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## A NEW FRONTIER: INTEGRATING ENVIRONMENTAL HISTORY INTO BYZANTINE STUDIES

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### ABSTRACT

This article aims to trace the historical development of environmental history and its integration into Byzantine studies. It explores the reciprocal relationship between human societies and the environment throughout history, highlighting how human actions have shaped and been shaped by ecological processes. Beginning with an overview of environmental history's emergence as a distinct field in the late 20th century, the article examines the debates and challenges faced by early environmental historians in defining the scope and methodology of the discipline. It then focuses on the gradual incorporation of environmental perspectives into Byzantine scholarship, highlighting key themes such as climate history, human impacts on the environment, and cultural perceptions of nature. Through a multidisciplinary approach that combines historical analysis with insights from natural sciences, archaeology, and interdisciplinary theories, scholars have begun to uncover the complex interactions between Byzantine society and its natural surroundings. By interrogating historical sources and employing innovative methodologies, this article demonstrates the importance of integrating environmental perspectives into the study of Byzantine history and offers insights into future directions for research in this interdisciplinary field.

**Keywords:** Environmental History, Byzantine Studies, Medieval Climate and Society, Interdisciplinary Approach, Human-Nature Interactions

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## YENİ BİR YAKLAŞIM: ÇEVRE TARİHİNİ BİZANS ÇALIŞMALARIYLA BİRLEŞTİRMEK

Hüseyin Erkan BEDİRHANOĞLU<sup>1</sup>

### ÖZ

Bu makalenin amacı, çevre tarihinin tarihsel gelişiminin ve Bizans çalışmalarına eklenmesinin bir izini sürmektir. İnsan eylemlerinin ekolojik süreçleri nasıl şekillendirdiğini ve bu süreçler tarafından nasıl şekillendirildiğini vurgulayarak, tarih boyunca insan toplumları ve çevre arasındaki karşılıklı ilişkiyi araştırmaktadır. Çevre tarihinin 20. yüzyılın sonlarında ayrı bir alan olarak ortaya çıkışına genel bir bakışla başlayan makale, ilk çevre tarihçilerinin disiplinin kapsamını ve metodolojisini tanımlarken karşılaştıkları tartışmaları ve zorlukları inceliyor. Ardından, iklim tarihi, insanın çevre üzerindeki etkileri ve doğanın kültürel algıları gibi kilit temaları vurgulayarak, çevresel perspektiflerin Bizans çalışmalarına kademeli olarak dahil edilmesine odaklanmaktadır. Tarihsel analizi doğa bilimleri, arkeoloji ve disiplinler arası teorilerden elde edilen bilgilerle birleştiren disiplinler arası bir yaklaşım sayesinde akademisyenler, Bizans toplumu ile doğal çevresi arasındaki karmaşık etkileşimleri ortaya çıkarmaya başlamıştır. Bu makale, tarihsel kaynakları sorgulayarak ve yenilikçi metodolojiler kullanarak, çevresel perspektifleri Bizans tarihi çalışmalarına dahil etmenin önemini ortaya koymakta ve bu disiplinlerarası alandaki araştırmalar için gelecekteki yönelimlere dair fikirler sunmaktadır.

**Anahtar Kelimeler:** Çevre Tarihi, Bizans Çalışmaları, Ortaçağ İklim ve Toplumu, Disiplinlerarası Yaklaşım, İnsan-Doğa Etkileşimleri

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## 1. INTRODUCTION

This study aims to bridge the gap between environmental history and Byzantine studies, a fusion that has only recently begun to gain traction. Given that Byzantine society was intricately connected to its natural environment through agricultural practices, resource management, and responses to environmental events, an examination through an environmental lens is essential. Adopting an interdisciplinary methodology, this article draws on recent advancements in environmental history, Byzantine studies, archaeology, and the natural sciences. Rather than a conventional empirical analysis, it synthesizes historical records, archaeological findings, and environmental data to offer new insights into how ecological factors influenced Byzantine society and, in turn, how the Byzantines interacted with and transformed their environment. By reviewing key sources in both environmental and Byzantine scholarship and interpreting these within an ecological context, this study underscores the reciprocal relationship between Byzantine society and its natural surroundings. This approach demonstrates the value of interdisciplinary research, merging insights across fields to foster a more comprehensive understanding of Byzantine history and the complex interactions between humans and their environment.

