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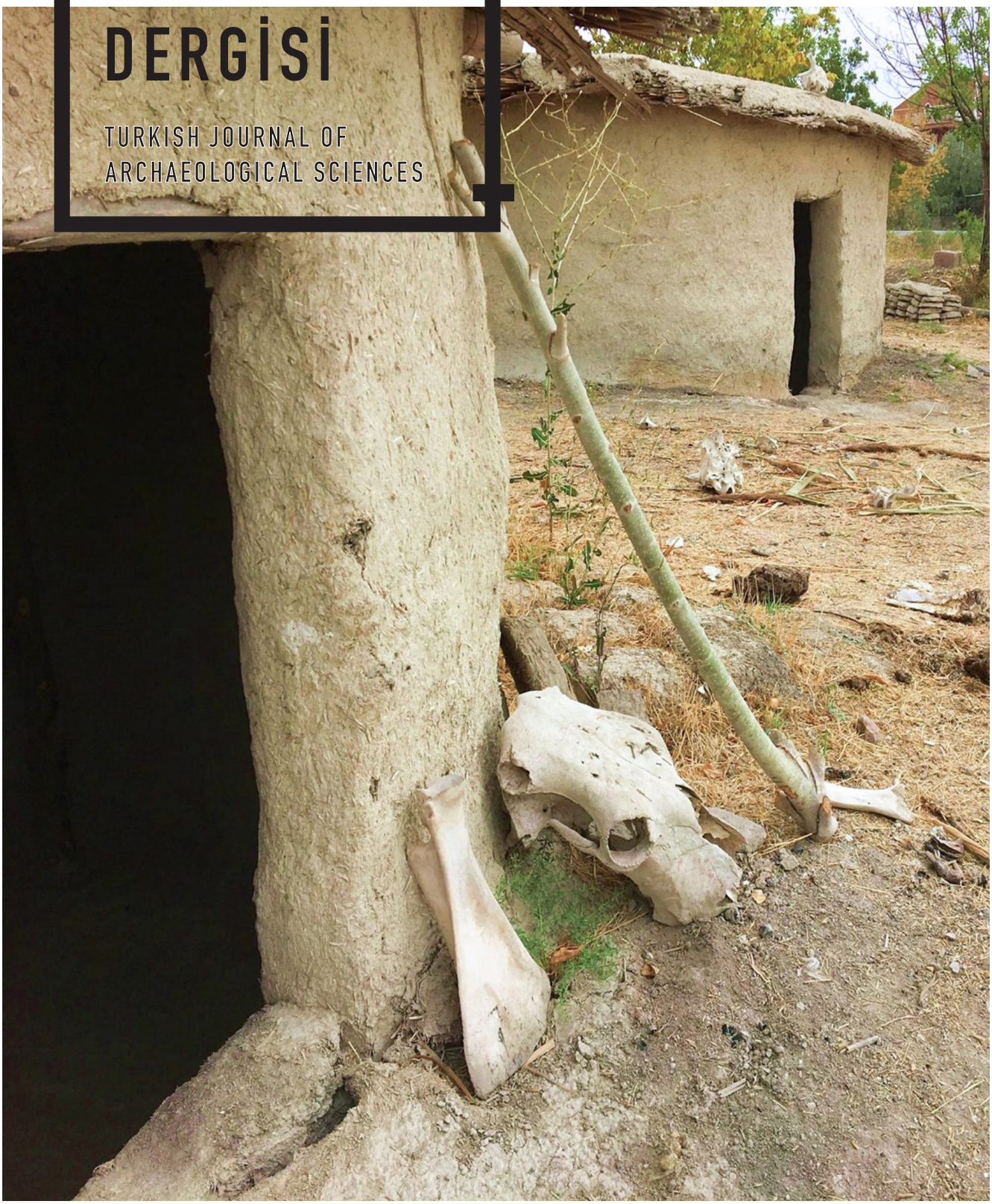

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İçindekiler / Contents

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Editörlerden

Bir yıl sonra yine bir Şubat ayı, beşinci sayımızla herkese merhaba diyoruz. Bu kez birbirinden çok farklı altı yazı ile karşınızdayız. Her biri gerek arkeolojik düşünce yelpazemizin sınırlarını genişleten, alternatif düşünmeye yönlendiren gerek disiplinin kendi içindeki yöntemsel gelişimini gösteren araştırma sonuçları.

Günümüzde var olan ve mücadele içinde olduğumuz çevresel, ekonomik, sosyal pek çok sorunun geçmişte hangi koşullarda nasıl yaşandığı, küçük gruplardan büyük örgütlü toplumlara kadar değişen ve dönüşen yaşamla o dönem koşulları içinde nasıl baş edildiği, toplumların verdikleri tepkileri, geliştirdikleri çözümleri geçmişin derinliklerinde araştıran arkeoloji disiplinine bu sayımızdaki yöntemsel, etnografik, deneysel, yorumlamacı yaklaşımlara sahip yazılarla katkı vermeyi sürdürmenin mutluluğu içindeyiz.

İyi okumalar.

Güneş Duru & Mihriban Özbaşaran

ARKEOLOJİ BİLİMLERİ DERGİSİ
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Note from the editors

A year has passed, and as February returns, we are pleased to present the fifth issue of the Turkish Journal of Archaeological Sciences. This issue brings you six different articles, each offering a unique perspective. Some push the boundaries of archaeological thought, others invite alternative ways of thinking, and some highlight methodological advancements within the field.

Archaeology, as a discipline, seeks to understand how past societies navigated environmental, economic, and social challenges under different conditions. From small-scale communities to large, complex societies, it explores how people adapted to change, responded to crises, and created innovative solutions. In this issue, we are excited to share new research that embraces methodological advances, and ethnographic, experimental, and interpretative approaches, all of them further enriching our understanding of the past.

We hope you enjoy reading!

Güneş Duru & Mihriban Özbaşaran

The Evolutionary Transition from Co-insurance to Self-insurance Risk Management

Ian Kuijt[a]

Abstract

Starting around 12.000-10.000 years ago, people living in the Near East started doing something quite remarkable: they developed new ways to store and prolong the shelf-life of plant foods. I argue that this process began with small-scale household decision-making, bringing about gradual and small-scale changes. When viewed as an evolutionary trajectory covering the Near Eastern Epipaleolithic to Pottery Neolithic periods, this transition exemplifies a shift from co-insurance to self-insurance food risk management. Ultimately, it was the combination of new plant processing technologies, new and more effective storage technologies, and the development of domesticated plants that worked in concert to increase the shelf-life and amount of plants that could be stored each year. All of these processes were important. It was a combination of all three that collectively changed the economic foundation within Neolithic villages.

Keywords: food storage, plant foods, Near East, Neolithic villages, risk management

Özet

Günümüzden yaklaşık 12.000-10.000 yıl önce Yakın Doğu'da yaşayan insanlar çok büyük bir değişime imza attılar: bitkisel besinleri depolamak ve raf ömürlerini uzatmak için yeni yöntemler denemeye başladılar. Bu makalede, bu sürecin hanehalkları tarafından gerçekleştirildiğini, hanehalklarının geliştirdiği bu yeni karar verme mekanizmalarının ise zaman içerisinde aşamalı, küçük ölçekli değişimler getirdiğini öneriyorum. Yakın Doğu'da Epipaleolitik'ten Çanak Çömlekli Neolitik'e uzanan evrimsel süreç içerisinde baktığımızda, bu değişim, beslenme stratejilerinin ortak karar alma mekanizmalarına bağlı olmaktan çıkıp, risk yönetimi için daha bireysel çözümlerin üretilmeye başladığı yeni bir döneme geçişi temsil ediyor. Bu süreçte,

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yıl boyu depolanabilecek bitkilerin miktarını belirleyen ve raf ömürlerini uzatan şey birkaç faktörün birleşimiydi: yeni bitkisel besin işleme teknikleri ile yeni ve daha etkili depolama teknolojilerinin geliştirilmesi ve bitkilerin ehlileştirilmesi. Bu üç faktör bir araya geldiğinde, Neolitik köylerin ekonomik altyapısı tümüyle değişmişti.

Anahtar kelimeler: besin depolama, bitkisel besinler, Yakın Doğu, Neolitik köyler, risk yönetimi

Introduction

As much as archaeologists celebrate the impressive evolutionary development of the world's first forms of plant food storage in the Near Eastern Neolithic, we are left with one unmovable reality: even the best food preparation and storage practices only extend the shelf-life of fresh foods, as all food eventually goes bad. Neolithic people were aware of this. Food storage is, above all else, an inventive example of how humans attempt to overcome the physical constraints of the natural world, alter the physical relationship between time and decay, and extend the shelf-life of fresh foods. The underlying goal of food storage in small agricultural households was, of course, collecting and storing sufficient foods to overcome short-term shortages of fresh food, seasonal shortages of plants and animals, and the potential risks associated with multiple years of crop failures.

It was, ultimately, the ability of people to store plant products, with the repeated selection and caring of plants, that created the evolutionary context under which plant domestication occurred, population levels increased, and Neolithic villages developed (see Bogaard et al., 2009; Asouti & Fuller, 2013; Kuijt, 2015; Zeder, 2024a, 2024b). In terms of plants, all of these actions were important factors as they contribute to size, period of growth, and survivability. Of these, however, only plant storage has the potential to alter time in a significant way by extending the shelf life of food.

While the domestication of plants and animals exists as a major evolutionary foundation for present-day economies, I argue that new Neolithic food processing and storage technologies served as the technological foundation that helped realize the potential of later domestication, and for entrenchment of new systems of food production. Moreover, I argue that it was the combination of plant domestication and the development of improved food processing and storage technologies that brought about a force multiplier effect where the combination of these factors increased the effectiveness and scalability of food systems. Collectively, the combination of these developments led to an increased seasonal carrying capacity for individual households and the broader community. The critical issue before us, then, both when did humans start to manage plants and animals (Zeder, 2024a, 2024b), resulting in morphological changes, and when did people recognize the potential payoffs of combining new food processing, storage, and food sources, and the emergence of simple food processing and storage systems.

Ultimately, to understand the Neolithic we need to understand how Neolithic people approached food systems and managed risk. Neolithic management and risk assessment took place at the intersection of yearly goals and planning, and repetitive, daily practices, such as the actions of weeding, watering plants, selecting and replanting specific plant species, and storing plants after harvesting. A range of researchers (e.g., Bogaard et al., 2009; Asouti & Fuller, 2013; Zeder, 2024a, 2024b) have advanced conversations as to which plants and animals were used by Neolithic people, the temporal and geographical distribution of these resources, and how this was linked to changing social systems. Complementing these rich descriptive works, archaeologists have devoted considerable efforts to understanding how different resources were stored, the extent to which food storage left a material footprint and the extent to which these traces can be identified and modeled by archaeologists (Fenton, 1984; Martinek, 1998; Christakis, 1999; Kent, 1999; Fairbairn & Omura, 2005; Bouby et al., 2005; Fairbairn et al., 2007; Kuijt, 2009; Barrier, 2011; Chesson & Goodale, 2014). These are, of course, complex questions, for depending on circumstances, food storage is visible and invisible, material and immaterial, and at times of critical importance and in other moments unnecessary.

As Zeder (2024a, 2024b) points out, there are evolutionary links between sedentism, plant management and food storage, for these co-occur and become entrenched through the Neolithic period. It is now widely recognized that under select circumstances, food management and storage facilitate a degree of residential mobility, and at the same time, require increased sedentism (Testart, 1982; Asouti & Fuller, 2013; Duru et al., 2021; Zeder, 2024b). Researchers have devoted considerable time to intellectually pulling apart the broader linkages between different types and scales of wild and domestic food storage, the linkages to site-based population growth, the global emergence of early villages and the transition from more egalitarian to hierarchical social organization (Kuijt & Goring-Morris, 2002; Frink, 2007; Kuijt, 2008). Several researchers (e.g., Ellis, 1988; Chrisakis, 1999; Wesson, 1999; Twiss, 2008; Bogaard et al., 2009; Twiss, 2012; Twiss et al., 2024) have explored the extent to which food storage emerged as a byproduct of greater household sociopolitical complexity, and provide insights into the importance of storage in the gradual development and increase in small-scale Neolithic social differentiation (see Kuijt et al., 2011; Benz et al., 2019; Twiss et al., 2024).

