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Cradled by architecture: infancy and delayed personhood in Neolithic Anatolia and the Balkans

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ABSTRACT

Children, especially infants, are integral to human communities, but how they are perceived varies across societies. This study examines infancy at the late seventh millennium Neolithic sites of Barcın Höyük and Lepenski Vir through the concept of delayed personhood, namely the belief that young children were partially or not yet recognized as persons. Both sites provide extensive data on burial locations, including age, sex, and biological relatedness. Infant burials show a strong spatial association with architectural structures, suggesting a distinct funerary practice from adults. While infant burial associated with houses may imply a link to homes, the evidence from both sites suggests burial according to age rather than genetic proximity. Therefore, our study suggests that delayed personhood was expressed after death through the cradling of infants by architecture, indicating that infants could have been community members, and that kin-making may have extended to 'not-yet-fully human' beings during the Neolithic.

KEYWORDS

Delayed personhood; infant burial; residential burial; Neolithic; Barcın Höyük; Lepenski Vir

Introduction

Children and infants are an innate part of nearly all communities. How children and infants are locally perceived, however, varies greatly according to cultural constructs. Despite local particularities and ethnographic knowledge from global contexts, infancy[1] has often been associated with a liminal state (cf. Van Gennep 1977), when the child is separated from its birth mother and is in the process of adjusting to the new environment and the integration into the community. In many societies, infants are not considered fully human or complete persons until they achieve personhood at a later stage (Lancy 2014; Godelier 2011).[2] For example, among the Wari in the south-central Andes and coastal area of modern-day Peru, babies are called *arawet*, meaning 'still being made' (Conklin and Morgan 1996, 672, cited in Grove and Lancy 2016). This leads us to a critical question: can we trace infancy and local conceptions of infants as 'still being made' and not fully human in the

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archaeological record, and what does that tell us about becoming a person or a member of a community in the past?

Early comparative approaches to burial showed that children are often buried and disposed of differently than adults (Hertz [(1960 2006)] 2006). In both archaeological and ethnographic records, it has also been observed that the shift from an informal (within the family) to a formal burial (within a community) is often marked by age (Lewis 2006, 31). Such a distinction has already been proposed for the Chalcolithic and Early Bronze Age period in Anatolia, where the so-called 'ghost children' were interred in a jar, pithoi, a pot, stone cists, or a cooking pot under house floors, whereas adults were buried in cemeteries (Cveček and Schwall 2022). However, no study to date has yet investigated the notion of infancy and delayed personhood through a systematic comparison of infant burial practices between Anatolia and the Balkans during the Neolithic.

This article focuses on the spatial and social position of infants through burial practices associated with architectural structures at Barcın Höyük (6,600–6,000 BCE) in western Anatolia and Lepenski Vir (6,200–6,000 BCE) in the central Balkans. Inspired by cross-cultural perspectives on delayed personhood and anthropological approaches to the archaeology of personhood more broadly (Fowler 2004), the article first outlines a cross-cultural understanding of children not being complete persons and their relation to burial practices before laying out the evidence of infant burial practices at each site. Located in different geographies and rooted in different cultural and economic Neolithization trajectories, Barcın Höyük and Lepenski Vir provide evidence for discussing infant burial practices along the following four axes: age, burial location, sex, and biological relatedness.

Our analysis and comparison between the two sites show intriguing similarities in burial practices. At both sites, infants were buried within buildings and close to architectural features, whereas adults were buried outside houses, in open spaces. This similarity in burial practice, we argue, is not because the two sites belong to the same archaeological culture but because the communities at these sites shared a belief in delayed personhood, in which infants may not have been fully human or complete persons (see Cveček and Schwall 2022; Lancy 2014). Infants at both sites were afforded different burials than adults. Finally, our study provides new evidence against the long-postulated association or a symbolic link between the spread of domestication and the rise of the nuclear family during the Neolithic in Anatolian and Balkan communities. Burial location, along with tested genetic relatedness at both sites, does not support the idea of primary importance of nuclear family for making kin in these contexts, even though the nuclear family could have served as a primary economic unit. Age, based on a contextual understanding of age (see Baxter 2005; Beauchesne and Agarwal 2018; Hosek and Robb 2019; Halcrow and Tayles 2011; Sofaer 2011) and delayed personhood were more important during the Neolithic in these communities, highlighting the critical importance of ancient DNA studies for not only for 'attesting' kin relations based on close genetic relatedness between individuals but also highlighting that genetic proximity was not the overarching and organizing principle for these communities, but age. The argument unfolds by first introducing the concept of delayed personhood as observed ethnographically, before turning to the comparative scales and the archaeological evidence for infant burials at Barcın and Lepenski Vir. The analysis of these materials then leads into a discussion of what we term *cradled by architecture*, which concludes with reflections and directions for future research.

Delayed personhood: ethnographic and archaeological perspectives

The expectation that infants or children will survive to adulthood is a relatively recent development. As recently as 150 years ago, the death of infants and children was a common occurrence rather

than the rare and shocking event it is today in developed countries (see Baxter 2019; Field and Behrman 2003). At the same time, in socio-cultural anthropology, it is well-known that an immediate emotional attachment to newborns is not a cultural universal. In the mid-20th century, Nancy Scheper-Hughes (1993) observed that mothers in underprivileged communities in Brazil often delayed emotional attachment to newborns who may not survive due to high child mortality. Although Scheper-Hughes has called such attitudes 'selective maternal neglect' (Scheper-Hughes 1993), follow-up studies highlighted the local moral world that underpin maternal responses to child illness and death (see Nations, Corlis, and Feitosa 2015). Among the Gonja of Northern Ghana, where a high rate of infant mortality was also the case, an infant was accepted into the community after the baby was shaved, named, and the triple marks were cut on face, limbs, and body. For boys, circumcision was an important part of the rite of passage from a nameless infant to a member of a community (Goody 1973). Goody (1973) observed the association between newborns and the spirit worlds among the Gonja:

> [T]he belief is strongly held that some infants are not human but evil spirits who impersonate human children to taunt the parents. A baby who dies before the seventh day following birth is assumed to be such a spirit. The shaving of the hair with which the child was born (*ebuni'min*, 'dead person's hair') symbolises for the Gonja the child's final decision to remain in the land of the living. (Goody 1973, 123)

Eszter Goody's observation among the Gonja is a wonderful example that personhood, agency, and care are distinct from one another. Babies had agency, since they were able to decide whether to live or to die. To make that decision, they were given seven days by the rest of the Gonja community. During that time, babies received a lot of care provided by the mother and the mother's close kin, including sisters, co-wives, and grandmothers. Only after babies survived through the seven-day liminal state, however, was the initiation into the family and the community enabled. First, by shaving and other bodily modifications, and second, by preparing a large quantity of porridge, the so-called 'good porridge' (*kude lele*) and soup, sent in bowls around the compounds of the town to celebrate the new member. Delayed personhood may mean that an infant is not yet recognized as a fully human person, but it does not mean the absence of care. Infants demand constant care, and regardless of weak or strong emotional attachment to them, mothers – supported by kin, community members, or doulas (Raphael 1973) – devote time and labour to ensuring their survival beyond nuclear families and biomedical settings.

