IMAGINING A CAPPADOCIAN FUTURE

Robert G. Ousterhout
Emeritus Professor, University of Pennsylvania / Philadelphia, PA
ORCID: 0000-0002-4323-2296

In the following paper, I'd like to do three things. First, to situate where we are right now in Cappadocian studies. Second, to suggest what might be productive directions for future studies. And finally, to consider the region itself and its future, faced with the onslaught of development and tourism, both well-intentioned and otherwise. For a recent assessment of the state of scholarship, I point you to my 2017 book, *Visualizing Community*, available in English and Turkish, as well as the papers in the fifth annual Sevgi Gönül Conference, just published.[1]

Recent scholarship on the region has been an interesting mix of traditional and innovative. I like to think that the last two decades have been something of a watershed for Cappadocian studies, with a variety of significant studies appearing that should signal the way forward for scholarship.

Following Guillaume de Jerphanion's lead, art historians have for decades made new and astounding discoveries of the Byzantine monuments of Cappadocia.[2] For almost all, however, the emphasis has been on painted churches, generally viewed individually and from an art historical perspective. Similar reconnaissance missions continue until today, sort of like big game hunting or treasure hunting, propelled by a quirky desire to be the first to publish anything and everything.

Traditional art history is still an absolute necessity in Cappadocia, and we shouldn't dismiss it, for the new scientific studies can only take us so far. Lacking firm dating for most monuments, the careful analysis of form, style, and iconography offers a

1 Robert G. Ousterhout, *Visualizing Community: Art, Material Culture, and Settlement in Byzantine Cappadocia*, Dumbarton Oaks Studies 46 (Washington, D. C.: Harvard University Press, 2017), published in Turkish as *Bizans Toplumunu Görünür Kılmak: Kappadokyada Sanat, Maddi Kültür ve Yerleşim*, *GABAM Series* (Istanbul: Koç University Press, 2020); Nikos B. Kontogiannis and Tolga B. Uyar, eds., *Space and Communities in Byzantine Anatolia: Papers from the Fifth Annual International Sevgi Gönül Byzantine Studies Symposium*, GABAM Series (Istanbul: Koç University Press, 2021).

2 Guillaume de Jerphanion, *Une Nouvelle province de l'art byzantin les églises rupestres de Cappadoce*, 2 vols. (Paris: Paul Geuthner, 1925–1942).

Ousterhout, Robert G. "Imagining a Cappadocian Future." *Valonia: A Journal of Anatolian Pasts* 1 (2024): 207-213. DOI: 10.5505/valonia.2024.46338

good departure for any monumental inquiry. The dating of architectural forms and spaces is considerably more problematic than for painting. Here, I cite the important publication of Catherine Jolivet-Lévy with Nicole Lemaigre Desmenil that offers an update on the original corpus of Jerphanion, adding dozens of new monuments into the mix—more than forty for the Göreme area alone. Although not offering a synthesis, their two volumes include in digital form both the original text of Jerphanion and new scans of his photographs—taken together, this is an incredible resource that no library should be without.[3]

Beginning in the 1980s, a more contextual approach gradually began to appear in the scholarship. Lyn Rodley's monograph, *Cave Monasteries of Byzantine Cappadocia*, still focused on the paintings but attempted to set them into a broader architectural framework. While examining architectural complexes in detail, she nevertheless assumed all were monastic.[4] By the 1990s, however, scholars had begun to examine settlements as a whole, privileging documentation over interpretation. This began, in part, with my own survey at the Çanlı Kilise settlement in western Cappadocia.[5] When I began, I assumed the settlement was monastic, a notion I dropped by the second week of surveying. It became clear to me that what I was looking at was a village, probably an administrative center, and not a monastic enclave. Courtyard complexes (in contrast to Rodley's view) fit much better within a domestic sphere. Thus, many areas elsewhere in Cappadocia that had been identified without question as monastic enclaves must have been villages, settlements, or estates. This conclusion has been taken up by a variety of others.[6] At the same time as my own survey work, Thomas Mathews suggested that the Hallaç Manastiri was a domestic residence, not a monastery, basing his analysis on the documentation of Rodley.[7] I should emphasize that this sea change in interpretation was not an either/or proposition. It does not discount the presence of monasteries, but with a broader view, Cappadocia is now emerging as the best-preserved area of Byzantine civilization, providing a mirror onto daily life in the Byzantine Empire—replete with large and small houses, villages, dovecotes, stables, and agricultural facilities, mills, wine presses, water systems, and even rock-cut beehives—as well as a variety of monasteries.[8]