The significance of ecological processes within history is apparent in many instances. Human beings have substantially triggered changes in their environments, and they have intentionally and unintentionally shaped it. In return, they are influenced by and have had to adapt to new environmental conditions. Societies who had not successfully altered their social organizations could not survive. This conditional existence of societies was inevitably experienced in every historical period and every part of the inhabited Earth (Hughes, 2001, p. 1). Therefore, it is possible to claim ‘there is a reciprocal relationship between’ the human societies and the environment (Hughes, 2001, p. 4). The nature itself, and the interactions between human beings and the nature in the past are the objects of environmental history, which explains the process of change by employing ‘ecological analysis as a means of understanding human history’ (Hughes, 2001, p. 4).

Environmental historians examine ‘the mutual effects that other species, natural forces, and cycles have on humans, and the actions of humans that affect the web of connections with non-human organism and entities’ (Hughes, 2001, p. 4). The materials for an examination of history from an environmental perspective, such as climate and weather, data on tides and winds, earthquakes, droughts and floods, plants and animals, and many others, has undeniably been there for a long time. However, they have just been utilized recently. Moreover, how ‘the living and non-living systems of the Earth have influenced the course of human affairs’ and ‘the impacts of changes caused by human agency in the natural environment’ are subject to the studies of environmental historians. Therefore, environmental history, on the one hand, completes, on the other hand, challenges traditional political, social, and economic forms of historiography (Hughes, 2001, p. 4).

Environmental history is, rather than an entirely new history, just a new perspective to study history and to improve already existed historiography. The traditional history, at first, had valued politics and the great men who shape history. Later, historians had utilized some concepts such as class, gender, race, and caste to examine history ‘from the bottom up.’ The idea that ‘the humans are the part of the planet’ (Worster, 1988, p. 290) was absolutely denied, and the presence of nature and environment was only recognized as a backdrop (Hughes, 2001, p. 5). However, historians who have the environmental history perspective treated them as active forces (Hughes, 2001, p. 5), and considered ‘the Earth itself as an agent and presence in history’ (Worster, 1988, p. 289). Moreover, human beings are recognized as an integral part of nature, and their roles are emphasized by environmental history.

In addition to this reciprocal relationship between human beings and nature, the ideas concerning nature, their impacts on the behaviors and attitude towards the environment are subject to environmental history. Furthermore, ways of thinking about nature, and the perception of it by individuals and groups are examined by way of analysis of laws, literature, myths, ethics, and other structure of meanings within the limits of environmental history. Consequently, social and economic organization of societies, their opinions and desires, and nature itself create a dynamic entity, which ‘changes as nature changes, as people change, forming a dialectic that runs through all of the past down to the present’ (Worster, 1988, p. 293). The world experienced the 1970s as a re-thinking and reform period in which many new perspectives in social sciences, such as post-modernism, the linguistic turn, and cultural turn, appeared and begun to influence current studies. The period was also witnessed to a great extent public concern, environmental movements and conferences in several countries. Environmental problems were considered as causes of ‘downfall of many civilizations’ (Kula, 1998, p. 1). Beside many other disciplines, as a result of ‘a moral purpose and with strong political commitments behind it,’ scholarly interest in these concerns took place in the discipline of history too (Worster, 1988, p. 290).

The earliest and the most important center for environmental history has been the United States, in which environmental matters have occupied an important place. There, many acts concerning environmental matters had gradually been invoked in response to contemporary natural disasters and pollution. Thus, in addition to popular culture and magazine publications, such matters have begun to be integrated into several textbooks and academic studies throughout the 20th century, especially in the second half of it. The roots of environmental history go back

until the 19th century (Myllyntaus, 2001, p. 3), but the field was first defined by Roderick Nash's article "The State of Environmental History," in which he advised to evaluate the nature as a historical document. Then, many others, including Richard White, Frederick Jackson Turner, Walter Prescott Webb, James Malin, traced the developments in the field in the United States. Moreover, since the 1980s, environmental history has permanently been recognized within the academic history depending on the studies of the first generation founding fathers such as William Cronon, Alfred Crosby, Thomas Dunlap, Samuel Hays, J. Donald Hughes, Carolyn Merchant, Martin Melos, Arthur McEvoy, William McNeil, Roderick Nash John Opie, Stephen Pyne, Hal Rothman, Susan Schrepfer, Joel Tarr, Richard White, Donald Worster.