The delayed attachment to infants among the Gonja's wider community and other contexts, however, also does not mean that the loss of an infant may not be an emotional event (see Einarsdóttir 2005; Fass 2016). This was certainly the case in 19th-century North America, when post-mortem family portraits or the supposedly dead dolls placed in miniature coffins served as a visual reminder of people's deceased children and siblings (Baxter 2019). Similarly, among the Yoruba people in southwest Nigeria, the high mortality rate among infants, especially twins, was commemorated by carving wooden figures of the dead (*ere ibejis*), usually twins, up to 25 cm high (Oyinloye et al. 2022). Many children among the Yoruba died as infants. Since the Yoruba believed in the reincarnation of the souls of ancestors, the smaller proportion of *ere ibejis* to the regular size of a baby, was 'to encase the spirit of the dead twin(s)' (Oyinloye et al. 2022) and to prevent future death of twins in the family. These cases, however, are crucial to highlight the diversity of mourning practices as well as the associations between the infants and the spirit world up to a certain age that is both socially and biologically defined.

In many communities, beyond the Yoruba and Gonja described above, including Anatolia until recently (Altuntek and Erdal 2013), children up to a certain age were not considered

complete persons vis-à-vis delayed personhood (Lancy 2014). This has been supported through a cross-cultural perspective, including a systematic comparison of over 200 cases from the ethnographic and archaeological records, spanning a variety of subsistence practices. A comparative inquiry allowed Lancy (2014) to explore what it takes to become a person, which led him to develop the concept of delayed personhood. To *become* persons and recognized members of human communities, children need to undergo many rituals and acquire skills and knowledge. For example, among the Nuer in the Greater Upper Nile region of South Sudan, a child was considered not fully human until the child could participate in the care of cattle. Becoming a person (*ram*) among the Nuer was marked by the removal of lower incisor teeth, when a child is about 7 or 8 years of age (Evans-Pritchard 1956, 156). Among the Ashanti in modern-day Ghana, children were also not accepted until adolescence and were buried in the midden without full funerary rites (McLeod 1981).

Socio-cultural anthropology, therefore, provides ample evidence that we are not born human but *become* human. What it takes to *become* human, however, varies widely. In some communities, children need to live beyond a certain period and receive a name; in others, they need to be able to digest solid food, learn to speak, or be initiated into a clan or kin group, among others. What it takes to *become* human may not only vary between communities but also within them. In both cases, until they acquire the requisite status, children and infants are often also not afforded the same burial as adults (Hertz (1960 2006)] 2006; Lewis 2006, 31).

In archaeology, children and their skeletons were afforded little attention, but changes during the 1970s made their presence more visible. Even though in the early days, children's skeletons were primarily analysed for fertility reconstruction, since the 1990s, they have also been studied in light of social and health status (Lewis 2006). Slowly, important synthetic works began to emerge in the field of childhood bioarchaeology, such as Lewis (2006) *The Bioarchaeology of Children*, which Mays and co-authors rightfully marked as a benchmark for the status of research (Mays et al. 2017). These authors also note that, despite significant advances in the analysis of skeletons, such as dietary reconstruction and palaeopathological studies, the adoption of theoretical developments from the social sciences in bioarchaeology remains slow, even though such integrated approaches may lead to important new results. We agree that linking bioarchaeological data with social contexts and phenomena is of exceptional importance, and therefore, we consider it relevant to compare bioarchaeological data of infants across different cultural contexts.

Until recently, childhood and, in particular, infancy have received little attention also in understanding Neolithization and Neolithic social organization. If any attention is paid to this type of analysis, however, infant burials dating to the Neolithic in Anatolia and central Balkans are contextualized through site-based perspectives (see Bacvarov 2008; Balossi Restelli and Erdal 2019; Borić and Stefanović 2004; Erdal and Erdal 2017; Haddow and Knüsel 2017; Hodder 1990, 52; Kay 2023; Naumov 2007; Stefanović 2006; Žegarac et al. 2025), or regional and/or cultural-historical contexts (see Bacvarov 2003; Cveček and Schwall 2022; Lichter 2016; Stefanović and Borić 2016; Yıldırım, Hackley, and Steadman 2018) rather than put into wider cross-regional perspectives. As we aim to show in this study, infancy during the Neolithic can be addressed through a unified analysis of architectural and contextual information, burial practices, biological-anthropological information, and cross-cultural insights, not only at individual sites but across them while paying attention to local and regional histories. Such triangulation of comparative, mixed methods (cf. Flick 2018) may provide new insights into shared Neolithic practices across the regions despite the regional site-specific differences in material culture and subsistence between sites.

Sites and scales of comparison

To address the local understanding of infancy reflected in burial records in Anatolia and the Balkans during the Neolithic, we consider multiple scales of comparison. We compare the archaeological evidence from Barcın Höyük (ca. 6,600–6,000 cal BC) in the Eastern Marmara region of western Anatolia, and Lepenski Vir (ca. 6,200–6,000 cal BC) in the Danube Gorges in the central Balkans (Figure 1). Each of the two sites is located in a different, dissimilar environmental setting, with distinct cultural practices, even though the expansion of the Neolithic from Anatolia to southeastern Europe has been genetically attested (Hofmanová et al. 2016; Koptekin et al. 2025). What the two sites share, however, is the frequent occurrence of residential burials, 'the practice of burying the deceased in and around houses' (Adams and King 2011, 1). Apart from this shared practice, they were selected for comparison as the two sites are almost contemporaneous to each other and provide ample evidence for addressing local perceptions of infancy during the Neolithic in southeastern Europe and Anatolia. For comparison, we chose four units of analysis, namely burial location, age, sex, and biological relatedness between those individuals. The two sites were chosen for both theoretical and practical reasons. Each offers rich archaeological contexts with residential burials studied through biological anthropology, ancient DNA, and contextual methods. This provides a unique opportunity to examine infancy, personhood, and the making of kin through multiple lines of evidence by treating genetic results as one line of evidence rather than the primary driver of interpretation (Cveček 2024; Cveček et al. 2025).