By the early 2000s, new methods of scientific analysis had bolstered settlement studies. Most important has been the analysis of pollen residues from the lakebed of Nar Gölü, published by England, Eastwood, Roberts, Turner, and Haldon. The annually laminated sediments can be securely dated, like tree rings in dendrochronology.[9] The study has revealed periods of productivity alternating with dramatic gaps in the agricultural record. The first "Capp gap" corresponds to the period of the Arab incursions, beginning ca. 680, marked by an end to intensive agriculture, replaced by invasive weeds and forestation. This is consistent with

3 Catherine Jolivet-Lévy with Nicole Lemaigre Demesnil, La Cappadoce: Un siècle après G. de Jerphanion, 2 vols. (Paris: Guethner, 2015).

4 Lyn Rodley, *Cave Monasteries of Byzantine Cappadocia* (Cambridge: Cambridge University Press, 1985).

5 Robert G. Ousterhout, *A Byzantine Settlement in Cappadocia*, Dumbarton Oaks Studies 42 (Washington, DC: Dumbarton Oaks Studies, 2005; 2nd rev. ed., 2011).

6 For Selime, see Veronica Kalas, "Rock-Cut Architecture of the Peristrema Valley: Society and Settlement in Byzantine Cappadocia" (PhD diss., New York University, 2000); Veronica Kalas, "The 2004 Survey of the Byzantine Settlement at Selime-Yaprakhisar in the Peristrema Valley, Cappadocia," *Dumbarton Oaks Papers* 60 (2006): 271–93. For Açıksaray, see Fatma Gül Öztürk, "A Comparative Architectural Investigation of the Middle Byzantine Courtyard Complexes in Acıksaray—Cappadocia: Questions of Monastic and Secular Settlement" (PhD diss., Middle East Technical University, 2010); Fatma Gül Öztürk, "Açıksaray 'Open Palace': A Byzantine Rock-Cut Settlement in Cappadocia," *Byzantinische Zeitschrift* 107 (2014): 785–810. For Mavrucan, see Nilüfer Peker and B. Tolga Uyar, "Güzelöz-Başköy ve Çevresi Bizans Dönemi Yerleşimleri 2010," *Araştırma Sonuçları Toplantısı* 29, no. II (2011): 251–65; and, the paper by T. Uyar in this volume.

7 Thomas F. Mathews and Annie-Christine Daskalakis-Mathews, "Islamic-Style Mansions in Byzantine Cappadocia and the Development of the Inverted T-Plan," *Journal of the Society of Architectural Historians* 56 (1997): 294–315.

8 Ousterhout, *Visualizing Community*, 271–368, esp. 359–68.

9 Ann England et al., "Historical Landscape Change in Cappadocia (Central Turkey): A Palaeoecological Investigation of Annually Laminated Sediments from Nar Lake," *The Holocene* 18, no. 8 (2008): 1229–45; John Haldon, "'Cappadocia Will Be Given Over to Ruin' and become a Desert': Environmental Evidence for Historically-Attested Events in the 7th–10th Centuries," in *Byzantina Mediterranea: Festschrift für Johannes Koder zum 65. Geburtstag*, eds. Klaus Belke, Ewald Kislinger, Andreas Külzer, and Maria Stassinopoulou (Vienna: Böhlau, 2007); also Adam Izdebski, "A Rural Economy in Transition: Asia Minor from Late Antiquity into the Early Middle Ages," *Journal of Juristic Papyrology Supplement* 18 (Warsaw: Raphael Taubenschlag Foundation, 2013); John Haldon et al., "The Climate and the Environment of Byzantine Anatolia: Integrating Science, History, and Archaeology," *Journal of Interdisciplinary History* 45, no. 2 (2014): 113–61.

what is known as the end of the Beyşehir Occupation Phase elsewhere in Anatolia. Although agricultural production was revived in the tenth century, a second disruption in the agriculture record appears toward the end of the eleventh century and extends throughout the twelfth century. This corresponds to the destabilization of the region caused by the arrival of the Seljuks and their struggles with their Turkish rivals for dominance of central Anatolia. As the investigators insist, the pollen evidence clearly indicates that both disruptions were the result of human activity.