In this essay on the Near Eastern Neolithic, I want to step back from some of these impressively detailed studies, to think broadly, and to consider how the combination of three food storage variables reframed Neolithic people's approach to risk management and planning. First, I want to think about the organization of labor within traditional villages and Neolithic communities' food storage and argue that, at least partially, we can track the evolution of two different risk minimization strategies organized around co-insurance and self-insurance, from the Epipaleolithic to Pottery Neolithic. Second, I want to consider how the shift in strategies may

have been linked to the scale and location of storage in the Epipaleolithic through the Neolithic periods. Third, I argue that at its foundation, food storage is about planning and anticipating subsistence needs associated with social units, such as the individual, the household or the community. Plant storage, in particular, is about planning and risk minimization. My interest here is not to provide a detailed consideration of which plants and animals were recovered and utilized at specific Neolithic sites, for this has comprehensively been provided by other researchers (for a recent overview see Zeder, 2024a, 2024b). Rather my focus is that of considering the long-term evolution of different management systems and how Neolithic households and communities approached food insecurity.

Neolithic Co-insurance vs Self-insurance

Economists often model peoples' and households' approach to food insecurity through the lens of insurance, for this framing helps us understand the mechanisms for minimizing risk. When considering the organization of risk minimization, they draw a contrast between what they term co-insurance and self-insurance (see Ehrlich & Becker, 1972; Bowles et al., 2010; Bowles & Gintis, 2011; Tertytchnaya & DeVries, 2018, 1048). As traditionally defined in economic modeling, self-insurance refers to the actions taken by members of a household or individuals to reduce economic uncertainty (Ehrlich & Becker, 1972; Bowles et al., 2010; Tertytchnaya & DeVries, 2018, 1048). In contrast, co-insurance can be viewed as a risk-management approach in which economic risk is mitigated through organized networks linking together multiple households and individuals. While this modeling has been traditionally focused on economics, the concept of co-insurance and self-insurance has utility for archaeologists when modeling Neolithic household decision-making and the evolution of food-producing economies that stored food (Table 1). When considering how this can be layered into our understanding of the foundations of Neolithic social organization, I argue that one of the operational foundations is that co-insurance in Neolithic villages was organized around community networks that integrated multiple single-family households, whereas self-insurance was organized around larger multi-family households (for further definition see Kuijt, 2018, Table 1).

Table 1. Co-insurance to self-insurance risk management strategies and food storage in Anatolia, the northern and southern Levant (10.500-6500 cal. BCE).

	Co-insurance risk management	Self-insurance risk management
Social unit and scale	**Community networks and single-family household**	**Multi-family household**
	Material expression and Neolithic examples: Anatolia: Jerf el-Ahmar Aşıklı Höyük (Level 5-4), Pınarbaşı, Boncuklu, Göbekli Tepe, Karahan Tepe; southern Levant: Jericho, Netiv Hagdud, WF-16, Dhra'	*Material expression and Neolithic examples:* Anatolia: Aşıklı Höyük (Level 2C/D), Çatalhöyük (Level 6), Tell Halula (Level 9); southern Levant: LPPNB Basta', 'Ain Ghazal, 'Ain Jammam, and Es-Sifiya
Food procurement, storage, and sharing	*Procurement and processing:* Harvesting and processing based on seasonal labor pooling through household and community networks. *Storage and consumption*: Immediate and delayed consumption, with a single-year target for storing wild grain and other plants. *Food sharing and access*: Reciprocity and access based on labor investment and kinship, and on extensive community networks.	*Procurement and processing:* Harvesting and processing based on seasonal labor pooling organized within multi-family households. *Storage and consumption*: Increased focus on delayed consumption, with a multi-year target for storing domesticated crops and other plants. *Food sharing and access*: Reciprocity and access based on labor investment, organized around multi-family household
	Material expression: Significant food storage in open areas, outside residential buildings. Food processing and cooking, inside and outside of buildings	*Material expression:* Majority of grain food storage in designated areas inside residential buildings. Food processing and cooking, inside of buildings.
Built environment	*Construction and use of residential and communal architecture:* *Residential architecture*: Oval/circular structures, with limited internal divisions. *Communal architecture*: Construction of communal buildings (towers, large communal areas) and features (benches) facilitating community integration and networks within and between multiple households.	*Construction and use of residential and communal architecture:* *Residential architecture*: rectangular structures, with multiple internal divisions, dedicated rooms and features. Standardization of the shape, size, and internal organization of residential buildings. *Communal architecture*: Absence of communal buildings and features.
	Material expression and Neolithic examples: Anatolia: Göbekli Tepe, Aşıklı Höyük (Level 5-4); southern Levant: Beidha, Jericho, WF-16, Dhra'	*Material expression and Neolithic examples:* Anatolia: Aşıklı Höyük (Level 2C/D), Çatalhöyük (Level 6), Tell Halula (Level 9); southern Levant: LPPNB 'Ain Ghazal, Yiftahel, Jericho, 'Ain Jammam, Basta, and Es-Sifiya

Viewed collectively, I argue that the trajectory from the Near Eastern Epipaleolithic to the Pottery Neolithic exemplifies an evolutionary shift from co-insurance risk management to self-insurance risk management of food systems. Building upon a range of studies (e.g., Mulder et al., 2009; Sakaguchi, 2009; Matson, 2011; Smith et al., 2010; Bowles & Gintis, 2011) I argue that Epipaleolithic and Pre-Pottery Neolithic A period (PPNA) risk management approaches were focused on systems of co-insurance, based on single-family households and community networks and communal social organization, on seasonal labor pooling from within the community, a primary reliance on immediate consumption, with some short-term delayed consumption of food, and social reciprocity that enhanced personal and ritual connections within the community (see also Bogaard, 2017). Settlements such as G*ö*bekli Tepe, Karahan Tepe, Aşıklı Höyük (levels 4-5), WF16 and Jericho, help us understand that community-oriented practices, involving communal spaces, probably also shaped access to stored food organized around labor sharing and kinship. While difficult, if not impossible to demonstrate, it is likely that the effectiveness of plant storage, defined by a shelf-life, would have been limited, with storage duration perhaps being measured in months rather than years. Co-insurance as a practice emphasizes collective membership, involvement in the broader community, and a tendency to pool resources, both food and other, in such a way that reflects an individual's contribution.

In contrast, self-insurance approaches to risk management in larger aggregate villages, such as in the Middle Pre-Pottery Neolithic B period (LPPNB), Late Pre-Pottery Neolithic B period (LPPNB), and Pottery Neolithic period (PN) were probably centered on the organization of labor within larger multi-family households. This included a range of settlements dating from 7500 to 6500 cal. BCE, such as Aşıklı Höyük (level 2) (Figure 2), Çatalhöyük, Basta, and 'Ain Ghazal in the southern Levant. Multi-family household activities would have involved harvesting and processing of food based on seasonal labor pooling, and greater utilization of delayed consumption planning, with reciprocity and access based, at least partially, on participation by multi-family household members. It can be assumed, but not demonstrated at this point, that systems of self-insurance in the LPPNB brought together more effective plant processing (such as parching of seeds) and plant storage systems (including such things as better clay lined silos), that resulted in longer storage shelf-life. My argument here is that, while researchers have yet to model many of the details, Neolithic planning and risk management were probably framed around kinship networks and labor sharing and defined and operationalized in concert with available processing and storage technology. This assumption, as well as the assumption that labor was organized around multi-family households, needs further study but is largely beyond the scope of this paper. At the moment, however, it appears that the combination of new plant processing technologies, new and more effective storage technologies, and the development of domesticated plants, worked in concert to increase the shelf-life and amount of plants that

could be stored each year. All of these processes were important. It was a combination of all three that collectively changed the economic foundation within Neolithic villages.

Depending upon how one reads the evidence for the domestication of plants and animals through time, it can also be argued that we witness an incremental, but by no means total, evolutionary shift from immediate to delayed food consumption from the Near Eastern Epipaleolithic to Pottery Neolithic periods. Settlements dating from the Epipaleolithic and PPNA, exemplified by G*ö*bekli Tepe, Karahan Tepe, Aşıklı Höyük (levels 4-5), WF16 (Finlayson et al., 2012), and Jericho, provide evidence for communal buildings with benches and features, and in the case of Jericho the construction of a large tower. All of these settlements have structures or features that require communal labor. The timing of the shift to self-insurance fits with the abandonment of communal buildings in earlier periods (Table 1, Figures 1-3). It also fits with research on mortuary practices that illustrate that it is only at the end of the Pre-Pottery Neolithic period that we witness some degree of materialized social inequality, perhaps most notably with children, as part of the development of larger villages (Benz, 2010, Kuijt et al., 2011; Benz 2012; Benz et al., 2019; Twiss et al., 2024) (Figure 3). Moreover, as noted in Figures 3 and 6, we see that through time households increasingly controlled access to food storage areas, with the location of Neolithic grain storage shifting from dedicated storage buildings, often located between residential buildings, to areas inside of residential buildings.

Humans store food to overcome seasonal and, in some cases, annual, shortfalls in the amount of food needed to stay alive. It is, therefore, a strategy to manage risk and overcome food insecurity (see Ellis, 1988; Hunt, 2000; Matson, 2011; Kuijt, 2017). Assessing risk is ultimately a local, contextualized calculation, and was managed differently at different points in prehistory. Storage reflects, at least partially in recent history, the stockpiling of intergenerational wealth. Thus, the long-term evolutionary trajectory of food storage may have been linked to the breakdown of communal, cooperative practices, and abandonment of systems of co-insurance, food storage and sharing. Elsewhere Smith et al. (2010) and Mulder et al. (2009), draw attention to the role of intergenerational wealth in explaining variation in inequality within premodern societies. As part of this, they draw our attention to the social institutions associated with the transference of wealth, and the role of new inequalities being passed from generation to generation (which they call windfall gains and losses). To be clear, the stated aim of their research (Smith et al., 2010, 124) is to understand economic systems, not political or cultural complexity. Still, their framing helps us understand some of the interrelationships between variables, and how this can be used to model changing systems of Neolithic risk management and social inequality.

Food Production and "Bending" of Daily Practices

Twenty-five years ago, I considered how PPNA and MPPNB social and ritual mechanisms, such as mortuary practices, may have functioned to limit the development of more powerful leadership in Neolithic villages. As with other research, at the time I was struck by the lack of material evidence for social inequality, yet on the other hand, the growth in population levels in agricultural villages and the potential for domesticated food to be used as a social and economic currency. Reflecting on this point, I speculated "…communities dealt with the new challenges of emerging systems of food production, food surpluses, labor needs, and increased social crowding and population aggregation by continuing existing, and developing new, social mechanisms for maintaining communities through the reiteration of social-leveling mechanisms." (Kuijt, 2000, 99). The critical question at the time, which remains unresolved, is, how and why did Epipaleolithic and PPNA systems of co-insurance broke down, with the abandonment of communal projects and facilities seen in the 10th and 9th millennium, and the emergence of larger agricultural villages organized around competing and cooperating households? To put it another way, why did social leveling mechanisms stop working?

Increasingly I am unsatisfied with this framing and am drawn to modeling small-scale internal decisions bringing about long-term change. Twiss et al. (2024, 2) provide a helpful framing when they astutely note "Specific forms of food production may nonetheless ***bend societies*** toward not just contemporaneous inequalities but also durable (intergenerationally transmissible) distinctions." (emphasis added). Bending societies is an attractive framing, especially as embedded in these words is the recognition that, at least at times, human relations are a byproduct of the organization of subsistence practices. This framing introduces an important point: small-scale changes in systems of food production, such as new preservation and storage technologies, have the potential to shape social relationships, both within present and future communities. Extending this further, I argue some of the "bending" in Neolithic social systems was linked to how household members managed risk based on seasonal and annual decision-making, and that some of this was crystalized to the development of more effective preservation and storage technologies. With the manipulation of plants, the incremental "bending" of practices if you will, gradual small-scale shifts in practice can result in accidental, unintended long-term byproducts and evolutionary consequences.

Circling back to the intersection of plant storage and risk management, let us consider Smith et al.'s (2010) speculation as to how change may have taken place: "One possibility is that new forms of material wealth made self-insurance through storage more feasible, reducing the importance of relational wealth." (Smith et al., 2010, 125). This observation is important and deserves greater attention, for archaeologists have yet to really model how Neolithic villagers abandoned practices of co-insurance, how daily practices were bent, how we see the shift from

sharing networks focused on community connections between multiple households within small-scale villages, to the reorganization of buffering mechanism focused on larger, autonomous, multi-family households within larger Neolithic villages (Figures 4 & 6). While no informed and compelling arguments have been made for LPPNB food being converted into material wealth (but see Henrich et al., 2004; Bowles & Choi, 2013), there is growing mortuary evidence (e.g., Kuijt, 2008, 2018; Twiss et al., 2024; Zeder, 2024b) for increasing focus on the individual, especially children in LPPNB villages. This shift coincides with the shift from the community to the household. While early village social networks probably relied upon community-scale social and labor networks, increased community size would have stressed traditional networks, and with time led to the development of relatively autonomous multi-family households in large aggregate villages (see also Kuijt et al., 2011).