These founders have mostly struggled to define the environmental history, and when it came to 1990, *Journal of American History* hosted a discussion among the participation of some of these founding fathers to decide the development of the field. They were separated as those who embraced the materialistic approach and those who argued the idealist approach. On the one hand, the prominent figure of the first group, Donald Worster, promoted 'a kind of base-superstructure Marxist-historical analysis' (Isenberg, 2014, p. 8). According to him, there is a hierarchy among the historical topics in which the environment is a base to a cultural superstructure. On the other hand, the second group, especially William Cronon and Richard White, opposing Worster's idea, advocated a kind of cultural history of the environment. They emphasized the human agency over the environmental processes and historical change, and they encouraged the environmental historians to study also other subfields of the historical study such as gender, labor and culture (Isenberg, 2014, pp. 8-9). Although this ostensible separation between the first generation of environmental historians concerning the nature and the direction of environmental history, they relatively employed both approaches in their studies. Some environmental historians such as Carolyn Merchant, without participating in the dispute from any party, suggested the integration of two approaches. The disputants of the roundtable had already employed both approaches in their studies. However they had just emphasized one of the approaches in their writings. Consequently, as a fruit of the dispute, the integration of the materialist and idealist approaches made the environmental history an innovative field since the 1980s (Isenberg, 2014, p. 8).

The successors of this first generation environmental historians had to strive, rather than the definition of the environmental history, to integrate the field into some other subfields, which are as complicated as the field itself. When it comes to these subfields, there is not any consensus concerning many notions such as class, race, ethnicity, gender, consumption, borderlands, labor, law, and the history of science (Isenberg, 2014, p. 10). Therefore, the new generation environmental historians have encountered with many new challenges, and have had to participate in several theoretical considerations. Firstly, the problem of environmental context and determinism dominates environmental studies for a long time. On the one hand, historians like Alfred Crosby and Jared Diamond argued that environmental forces overpower human societies and historical events (Isenberg, 2014, p. 10), on the other hand, some others such as Mark Carey, Linda Nash, Diana Davis, Mark Sutter suggest that human perception and cultural contexts are essential factors as nature itself in response to ecological changes and environmental circumstances (Isenberg, 2014, p. 11). Moreover, some others including Brett Walker, Andrew Iseberg, Emily Brock emphasize that human beings are adaptable to newly developed conditions (Isenberg, 2014, p. 11). They, consequently, favor the notion of adaptation over absolute ecological determinism. Another challenge for environmental historians is 'a changing understanding of scientific knowledge.' The older concepts of a stable climax community and ecological succession were replaced by 'a new science of nonlinear dynamics.' Therefore, the environment is regarded as inclined to instability and to change unpredictably. Since environmental sciences have been just a way to represent nature in the culture, environmental historians should integrate their studies in the historical and cultural context (Isenberg, 2014, p. 11). Lastly, the overwhelming emphasis on the environmental factors and the negligence of the other subfields by the environmental historian is another difficulty that integration of environmental history and the other subfields raises. Since the environmental history focuses on nature, which transcends the national borders, it questions well-established fields such as the history of the nation-state and disregards the primary concerns of the fields that it is in close-connection such as economic history (Isenberg, 2014, p. 12).

## 2. ENVIRONMENTAL HISTORY IN THE BYZANTINE STUDIES

Even though the environmental history has expanded most quickly in historical fieldworks of Modern Ages and American History, and that the debates and challenges above are mostly at the center of these fields, several historians of Medieval Europe have successfully taken over the perspective and issues of Environmental History into their research fields (Arnold, 2008; Aberth, 2013; Hoffmann, 2014; Bartlett, 2015). It is crucial to analyze the Medieval Period from environmental history's point of view because the political and economic organization of Medieval societies, including Byzantines, were depended on the exploitation of the natural resources through agricultural activity, settlement patterns, technological developments, etc. (Telelis, 2014, p. 738).