As already mentioned above, there are differences between the two sites that need to be considered to conduct this comparison. The first one concerns chronology. Whereas infant burials



Figure 1. Location of Barcın Höyük and Lepenski Vir (OeAw/oeai, M. Börner).

associated with houses included in this study span from 6,600 to 6,250 BCE at Barcın Höyük (Gerritsen and Özbal 2019), burials at Lepenski Vir date to a slightly later period, to 6,200–6,000 BCE (Borić and Stefanović 2004). Further differences concern the settlement organization and the size of buildings. Rectangular structures in agglutinated formations characterized the settlement at Barcın (Van den Bos and Gerritsen 2024), whereas trapezoid structures of similar size, detached from each other, were excavated at Lepenski Vir (Borić and Stefanović 2004; Stefanović 2006; Stefanović and Borić 2006). Further differentiation concerns the use of space. At both sites, excavated hearths and other installations provide valuable evidence for the use of space, which, in turn, may provide insights into questions of identity and burial location. Whereas hearths were found both within structures as well as in open spaces at Barcın (Gerritsen and Özbal 2019; Gerritsen, Özbal, and van den Bos in press), hearths were only found within structures at Lepenski Vir (Borić and Stefanović 2004).

A slight difference in chronology and a significant difference in settlement organization and the use of space between the two sites, however, are not the only ones. The most apparent difference is in subsistence. Whereas Barcın was a farming community with a full Neolithic package, including domestic animals (e.g. cattle, sheep, goat) (Galik 2013; Özbal et al. 2024), domesticated plants (e.g. einkorn, emmer, barley, pulses, bitter vetch, and flax) (Balcı et al. 2019, 2022), and pottery (De Groot et al. 2017), a semi-sedentary fishing community inhabited Lepenski Vir during the Neolithic period (6,200–6,000 BCE) (De Becdelièvre 2020; Petrović et al. 2022). Therefore, considering a sum of differences between the two sites, our analysis was not driven by finding similarities between sites located in different geographical areas and embedded in distinct subsistence strategies. Similarities in house-associated burial practices have often been emphasized in studies prioritizing the out-of-Anatolia expansion based on ancient DNA, which shows that both Anatolian farmers and Western Hunter-Gatherers were present at Lepenski Vir during this phase (Brami and Dienkmann 2023; Brami et al. 2022; Brami, Blöcher, and Diekmann 2025). Instead of exclusively looking for answers to how ideas and practices from Anatolia spread into southeastern Europe, examining notions of infancy through burial practices associated with architectural spaces, while considering local histories, inspired our analysis. A similar treatment of infants at Lepenski Vir and Barcın Höyük was not an *a priori* archaeological assumption but an *a posteriori* insight, resulting from regional comparison (cf. Gingrich 2020).

For defining infants in archaeological contexts, we have chosen to use one of the common bioarchaeological definitions, which states that an infant is an individual under the age of one year (Saunders 1992). Based on physiological periods of child's life, we furthermore distinguish between foetus (from 8 weeks of intra-uterine life to birth), neonate (birth to 27 postnatal days), infant (birth to 1 year), child (1–14.6 years of age), adolescent (14.6–17 years) and adult (>17 years) (Lewis 2006, 2, Figure 2), while recognizing that that this biological distinction does not encompass the socially defined transitions in children's lives in the past or present. In our interpretations, we also distinguish between infancy and childhood as not having and having obtained full personhood, respectively, without predetermining the age at which the transition takes place.

Infant burial practices at Barcın Höyük

Barcın Höyük is a multi-period settlement site located in the Yenişehir Plain of northwestern Türkiye (Figure 1), excavated by Fokke Gerritsen and Rana Özbal under the auspices of the Netherlands Institute in Turkey from 2007 to 2015, in collaboration with Turkish and international researchers. The site consists of two low mounds, with investigations focused on the

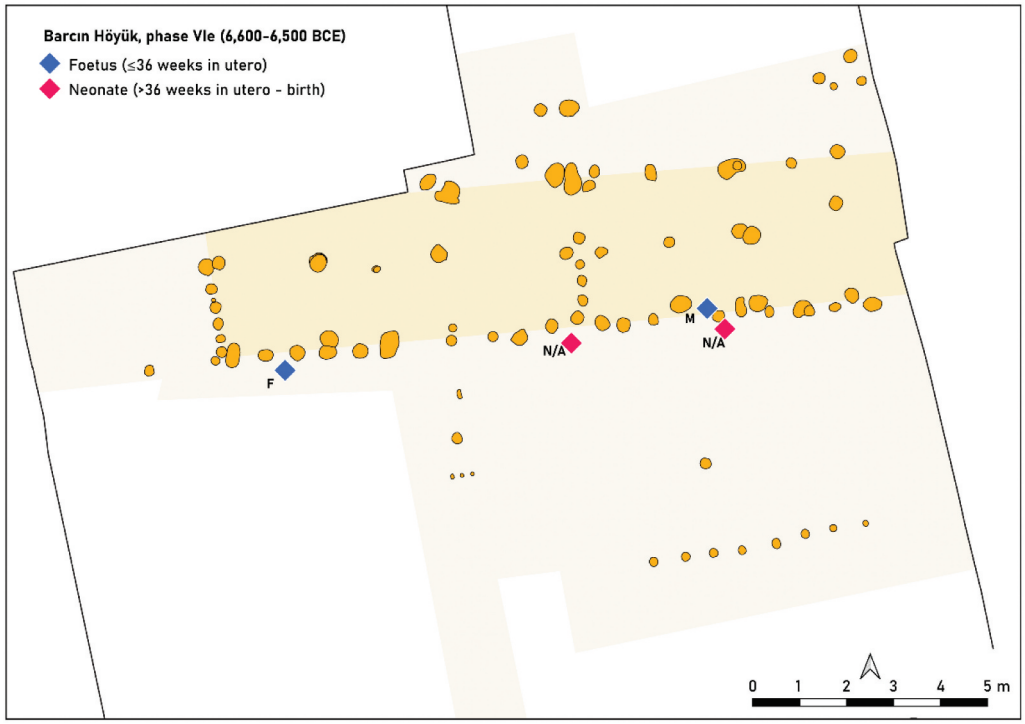


Figure 2. Settlement plan and location of buried individuals during phase VIe (6,600–6,500 BCE) at Barcın Höyük.

eastern mound, where a long sequence of Neolithic occupation was uncovered. The Neolithic settlement existed continuously for approximately six centuries, starting at 6,600 cal BC. The Neolithic period has been subdivided into seven architectural phases, labelled from old to young as VIe, VId1, VId2, VId3, VIc, VIb and VIa and defined based on stratigraphy, ceramic analysis, and radiocarbon dating (Gerritsen and Özbal 2019). During the Neolithic, the settlement layout and positioning of buildings show a high degree of continuity, with rectangular buildings constructed using wooden posts set in foundation ditches and reinforced with loam, while entrances were located along the long sides. Following the Neolithic period, the site experienced intermittent reoccupation during the Chalcolithic and Bronze Age, though there was limited mound formation. During the Byzantine period, the eastern mound was repurposed as a burial ground.