Near Eastern Pre-Pottery Neolithic Storage: Scale and Location

Having now argued that the development of plant storage from the Epipaleolithic to Pottery Neolithic periods reflects an organizational shift from co-insurance to self-insurance as a system of risk management, let us turn to how Neolithic daily practices and decision-making may have resulted in significant long-term changes. With time, and with improved technology in food harvesting, processing, and storing, people were able to store more food and increase how long they could store plant foods (Kuijt, 2015, 2017). While there is debate among researchers, I argue that the transition from co-insurance to self-insurance may well have been incremental, barely noticeable or measurable to people in the past, taking place over hundreds of years and multiple generations, and with the layering of new methods and practices into daily life. In the short-term the layering of new practices into daily life, such as where and how to store food, and parching grain before storing it, were likely viewed as relatively minor adjustments, envisioned as practical considerations to do things in a slightly better way, and with household members having no awareness that the small-scale changes might result in long-term evolutionary changes. For example, such small-scale changes may have included how silos were plastered, how crops were parched, and where food was stored within buildings. These would have resulted in minor, yet significant, improvements in how long food could be stored. Such changes may have only resulted in minimal increases, for example, a 3-5% longer storage shelf life of plants, a similar reduction in insect or rodent infestations, or lowering temperature and humidity levels within rooms. In the long-term, however, the adoption of a combination of new food management practices, with simple storage technologies and greater knowledge about how to care for plants and animals, would have a multiplier effect and increased household and community carrying capacities. This would have unintentionally created the long-term potential for how many people lived in Neolithic settlements, how much labor was available for seasonal work, how many people could seasonally aggregate into large villages, and ultimately the

increased potential for social differentiation within Neolithic communities. The fundamental changes that occurred over this transition, often based on small-scale daily practices, eventually transformed the economic, social and technological landscapes, including the development of the interrelated economic reliance on domesticated plants and animals that later served as the core of food-producing economies in southwest Asia and Europe.

How does this evolutionary modeling of the shift from co-insurance to self-insurance as a risk minimization strategy link to current archaeological data? When we think of the large, densely populated villages of 7500-6500 cal. BCE, represented by Çatalhöyük and Aşıklı Höyük (level 2) (Figure 2) in Anatolia, or for that matter Basta and 'Ain Ghazal in the southern Levant, it is remarkable to note how quickly things changed over 3000 years (Figures 3, 4, 6). In contrast to the later period villages of 7500-6500 cal. BCE, there is no evidence for significant, systematic, large-scale, food storage within or between residential buildings from before 9500 cal. BCE (Kuijt, 2008, 2015). In the southern Levant, at some point *after* 9500 cal. BCE, people started cultivating and storing wild plants in areas between structures and to a certain extent, inside the buildings. Archaeological excavations reveal that by 9500 cal. BCE in the southern Levant, PPNA people employed at least two types of storage systems for wild plants: small bins and larger storage silos constructed as individual buildings (see Kuijt, 2008; Kuijt & Finlayson, 2009; Finlayson et al., 2012; Kuijt 2015). Our understanding of what took place in Anatolia is less clear, but the scale of the settlements and architecture dated between 9500 and 9000 cal. BCE, such as Göbekli Tepe (Dietrich et al., 2019), Körtik Tepe (Özkaya & Coşkun, 2011), and Karahan Tepe (Karul, 2021) suggests that there must have been some degree of efficient collection of wild plants, processing of plants, and means of storing food at this point.

By around 8200 cal. BCE early villagers in Anatolia had developed several different ways of storing food (Duru et al., 2021), with villagers probably storing the bulk of their processed plant foods, such as baskets of dried grain, inside residential buildings. As seen in Figure 3, similar practices of plant control and storage are seen at different sites, including Aşıklı Höyük (level 5-4) (Özbaşaran et al., 2018), Boncuklu and Pınarbaşı (Baird et al., 2012, 2016), and Tell Halula (level 9) (Molist, 1996; Molist et al., 2020) at 7700 cal BCE. At the same time in the southern Levant, there is evidence for grain storage in small mud silos, such as those seen at Jericho and Yiftahel, found in a range of locations. While poor preservation conditions restrict our understanding of the overall village plan of Yiftahel, excavations revealed a building that may have served as a dedicated storage building (Garfinkel, 1987). While possibly a byproduct of archaeological sampling, by at least 7800 cal. BCE, there is strong evidence from multiple sites in Anatolia and the southern Levant for food storage being located in internal areas of buildings. This includes the development of what appear to be dedicated rooms designed for special-purpose storage.

After 7500 cal. BCE in Anatolia and the southern Levant, we witness a major shift in food storage practices, with an increase in the scale of food storage, as well as the formalization of the move of food storage into clearly defined and separate interior spaces. Collectively, the data from this period, generally framed as the LPPNB, illustrate how, over time, Neolithic villagers shifted the location of storage features from external to internal areas. The most dramatic and noticeable transition in storage practices occurs with the emergence of large aggregate villages after 7500 cal. BCE. At sites such as Es-Sifiya, Basta, and 'Ain Ghazal in the southern Levant, or sites such as Aşıklı Höyük (level 2) and Çatalhöyük in Anatolia, villagers developed new, larger enclosed, internal storage spaces such as bins, where access could be further controlled with the development of dedicated storage rooms inside of buildings (Bogaard et al., 2009; Kuijt, 2015; Bogaard, 2017; Duru, et al., 2021). Exemplifying this is Building 77 at Çatalhöyük, where excavations revealed two rooms (spaces 336 and 337), where the first room (space 336) contained multiple platforms, a hearth, bucrania display and multiple burials (Figure 5) (Bogaard et al., 2009; Twiss, 2012). The smaller second room (space 337) was organized around large bins, smaller basins, and a bin and a hearth.

It is interesting to note that in the LPPNB we also find the first evidence for systematic use of space on top of ground floor buildings. For example, arguments have been made that at Çatalhöyük by 7500 cal. BCE and into the Pottery Neolithic people used the roof areas of buildings, both for domestic purposes as well as to walk from building to building. With the availability of stone for construction, at times LPPNB people in the southern Levant constructed two-story buildings, probably with household members using space on the ground level for storage while living on the upper floor. Characteristic of this at Es-Sifiya Area A we see the construction of abutting two-story buildings with a central basement room entered with a ladder, and a series of smaller (around 1.20 x 1.20 m area) rooms entered through half-doors (Mahasneh, 1997). The buildings were often separated by a terrace wall with the foundation of the down-slope building 50 cm lower in elevation, and at Es-Sifiya and Basta, constructed on top of well-made drain systems underneath the house (Mahasneh, 1997, 207). At Basta, people constructed a semi-subterranean lower floor with multiple rooms, probably for storage, and lived above these rooms on the upper floor (Kuijt, 2000). The placement of storage areas inside buildings raises important questions concerning the meaning of increased control and restricted access to stored food (Figures 5 & 6).

Among others, Zeder (2024b) notes that Neolithic people not only stored food differently over time, but there must have been interconnections between population scale, heightened seasonality in the early Holocene, and new storage technologies (see Figure 6). They created, in short, both practical and visual means by which food was controlled, protected from other people, animals, and insects, and spatially defined. The appearance of bins and silos inside

residential buildings, seen at 'Ain Ghazal and Çatalhöyük (Kuijt, 2000; Bogaard et al., 2009; Bogaard, 2017) may reflect changes in ownership and restricted access to food based on kinship and household membership. This argument, however, is very difficult to assess in that individual multi-household families are likely to have lived in, and controlled, multiple buildings and these may not have been adjacent to each other. At the moment researchers are not able to reconstruct how members of individual social units, such as a nuclear or multi-family household, would have lived in multiple residential buildings or stored food in multiple residential buildings. Another challenge is that researchers working in the southern Levant have yet to really understand the extent to which LPPNB people used interior, below-ground, spaces in residential buildings. The use of these spaces would have minimized variation in temperature and humidity and extended how many days dried plants could be stored. Thus, we have to keep in mind that in some cases Neolithic plant storage may not have reflected new forms of ownership or access, so much as the practical act of storing dried plants in cool, dark, and dry locations, such as in basements and inner rooms. Such a simple act, even if the original intent was to organize and consulate food in one location, may well have resulted in great shelf-life.

In sum, the LPPNB predominance of intermural area food storage highlights two processes. First, broadly speaking the evolutionary trajectory of food storage reflects the appearance of incremental technological developments and the increasing mastery of physical materials, such as wall plastering, and the repeated selection and management of specific plants. Second, collectively, the evolutionary development of food storage both increased the carrying capacity of villages as well as establishing the potential for greater social abstraction and differentiation. As seen in discussions of mortuary practices and architecture, researchers are increasingly recognizing evidence for some degree of material social differentiation through time, but at the moment the best evidence we have for this is in the later stages of the LPPNB (Benz, 2010; Kuijt et al., 2011; Benz et al., 2019; Twiss et al., 2024).

Thinking About the Neolithic Foodscape: Awareness of Food Conditions and Storage Planning

Let us now turn to a broader question: how might annual Neolithic household planning have been shaped by plant food storage? Today, as in the past, farmers, collectors, and foragers think about food preparation and storage in terms of farming taskscapes and seasons. These are, of course, linked to time units: when would harvests take place, and how many months could Neolithic people live on a combination of fresh and stored plants and animals? On a more detailed level, when were seasonal fresh foods available and when might drying and preserved foods have run out? These are practical, critical questions, and shaped how Neolithic people approached and managed food insecurity and risk. Processing fresh foods plays a major role

in extending the period people can eat foods, including pickling, brining, smoking, parching, drying, and seasoning meat and vegetables. Just as importantly, over thousands of years in different parts of the world, humans have developed practical means of using technology to store processed foods, including reducing temperature and humidity levels within physical spaces and creating spaces that provide enhanced protection of stored foods from insects and pests.

Food storage is about planning and shelf-life. So, how might have planning been manifested in the seasonal organization of labor and sharing within the household and the community, and how might have Neolithic villagers approached food insecurity at the household and village level? All farmers, collectors, and foragers rely on a range of seasonally available, collected, planted, fresh, and stored foods. Thinking about a hypothetical LPPNB in central Anatolia, at what point of the year did villagers collect, harvest, and prepare different plants and animals? As seen in Figure 7, in Neolithic villages storage planning would have been framed around practical considerations such as available harvesting, processing and storage technologies, and perhaps most importantly, available human labor. Modeling of storage, therefore, requires us to think about labor as one part of decision-making and risk minimization. Fundamentally, food storage is primarily a means of buffering people from seasonal or yearly variances and works so that daily/weekly shortfalls of select wild or domesticated fresh plants or hunted animals are augmented by stored foods. Plants are only seasonally available, so storage targets would have been based on projected future subsistence needs, anticipated yearly growth conditions, planning around foods that could be grown, harvested, and processed, and with some estimate for how much of this would spoil over the winter. This entire risk calculation requires a consideration of the long-term, at least a year, and in some cases of repeated crop failures, up to four years (see Kuijt, 2017).

As I have discussed elsewhere (Kuijt, 2015, 2017), when farmers, collectors, and foragers discuss plans for storing grain at the end of the harvest season, their conversations are largely focused on three issues: how much grain/tubers/other do they need to keep in reserve for next years' seed stock, how much grain/tubers/other do they need to store for the household so they have enough preserved food over the next year(s), and how much of the first two might be lost each year due to fungi, insects and rodents? The last of these is critical, for depending on the answer, which is essentially an informed gamble based on historical knowledge from previous seasons, household decision-makers estimate how much extra they need to store to overcome lost food from spoilage. For archaeologists and economists, this is incredibly hard to reconstruct, as seasonal and yearly levels would have varied depending upon the specific environmental context of villages, the level of household interconnection within and between villagers, and the economic and food-sharing strategies adopted by people.