Their analysis strengthens our views on the chronology of Cappadocian culture. For example, Nicole Thierry and others have argued for an "Iconoclast" phase in the painting, which they saw represented by the non-figural paintings of the region, but the break in the agricultural record of ca. 680 to the tenth century encompasses the entire period of Iconoclasm (which lasted officially from 726 until 843). In contrast to Thierry's assessment, the 2011 doctoral thesis of Maria Xenaki carefully re-examines the stylistic and iconographic evidence against the social and political condition of the times. She argues instead—rightly, I think—that the majority of these monuments fit better into the period shortly after the resolution of the Iconoclast controversy—that is, after the mid-ninth century.[10] In short, the question becomes: can we have culture without agriculture?
Similarly, the disruptions of the twelfth century make the dating of important artistic monuments to this period highly unlikely—going against the prevalent belief of many German scholars.[11] And as Tolga Uyar has demonstrated in several studies, the painting that emerged in the thirteenth century is distinct from its Middle Byzantine predecessors.[12] Ongoing studies of climate change may also add additional nuance to the historical picture.[13]

Starting in the 1990s, scholarship began to shift from privileging interpretation to emphasizing the necessity of documentation. As I've often noted, the evocative landscape of Cappadocia demands a narrative, which the written record fails to provide, and it's tempting to jump to conclusions before all the evidence has been considered. But interpretation is easy; documentation is the hard part. As I have argued, scholarship should involve both give and take: we take from the monuments when we interpret them, but we also need to give something back—that is, documentation, conservation, and preservation. When I began fieldwork at Çanlı Kilise, my intention was to document everything possible in a non-intrusive survey.[14] To my surprise, this had not been attempted at any other site. Using state of the art surveying equipment, it took us three seasons to record the topography, with the architectural features documented by hand. Larger issues of interpretation were put on hold as we attempted to grapple with what exactly was there. But I must add that it was hard to draw conclusions—that the site was a secular settlement, not a monastic one, probably an administrative center associated with a nearby fortress. This went against the prevailing view of Cappadocia as a monastic center, and I was taken to task by my French colleagues, who'd been studying Cappadocia much longer than I had been, but I'm grateful to them for keeping me honest. In the end—as Tolga Uyar and I teach in our summer program—it's best to start with the physical evidence, based on a close reading of a site, unbiased by previous scholarship—the bibliography comes after-

10 Maria Xenaki, "Recherches sur les églises byzantines de Cappadoce et leur décor peint (VIe-IXe siècles)" (PhD diss, University of Paris 1, 2011).

11 E.g., Rainer Warland, *Byzantinisches Kappadokien* (Darmstadt: Philipp von Zabern, 2013); following Marcel Restle, *Byzantine Wall Painting in Asia Minor*, 3 vols. (New York: Bongers, 1967).

12 Tolga B. Uyar, "Art et Société end pays de Rûm: les peintures 'byzantines' du XIIIe siècle en Cappadoce," (PhD diss, University of Paris I, 2011), esp. 531–723; also Tolga B. Uyar, "L'église de l'Archangelos: la décor de la nef sud et le renouveau de la peinture byzantine en Cappadoce au début du XIIIe siècle," DChAE 29 (2008): 119–130; Tolga B. Uyar, "Thirteenth-Century Byzantine Painting in Cappadocia: New Evidence," in *First International Sevgi Gönül Byzantine Studies Symposium*, ed. Ayla Ödekan, Engin Akyürek, and Nevra Necipoğlu (Istanbul: ANAMED, 2010), 617–25; Tolga B. Uyar, "Thirteenth-Century 'Byzantine' Art in Cappadocia and the Question of Greek Painters at the Seljuk Court," in *Islam and Christianity in Medieval Anatolia*, eds. Andrew C. S. Peacock, Bruno de Nicola, and Sara Nur Yıldız (Burlington: Routledge, 2015), 215–31.

13 See Haldon et al., "Climate and the Environment," esp. table 3; also Jessie Woodbridge and Neil Roberts, "Late Holocene Climate of the Eastern Mediterranean Inferred from Diatom Analysis of Annually-Laminated Sediments," Quaternary Science Reviews 30 (2011): 3381–92; Jonathan Dean et al., "Palaeo-Seasonality of the Last Two Millennia Reconstructed from the Oxygen Isotope Composition of Carbonates and Diatom Silica from Nar Gölü, Central Turkey," Quaternary Science Reviews 66 (2013): 35–44, infers wet periods from increased snowmelt (with precipitation mostly in winter) from 561–801 and 921–1071.

