated near watercourses, and current research continues at sites such as Măgura Buduiasca and Seciu.

The chapter also includes a detailed discussion of the cultural terminology used to define the Starčevo-Criș phenomenon, highlighting the variety of names and approaches found in both Romanian and international literature.

Chapter II. The Local Mesolithic Substratum

This chapter discusses the local Mesolithic substratum of southern and southeastern Romania, focusing on the interactions between Mesolithic populations and the Early Neolithic communities of the Starčevo-Criș culture.

Special attention is given to the Iron Gates area, a key point in European Mesolithic research due to the large number of archaeological sites and evidence of continuous human occupation. Archaeological investigations have revealed over 50 Mesolithic and Neolithic sites, most of which are now submerged as a result of the dam's construction. The area is particularly

noted for its rich funerary archaeology, with more than 400 graves discovered, displaying a variety of burial practices (inhumation, cremation) and body positions.

Recent studies, including DNA, isotopic, and radiocarbon analyses, have addressed the transition from the Mesolithic to the Neolithic, pointing to complex interactions and cohabitation between the two types of communities. Evidence has shown the migration of Neolithic groups originating in Anatolia and their integration into local Mesolithic populations. Strontium isotope analyses have been crucial in investigating mobility, while stable isotope studies (C, N) reflect dietary shifts. Paleogenetic research has confirmed population admixture.

Recent excavations in Teleorman County, in the area around the village of Poiana, also indicate the possible presence of a local Mesolithic substratum, evidenced by distinctive lithic finds that are so far unique in the region.

The chapter concludes that interactions between the two populations led to cultural and technological exchanges, marking the beginning of a new social and economic era, clearly manifested in funerary practices, diet, and sedentarism.

Chapter III. Neolithisation: Origins, Routes, and the Neolithic Packag

Chapter III analyzes the Neolithisation process in terms of its origins, migration routes, and the so-called "Neolithic package," providing a rigorous synthesis of recent research and analyses concerning this phenomenon in Europe, with a particular focus on the Balkans.

The origin of the Neolithic can be traced back to Southwest Asia (Anatolia), where the domestication of plants and animals began between 10,000 and 8,000 BC. Genetic analyses and radiocarbon dating indicate that the first farming communities later migrated into Europe, initially through the Aegean region and then northward into the Balkans. This process was not uniform and involved successive episodes of migration and local adaptation.

Regarding the migration routes, recent studies suggest that the main northward pathway followed the valleys of the Struma, Mesta, and Vardar rivers, which connected Anatolia with the Balkans and subsequently with the Danube Plain. Early Neolithic communities initially settled in sub-Mediterranean environments similar to their region of origin. There is limited evidence supporting an alternative route through the Bosphorus and the Black Sea into the Danube basin; while this hypothesis is discussed, it remains insufficiently documented.

The **"**Neolithic package**"** refers to the essential innovations that enabled the transition from Mesolithic hunter-gatherer societies to Neolithic communities: agriculture, animal domestication,

sedentarism, pottery, and the use of polished stone tools. However, the concept is regionally variable. Recent studies have identified distinct regional distributions of the package's components, suggesting a rapid and diverse adaptation of these innovations to local contexts.

Archaeobotanical and archaeozoological research confirms the Anatolian origin of the domesticated plants and animals used in the Balkans, refuting earlier theories about secondary domestication centers in Europe. In the Iron Gates area, recent studies point to a specific adaptation of early Neolithic communities, who also exploited local aquatic resources.

Genetic analyses of Neolithic individuals from the Balkans reveal a predominantly Anatolian origin (98%), with minimal influence from European Mesolithic populations. This finding significantly alters previous perceptions of interactions between Mesolithic and Neolithic populations and suggests a faster migration process than the classical "Wave-of-Advance" model. The chapter concludes that the Neolithisation of the Balkans and southern Europe was the result of rapid, multi-episodic migration, characterized by high complexity and strongly influenced by dynamic interactions between the involved human groups.

Chapter IV. Paleoclimate and Early Archaeological Sites in Southern Romania. Case Studies: The Iron Gates Region (Banat) and the Teleorman Valley (Muntenia)

Chapter IV explores the relationship between paleoclimatic conditions and the presence of early Neolithic archaeological sites in southern Romania, with a focus on two key areas: the Iron Gates (Banat) and the Teleorman Valley (Muntenia). The study emphasizes the importance of interdisciplinary research in clarifying the impact of climate change on Mesolithic and Neolithic communities.