The primary goal of food storage is, of course, to secure and store sufficient foods for delayed consumption in the future when there are no fresh foods available. As a secondary goal, Neolithic people pursued an excess of food that could be stored for trade, exchange, or gifts at some later advantageous point in time (see Bogaard et al., 2009; Kuijt, 2015, 2017). An excess can be considered an amount or quantity beyond what is considered normal or sufficient each year (Hunt, 2000). As is noted by several researchers (Testart, 1982; Forbes & Foxhall, 1995) at times storage systems can produce an excess beyond the immediate annual household needs, and banked grain to overcome spoilage, as seed for planting, and supply for potential years of crop failure. Food storage, however, does not always result in excess. To be a true excess or surplus it is necessary to produce enough yearly food resources to cover the anticipated future subsistence needs of the group, to secure sufficient stored food to overcome any seasonal or yearly shortage for multiple years and still have remaining amounts that can be used for trade, exchange, or feeding stock. Thus, the critical question is not if there was storage in many cases, but if was there anything left over after all normal anticipated needs were satisfied. This is very different and potentially has huge implications for reconstructing past human economies.

Finally, it is important to recognize that storage is only one aspect of a broader interconnected system and only one means of overcoming seasonal and annual food shortages. Planning requires an understanding of some of these interconnected relationships, including that storage is an intermediary stage embedded within food production, processing, distribution, and consumption. As outlined by numerous researchers (e.g., Winterhalder & Goland, 1997; Stopp, 2002; Forbes, 2007) there are a range of risk-buffering strategies available to hunter-gatherers, foragers, collectors, and farmers. Many risk-buffering mechanisms, such as altering resource selection or intra-band food sharing, only extend the buffering period by a limited amount. Some risk minimization strategies really only provide a buffer for days, or at most multiple months. In the Neolithic, they would still have been useful systems to overcome short-term seasonal variations in available food resources. In the end, however, there are only two risk-buffering strategies that provide the means for people to overcome long-term food access problems: field dispersion (the use of agricultural fields in different ecological, sedimentological and growth contexts) and long-term food storage. Ultimately, food storage serves as a means of buying time, thereby increasing the chance that people will survive during periods of drought, diminished crops, and bad years.

Discussion

It is remarkable how little researchers know about the development of food sharing and storage, let alone risk management, for the Near Eastern Neolithic period. Food storage in general, and the development of grain food storage in specific, reflects an evolutionary transition and a technological and social solution to a problem. Although our understanding is obscured by

limited data and visibility of material remains, data indicates that compared to later periods food storage and delayed consumption management systems were not part of the Epipaleolithic adaptive package. Secondary proxies, such as grinding stones, highlight that there must have been some limited food storage of wild plants in the Epipaleolithic. In contrast, by at least 9500 cal. BCE, Neolithic people started to cultivate and store wild plants, with evidence for storage outside and inside of buildings, but most importantly, high-volume storage in dedicated storage silos were located between residential buildings. Evidence after 8200 cal. BCE highlight that food storage shifted to areas inside the buildings and that the total volume of plant food storage increased significantly.

Anyone handling and processing plant foods today or in the past is aware that different storage conditions result in different outcomes. Given seasonal and yearly variability in wild and domestic plants, it is clear that Epipaleolithic and Neolithic people were aware of the potential risk of running out of stored food. Seasons of scarcity and the knowledge that people could face multiple bad seasons and years in a row would have produced an ongoing incentive for Epipaleolithic and Neolithic people to think about better ways to do things, to develop ways of extending the use life of food, through experimentation and in combination with ways of processing foods, even if these resulted in just marginal improvements. As with any group who observe and manage plants and animals, Epipaleolithic and Neolithic people would have understood on a basic level how fungi, insects and animals caused the destruction, deterioration and transformation of different types of food.

Agriculturalists and pastoralists are well aware that specific types of resources have a shelf-life and plan around this knowledge (Testart, 1982; Forbes & Foxhall, 1995; Kuijt, 2015, 2017). Annual planning, of course, would have been framed around the anticipated need for food over the next year, the shelf-life of resources that varied for specific animals and plants, and the processing and storage technologies that existed at the time. All storage, including dried plants, can only be successfully stored as long as specific physical thresholds (e.g., temperature, humidity, air circulation) are maintained. Even under the best conditions, food storage is not indefinite, for it probably only extends the use-life of stored plants for one to three years (Kuijt, 2017). The stored resources, however, would have smoothed over seasonal variation in food abundance and raised the carrying capacity during the lean season.

It is somewhat strange to note that in most cases researchers do not understand what food was stored in specific features, how long different commodities could be stored, how much stored food was lost each season as commodities decayed, or how many people could be kept alive with the stored stocks. We need to know the answers to these questions. To be honest, however, we are only now identifying the questions we need to ask and are a long way from securing answers to the questions we have yet to formulate. This state of affairs is strangely exciting, for

even simple, future baseline archaeological research, focused on daily, physical, storage conditions, has the potential to significantly advance debate and discussion. While focused on the long-term, in a similar way modeling shifting risk-management strategies and the use of co-insurance and self-insurance risk management, also helps us think about the long-term evolutionary by-products of storage. The point here is, of course, that we need to think further about food storage from multiple perspectives, as we consider how the Neolithic Revolution, reflecting profound shifts in labor, social relationships, and food production, were defined and materialized.

Stepping back for a minute, I want to think about the role of food storage within the Neolithic Revolution as defined by V.G. Childe. Archaeologists often overlook the fact that at some point around 12.000-10.000 years ago, people living in the Near East did something quite remarkable: with no understanding of the consequences of their actions, people started to incrementally develop new ways to store and prolong the shelf-life of plant foods. This changed the world forever. When crafting essays such as this one, we often write things such as "The transition between foraging and food production economies from the Epipaleolithic through Pottery Neolithic period embodies profound changes in subsistence practices and economic systems, all of which is widely recognized as representing a crucial threshold in human prehistory". While a reasonable sentence, these words antiseptically undersell what took place and mask the important role of food storage in creating the world we live in today. Now, yes, the caloric backbone and payoff of the forager-farmer transition was the manipulation and eventual domestication of plants and animals. Without plant and animal domesticates you cannot have a Neolithic Revolution. In terms of plants, however, this narrative overlooks that it was the *combination* of the genetic transition from wild to domesticated plants, the development of new plant processing technologies, and the development of new forms of plant storage that was revolutionary. To be direct, there is no or minimal long-term evolutionary impact of having domesticated plants without the ability to process and store the food over months or years. Having more wheat in September is only helpful if you can eat it next March when there are no fresh plants, and is only really, really, helpful if you can eat your wheat in the following March. From this perspective, then, perhaps The Neolithic Revolution, that widely recognized and celebrated evolutionary process, should be recast as *The Storage Revolution*.

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Figure 1. Structure AD, Karahan Tepe, Turkey (Photo: I. Kuijt 2024).

Figure 2. Aşıklı Höyük (level 2), Turkey (Aşıklı Höyük Research Project, 2018).

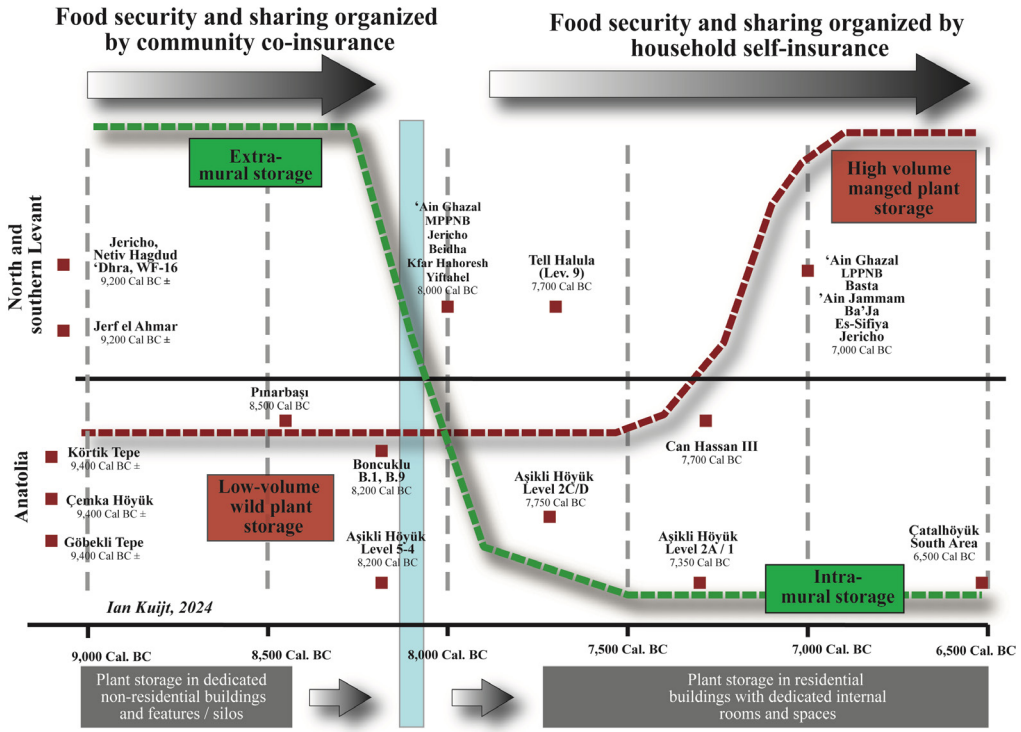

Figure 3. Modeling of the Epipaleolithic to Pottery Neolithic period shift from co-insurance to self-insurance as a risk management strategy through time.

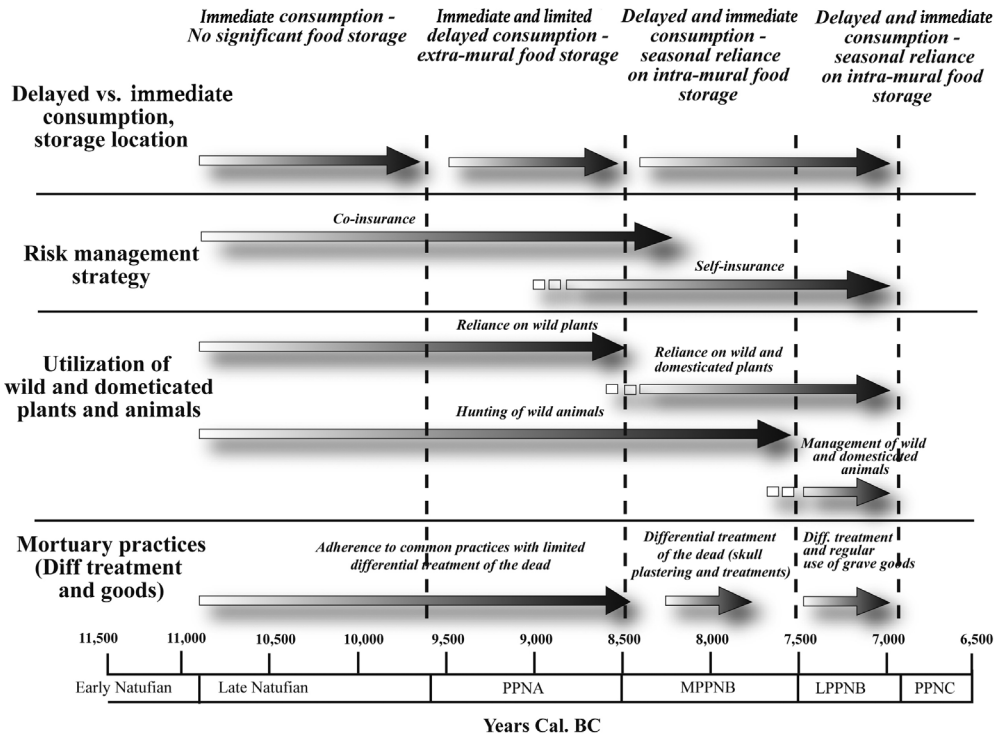

Figure 4. Changing food storage location and the transition from low-volume wild plant storage to high-volume managed plant storage over time.