14 Robert G. Ousterhout, "The 1994 Survey at Akhisar-Çanlı Kilise," *Araştırma Sonuçları Toplantısı* 13 (1996), 165–180; Ousterhout, *Byzantine Settlement*.

wards.[15] Our analysis includes not just the wall paintings, not just the architecture, but the context, the setting, must be considered, as well.

For scholars, this means spending more time on the ground and looking at details and issues we might not otherwise consider. I knew nothing about winemaking, beekeeping, or horse breeding when I began my survey, but I had to quickly come to grips with them. Similarly, if as I argue, most settlements are villages and not monastic enclaves, how do we put people back into the rock-cut houses? Questions like this dragged me kicking and screaming into such considerations as social organization, trade and economy, family structure, and so on. When I began, my interests were architectural, pure and simple—a beautiful church—but I couldn't *not* attempt to put it into context. In this respect, I began to encounter the same difficulties as the text-based scholars do—outside of Constantinople, life is not well documented, particularly aspects of private life. For example, it's still a matter of contention if there was gender segregation in the Byzantine household. For Cappadocia, Thomas Mathews has argued for it, whereas I have not been able to find good physical evidence to support this view.[16]

I've extended this assessment in my 2017 book, Visualizing Community, to include numerous other sites and individual monuments.[17] Since my time at Çanlı Kilise in the 1990s, systems of documentation have developed dramatically, with digital laser technology and drone photography. For the former, I note the work of the Italians, including Maria Andaloro, Roberto Bixio, and others working around Göreme, where they have done impressive documentation along the ridge between the Göreme Valley and the Kılıçlar Valley, mapping tunnels, refuges, agrarian spaces, churches, and other cavities in three dimensions. The involvement of both mountain climbers and speleologists in this study is noteworthy because of the challenges posed by the landscape. The functional and chronological implications of their study remain undeveloped.[18] I suspect, for example, that much of the carving they've documented is post-Byzantine, or at least after the tenth–eleventh century flourishing of the region.

For the latter approach, I highlight Tolga Uyar's ongoing recording in the Mavrucan area.[19] This combines traditional mapping methods—carried out under the direction of Nilüfer Peker—with a digital landscape visualization project.[20] This latter consists of georeferencing (Global Navigation Satellite System), aerial documentation (drone), orthophotography, and 3D land modeling (ArcGis software) of a large area containing extensive artistic, architectural (both rock-carved and masonry), archaeological, and epigraphical evidence. This dramatically allows us to understand the spatial relationships between individual structures—houses, churches, agricultural installations, and winemaking facilities across the sprawling valley once known as Potamia.

Sadly, for the fragile landscapes of Cappadocia—threatened as they are by everything from unchecked tourism to Mother Nature herself—systematic documentation may be the best way of preserving the history of the region. I note, for example, the careful laser documentation of the Meryemana church at Göreme, which is now closed to the public because of its dangerously fragmented condition.[21]

15 "Cappadocia in Context Summer Program (CAPP)," ANAMED, https://anamed.ku.edu.tr/en/programs/cappadocia-in-context-summer-program/.

16 Mathews and Daskalakis-Mathews, "Islamic-Style Mansions," 294–325; and my comments, *Visualizing Community*, 279–83.

17 Ousterhout, *Visualizing Community*.

18 Maria Andaloro et al., "New Surveys on Underground Structures in Cappadocia: A Dialogue between Art Historians, Conservators, Archaeologists and Speleologists," *Hypogea 2015: Proceedings of the International Congress of Speleology*, eds. Mario Parise, Carla Galeazzi, Roberto Bixio, and Carlo Germani (Rome: Arte Grafiche Editoriali Srl, 2015), 15–29; Maria Andaloro, Roberto Bixio, and Carmela Crescenzi, "The Complex of S. Eustachius in Göreme, Cappadocia: Reading the Relationship between the Landscape and a Very Articulated Underground Settlement," in *International Conference on Cultural Heritage and New Technologies*, eds. Wolfgang Börner and Susanne Uhlirz (Vienna: Museen der Stadt Wien—Stadtarchäologie, 2013), unpaginated; Andrea Bixio, Roberto Bixio, Andrea De Pascale, and Alessandro Maifredi, "Kiliclar Kalesi: una fortezza 'lineare'a Göreme (Cappadocia, Turchia)," *Opera Ipogea* 20 (2018): 109–26; among many others. I am grateful to Roberto Bixio for keeping me up to date on this research.