In the Balkan context, the Mesolithic–Neolithic transition period (especially between 6300–6000 BC) was marked by major climatic fluctuations, such as the "8.2 ka Cold Event," which caused average temperature drops of 2–3°C for approximately 300–400 years. This event had significant implications for the northward migration of agricultural communities from the south. Palynological studies have shown a gradual adaptation of Anatolian-origin vegetation and agricultural crops to the cooler climatic conditions of the Balkans.

In the Iron Gates area, the specific microclimate strongly influenced biodiversity. Recent interdisciplinary research—including pollen analyses and archaeozoological studies—has identified specific adaptations of Mesolithic communities to local resources, especially the abundant fish in the Danube. Climatic fluctuations had direct effects on the Danube's hydrology,

causing changes in water flow and the biological cycles of aquatic species. However, there is no clear evidence of a major food crisis resulting from these changes, due to the abundance of alternative resources.

The Teleorman Valley has been studied from the perspective of alluvial archaeology, examining the influence of fluvial processes on early Neolithic settlements. Geomorphological research conducted within international projects has identified stable river terraces that enabled prolonged Neolithic habitation, as seen at the site of Teleor 003. However, Mesolithic settlements have been difficult to identify in lowland areas, which were frequently affected by flooding and heavy sedimentation. Research in the Poiana area suggests that Neolithic sites are predominantly located on high terraces, safe from floods, while Mesolithic sites in lower areas are likely buried beneath thick layers of sediment.

In conclusion, recent studies show that climate change had a significant impact on the lifestyle and distribution of early Neolithic populations, prompting migrations and specific adaptations depending on local environmental contexts. This chapter highlights the importance of interdisciplinary methods—archaeology, paleoclimatology, geomorphology—for a comprehensive understanding of the complex relationship between humans and the environment in prehistory.

Chapter V. Elements of Material Culture

Chapter V provides a detailed analysis of the material culture of early Neolithic communities in southern Romania, focusing on settlement structures, the geographical distribution of habitation sites, and the use of natural resources. An interdisciplinary approach is adopted, linking archaeological data with paleogeographic, geomorphological, and statistical information to reconstruct daily life and spatial organization within these communities.

A key contribution of this thesis is the compilation of a rigorous repertoire of Starčevo-Criș settlements from Banat, Oltenia, and Muntenia, organized according to geographical, chronological, and cultural certainty criteria. Out of a total of 129 recorded sites, 119 are considered certain, while 10 are classified as uncertain and are treated separately. The inclusion of precise geographical coordinates, the accuracy of descriptions, and the separation of insufficiently researched or documented settlements are essential elements of this contribution.

The chapter also includes a complex geomorphological analysis, using modern tools such as ArcGIS and Global Mapper to identify potential patterns regarding settlement density, slope

orientation, slope angle, and site visibility. The results indicate a concentration of habitation in areas with low slopes, southern exposure, and proximity to water sources. The highest site densities are found in the Iron Gates Gorge and the Olt Valley, confirming the attractiveness of these regions for early Neolithic communities due to natural resources (water, game, fertile land) and easy access to migration routes.

Settlement structures are varied, ranging from pit dwellings and semi-subterranean houses to surface constructions. The author emphasizes the lack of a clear pattern in housing types according to cultural phase or region, criticizing the generalizing tendencies found in some archaeological literature. By presenting numerous examples from archaeological publications, the thesis highlights the diversity of interpretations for similar complexes, as well as the challenges in assigning functional roles to structures in the absence of standardized criteria.

The analysis of hearths and ovens further complements the picture of domestic life, although such discoveries are relatively rare—likely due to poor preservation. While hearths are generally associated with dwellings, many are found outdoors, between constructions, suggesting possible collective or ritual functions. Ovens are rare, documented in only two sites, but they provide valuable insights into household activities and the technological specializations of these communities.

Chapter VI. Elements of Relative and Absolute Chronology

Chapter VI addresses a key topic for understanding the evolution of the Starčevo-Criș culture: relative and absolute chronology. The text offers a rigorous analysis of the chronological systems proposed over time for the Early Neolithic in Romania, with a focus on correlating these frameworks with radiocarbon dating results, in an effort to build a coherent and up-to-date picture of the Neolithisation phenomenon in southern and southeastern Europe.