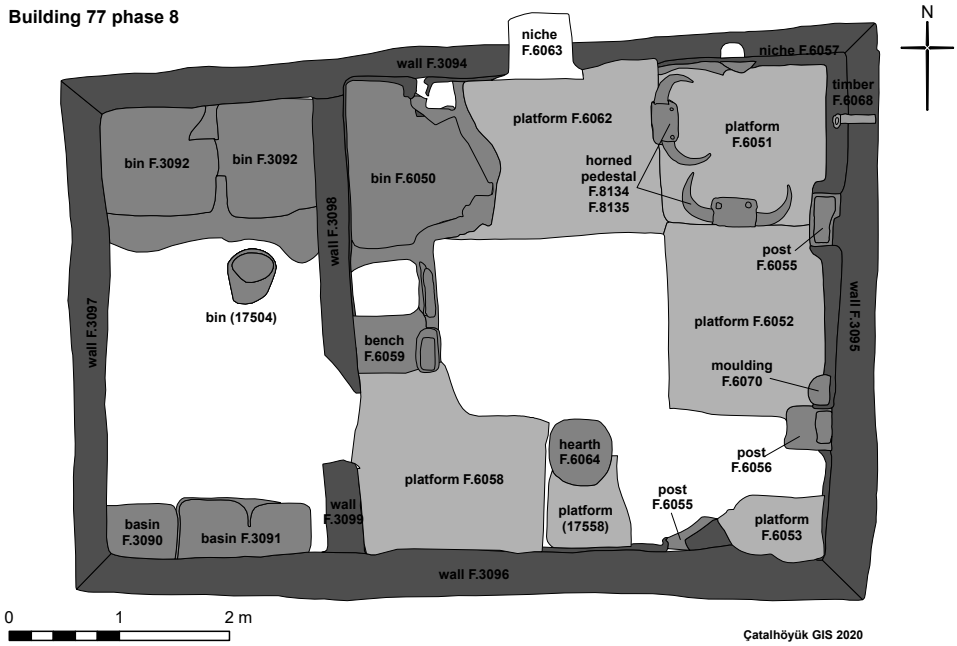

Figure 5. Planview of Building 77 at Çatalhöyük, divided into two rooms. The western room contains food storage bins and food processing features. While also containing a large bin, the eastern building is organized around raised platforms, food cooking features, ritual display materials and benches for burials (Figure by C. Mazzucato, Çatalhöyük Research Project).

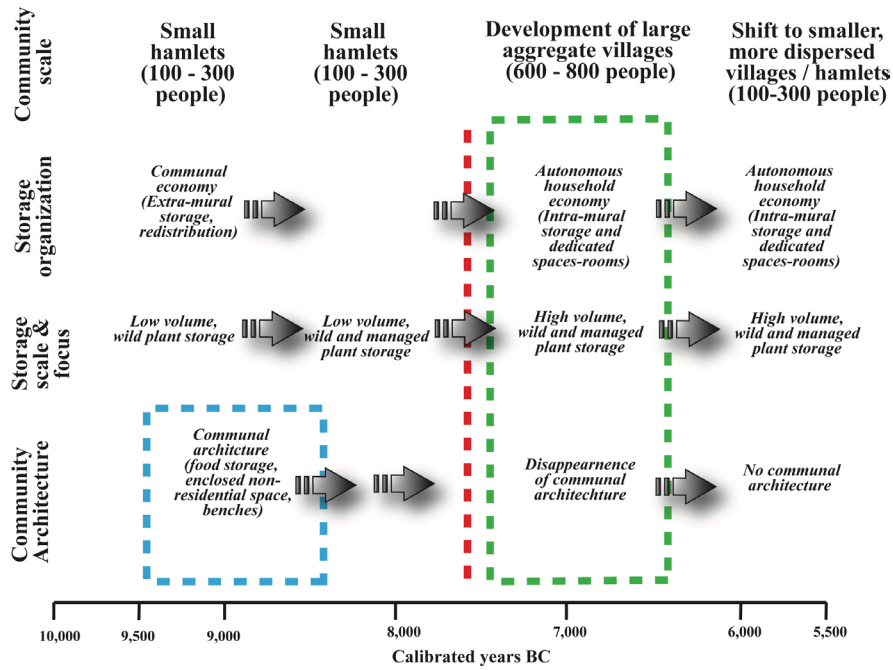

Figure 6. Changing community scale, storage organization and scale, and community architecture through time. Except for the detailed analysis of large aggregate villages from 7500 to 6500 cal. BCE (see Kuijt & Marciniak, 2024) remarkably little research has attempted to understand how regional population levels changed through time (see, however, Kuijt, 2000, 2008; Birch-Chapman et al., 2017). Thus, it is important to understand that the projected total average community population presented here are approximation.

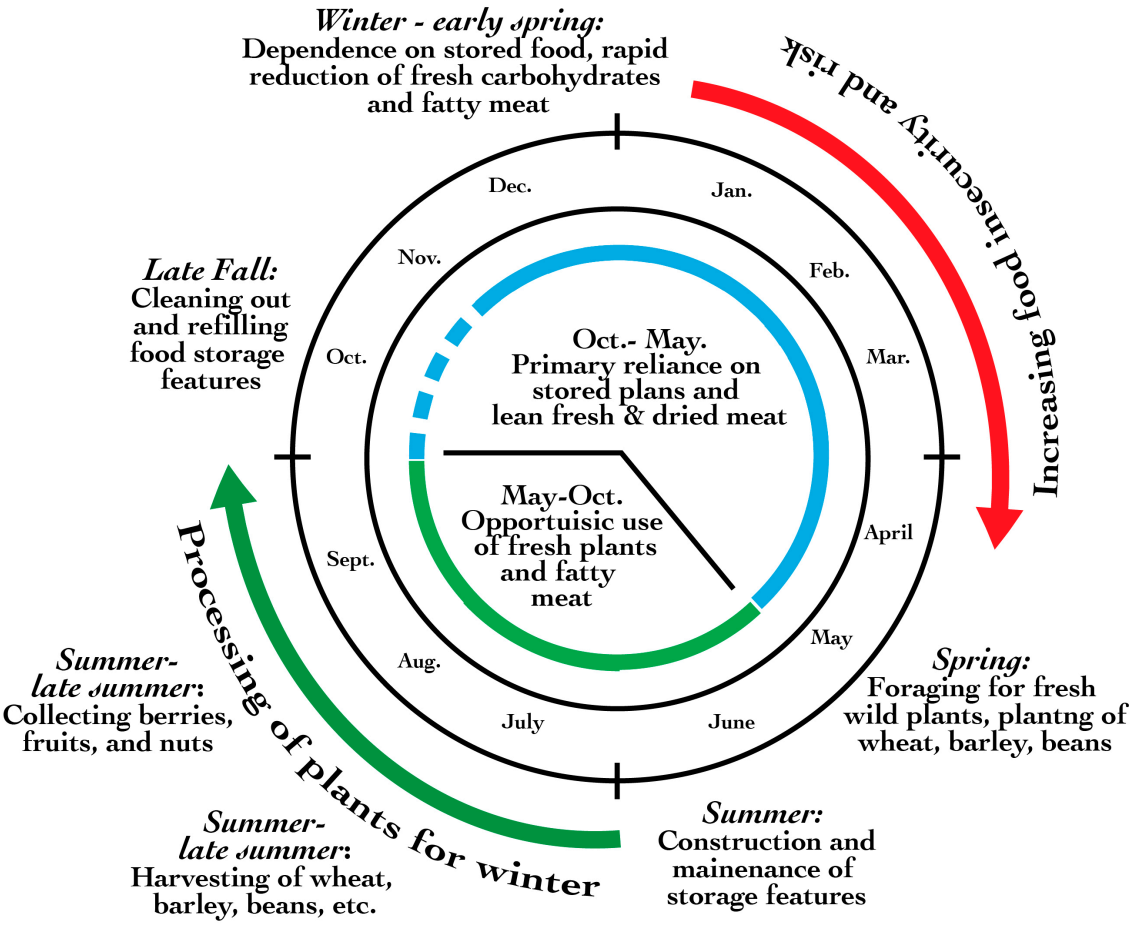

Figure 7. Seasonal food insecurity and risk, harvest and storage tasks in central Anatolian LPPNB villages, 7500-6500 cal. BCE.

ARKEOLOJİ BİLİMLERİ DERGİSİ

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Amaç & Kapsam

Arkeoloji bir süredir geçmişin yorumlanmasında teknoloji ve doğa bilimleri, mühendislik ve bilgisayar teknolojileri ile yoğun iş birliği içinde yeni bir anlayışa evrilmektedir. Üniversiteler, ilgili kurum ya da enstitülerde yeni açılmakta olan "Arkeoloji Bilimleri" bölümleri ve programları, geleneksel anlayışı terk ederek değişen yeni bilim iklimine adapte olmaya çalışmaktadır. Bilimsel analizlerden elde edilen sonuçların arkeolojik bağlam ile birlikte ele alınması, arkeolojik materyallerin, yerleşmelerin ve çevrenin yorumlanmasında yeni bakış açıları doğurmaktadır.

Türkiye'de de doğa bilimleriyle iş birliği içindeki çalışmaların olduğu kazı ve araştırma projelerinin sayısı her geçen gün artmakta, yeni uzmanlar yetişmektedir. Bu nedenle Arkeoloji Bilimleri Dergisi (ABD), Türkiye'de arkeolojinin bu yeni ivmenin bir parçası olmasına ve arkeoloji içindeki arkeobotanik, arkeozooloji, alet teknolojileri, tarihlendirme, mikromorfoloji, biyoarkeoloji, jeokimyasal ve spektroskopik analizler, Coğrafi Bilgi Sistemleri, iklim ve çevre modellemeleri gibi uzmanlık alanlarının çeşitlenerek yaygınlaşmasına katkı sağlamayı amaçlamaktadır. Derginin ana çizgisi arkeolojik yorumlamaya katkı sağlayan yeni anlayışlara, disiplinlerarası yaklaşımlara, yeni metot ve kuram önerilerine, analiz sonuçlarına öncelik vermek olarak planlanmıştır. Kazı raporlarına, tasnif ve tanıma dayalı çalışmalara, buluntu katalogları ve özgün olmayan derleme yazılarına öncelik verilmeyecektir.

Arkeoloji Bilimleri Dergisi açık erişimli, uluslararası hakemli bir dergidir. Araştırma ve yayın etiğine uygun bulunan makaleler çift taraflı kör hakem değerlendirme sürecinden geçtikten sonra yayınlanır. Dergi, Ege Yayınları tarafından çevrimiçi olarak yayınlanmaktadır.

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Archaeology is being transformed by integrating innovative methodologies and scientific analyses into archaeological research. With new departments, institutes, and programs focusing on "Archaeological Sciences", archaeology has moved beyond the traditional approaches of the discipline. When placed within their archaeological context, scientific analyses can provide novel insights and new interpretive perspectives to study archaeological materials, settlements and landscapes.

In Türkiye, the number of interdisciplinary excavation and research projects incorporating scientific techniques is on the rise. A growing number of researchers are being trained in a broad range of scientific fields, including but not limited to archaeobotany, archaeozoology, tool technologies, dating methods, micromorphology, bioarchaeology, geochemical and spectroscopic analysis, Geographical Information Systems, and climate and environmental modeling. The Turkish Journal of Archaeological Sciences (TJAS) aims to situate Turkish archaeology within this new paradigm and to diversify and disseminate scientific research in archaeology. New methods, analytical techniques and interdisciplinary initiatives that contribute to archaeological interpretations and theoretical perspectives fall within the scope of the journal. Excavation reports and manuscripts focusing on the description, classification, and cataloging of finds do not fall within the scope of the journal.

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Makale Değerlendirme Politikası (Çift Taraflı Kör Hakemlik) ve Yayın Süreci

Arkeoloji Bilimleri Dergisi, Türkçe veya İngilizce özgün araştırma makaleleri yayımlamaktadır.

1. Daha önce yayımlanmamış veya başka bir dergide değerlendirme sürecinde bulunmayan ve tüm yazarlar tarafından onaylanan makaleler değerlendirilmek üzere kabul edilir.
2. Gönderilen makaleler, ön inceleme, intihal taraması, hakem değerlendirmesi ve dil düzenlemesi aşamalarından geçirilir.
3. Ön inceleme aşamasını geçemeyen makaleler, yazar(lar)a iade edilir ve aynı yayın döneminde tekrar değerlendirmeye alınmaz. Ön incelemeyi geçen makaleler, en az iki hakemin değerlendirdiği çift taraflı kör hakem sürecine tabi tutulur.
4. İntihal kontrolünden geçen makaleler, Editör tarafından bilimsel içerik, yöntem, ele alınan konunun önemi ve derginin kapsamına uygunluk açısından değerlendirilir. Editör, makalelerin ön değerlendirmesini yapmak üzere editör yardımcılarına yönlendirir.
5. Editör yardımcıları, her bir makaleyi son gönderim tarihinden önce inceleyerek Arkeoloji Bilimleri Dergisi yayın ilkelerine uygunluğunu değerlendirir. Bu aşamada intihal taraması yapılır ve dergi yazım kurallarına uygunluk kontrol edilir.
6. Editörler ve editör yardımcıları, makalenin etik standartlara, konuya uygunluğa, metin düzenine, dipnotlar ve kaynakçaya, görsel kalitesine ve gerekli telif hakkı izinlerine uyup uymadığını değerlendirir. Bu kriterleri karşılayan makaleler, çift taraflı kör hakemlik süreci korunarak en az iki ulusal/uluslararası hakeme gönderilir.
7. Derginin hakem değerlendirme süreci ve editoryal etik kuralları, değerlendirmelerin milliyet, cinsiyet veya diğer herhangi bir faktöre dayalı önyargılardan arındırılmış olmasını sağlar. Makaleler, doktora derecesine sahip ve güçlü bir araştırma geçmişi bulunan en az iki uzman tarafından değerlendirilir.