19 Tolga Uyar, "Digital Modeling and Interpreting Settlement Patterns in Byzantine Cappadocia," unpublished paper delivered at the *Fifth International Sevgi Gönül Byzantine Studies Conference*, Istanbul, 2019.

20 Peker and Uyar, "Güzelöz-Başköy 2010;" Nilüfer Peker, "Agricultural Production and Installations in Byzantine Cappadocia: A Case Study Focusing on Mavrucandere," *Byzantine and Modern Greek Studies* 44 (2020): 40–61.

21 Maria Andaloro, Tatiana Pignatale, and Giorgio Verdiani, "The Church of Meryem Ana in Göreme, Cappadocia: Correct Documentation for a Meaningful Heritage at Risk," in *International Conference on Cultural Heritage and New Technologies*, eds. Wolfgang Börner and Susanne Uhlirz (Vienna: Museen der Stadt Wien—Stadtarchäologie, 2013), unpaginated.

It may be impossible to stabilize, and collapse may be inevitable. Again, the Italian mapping project here under the direction of Maria Andaloro has produced a valuable three-dimensional record. This and the detailed photographic records may be the way the next generation of scholars will know this important monument.

If Byzantine Cappadocia is to be understood in context, as more than a sum of its parts, the way forward in Cappadocian scholarship may be in collaborative projects such as these. The knowledgeable eyes of the art historian or archaeologist can be augmented by the potential that scientific analysis and new technologies now offer. As we look for the big picture, however, we might also consider looking small—for the overlooked ceramics, small finds, coins, and seals have much to contribute to the historic record. Recently studied seals and coins from Kayseri and Niğde, for example, indicate an official presence into the seventh and possibly eighth century, while a coin hoard found at Pınarbaşı (east of Kayseri), seems to have been hidden ca. 654.[22] Many of the regional museums house materials found in salvage excavations, which have never been properly published. Many languish in storerooms, although some are on display. The ten fragments of Byzantine documents found in the salvage excavation at Çanlı Kilise in the 1990s are begging to be examined by a paleographer.[23] I published these summarily, but I'm no paleographer; moreover, there are other small finds that remain unpublished, such as textile fragments from the same site. In short, you do not have to be an intrepid archaeologist or a computer whiz to contribute to Cappadocian studies.
Of course, the future of Cappadocian studies requires a future Cappadocia. The powers that be seem to privilege the short term economic benefits of mass tourism to the long term cultural benefits of historic preservation. The damage caused by package tours, oversized buses, new rock-cut hotels, and those inevitable balloons has been exacerbated by sporting events—organized footraces, bicycle races, all-terrain vehicles, motor cross, and horseback riding, to name a few—which are devastating the fragile landscape. All are encouraged, with minimal regulation. New cave hotels appear faster than balloons, and in many areas, such as the Göreme open air museum, the privileging of tourism renders them virtually off-limits to scholarly investigation. Historic Maçan—now Göreme Village—has all but disappeared. Indeed, the open-air museum is the most visited area of the region, but it has never been properly mapped—we still rely on a simplified and incorrect map drawn half a century ago.[24]

Areas outside the Göreme park are increasingly inaccessible, fenced off by local farmers, with livestock and stableboys now housed in the Byzantine rock-carved refectories. Who's in charge here? The cultural ministry? The local museum, the police, the gendarmes? No one seems to be willing to intervene. Half a century ago, in 1967, before the advent of present-day over-tourism, the Turkish authorities, in collaboration with the U.S. National Parks Service, drew up a comprehensive plan for the preservation and conservation of the Göreme region.[25] It was smart, prescient, and never implemented. As with global warming, one wonders when too late is too late.

Of course, one of the biggest enemies of Cappadocia is Mother Nature herself. The dramatic historical landscape was created by erosion, and it continues to wear away. The layers of soft volcanic stone are friable, the harder stone subject to mass wastage. Within the stratigraphy of Cappadocia, layers of volcanic stone often alternate with layers of ash. At Çanlı Kilise, the settlement was carved into a band of tuff sandwiched between unstable layers of ash. This resulted over time in the carved spaces being eroded from below and buried by landslides from above—a process that began already in Byzantine times. For the archaeologist, this is a nightmare: how does one excavate a site that may be buried at any time by landslides, which the digging of trenches would only encourage?