To enable comparison between the evidence at Barcın and Lepenski Vir, age at death has been estimated and mapped in this study for Barcın Höyük.[3] The infant burials included in the analyses for this comparison date to the early and middle phases at the site, namely VIe (6,600–6,500 BCE) and VId1 (6,500–6,350 BCE) belonging to the early phase, and VId3/VIc1 (6,300–6,250 BCE) belonging to the middle phase. In the earliest architectural phase, VIe (6,600–6,500 BCE), the settlement architecture comprises rectangular structures based on the evidence of post holes, wall ditches, and floors. Four burials were excavated in phase VIe, of which two are foetuses and two are neonates, based on age at death estimation. Infant burials with both XX and XY sex chromosomes were associated with posthole rows (Figure 2). Apart from the four infants associated with this architectural phase, one more adult was buried farther south, in an open space that cannot be captured in Figure 2.

In the second architectural phase, VId1 (6,500–6,350 BCE), 17 burials were excavated in association with the central row of rectangular structures of different sizes from wattle and daub. Those included one foetus burial, eight neonate burials, four children below 3 years of age, and one older child, and three infants of undetermined age (Figure 3). All but the older child were located near the walls and wall ditches and comprised individuals of both sexes, including XX and XY sex chromosomes. Similar to the earliest architectural phase, no adults were buried in association with architectural structures and walls or close to the settlement. An example of an infant burial from phase VId1 is burial M11_664. The grave pit was dug against the exterior base of the southern wall of structure 19 and the body was placed parallel to and facing the wall. The 2,5–3-year-old, unsexed, child wore a necklace of stone and shell beads, while a small bone spoon was placed behind the head. It was accompanied along the same wall by graves of two neonates with XY sex chromosomes and one 3–6-month-old infant with XY sex chromosomes (Figures 4, and 5 (left)).

In the third architectural phase, VId3/VIc1 (6,350–6,250 BCE), 56 individuals were excavated in association with the central row of rectangular structures of different sizes from wattle and daub in the same settlement area as considered in previous phases. Burials included one foetus, 26 neonates, six children, and 19 adults, as well as four infants of undetermined age (Figure 6).

At Barcın, infants and children up to 2–3 years old were consistently buried within or near architectural structures, often placed next to walls and wall ditches. The stratigraphic relationship with the earthen floors of these buildings is not always clear, but there is evidence for indoor burials contemporaneous with the occupation, as well as evidence for burials from around the time of abandonment of buildings. Adults were placed in open spaces outside these structures. This pattern

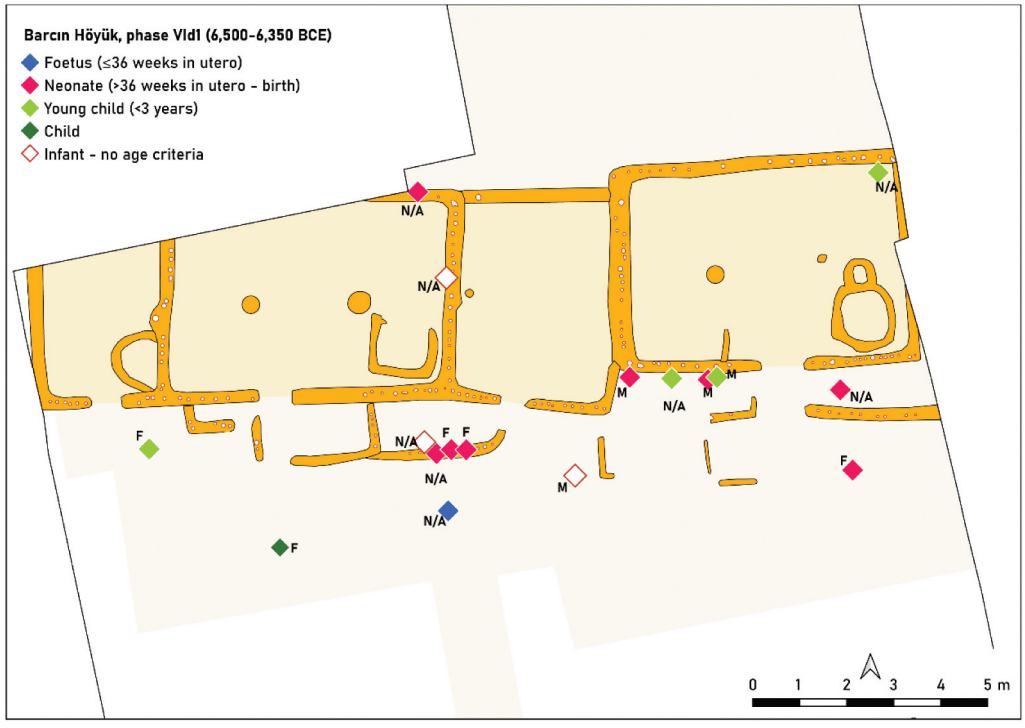


Figure 3. Settlement plan and location of buried individuals during phase VId1 (6,500–6,350 BCE) at Barcın Höyük.

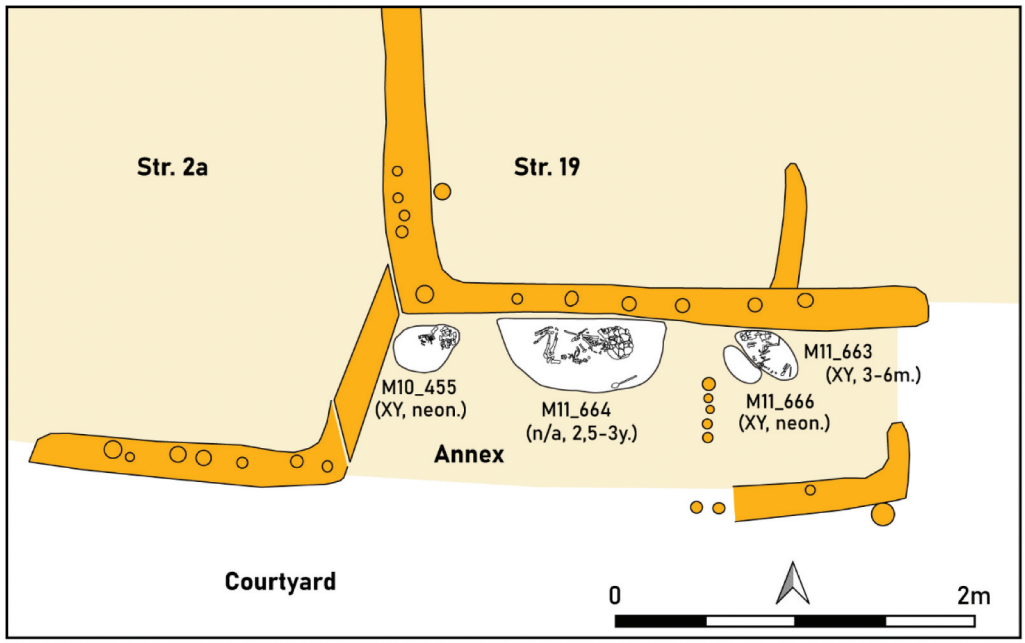


Figure 4. Annex area in front of structure 19, with four infant burials placed against the external facade.

of a clear spatial distinction between infant and adult burials remained consistent throughout the early and middle phases, VIe through VIc (6,600–6,200 cal BCE).