The introductory section highlights the methodological difficulties encountered in establishing chronologies: the former reluctance to use modern methods, the high cost of 14C analyses, and the fragmentary nature of the archaeological data. In the past, relative chronology was mainly based on the typological analysis of ceramics. Various styles such as impressed, painted, or monochrome pottery were used to define cultures and subphases, often in the absence of a consistent quantity of ceramics from well-defined archaeological contexts. The chapter reviews the chronological systems proposed by scholars such as Milojčić, D. and M. Garašanin,

St. Dimitrijević, D. Srejović, Iuliu Paul, and especially Gheorghe Lazarovici, whose chronological model has been the most widely used in Romanian research.

In parallel, the Neolithisation process of the Balkan Peninsula is also analyzed, considering traditional routes (Vardar, Struma, Maritsa) and theories of migration or diffusion. Particular attention is given to the chronological placement of sites in Banat, Oltenia, and Muntenia within phases I–IV of the Starčevo-Criș culture. A notable expansion is observed during phases II and III, with a numerical peak in phase III, followed by a decline in phase IV. This trend is correlated with the advance of the Vinča culture and possible climatic changes.

A valuable contribution of this chapter is the centralization and analysis of 71 radiocarbon dates from Romania, which are compared with data from other southeastern European countries. The results show a relatively low average number of samples per site in Romania (3.2), compared to other countries (Hungary – 5.8; Serbia – 5.95; North Macedonia – 13.5).

Recent radiocarbon analysis results allow the establishment of a probable time frame for the emergence of the Starčevo-Criș culture between 6100–6000 cal BC, and its conclusion around 5400 cal BC. Numerous relevant sites are discussed, such as Dubova, Schela Cladovei, Măgura (Boldul lui Moș Ivănuș and Buduiasca), Coțatcu, Seciu, Foeni, and Parța, whose datings support the idea of an early Neolithisation in southern Romania. The chapter also highlights discrepancies between dates obtained from charcoal versus those from bone or plant samples, concluding that the latter provide significantly higher accuracy.

The chronological results support the hypothesis of a core Neolithic nucleus in the Iron Gates area, a rapid expansion during phases II–III, followed by migration towards the north and east.

Conclusions

The final chapter synthesizes the main results of the research on the Early Neolithic Starčevo-Criș culture in southern Romania, emphasizing the interdisciplinary and innovative nature of the scientific approach. The thesis highlights the limitations of earlier research, often conducted under time constraints, lacking methodological tools, and with many results from the Iron Gates area remaining unpublished. Nevertheless, these early investigations laid the foundation for subsequent studies on the Mesolithic and Early Neolithic.

A fundamental contribution of this thesis is the creation of a detailed catalogue of Starčevo-Criș sites from Banat, Oltenia, and Muntenia. This catalogue serves multiple functions:

documenting heritage, supporting administrative decisions, managing accidental discoveries, and providing a basis for future research. In total, 119 sites were recorded (of which 10 are uncertain), distributed as follows: 27 in Banat, 65 in Oltenia, and 22 in Muntenia. Of these, 52 have been archaeologically investigated (28 through systematic excavations, 24 through preventive ones).

The thesis underlines the fragmentary nature of data for Muntenia and the importance of a critical approach in selecting sites considered as culturally certain. Moreover, the geographical analysis showed a significant concentration of sites near major rivers and on slopes with southern or southeastern exposure, in areas with gentle terrain suitable for early agriculture.

A substantial section is dedicated to the relationship between Mesolithic and early Neolithic communities, especially in the Iron Gates area. Arguments for interaction and even cohabitation include: the spatial overlap of sites, isotopic analyses of burials, occupational continuity, funerary evidence, and genetic results indicating individuals of mixed ancestry (Anatolian and Mesolithic). These data suggest a gradual rather than abrupt transition to the Neolithic.

Regarding the spread of the Early Neolithic in southern Romania, it was not uniform. Certain geographical areas were clearly favored: the Iron Gates, the Jiu–Olt interfluve, the Vedea–Teleorman and Teleorman–Argeș interfluves, and the Carpathian Bend area. This distribution was influenced by natural factors (resources, topography, visibility) as well as potential intercommunity conflicts, which may have prompted groups to migrate eastward.