8. Hakemler, makalenin yayınlanmaya uygunluğunu değerlendiren bir form doldurur ve gerekli revizyonlara yönelik önerilerde bulunur. Hakemler makaleyi değişiklik yapmadan kabul edebilir, küçük değişikliklerle kabul edebilir, büyük değişiklikler ve yeniden gönderim talep edebilir veya makaleyi reddedebilir. Her iki hakem de küçük değişiklikleri kabul ederse ve revize edilen versiyon onaylanırsa makale kabul edilir. Büyük değişiklikler gerektiğinde, makale Editörler tarafından yeniden değerlendirilir ve gerekli düzeltmeler yapıldıktan sonra hakemlere geri gönderilebilir. Revizyonlar yeterli bulunduğunda makale yayımlanmak üzere kabul edilir. Eğer bir hakem makaleyi reddeder veya biri olumlu, diğeri olumsuz görüş bildirirse, makale üçüncü bir hakeme gönderilir. Ancak iki hakemin olumlu görüş bildirmesi durumunda, son yayın kararı Editör Kurulu tarafından verilir. Editoryal kararlar nihaidir ve yalnızca istisnai durumlarda ilgili COPE yönergelerine göre itiraz edilebilir.
9. Hakemlerden, değerlendirmelerinde nazik, saygılı ve bilimsel bir dil kullanmaları beklenir. Saldırgan, saygısız veya kişisel yorumlardan kaçınmaları gerekmektedir. Bilimsel olmayan yorumlar tespit edildiğinde, dergi yönetimi hakemden raporunu gözden geçirmesini ve düzeltmesini talep eder. Hakemlerin değerlendirmelerini belirtilen süre içinde tamamlaması ve burada açıklanan etik sorumluluklara uyması gerekmektedir.
10. Dil düzenlemesi tamamlandıktan sonra, kabul edilen makaleler ilgili dergi sayısında tematik veya kronolojik sıraya göre düzenlenir.
11. Makalelerin mizanpajı, dergi tasarımına uygun olarak yapılır ve ardından Editörler tarafından gözden geçirilir.
12. Makalelerin son PDF versiyonu, nihai kontrol ve onay için yazarlara gönderilir. Yazarlar, makalenin derginin etik standartlarına uygun olduğunu ve çalışmalarının tüm sorumluluğunu kabul ettiklerini teyit etmelidir.
13. Hakemlerin talepleri doğrultusunda yazarlar tarafından yapılan düzenlemeler incelendikten sonra, nihai yayın kararı Yayın Kurulu tarafından verilir.
14. Yukarıda belirtilen süreçler tamamlandıktan sonra ilgili dergi sayısı son haline getirilir ve makalelere DOI numaraları atanır.
15. DOI numaraları atandıktan sonra baskı süreci başlar ve yayın süreci tamamlanır.

Editör Sorumlulukları

1. Editör, makaleleri yalnızca bilimsel içerik temelinde değerlendirir; yazarların etnik kökeni, cinsiyeti, cinsel yönelimi, milliyeti, dini inançları veya siyasi görüşleri dikkate alınmaz.
2. Editör, gönderilen makalelerin tarafsız bir şekilde çift taraflı kör hakem değerlendirmesine tabi tutulmasını sağlar ve yayınlanmadan önce gizliliği korur.

3. Editör, hakemlere makalelerin gizli bilgi içerdiğini ve değerlendirmenin ayrıcalıklı bir etkileşim olduğunu bildirir. Hakemler ve yayın kurulu üyeleri, makaleleri üçüncü şahıslarla tartışamaz. Belirli durumlarda, Editör belirli bir noktayı netleştirmek amacıyla bir hakemin değerlendirmesini diğer hakemlerle paylaşabilir.
4. Editör, derginin içeriği ve genel kalitesinden sorumludur; gerektiğinde düzeltme notu yayımlamak veya geri çekme işlemi yapmak editörün sorumlulukları arasındadır.
5. Editör, yazarlar, editörler ve hakemler arasında çıkar çatışmasına izin vermez. Hakem atama konusunda tam yetkilidir ve makalelerin yayımlanmasına ilişkin nihai karardan sorumludur.

Hakem Sorumlulukları

1. Hakemler, araştırma, yazarlar ve/veya finansman sağlayıcıları ile herhangi bir çıkar çatışması içinde olmamalıdır. Değerlendirmeleri objektif olmalıdır.
2. Hakemler, gönderilen makalelerle ilgili tüm bilgilerin gizli kalmasını sağlamalı ve telif hakkı ihlali veya intihal tespit etmeleri durumunda Editöre bildirmelidir.
3. Kendini makaleyi değerlendirmede yetersiz hisseden veya incelemeyi belirtilen süre içinde tamamlayamayacağı kanısına varan hakem, Editöre haber vermeli ve değerlendirme sürecinden çekilmelidir.

Yazar Sorumlulukları

1. Yazar olarak belirtilen kişiler, makalenin kavramsallaştırılması, tasarımı, veri toplama ve yorumlama, veri analizi veya araştırma ve yazım süreçlerine önemli katkıda bulunmuş olmalıdır. Tüm ortak yazarlar, makalenin son sürümünü onaylamalı ve içeriğinden eşit derecede sorumlu olmalıdır.
2. Yazarlar, görsellerin (fotoğraf veya şekiller) telif hakkı düzenlemelerine uygun olmasını sağlamalı veya gerekli izinleri almalıdır. Eğer etik veya telif hakkı ihlali tespit edilirse, dergi ilgili makaleyi geri çekme veya erişimini engelleme hakkını saklı tutar.
3. Yazarlar, dergi editörleri ile iletişim kurmaktan, düzeltmeleri yapmaktan, makaleyi belirtilen sürede yeniden göndermekten ve etik ile telif hakkı kurallarına uygunluğu onaylamaktan sorumludur. İlk gönderimden sonra yazar isim değişiklikleri dikkate alınmaz.

Düzeltme Süreci

Hakemler tarafından revizyon talep edilmesi durumunda, ilgili raporlar yazara iletilir ve yazarın en kısa sürede gerekli düzeltmeleri yapması beklenir. Yazar, yaptığı düzeltmeleri işaretleyerek güncellenmiş makaleyi Editörlere sunmalıdır.

Türkçe Dil Düzenlemesi: Hakem sürecinden geçen Türkçe makaleler, Türkçe Dil Editörü tarafından incelenir ve gerekli görüldüğünde yazardan tashih istenebilir.

Yabancı Dil Düzenlemesi: Hakem sürecinden geçen İngilizce makaleler, Yabancı Dil Editörü tarafından gözden geçirilir ve gerekli görüldüğünde yazardan ek düzeltmeler yapması istenebilir.

Dizgi, Mizanpaj ve Son Okuma Süreci

Yayın Kurulu tarafından yayımlanması onaylanan makaleler, nihai yayına hazırlanmak üzere dizgi ve mizanpaj işlemlerine tabi tutulur. Mizanpaj işlemi tamamlandıktan sonra, yayınlanmadan önce makaleler için son okuma süreci gerçekleştirilir.

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Dijital Nesne Tanımlayıcısı (DOI), elektronik ortamda yayımlanan bir makalenin resmi ve orijinal versiyonuna kalıcı bir bağlantı sağlayan benzersiz bir kimlik numarasıdır. Arkeoloji Bilimleri Dergisi, yayın sürecinin tamamlanmasının ardından kabul edilen tüm bilimsel makalelere DOI numarası atayarak, makalenin dijital ortamda resmi kaydını güvence altına alır.

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ARKEOLOJİ BİLİMLERİ DERGİSİ

TURKISH JOURNAL OF ARCHAEOLOGICAL SCIENCES

Arkeoloji Bilimleri Dergisi Yayın Etiği ve Yayın Politikası

Yayın Etiği

Arkeoloji Bilimleri Dergisi, yürütülen tüm süreçlerde; Yazar, Hakem, Editör, Yayıncı ve Okuyucu sorumlulukları bağlamında yayın etiğine ilişkin uluslararası bir standart olarak kabul gören *Committee on Publication Ethics* (COPE) politikalarını benimsemekte ve yönergelerini takip etmektedir.

Editörler için: Editörler kurulunda yer alan araştırmacıların göndermiş olduğu makalelerle ilgili olarak makale hakem sürecindeyken makale sahibi editörlerin editör rolleri askıya alınır ve hakem sürecini görmemeleri sağlanır, böylece çift taraflı kör hakemlik korunur.

Hakemler için: Arkeoloji Bilimleri Dergisi, önyargısız ve en iyi etik standartlara göre çift taraflı kör hakem değerlendirmesi sistemi işletir ve COPE'nin Akran Hakemleri için Etik İlkelerinde belirtilen akran hakemlerine yönelik kılavuzunu dikkate alır. Hakemlerin, incelemelerini kendilerine ayrılan süre içinde tamamlamaları beklenir. Hakemlerimizin gizliliğine saygı duyuyor, yazarların ve hakemlerin de aynı gizliliğe uymasını bekliyoruz. Hakemlerin önyargısız ve saygılı bir dil kullanarak rapor vermeleri beklenir. Agresif dil veya yazarlar hakkında kişisel görüşler içeren yorumlar dikkate alınmaz. Bir hakem, gönderiyi incelemeye başlamadan önce varsa konuya istinaden veya olası herhangi bir çıkar çatışması hakkında editörleri bilgilendirmelidir.

Yazarlar için: Arkeoloji Bilimleri Dergisi, bilim dünyasına özgün çalışmalar sunmayı amaçlamaktadır. Makaleler özgün bilimsel araştırma olmalıdır. Dergiye çalışmalarını gönderen yazar(lar) söz konusu yazının daha önce başka bir yerde yayımlanmadığını ya da yayımlanmak üzere bir başka yere gönderilmemiş olduğunu kabul etmiş sayılırlar. Yazarlar, araştırma ve yayın etiğine uyduklarını kabul ederler. Yazar/lar etik izin gerektiren çalışmalar için Etik Kurul İzni sunmalıdır. Yazar/lar araştırma sürecinde araştırmaları için mali destek almışlarsa bu desteği makale metninde belirtmelidir. Yayın sonrası hata tespit edilmesi durumunda yazar/lar, hatalı makaleyi geri çekmek ve düzeltmekle yükümlüdür. Dergi ilkelerine uymayan makaleler dergiye kabul edilmezler. Ön değerlendirme ve intihal denetimini başarıyla geçen makaleler hakem değerlendirme süreci için en az iki hakeme gönderilir.

Telif Hakkı

Arkeoloji Bilimleri Dergisi'nde yayımlanan tüm özgün makaleler, Creative Commons Atıf-Gayri Ticari 4.0 International (*CC BY-NC 4.0*) lisansına tabidir. Bu lisans ile taraflar, Arkeoloji Bilimleri Dergisi'nde yayımlanan tüm makaleleri ve görselleri; atıfta bulunarak dağıtabilir, kopyalayabilir, üzerine çalışma yapabilir, yine sahibine atıfta bulunarak türevi çalışmalar yapabilir. Arkeoloji Bilimleri Dergisi tarafından yayınlanan makalelerin telif hakları CC BY-NC 4.0 lisansı kapsamında yazarlara aittir. Yayınlanan tüm telif hakları yazarın/yazarların sorumluluğundadır. Dergide yayınlamayı kabul ederek, yazarlar bu telif hakkı şartlarına uymayı da kabul ederler. Dergide yayımlanan eserlerin sorumluluğu yazarlarına aittir. Yazarların yayımlanmış olan makalelerine ait PDF dosyaları, kendi kurumsal arşivleri ile başka makale platformlarında ve sosyal medya hesaplarında açık erişim politikası gereği paylaşılabilir. Arkeoloji Bilimleri Dergisi hiçbir çıkar gözetmez.

İntihal

Arkeoloji Bilimleri Dergisi, intihal tespit yazılımı (*iThenticate* veya benzeri) kullanarak metinleri kontrol etme hakkını saklı tutar. İntihal, başkalarına ait çalışmaların (fikirlerin, verilerin, kelimelerin, görüntülerin vb. her türlü medyatik formun) kaynak göstermeden veya gerekli olduğunda izin veya onay alınmadan kullanılmasıdır. Bu tanım çerçevesinde yazar(lar)ın gerekli referanslar veya izinler olmadan kendi çalışmalarını yeniden üretmeleri, kendinden kendine intihali içerir. İntihal materyali içeren gönderiler otomatik olarak reddedilecektir. Yayınlanmış ise yayınlandıktan sonra dahi, ilgili eyleme karar verilerek COPE'nin Akran Hakemleri için Etik İlkelerine göre sürdürülür.