Infant burial practices at Lepenski Vir

The second site considered in our comparative study of infancy is located in the Iron Gates region along the Danube river (Figure 1). Lepenski Vir is a multi-period site excavated by Dragoslav Srejović from the University of Belgrade between 1965 and 1971 (Srejović 1972). The site was later relocated to avoid flooding from the Iron Gate I Hydroelectric project and is now part of the UNESCO World Heritage List. Lepenski Vir, which is considered a key link between Mesolithic hunter-gatherers and early Neolithic farming communities in southeastern Europe, contains trapezoidal structures, a rich material culture, and numerous residential burials. Initially used as a burial site during the Proto-Lepenski Vir phase (ca. 9,500–7,300 BCE), it was abandoned for a millennium before the construction of trapezoidal limestone-floored houses (ca. 6,200–5,900 BCE) (Borić 2016) arranged in a planned, terraced layout facing the river.

Trapezoid structures had stone foundations, clay floors, and central hearths, often containing large boulders, some of which may have been places for giving birth (Stefanović 2006). The subsistence economy combined fishing, hunting, and gathering, with increasing contact with Neolithic farming communities. Throughout all periods, people at Lepenski Vir relied on aquatic and terrestrial foods (De Becdelièvre 2020) with sophisticated skills of fish processing (Petrović et al. 2022). Between 2015 and 2021, infant burials found within trapezoid house floors at Lepenski Vir were systematically studied by Sofija Stefanović and her research team within the ERC Starting Grant Project and in collaboration with international researchers, on which results we draw.



Figure 5. Left: three infant burials placed against the external facade of structure 19 (VId1); right: infant burial from VId1.

Unlike at Barcın, where three settlement phases can be compared to each other, Lepenski Vir provides the evidence of residential burials dating to the latest phase of occupation at the site, dating to 6,200–6,000 BCE (Figure 7). In this period, 41 infants were buried under the floors of 19 structures (Borić and Stefanović 2004; Stefanović 2006; Stefanović and Borić 2008). Of those, 33 were sexed, from which it is evident that there were 19 infants with XY and 14 infants with XX sex chromosomes (Čuljković, Stefanović, and Romac 2008). They were associated with walls and buried by cutting through floors at the rear end of 19 'houses' or structures (Borić and Stefanović 2004; Stefanović 2006). Regarding the age at death, 28 individuals were neonates, six individuals were likely foetuses, and seven of them were infants, who lived a few weeks or months (Stefanović 2006). Apart from infants, which were associated with houses, walls, and stone installations, adult individuals, which are not contemporaneous to the burial of infants, were found buried in open spaces, outside the architectural structures.

Following this bird's-eye view of the site, the evidence from 'House 24' exemplifies infant burial practices at Lepenski Vir (Figure 8). Four individuals were excavated in this 'house', all identified as neonates based on the age at death estimation. They comprised one individual with XY sex chromosomes and three individuals with XX chromosomes. All of them were associated with architectural features. Two individuals (98, 99) depicted on this floor plan were found near the stone construction located at the rear end of 'House 24'. One individual (101) was buried at the rear end of the structure, very close to the wall, which is the recurring pattern for Lepenski Vir (Figure 9).

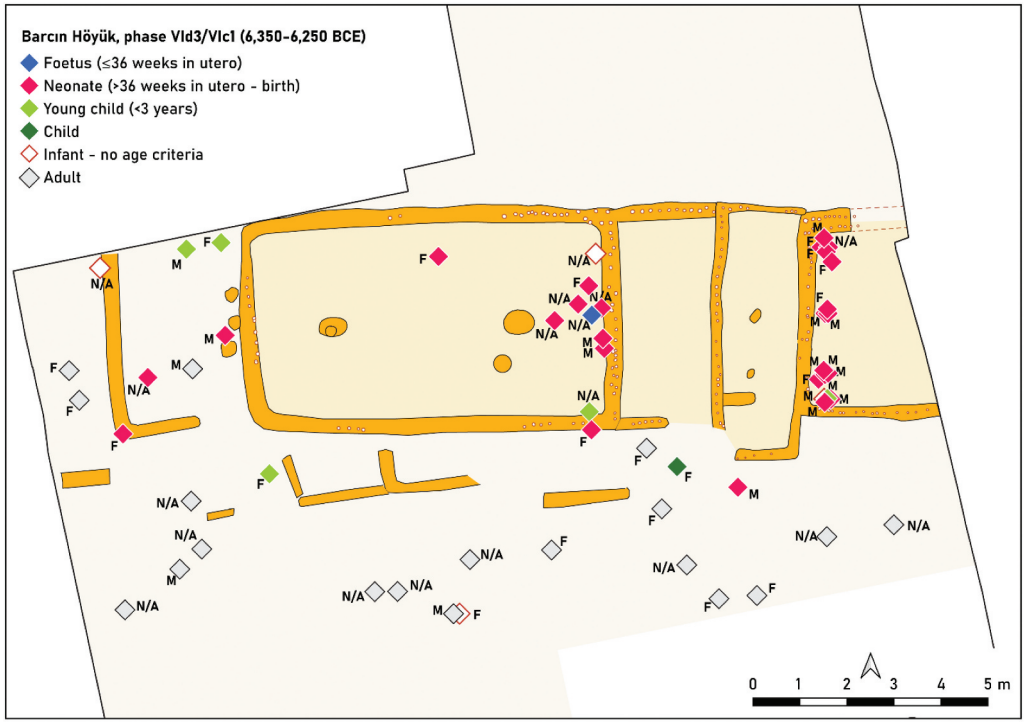


Figure 6. Settlement plan and location of buried individuals during the phase VId3/VIc1 (6,350–6,250 BCE) at Barcın Höyük. Note that the architecture of VId3 is shown but that the burials date from the broader VId3-VIc time interval.