Whether the Byzantine Studies succeeded to integrate the Environmental History into the field so far, at least as successfully as Medievalists, is an excellent question to focus on profoundly. On the one hand, Byzantinists were

not essentially unfamiliar with the topics related to environmental history, and many of those who had been interested in economic history and historical geography of Byzantium had studied topics such as agricultural production, resource management, landscape, and land tenure and taxation in the Byzantine Empire (Dunn, 1992; Laiou, 2002; Laiou & Morrisson, 2007). On the other hand, these studies had been lack of a proper perspective of Environmental History, which scrutinizes the changes in the natural environment, and the responses of people to those changes. Therefore, Byzantinists are relative latecomers in Environmental History, and the ones who embraced the perspective in their studies are considerably restricted in number compared to Medieval Europe and Modern Histories.

The works combining Environmental History with Byzantine Studies have begun to appear in the last decade of the 20th century, then increased in the first decade of the 21st century, and later intensified in particular in the second decade of the century. The developments in various disciplines have radically hastened the advances in Environmental History of Byzantine Empire because it mostly depends on palaeoenvironmental data and methods collected from a variety of sciences such as paleoclimatology, dendroclimatology, palynology, glaciology, and speleothemology. In particular, the transformation of archeological sciences as a multidisciplinary field enables the many researchers to obtain much more data concerning stratigraphy and pollen analysis, and to reconstruct the past landscapes (Telelis, 2014, pp. 740-741). Moreover, these historians tend to employ several interdisciplinary theories and methodologies such as “Chaos Theory” and “Resilience Theory,” and to combine them in the historical context of the Byzantine Studies. Consequently, unlike the tradition, most of the articles concerning the Byzantine environmental history are belong to a group of writers, rather than a single one because this cross-disciplinary field requires integration of different social and natural sciences, and cooperative study of groups of scientists and historians.

As mentioned above, the themes and topics on which Environmental History focuses consists of three main categories, and the subjects of Byzantine environmental studies are in accordance with them. The topics of the first category are the nature itself, including climate history, history of natural events and environmental disasters, and history of epidemics and pandemics. The second one deals with the impact of human activities on the environment, and the agency of humans in ecological processes. Atmosphere and climate, the waters, geomorphology, the soil, vegetation, and animals are some of the main objects of this category. Lastly, the opinions and the ways of thinking of people concerning the nature and their environment form the third category, in which primarily cultural and religious studies are counted (Telelis, 2014, pp. 740-741).

The climate history is considered as the first historical field mingling humanities and natural sciences (Telelis, 2014, pp. 743-743), and it is one of the most remarkable topics of the environmental history of the Byzantine Empire. At the 1990s, Byzantinists desired to reconstruct the climate history of Byzantium, and it was the time when the advances of the related sciences enabled the researchers to enhance their information concerning the Medieval climate patterns basing on paleoclimate proxy data and highly developed scientific tools (Brazdil, 2005, pp. 363-430). As a result of this, climate trends such as “Roman Climate Optimum,” “Medieval Warm Period,” and “Little Ice Age” became more applicable to not only Western and Central Europe but also Eastern Mediterranean (Telelis, 2014, p. 744). Thus, Byzantinists produced many articles and books concerning historical climate and climatological events by integrating historical documents and Paleoclimatic proxy data-sets (Telelis & Chrysos, 1992, pp. 17-31; Koder, 2017; Stathakopoulous, n.d.; Telelis, 2008, pp. 167-207; Telelis, n.d., pp. 223-243; McCormick, 2012, pp. 169-220). Moreover, several important research groups and initiatives integrate historical evidence and natural scientific data in order to have a better comprehension of the past climate, environment and societies, especially the Byzantine Empire because of its existence as a longest-lasting pre-modern socio-political system, and one of the most complexes (Independent Max Planck Research Group, 2018-2023).