22 Sophie Métivier, "Sceaux inédits des musées de Kayseri et de Niğde (Turquie)," *Studies in Byzantine Sigillography* 10 (2009): 61–74, esp. 71–73; Sophie Métivier and Vivien Prigent, "La circulation monétaire dans la Cappadoce byzantine d'après les collections des musées de Kayseri et de Niğde," in *Mélanges Cécile Morrisson*, eds. Jean-Claude Cheynet, Vincent Déroche, Denis Feissel,Bernard Flusin, and Constantin Zuckerman (Paris: Association des Amis du Centre d'Histoire et Civilisation de Byzance, 2010), 577–618; Sophie Métivier and Cécile Morrisson, "Un peu de l'or de Byzance: le trésor de Pınarbaşı (Cappadoce) (enfoui vers 654)," in *Le saint, le moine et le paysan. Mélanges offerts à Michel Kaplan*, eds. Olivier Delouis, Sophie Métivier, and Paule Pagès, *Byzantine sorbonensia* 29 (Paris: Publications de la Sorbonne, 2016).

23 Ousterhout, *Byzantine Settlement*, 236–37.

24 Luciano Giovannini, *Arts of Cappadocia* (London: Hippocrene Books, 1971), fig. 28; see my comments, *Visualizing Community*, 492.

25 *Göreme Historical National Park: Master Plan for Protection and Use* (Turkey: National Park Project Planning Team, 1972).

Efforts to control erosion have been effective only in the short term, while adding the unsightly spectacle of crumbling concrete and chicken wire to the picturesque landscape—or constructions resembling the architecture of Frank Gehry. What can be done? What should be done? My questions are intended to be both philosophical and methodological. In the short term, how do we balance preservation and documentation with the demands of tourism? In the long term, more importantly, should we allow a historic process to continue its natural course—that is, do we accept erosion as inevitable? Or, do we attempt to freeze a fragile landscape in time? And if so, how? And will future generations of scholars know Byzantine Cappadocia only virtually? I wish I had some answers.

BIBLIOGRAPHY

Andaloro, Maria, Michele Benucci, Roberto Bixio, Andrea de Pascale, and Guiseppe Romagnoli. "New Surveys on Underground Structures in Cappadocia: A Dialogue between Art Historians, Conservators, Archaeologists and Speleologists." In *Hypogea 2015—Proceedings of the International Congress of Speleology*, edited by Mario Parise, Carla Galeazzi, Roberto Bixio, and Carlo Germani, 15–29. Rome: Arte Grafiche Editoriali Srl, 2015.

Andaloro, Maria, Tatiana Pignatale, and Giorgio Verdiani. "The Church of Meryem Ana in Göreme, Cappadocia: Correct Documentation for a Meaningful Heritage at Risk." In *International Conference on Cultural Heritage and New Technologies*, edited by Wolfgang Börner and Susanne Uhlirz, unpaginated. Vienna: Museen der Stadt Wien—Stadtarchäologie, 2013.

Andaloro, Maria, Roberto Bixio, and Carmela Crescenzi. "The Complex of S. Eustachius in Göreme, Cappadocia: Reading the Relationship between the Landscape and a Very Articulated Underground Settlement." In *International Conference on Cultural Heritage and New Technologies*, edited by Wolfgang Börner and Susanne Uhlirz, unpaginated. Vienna: Museen der Stadt Wien—Stadtarchäologie, 2013.

Bixio, Andrea, Roberto Bixio, Andrea De Pascale, and Alessandro Maifredi. "Kiliclar Kalesi: una fortezza 'lineare'a Göreme (Cappadocia, Turchia)." *Opera Ipogea* 20 (2018): 109–26.

Bixio, Roberto, ed., *Cappadocia: Schede dei siti sotterranei/Records of the underground sites.* British Archaeological Reports International Series 2413. Oxford: British Archaeological Reports, 2012.

Dean, Jonathan, Matthew Jones, Melanie Leng, Hilary Sloane, Neil Roberts, Jessie Woodbridge, George Swann, et al. "Palaeo-Seasonality of the Last Two Millennia Reconstructed from the Oxygen Isotope Composition of Carbonates and Diatom Silica from Nar Gölü, Central Turkey." *Quaternary Science Reviews* 66 (2013): 35–44.