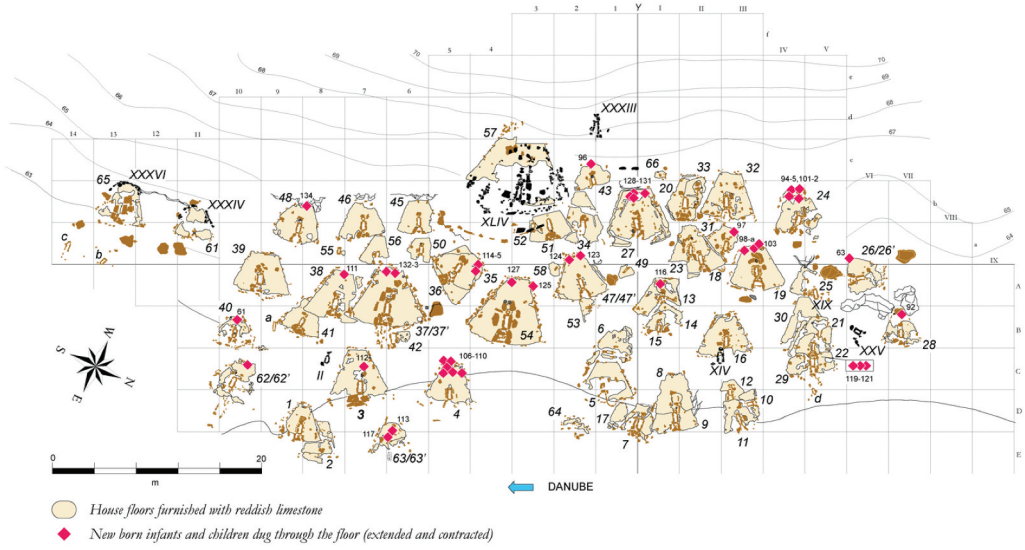


Figure 7. Settlement plan and location of buried individuals associated with trapezoid structures (ca. 6200–5900 BCE) at Lepenski Vir (OeAW/OeAI, M. Börner after Borić and Stefanović 2004, Fig. 1).

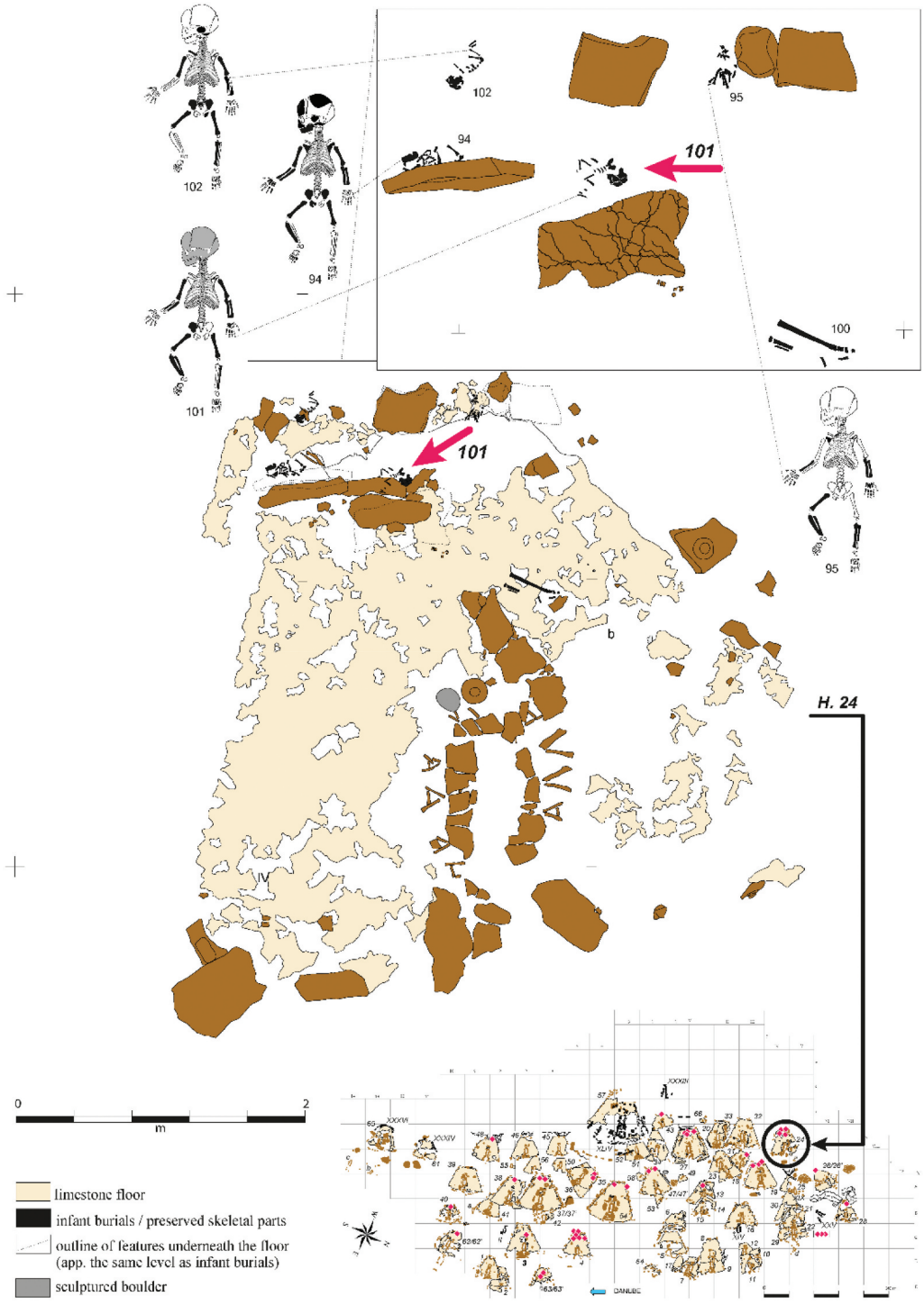


Figure 8. The evidence of infant burials in 'house 24' with arrows pointing to burial 101 (OeAW/OeAI, M. Börner after Borić and Stefanović 2004, fig. 13).

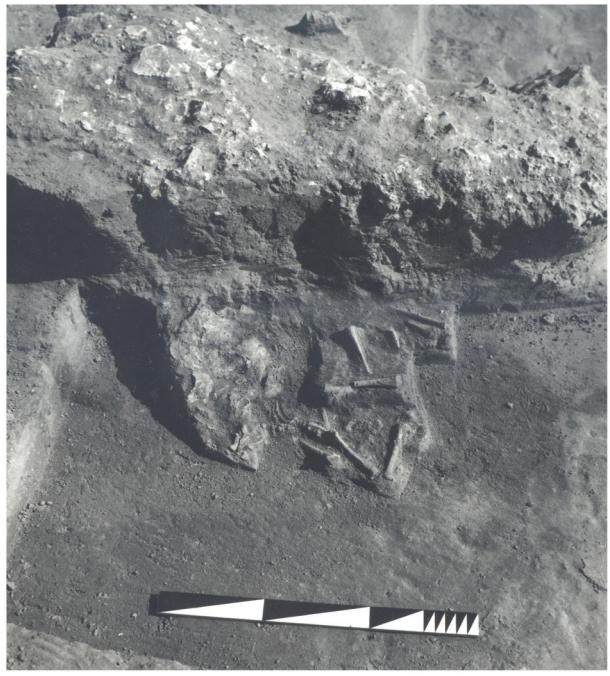


Figure 9. Infant burial 101 next to the house wall of 'house 24' at Lepenski Vir (S. Stefanović).