The problems of resilience, adaptation and transformation of complex society in response to changing environmental conditions in the course of Medieval Period, especially climate, is subject to several environmental Byzantine studies (Haldon & Rosen, 2018; Xoplaki et al., 2018), in which two theories are prevalent. Firstly, Chaos Theory argues that in the complex systems of large networks of individual components any change in micro level affects the behavior of the entire system on a macro level almost unpredictably and that no crisis or transformation in historical processes could not be understood from a monocausal perspective (Preiser-Kapeller, 2011). Secondly, according to Formal Resilience Theory, a Social-Ecological-System traverses several stages, in order of increasing complexity, connectedness and conservatism. Then, they are followed by stability, in which networks are so connected that it cannot adequately respond to ‘exogenous or endogenous points of stress.’ As a result of this, a final releasing stage appears, and it opens the system various new or traditional responses. Consequently, the system is led to an extremely resilient and ‘loosely structured’ phase that producing a new equilibrium, in which different features than the previous one reorganize it (Haldon, 2018, p. 277). These theories, in particular, the second one, having been criticized and developed, are effectively employed in the context of Environmental History of the Byzantine Empire (Haldon, 2018; Xoplaki et al., 2018, *passim*; Haldon, 2014).



The history of natural events and environmental disasters, as well as the history of epidemics and pandemics, are among the most prevailing topics among historians since the 19th century; however, it is just a fresh development that 'phenomena such as cosmic events, volcanic eruptions, earthquakes, tsunamis, pandemics, etc. have become topics of interdisciplinary research' (Telelis, 2014, p. 745).

Cosmic events such as dust veil at the first half of the sixth century, as well as its 'effects of a wide-range tropospheric dry fog accumulation,' have been subject to several historical studies benefiting from ice-core chronologies and dendrochronological series (Telelis, 2014, p. 746). Moreover, not only Byzantine but also various documents of other societies recorded them (Arjava, 2005; Graslund & Price, 2012). The environmental and social impacts of volcanic eruptions are another interest of environmental historians (Telelis, 2014, pp. 746-747). Besides, earthquakes occurring Medieval Period constitute another category that was studied by many scientists depending on not only written documentary pieces of evidence but also on archeological and geomorphological data (Guidoboni, Comastri, & Traina, 1994; Guidoboni & Comastri, 2005). The seismic events are very well documented subject in the historical studies of the Byzantine Empire, as well as their cultural significance. The earthquakes had carried two different meaning for the Byzantine society as described in the literary sources and chronicles. On the one hand, they had been regarded as punishment for the contemporary transgressor people and a sign for the Day of Judgment. On the other hand, many contemporary sources had mentioned them without any further moral judgment just as natural phenomena (Croke, 1981, pp. 122-147; Meier, 2007, pp. 237-266; Telelis, 2014, p. 748). A natural result of earthquakes is tidal waves happening mostly in the oceans, but time to time in the Eastern Mediterranean. During the Byzantine Period, several seismic events resulted in 'tsunamis' affecting the coastlines, Constantinople and Nicomedia (Guidoboni & Comastri, 1997, pp. 55-72; Telelis, 2014, p. 749). Finally, epidemics and pandemics such as plagues have been subject to historical studies for a long time. There are numerous references to them in historical and literary sources, and archeological and scientific evidence proved them. Since their outbreaks and expansions are closely related to both natural and human conditions, environmental historians also deal with them. The First and the Second Plague Pandemics, being highly destructive in terms of their demographic, economic and political consequences, had coincided with climatic shifts in the history, and this resulted in an interest to integrate them in the framework of the environmental history (Dionysios Ch. Stathakopoulos, 2016; Lester K. Little, 2009, pp. 541-750; McCormick, 2003-2004, pp. 49-61; Sallares, pp. 231-289; Tsiamas, 2011, pp. 194-201).

The impact of socioeconomic activities on the environment and the agency of humans in ecological processes is another category that concerns historians. Alteration of the natural environment by humans has been the way of survival for societies since the very beginning. The more humans became capable and societies became complex, the more intense and diverse their intervention became. All 'the agents of the natural environment' such as soil, water, vegetation, animals, atmosphere and climate are subject to the impact of increasing human activities as a result of the expansion of settlements, land clearance and other actions such as constructing roads, terraces, dams, and exploitation of natural resources (Telelis, 2014, p. 751). The Byzantine sources refer to all of these, and there are many studies concerning them at the point of Byzantine Studies and Environmental History intersect.