Makale Geri Çekme Politikası

Bünyesinde özgün makalelere yer veren Arkeoloji Bilimleri Dergisi yayın yönetimi, yayın politikası gereği henüz değerlendirme aşamasında veya dergide yayımlanmış bir makaleye dair etik olmayan bir durum şüphesinin oluşması veya telif hakkı ihlali halinde, söz konusu çalışma hakkında incelemelerde bulunabilir. Yapılan incelemeler sonucunda bu amaçla değerlendirilen makale için COPE'nin makale geri çekme süreçleri uygulanır.

Eğer dergi editörleriyle iletişime geçen çalışma sahibinin kendisinden henüz yayımlanmış, hakem sürecinden geçerek kabul edilmiş ya da değerlendirme aşamasındaki çalışmalarıyla ilgili bir geri çekme talebi gelirse Arkeoloji Bilimleri Dergisi Yayın Kurulu bunu ivedilikle işleme alır. Bu işlemin yapılabilmesi için yazar(lar)ın geri çekme isteklerini kaleme aldıkları bir belge hazırlayıp her bir yazarın ıslak imzasıyla imzalayarak Arkeoloji Bilimleri Dergisi e-posta adresine (editor@arkeolojibilimleridergisi.org) iletmesi gereklidir. Bu süreç COPE'nin Akran Hakemleri için Etik İlkelerine göre sürdürülür. Arkeoloji Bilimleri Dergisi Yayın Kurulu, başvuruyu inceleyip karar vermeden önce yazarların çalışmasını başka bir dergiye yayınlanmak üzere göndermesini katiyetle etik bir davranış olarak kabul görmez.

Finansman

Yayında sunulan çalışmanın tamamlanması için alınan fon ve benzeri araştırma desteği, uygun olduğunda hibe numaraları ve/veya bilimsel proje numaraları da dahil olmak üzere beyan edilmelidir. Arkeoloji Bilimleri Dergisi'nde uygulanan yayın süreçleri, bilginin tarafsız ve saygın bir şekilde gelişimine ve dağıtımına temel oluşturmaktadır. Hakemli çalışmalar bilimsel yöntemi somutlaştıran ve destekleyen çalışmalardır. Bu noktada sürecin bütün paydaşlarının—yazarlar, okuyucular ve araştırmacılar, yayıncı, hakemler ve editörler—etik ilkelere yönelik standartlara uyması önem taşımaktadır. Makalelerde cinsiyetçi, ırkçı veya kültürel ayrım yapmayan, kapsayıcı bir dil kullanmalıdır ("insanoğlu" yerine "insan"; "bilim adamı" yerine "bilim insanı" gibi). Arkeoloji Bilimleri Dergisi yayın etiği kapsamında tüm paydaşların bu etik sorumlulukları taşımasını beklenmektedir. Burada belirtilen etik görev ve sorumluluklar, Committee on Publication Ethics (COPE) tarafından açık erişimli olarak yayınlanan rehberler ve politikalar dikkate alınarak hazırlanmıştır. Bkz.: COPE İş Akış Diyagramları.

Kişisel Verilerin Korunması

Arkeoloji Bilimleri Dergisi'nde değerlendirilen çalışmalarda gerçek kişilere ait kişisel veriler Kişisel Verilerin Korunması Hakkında Kanun kapsamında koruma altındadır. Yazara ait hiçbir bilgi üçüncü kişi ve kurumlarla paylaşılmaz.

ARKEOLOJİ BİLİMLERİ DERGİSİ

TURKISH JOURNAL OF ARCHAEOLOGICAL SCIENCES

Turkish Journal of Archaeological Sciences Publication Ethics and Policies

Publication Ethics

The Turkish Journal of Archaeological Sciences adheres to the ethical standards set by the Committee on Publication Ethics (COPE), ensuring integrity in all aspects of the publication process for authors, reviewers, editors, publishers, and readers. The journal follows COPE guidelines to uphold ethical publishing practices.

For Editors: If a member of the editorial board submits an article to the journal, their editorial role is suspended during the peer review process to prevent any access to or influence over the review. This measure safeguards the integrity of the double-blind peer review system.

For Reviewers: The Turkish Journal of Archaeological Sciences employs an unbiased and ethical double-blind peer review system in accordance with COPE's Ethical Guidelines for Peer Reviewers. Reviewers are expected to complete their assessments within the assigned timeframe. The journal maintains the confidentiality of reviewers and expects both authors and reviewers to do the same. Reviewers must provide objective cand respectful evaluations. Comments containing aggressive language or personal opinions about the authors will not be considered. Before commencing a review, reviewers must disclose any potential conflicts of interest to the editors.

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The Turkish Journal of Archaeological Sciences is committed to academic integrity and will investigate ethical concerns regarding submitted or published articles. If ethical violations or copyright infringements are suspected, the journal will initiate a review process and follow COPE's retraction procedures as necessary.

If an author wishes to withdraw their manuscript after submission, acceptance, or publication, the Editorial Board will process the request promptly. Authors must submit a signed withdrawal request, endorsed by all co-authors, to the journal's official email address (editor@arkeolojibilimleridergisi.org). Manuscripts must not be submitted to another journal before receiving formal withdrawal confirmation, as this is considered unethical.

Funding Disclosure

If the research was supported by a grant or other financial resources, authors must disclose this in the manuscript, including relevant grant numbers and project identifiers where applicable.

Ethical Standards and Responsibilities

The Turkish Journal of Archaeological Sciences aims to support the objective and reputable dissemination of knowledge. Peer-reviewed publications represent the application of scientific methodology, and all stakeholders—authors, readers, researchers, publishers, reviewers, and editors—must adhere

to ethical standards. Manuscripts should use inclusive language that is free from bias based on sex, race or ethnicity, etc. (e.g., "he or she" or "his/her/their" instead of "he" or "his") and avoid terms that imply stereotypes (e.g., "humankind" instead of "mankind"). The ethical duties and responsibilities outlined herein align with open-access policies and the Committee on Publication Ethics (COPE) guidelines.

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Personal data of individuals involved in research published in the Turkish Journal of Archaeological Sciences is protected under the Law on the Protection of Personal Data. No personal information of authors will be shared with third parties or external institutions.

ARKEOLOJİ BİLİMLERİ DERGİSİ

TURKISH JOURNAL OF ARCHAEOLOGICAL SCIENCES

Makale Gönderimi ve Yazım Kılavuzu

* *Please see below for English*

Makale Kabul Kriterleri

Makalelerin konu aldığı çalışmalar, Arkeoloji Bilimleri Dergisi'nin amaçları ve kapsamı ile uyumlu olmalıdır (bkz.: Amaç ve Kapsam).

Makaleler Türkçe veya İngilizce olarak yazılmalıdır. Makalelerin yayın diline çevirisi yazar(lar)ın sorumluluğundadır. Eğer yazar(lar) makale dilinde akıcı değilse, metin gönderilmeden önce anadili Türkçe ya da İngilizce olan kişilerce kontrol edilmelidir.

Her makaleye 200 kelimeyi aşmayacak uzunlukta Türkçe ve İngilizce yazılmış özet ve beş anahtar kelime eklenmelidir. Özete referans eklenmemelidir.

Yazarın Türkçesi veya İngilizcesi akıcı değilse, özet ve anahtar kelimelerin Türkçe veya İngilizce çevirisi editör kurulu tarafından üstlenilebilir.

Metin, figürler ve diğer dosyalar wetransfer veya e-posta yoluyla **archaeologicalsciences@gmail.com** adresine gönderilmelidir.

Makale Kontrol Listesi

Lütfen makalenizin aşağıdaki bilgileri içerdiğinden emin olun:

- Yazarlar (yazarların adı-soyadı ve iletişim bilgileri buradaki sırayla makale başlığının hemen altında paylaşılmalıdır)
- Çalışılan kurum (varsa)
- E-mail adresi
- ORCID ID

Makalenin içermesi gerekenler:

- Başlık
- Özet (Türkçe ve İngilizce)
- Anahtar kelimeler
- Metin
- Kaynakça
- Figürler
- Tablolar

Yazım Kuralları

Metin ve Başlıkların Yazımı

- Times New Roman karakterinde yazılan metin 12 punto büyüklüğünde, iki yana yaslı ve tek satır aralıklı yazılmalıdır. Makale word formatında gönderilmelidir.
- Yabancı ve eski dillerdeki kelimeler *italik* olmalıdır.
- Başlık ve alt başlıklar **bold** yazılmalıdır.
- Başlıklar numaralandırılmamalı, italik yapılmamalı, altları çizilmemelidir.
- Başlık ve alt başlıklarda yalnızca her kelimenin ilk harfi büyük olmalıdır.

Referans Yazımı

Ayrıca bkz.: Metin içi Atıflar ve Kaynakça Yazımı

- Referanslar metin içinde (Yazar yıl, sayfa numarası) şeklinde verilmelidir.
- Referanslar için dipnot ve son not kullanımından kaçınılmalıdır. Bir konuda not düşme amacıyla gerektiği taktirde dipnot tercih edilmelidir.
- Dipnotlar Times New Roman karakterinde, 10 punto büyüklüğünde, iki yana yaslı, tek satır aralıklı yazılmalı ve her sayfa sonuna süreklilik izleyecek şekilde eklenmelidir.

Şekiller ve Tablolar

- Makalenin altına şekiller ve tablolar için bir başlık listesi eklenmelidir. Görsellerde gerektiği taktirde kaynak belirtilmelidir. Her şekil ve tabloya metin içerisinde gönderme yapılmalıdır (Şekil 1 veya Tablo 1).
- Görseller Word dokümanının içerisine yerleştirilmemeli, jpg veya tiff formatında, ayrı olarak gönderilmelidir.
- Görüntü çözünürlüğü basılması istenen boyutta ve 300 dpi'nin üzerinde olmalıdır.
- Görseller Photoshop ve benzeri programlar ile müdahale edilmeden olabildiğince ham haliyle gönderilmelidir.
- Excel'de hazırlanmış tablolar ve grafikler var ise mutlaka bunların PDF ve Excel dokümanları gönderilmelidir.

Tarihlerin ve Sayıların Yazımı

- MÖ ve MS kısaltmalarını harflerin arasına nokta koymadan kullanınız (örn.: M.Ö. yerine MÖ).
- "Bin yıl" ya da "bin yıl" yerine "... binyıl" kullanınız (örn.: MÖ 9.binyıl).
- "Yüzyıl", "yüz yıl" ya da "yy" yerine "yüzyıl" kullanınız (örn.: MÖ 7.yüzyıl).
- Beş veya daha fazla basamaklı tarihler için sondan sayarak üçlü gruplara ayırmak suretiyle sayı gruplarının arasına nokta koyunuz (örn.: MÖ 10.500).
- Dört veya daha az basamaklı tarihlerde nokta kullanmayınız (örn.: MÖ 8700).
- 0-10 arasındaki sayıları rakamla değil yazıyla yazınız (örn.: "8 kez yenilenmiş taban" yerine "sekiz kez yenilenmiş taban").

Noktalama ve İşaret Kullanımı

- Ara cümleleri lütfen iki çizgi ile ayırınız (—). Çizgi öncesi ve sonrasında boşluk bırakmayınız.
- Sayfa numaraları, tarih ve yer aralıklarını lütfen tek çizgi (-) ile ayırınız: 1989-2006; İstanbul-Kütahya.

Kısaltmaların Yazımı

- Sık kullanılan bazı kısaltmalar için bkz.:

Yaklaşık:	yak.	Circa:	ca.
Bakınız:	bkz.	Kalibre:	kal.
Örneğin:	örn.	ve diğerleri:	vd.

Özel Fontlar

- Makalede özel bir font kullanıldıysa (Yunanca, Arapça, hiyeroglif vb.) bu font ve orijinal metnin PDF versiyonu da gönderilen dosyalar içerisine eklenmelidir.