At Barcın and Lepenski Vir, no adult burials were associated with architectural structures during their occupation. This points to an important distinction in burial regarding age in which adults were buried away from architectural features, whereas infants were closely associated with walls and installations. However, there is a slight difference between the sites. Whereas exclusively foetuses, neonates and infants were found within structures at Lepenski Vir, foetuses, neonates, infants and children up to 2–3 years of age were associated with structures at Barcın. Therefore, despite the many previously known differences between sites, a comparison between Barcın and Lepenski Vir reveals important similarities and differences about the notion of infancy and delayed personhood at each site. Whereas neonates and children up to 2–3 years were 'cradled' by architecture and closely associated with the house after death at Barcın, architecture at Lepenski Vir 'cradled' only infants below one year of age at Lepenski Vir.

Infants cradled by architecture

Based on our comparison, we can highlight a few shared practices between the two sites. The first similarity concerns age at death, which matters greatly at both sites. At Barcın and Lepenski Vir, as well as many other sites in the Balkans and Anatolia (see Bacvarov 2003; Lichter 2016; Naumov 2007; Yıldırım, Hackley, and Steadman 2018), infants and adults were spatially separated at death instead of being buried together. The second similarity that mattered at both sites and that our study highlighted, is the association of infants and children with architecture. Infants at both sites were buried next to architectural features, including walls, wall ditches, and installations, whereas adults were buried in open spaces. Infants and children at Barcın and Lepenski Vir were *cradled by architecture*, which we define

as the burial of infants and children within architectural features bearing a relationship with notions of delayed personhood (cf. Lancy 2014), which distinguishes it from a broader definition of residential burial (cf. Adams and King 2011). This allows us to highlight an important distinction between the sites: whereas infants and children below 2–3 years of age were cradled by architecture at Barcın, only infants below 1 year of age were cradled by architecture at Lepenski Vir.[4] Those bodies may not have been recognized as complete persons but were nevertheless made into kin by being cradled by architecture, namely being associated with residential places, or places of care and affection, after death. Based on the data, it might be speculated that the process of becoming a person took slightly longer at Barcın than at Lepenski Vir. Elsewhere, children buried underneath house floors have been described as 'ghost children' (Cveček and Schwall 2022), who, considered as 'earthlings', may be understood as 'kin in the deepest sense' (Haraway 2016, 103).

The practice of cradling infants and young children by architecture possibly suggests a liminal status (cf. Van Gennep 1977) for the infant deceased, being part of the household but not yet integrated into the community and therefore, not being a complete person. Infants were integrated into the built environment after death, and their burial next to walls, thresholds, and beneath house floors materializes the zones between inside and outside, life and death, household and community. However, as they were not complete persons, they were buried away from the community burial area. It also follows that what was considered the community was composed of persons who had attained full personhood in life and that the symbolic expression of the community was situated within the settlement but away from the buildings. Nevertheless, built structures helped transform infant death into an enduring presence at the core of domestic life, sustaining community continuity.

The third apparent similarity between the two sites is that genetic sex did not matter at burial since infants with both XX and XY sex chromosomes were buried together in the same way and in the same types of locations. At least at Barcın, the same applies to adults buried together in the open spaces. Finally, based on the latest paleogenetic results from Barcın and Lepenski Vir, it is evident that close genetic relatedness also did not predict a burial close by. Instead, individuals buried within the same buildings or nearby were commonly not genetically related below 3rd degree of relatedness (Yaka et al. 2021; Yüncü et al. 2024; Žegarac 2025). Beyond delayed personhood, this evidence may also point to the presence of age grades or age sets, where infants of both sexes occupied a liminal stage. In some societies, such age-based systems, documented ethnographically in East Africa (Evans-Pritchard 1940; Fortes and Evans-Pritchard [1940] 1987), organized social life through progression across recognized stages and collective age groups. It seems likely that communities at Barcın and Lepenski Vir recognized collective age categories that brought together individuals of similar age. Following our analyses and comparison, this situation allows us to evaluate the four criteria considered in this study, namely the age, sex, burial location, and biological relatedness, to understand which mattered and which did not. It is evident that at both sites, age and burial location mattered most. Infants and children up to 2–3 years of age at Barcın Höyük and infants at Lepenski Vir were buried close to the architectural features and cradled by architecture, indicating variability in delayed personhood between sites. On the contrary, genetic sex and relatedness, however, do not appear to matter since individuals of different genetic sexes, as well as those who were not genetically closely related, were buried nearby. This may reflect delayed personhood or the presence of age sets. Ethnographically, such systems are characteristic of small-scale, non-state societies, where social and political life is organized through successive age classes that structure status and authority.

To situate the understanding of Neolithic burial practices within regional and supra-regional scales, the evidence from Barcın and Lepenski Vir differs from – but also overlaps with – other Neolithic sites. For example, burial practices at Barcın and Lepenski Vir contrast with those at Çatalhöyük, where both adults and infants were buried within houses, underneath house floors. However, even at Çatalhöyük, a spatial distinction between infant and adult burials was observed. While adults were buried in platforms or the so-called 'cleaner' parts of the house, infants were interred near hearths and midden areas – the 'dirty' parts of the house at Çatalhöyük (Boz and Hager 2013; Haddow and Knüsel 2017; Haddow et al. 2020), even though the 'dirty' parts of houses at Çatalhöyük could be better understood as areas richer in household activities, and the 'cleaner' parts as areas involving fewer household activities.[5] This situation suggests that also at Çatalhöyük, age at death mattered for burial location, with infants and adults being interred in different areas of the house.[6] Key importance of age and ageing over gender has also been emphasized at Çatalhöyük (Agarwal et al. 2015; Pearson et al. 2015). Although some infant bodies and human remains were placed against brick walls at Çatalhöyük, purportedly to reinforce them (see Kay 2023), the evidence from Barcın and Lepenski Vir does not support this interpretation. Instead, at Barcın and Lepenski Vir, infants were mostly buried by cutting through floors, being associated with walls and installations, which indicates that infants were cradled *by* architecture rather than their dead bodies or body parts supporting or reinforcing the architecture.

Beyond the Near East and Anatolia, similar practices of burying infants near architectural features appear in Neolithic contexts of the Great Hungarian Plain and the LBK of Central Europe. On the Great Hungarian Plain, early fifth-millennium BC sites such as Berettyóújfalu-Herpály show child burials beneath house floors, often in corners and occasionally with wild cattle skulls (Kalicz and Raczky 1987). Comparable patterns occur in LBK settlements of Central and Western Europe, where children were interred beside or between longhouses while adult burials remained rare (Orschiedt 1998; Siemoneit 1997; Veit 1996; Whittle 2003). In the Aisne Valley and Paris Basin, infants and young children were likewise buried near house walls (Bickle 2020).