As a pre-industrial society, the Byzantine society did not significantly cause pollution in the natural environment. However, at the places where mining was an important occupation, it is possible to talk about a contribution to environmental pollution. There are several articles concerning these local and regional issues (Grattan, 2007, pp. 83-110; Hunt & El-Rishi, 2010, pp. 121-134; Martinez-Garcia, 2005, pp. 51-72; Degryse, 2004, pp. 2819-2834). The human impact on water is another important topic for the environmental history of the Byzantine Empire. The control of water has always been an important responsibility of the Byzantine authorities. Byzantine documents, as well as archeological studies, provide information concerning the control and the distribution of water within the Byzantine Empire and the cities (N. Purcell, 1996, pp. 180-212; Bono, Crow, & Bayliss, 2001, pp. 1325-1333; Crow, Bardill, & Bayliss, 2008). Furthermore, Human societies interacted with the earth by transforming the land and affecting natural processes, such as soil erosion and sediment deposition. People constructed a variety of building to conserve water and soils throughout history, but their influence gradually enhanced. Irrigation constructions and networks of terraced lands dominated many regions wherever human societies dwelt. Numerous case studies show human efforts to tame the landscape in the Byzantine Empire (Sytze Bottema, 1990; Telelis, 2014, pp. 753-754). The changes in agrarian production patterns and preferences, as well as the development of settlements, also had impacts over the landscape in terms of vegetation cover of the regions. The alteration of landscape with human intervention has been among the concerns of many historians for a long time (J. McNeill, 1992; Hughes, 2005). Palynological studies, archeological evidence, and historical documents enable historians to make historical interpretations about the economic and environmental conditions of various local areas (Izdebski, 2015; Dunn, 1992, pp. 235-298; Eastwood et al., 1998, pp. 69-86; Telelis, 2014, pp. 755-757). Not only in the rural areas of the empire, but the human impact on the vegetation cover could also be seen in urban environments. The gardens, vineyards, and orchards were vital components of the Byzantine monastic foundations and almost all Byzantine cities because they had economic, religious and cultural value for the Byzantine society both during the warfare and peace times (Littlewood & Maguire, 2002). When it comes to human impact on animals, it is clear

that the cultural representation of animals in Greek, Roman and Byzantine world have been systematically studied; however, faunal environment and human activity on wild and domestic animals are relatively recent topics in the Byzantine Studies (Telelis, 2014, p. 757).

The last category that environmental studies focus on is the perception of the environment by human societies. This includes cultural, religious, and intellectual behaviors of people towards nature. The Byzantines left various documents and narratives that enable historians to reconstruct their image of nature. The Byzantine considered human beings as sovereigns of nature in accordance with Christian Theology. They also carried the heritage of Roman and Greek concepts of nature, which involved using both scientific approaches and religious beliefs to explain the natural environment. Moreover, there are numerous sources concerning the representation of the natural environment in Byzantine art and literature. All of these topics have satisfactorily been studied so far (Attfield, 1983, pp. 369-386). Finally, it is important to note that some Byzantine texts show the existence of concern towards environmental protection, but this concern was derived from the aim of ensuring the adequate natural sources rather than any 'environmental provisionalism' or 'ecological thought' in the modern sense (Telelis, 2014, p. 759).

### 3. CONCLUSION

In conclusion, while Byzantinists may not have been among the founders of environmental history, their journey into this interdisciplinary field marks a significant evolution in Byzantine scholarship. Despite their late entry, Byzantinists have successfully navigated the challenges inherent in integrating environmental perspectives into their research, utilizing historical, archaeological, and scientific evidence to enrich our understanding of the Byzantine Empire's relationship with its natural environment. Moving forward, Byzantine scholars could benefit from broadening their methodological toolkit by incorporating advanced scientific techniques, such as climate modeling, dendrochronology, and GIS mapping, to uncover more details about Byzantine agricultural practices, settlement patterns, and responses to environmental change. Additionally, expanding research on resilience theory and adaptation within Byzantine society can provide valuable perspectives for both historical scholarship and modern environmental studies. In an era of heightened environmental awareness, the integration of environmental history into Byzantine studies offers not only a richer understanding of the past but also essential insights into sustainability and resilience. By embracing interdisciplinary approaches and fostering a deeper appreciation for the nexus of human societies and the natural environment, Byzantinists are poised to make meaningful contributions to both academic discourse and broader conversations on environmental sustainability.

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### **ÇALIŞMANIN ETİK İZNİ**

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