Metin içi Atıflar ve Kaynakça Yazımı

Her makale, metin içinde atıfta bulunulan çalışmalardan oluşan ve "Kaynakça" başlığı altında düzenlenmiş APA7'ye göre bir referans listesi içermelidir. Metin içindeki her referansın kaynakçada yer aldığından emin olunuz.

https://apastyle.apa.org/style-grammar-guidelines/references/examples

- **Doğrudan atıf:** *Örnek:* "… Esin (1995)'in belirtmiş olduğu gibi."
- **Parantez içinde atıf:** *Örnek:* "… analiz sonuçları gösteriyor ki … (Esin, 1995)."
- **Aynı parantezde birden fazla atıf: Yayın yılına** göre sıralanmalı ve noktalı virgül ile ayrılmalıdır. *Örnek:* "… (Dinçol & Kantman, 1969; Esin, 1995; Özbal et al., 2004)."
- **Aynı yazarın farklı yıllara ait yayınlarına atıf:** Yazarın soyadı bir kez kullanılır, yıllar virgül ile ayrılır. *Örnek:* "… (Peterson, 2002, 2010)."
- **Aynı yazarın aynı yıl içindeki farklı yayınlarına atıf:** Yılın yanına alfabetik harf eklenir (örn. "a", "b"). *Örnek:* "… (Peterson, 2010a, 2010b)."
- **Tek yazarlı ve çok yazarlı kaynaklar:** Tek yazarlı kaynaklar önce sıralanır. Aynı yazarın farklı eş yazarlara sahip kaynakları ikinci yazarın soyadına göre alfabetik sıralanır. *Örnek:* "… (Esin, 1995; Esin & Özbal, 1998)."
- **Kaynakça Yazım Kuralları:** Kaynakça, ilk yazarın soyadına göre **alfabetik** olarak sıralanmalı ve aşağıdaki kurallar izlenmelidir:
  1) **Tek yazarlı yayınlar:** Yazarın soyadına göre sıralayın, ardından yayın yılına göre (en eskiden en yeniye doğru) düzenleyin.
  2) **İki yazarlı yayınlar:** İlk yazarın soyadına göre sıralayın, ardından ikinci yazarın soyadına göre ve son olarak yayın yılına göre sıralayın.
  3) **Üç veya daha fazla yazarlı yayınlar:** İlk yazarın soyadına göre sıralayın, ardından yayın yılına göre (en eskiden en yeniye doğru) düzenleyin. Ek yazarların sırası önemli değildir.

- Metinde atıfta bulunulan tüm çalışmalar "Kaynakça" başlığı altında listelenmelidir.
- Eğer mevcutsa, dergi makaleleri için mutlaka DOI numarası eklenmelidir (örn. "*https://doi.org/abc*").
- Kişisel iletişimler ve yayımlanmamış çalışmalar yalnızca metin içinde belirtilmelidir ve kaynakçaya eklenmemelidir.

Dergi makalesi

Bickle, P. (2020). Thinking gender differently: New approaches to identity difference in the Central European Neolithic. *Cambridge Archaeological Journal, 30*(2), 201–218. https://doi.org/10.1017/S0959774319000453

Hansen, S., Mirtskhulava, G., & Bastert-Lamprichs, K. (2007). Aruchlo: A Neolithic settlement mound in the Caucasus. *Neo-Lithics*, *1*, 13–19.

Pearson, J., & Meskell, L. (2015). Isotopes and images: Fleshing out bodies at Çatalhöyük. *Journal of Archaeological Method and Theory*, *22*, 461–482. https://doi.org/10.1007/s10816-013-9184-5

Metin içi atıf: (Hansen vd., 2007; Pearson & Meskell, 2015; Bickle, 2020). Eğer sayfa numarası eklenecek ise: (Hansel vd., 2007, 16; Pearson & Meskell, 2015, 475; Bickle, 2020, 210–212).

Kitap / e-kitap

Dinçol, A. M., & Kantman, S. (1969). *Analitik arkeoloji: Denemeler.* Edebiyat Fakültesi Basımevi.

Peterson, J. (2002). *Sexual revolutions: Gender and labor at the dawn of agriculture.* AltaMira Press.

Metin içi atıf: (Dinçol & Kantman, 1969; Peterson, 2002).

Editörlü kitap & Kitap içi bölüm

Akkermans, P. M. M. G., & Schwartz, G. M. (Eds.). (2003). *The archaeology of Syria: From complex hunter-gatherers to early urban societies (c. 16,000–300 BC)*. Cambridge University Press.

Esin, U. (1995). Aşıklı Höyük ve radyo-aktif karbon ölçümleri. İçinde A. Erkanal, H. Erkanal, H. Hüryılmaz, & A. T. Ökse (Eds.), *İ. Metin Akyurt - Bahattin Devam anı kitabı. Eski Yakın Doğu kültürleri üzerine incelemeler* (ss. 135–146). Arkeoloji ve Sanat Yayınları.

Özkaya, V., & San, O. (2007). Körtik Tepe: Initial observations on cultural context based on findings. In M. Özdoğan & N. Başgelen (Eds.), *The Neolithic period in Turkey: New excavations and findings* (pp. 21–36). Archaeology and Art Publications.

Metin içi atıf: (Esin, 1995; Akkermans & Schwartz, 2003; Özkaya & San, 2007)

Çeviri kitabı

Foucault, M. ([1954]1992). Deliliğin tarihi. (M. A. Kılıçbay, Çev.). İmge Kitapevi.

Metin içi atıf: (Foucault, 1992)

Yüksek lisans & Doktora tezi

Kayacan, N. (2015). Anadolu'da Neolitik Dönem'de baskı tekniği ile taş yongalama: Uygulama, dağılım ve kültürel farklılıklar [Yayımlanmamış Doktora Tezi]. İstanbul Üniversitesi.

Metin içi atıf: (Kayacan, 2015)

ARKEOLOJİ BİLİMLERİ DERGİSİ

TURKISH JOURNAL OF ARCHAEOLOGICAL SCIENCES

Submission and Style Guideline

Submission Criteria for Articles

The content of the manuscripts should meet the aims and scope of the Turkish Journal of Archaeological Sciences (cf. Aims and Scope).

Manuscripts may be written in Turkish or English. The translation of articles into English is the responsibility of the author(s). If the author(s) are not fluent in the language in which the article is written, they must ensure that the text is reviewed, ideally by a native speaker, prior to submission.

Each manuscript should include a Turkish and an English abstract of up to 200 words and five keywords in both Turkish and English. Citations should not be included in the abstract.

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Manuscripts, figures, and other files should be sent via wetransfer or e-mail to **archaeologicalsciences@gmail.com** .

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Each article must contain the following:

- Authors (please provide the name-last name and contact details of each author under the main title of the manuscript)
- Affiliation (where applicable)
- E-mail address
- ORCID ID

The manuscript should contain:

- Title
- Abstract (in English and Turkish)
- Keywords
- Text
- References
- Figures (when applicable)
- Tables (when applicable)

Style Guide

Manuscript Formatting

- Manuscripts should be written in Times New Roman 12-point font, justified and single-spaced. Please submit the manuscript as a word document.
- Words in foreign and ancient languages should be *italicized*.
- Titles and subtitles should appear in **bold**.
- Titles and subtitles should not be numbered, italicized, or underlined.
- Only the first letter of each word in titles and subtitles should be capitalized.

References

Cf.: In-Text Citations and References

- In-text citations should appear inside parenthesis (Author, year, page number).
- Footnotes and endnotes should not be used for references. Comments should be included in footnotes rather than endnotes.
- The footnotes should be written in Times New Roman 10-point font, justified and single-spaced, and should be continuous at the bottom of each page.

Figures and Tables

- Please provide a caption list for figures and tables following the references. Provide credits where applicable. Each figure and table should be referenced in the text (Figure 1, or Table 1), but please do not include figures in the text document.
- Each figure should be submitted separately as a jpg or tiff file.
- Images should be submitted in the dimensions in which they should appear in the published text and their resolution must be over 300 dpi.
- Please avoid editing the figures in Photoshop or similar programs but send the raw version of the figures if possible.
- Tables and graphs prepared in Excel should be sent as both PDF and Excel documents.

Dates and Numbers

- Please use BCE/CE and please avoid using dots without dots (i.e., BCE instead of BC or B.C.).
- Please use a dot for numbers and dates with 5 or more digits (i.e., 10.500 BCE).
- Please avoid using dots for numbers and dates with 4 or less digits (i.e., 8700 BCE).
- Please spell out whole numbers from 0 to 10 (e.g., “the floor was renewed eight times” instead of “the floor was renewed 8 times”).

Punctuation

- Please prefer em dashes (—) for parenthetical sentences: “Children were buried with various items, the adolescents—individuals between the ages of 12-19—had the most variety in terms of grave goods.”
- Please prefer an en dash (-) between page numbers, years, and places: 1989-2006; İstanbul-Kütahya.

Abbreviations

- Commonly used abbreviations:

Approximately:	approx.	Figure:	Fig.
Confer:	cf.	*Id est:*	i.e.
Circa:	ca.	*Exempli gratia:*	e.g.
Calibrated:	cal.		

Special Fonts

- If a special font must be used in the text (e.g., Greek or Arabic alphabet or hieroglyphs), the text in the special font and the original manuscript should be sent in separate PDF files.

In-Text Citations and References

Each article must include a reference list titled "References," containing only works cited in the text, formatted according to APA 7. Ensure that every in-text citation has a corresponding entry in the reference list.

https://apastyle.apa.org/style-grammar-guidelines/references/examples

- **Direct Citation:** *Example:* "As Esin (1995) stated…"
- **Parenthetical Citation:** *Example:* "The analysis results indicate… (Esin, 1995)."
- **Multiple Citation in One Parenthesis:** Arrange by **publication year** and separate with semicolons. *Example:* "(Dinçol & Kantman, 1969; Esin, 1995; Özbal et al., 2004)."
- **Publications by the Same Author in Different Years:** List the author once and separate publication years with commas. *Example:* "(Peterson, 2002, 2010)."
- **Multiple Publications by the Same Author in the Same Year:** Add letters alphabetically to the publication year (e.g., "a," "b"). *Example:* "(Peterson, 2010a, 2010b)."
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- Always include DOI for journal articles in your reference list, if available. (e.g. "https://doi.org/abc").
- Personal communications and unpublished works should only be mentioned in the text.

Journal article

Bickle, P. (2020). Thinking gender differently: New approaches to identity difference in the Central European Neolithic. *Cambridge Archaeological Journal, 30*(2), 201–218. https://doi.org/10.1017/S0959774319000453

Hansen, S., Mirtskhulava, G., & Bastert-Lamprichs, K. (2007). Aruchlo: A Neolithic settlement mound in the Caucasus. *Neo-Lithics*, *1*, 13–19.

Pearson, J., & Meskell, L. (2015). Isotopes and images: Fleshing out bodies at Çatalhöyük. *Journal of Archaeological Method and Theory*, *22*, 461–482. https://doi.org/10.1007/s10816-013-9184-5

In-text citation: (Hansen et al., 2007; Pearson & Meskell, 2015; Bickle, 2020). If page numbers are required: (Hansel et al., 2007, 16; Pearson & Meskell, 2015, 475; Bickle, 2020, 210–212).

Book / eBook

Dinçol, A. M., & Kantman, S. (1969). *Analitik arkeoloji: Denemeler*. Edebiyat Fakültesi Basımevi.

Peterson, J. (2002). *Sexual revolutions: Gender and labor at the dawn of agriculture.* AltaMira Press.

In-text citation: (Dinçol & Kantman, 1969; Peterson, 2002).

Edited book & Book chapter

Akkermans, P. M. M. G., & Schwartz, G. M. (Eds.). (2003). *The archaeology of Syria: From complex hunter-gatherers to early urban societies (c. 16,000–300 BC)*. Cambridge University Press.

Esin, U. (1995). Aşıklı Höyük ve radyo-aktif karbon ölçümleri. İçinde A. Erkanal, H. Erkanal, H. Hüryılmaz, & A. T. Ökse (Eds.), *İ. Metin Akyurt - Bahattin Devam anı kitabı. Eski Yakın Doğu kültürleri üzerine incelemeler* (ss. 135–146). Arkeoloji ve Sanat Yayınları.

Özkaya, V., & San, O. (2007). Körtik Tepe: Initial observations on cultural context based on findings. In M. Özdoğan & N. Başgelen (Eds.), *The Neolithic period in Turkey: New excavations and findings* (pp. 21–36). Archaeology and Art Publications.

In-text citation: (Esin, 1995; Akkermans & Schwartz, 2003; Özkaya & San, 2007)

Translated book

Foucault, M. ([1954]2011). *Madness: The invention of an idea.* (A. Sheridan, Trans.). Harper Perennial Modern Thought.

In-text citation: (Foucault, 2011)

Dissertation & Thesis

Mosek, E. (2017). Team flow: The missing piece in performance [Doctoral dissertation, Victoria University]. Victoria University Research Repository.

In-text citation: (Mosek, 2017)