From a bird's-eye perspective, the placement of infants within architectural contexts may appear to reflect a practice spreading from the Near East and Anatolia into Southeastern and Central Europe through Neolithization (see Brami, Blöcher, and Diekmann 2025). However, local and regional histories challenge this diffusionist interpretation. For example, infants were already buried in association with trapezoid structures at the Mesolithic site of Vlasac in the Danube Gorges (Borić and Stefanović 2004), pointing towards some continuity between preceding Mesolithic practices at the dawn of Neolithization in the region. Thus, interpreting the placement of infants within the architecture as exclusively introduced to the Danube Gorges solely through Neolithization overlooks local traditions that predated the arrival of Anatolian farmers. How does this add to the understanding of infancy, kin-making, and becoming a person during the Neolithic in the Balkans and Anatolia? First, it is apparent that despite the differences in subsistence practices, settlement patterns, degrees of sedentism, and their genetic ancestry, while recognizing some Anatolian ancestry attested at Lepenski Vir (Hofmanová et al. 2016; but see also Brami et al. 2022, 2025), people at Lepenski Vir and Barcın Höyük buried their dead in similar ways during the Neolithic. Based on the available evidence, it appears that it was the house that cradled and offered protection to infants and children at these sites after death. This pattern suggests that age and burial location were more significant than genetic relatedness or sex in determining belonging and making persons. The house and/or architecture functioned as a cradle, reinforcing the idea that infants, though not complete persons, were still integrated into the community. This implies that kin-making at the farming and hunter-fisher-gatherer communities at Barcın and Lepenski Vir,

respectively, was not based on close genetic or biological ties, but that kin-making extended to incomplete persons who were cradled by architecture after death. People at both settlements afforded the house a symbolic role with regard to kin making and how infants were integrated into the community, not based on either genetic or nuclear family, but age. Although inferring socio-political organization from the available record is challenging, the presence of 'age-class polities', structured through successive sets and classes with defined grades and divisions of power, remains a possibility.

If life and death mark the biological limits within which kinship is both inherited and made (Roy 2019), then the deliberate burial of infants apart from adults and within spaces of care signifies more than a symbolic act. It reflects a practice in which kinship, biologically inherited at birth, was reconfigured through lived relations and ultimately inscribed in death – cradled in architecture. Here, mortuary treatment emphasized belonging through 'age sets' rather than biological relatedness, showing that kinship was continually remade across the life course.

Conclusion

This study challenges long-standing assumptions of the emergence of nuclear family structures during the Neolithic and suggests that infant burial practices at Barcın Höyük and Lepenski Vir reflect a shared perception of infancy as a liminal stage, marked by delayed personhood. At both sites, infants and children were buried within houses, often near walls or installations, away from adults or members of nuclear households, which we refer to as infants and (young) children being cradled by architecture. The fact that infants were buried away from adults underscores the importance of age and age groups rather than membership in a nuclear family. This does not exclude the possibility that the nuclear family emerged as a primary economic unit during the Neolithic; however, the evidence presented here indicates that the nuclear family was not the elemental unit for making kin, belonging, and care.

Even though infants at both sites were cradled by architecture after death, the age at which children would be marked by delayed personhood varied. Whereas children up to 2–3 years-of-age were cradled by architecture at Barcın, only infants were cradled by architecture at Lepenski Vir. This emphasizes the importance and variability of age in becoming a person or member of a community during the Neolithic, which could be further explored at other Neolithic sites in the Balkans and Anatolia, to understand regional variability.

Despite differences in subsistence strategies, settlement organization, and genetic ancestry between the two sites, kin-making at Barcın and Lepenski Vir was shaped by shared age and cradling of infants by architecture, rather than close genetic relatedness or sharing the same genetic sex. This study also highlights the role of ancient DNA for understanding that close genetic ties between individuals or genetic sex were not the primary structuring principles of communities during the Neolithic. Instead, age grades and age sets likely structured personhood and defined children's place within the community. Kinship in the Neolithic was not merely inherited by blood but continually remade across the life course and produced through care and the recognition of belonging to specific life stages and cohorts.The comparison between Lepenski Vir's hunter-fisher-gatherers and Barcın's early farmers reveals that kin-making at these sites was not based on close genetic ties but extended to incomplete persons or not-yet-fully human beings, such as 'ghost children' (Cveček and Schwall 2022) during the Neolithic. Crucially, this insight emerges only through direct comparison, demonstrating how interdisciplinary and cross-cultural approaches

challenge perceived distinctions – whether in subsistence practices or genetic distance – and reveal broader patterns of kin-making, belonging, and the variability of age at which earthlings became persons in the deep past.

Future research on these practices offers a promising path for exploring how households function as arenas of social, economic, and biological reproduction. Particular attention should be given to how local practices – such as delayed personhood or age-set organization – interacted with and reshaped biologically defined kin networks inferred from ancient DNA. Comparative, bioarchaeological, and isotopic analyses, alongside attention to local histories, can further reveal how kinship was made and remade in everyday life. By foregrounding the intersectional approach to age, gender, architecture, community, and care over biological relatedness (Cveček et al. 2025; Cveček, Raghavan, and Bickle in press), such work can refine our understanding of Neolithic societies and enrich wider debates on the diversity and creativity of kinship in the past.

Notes

1. In evolutionary anthropology, infancy is defined as 'the period for which a mother nurses an infant, a period which begins at birth and encompasses early milk-only feeding, mixed feeding, and the weaning process' (Smith 2018, 2).
2. However, even though babies may not be seen as fully human, they may be filled with spiritual knowledge, such as among the Beng people of West Africa (Gottlieb 2004).
3. Genetic sex at Barcın Höyük was determined in several published paleogenomics articles (see Hofmanová et al. 2016, 2022; Lazaridis et al. 2022; Marchi et al. 2022; Mathieson et al. 2015) and as part of genomic analyses in the ERC project 'NEOGENE: Archaeogenomic Analysis of Genetic and Cultural Interactions in Neolithic Anatolian Societies' (PI: Mehmet Somel).
4. At other Neolithic sites in the Balkan and Anatolia, this age may vary.
5. Sabina Cveček would like to thank Christine Hastorf (Department of Anthropology, University of California, Berkeley) for suggesting an alternative interpretation of distinct areas within Çatalhöyük houses—one that values household activities, such as food preparation and consumption, without imposing value-laden categories of 'dirty' versus 'clean'.
6. A differential treatment of infants vs. adults persisted into Chalcolithic and the Early Bronze Age period in Anatolia (see Balossi Restelli and Erdal 2019; Cveček and Schwall 2022; Erdal and Erdal 2017; Yıldırım, Hackley, and Steadman 2018).

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