England, Ann, Warren J. Eastwood, C. Neil Roberts, Rebecca Turner, and John F. Haldon, "Historical Landscape Change in Cappadocia (Central Turkey): A Palaeoecological Investigation of Annually Laminated Sediments from Nar Lake." *The Holocene* 18, no. 8 (2008): 1229–45.

Giovannini, Luciano. *Arts of Cappadocia.* London: Hippocrene Books, 1971.

Göreme Historical National Park: Master Plan for Protection and Use. Turkey: National Park Project Planning Team, 1972.

Haldon, John. "'Cappadocia will be Given over to Ruin and become a Desert': Environmental Evidence for Historically-Attested Events in the 7th–10th Centuries." In *Byzantina Mediterranea: Festschrift für Johannes Koder zum 65. Geburtstag*, edited by Klaus Belke, Ewald Kislinger, Andreas Külzer, and Maria Stassinopoulou, 215–30. Vienna: Böhlau, 2007.

Haldon, John, Neil Roberts, Adam Izdebski, Dominik Fleitmann, Michael McCormick, Merica Cassis, Owen Doonan, et al. "The Climate and the Environment of Byzantine Anatolia: Integrating Science, History, and Archaeology." *Journal of Interdisciplinary History* 45, no. 2 (2014): 113–61.

Izdebski, Adam. *A Rural Economy in Transition: Asia Minor from Late Antiquity into the Early Middle Ages. Journal of Juristic Papyrology Supplement* 18. Warsaw: Raphael Taubenschlag Foundation, 2013.

Jerphanion, Guillaume de. *Une Nouvelle province de l'art byzantin les églises rupestres de Cappadoce*. 2 vols. Paris: Paul Geuthner, 1925–1942.

Jolivet-Lévy, Catherine, with Nicole Lemaigre Demesnil. *La Cappadoce: Un siècle après G. de Jerphanion*. 2 vols. Paris: Guethner, 2015.

Kalas, Veronica. "Rock-Cut Architecture of the Peristrema Valley: Society and Settlement in Byzantine Cappadocia." PhD diss., New York University, 2000.

Kalas, Veronica. "The 2004 Survey of the Byzantine Settlement at Selime-Yaprakhisar in the Peristrema Valley, Cappadocia." *Dumbarton Oaks Papers* 60 (2006): 271–93.

Kontogiannis, Nikos B., and Tolga B. Uyar, eds. *Space and Communities in Byzantine Anatolia: Papers from the Fifth Annual International Sevgi Gönül Byzantine Studies Symposium*, GABAM Series. Istanbul: Koç University Press, 2021.

Mathews, Thomas F., and Annie-Christine Daskalakis-Mathews. "Islamic-Style Mansions in Byzantine Cappadocia and the Development of the Inverted T-Plan." *Journal of the Society of Architectural Historians* 56 (1997): 294–315.

Métivier, Sophie. "Sceaux inédits des musées de Kayseri et de Niğde (Turquie)." *Studies in Byzantine Sigillography* 10 (2009): 61–74.

Métivier, Sophie, and Cécile Morrisson. "Un peu de l'or de Byzance: le trésor de Pınarbaşı (Cappadoce) (enfoui vers 654)." In *Le saint, le moine et le paysan. Mélanges offerts à Michel Kaplan, edited by Olivier Delouis, Sophie Métivier, and Paule Pagès*, 503–22. Byzantine sorbonensia 29. Paris: Publications de la Sorbonne, 2016.

Métivier, Sophie, and Vivien Prigent. "La circulation monétaire dans la Cappadoce byzantine d'après les collections des musées de Kayseri et de Niğde." In Mélanges Cécile Morrisson, edited by Jean-Claude Cheynet, Vincent Déroche, Denis Feissel, Bernard Flusin, and Constantin Zuckerman, 577–618. Paris: Association des Amis du Centre d'Histoire et Civilisation de Byzance, 2010.

Ousterhout, Robert G. "The 1994 Survey at Akhisar-Çanlı Kilise." *Araştırma Sonuçları Toplantısı* 13 (1996): 165–80.

Ousterhout, Robert G. *A Byzantine Settlement in Cappadocia.* 2nd rev. ed. 2011. Dumbarton Oaks Studies 42. Washington, DC: Dumbarton Oaks Studies, 2005.

Ousterhout, Robert G. *Visualizing Community: Art, Material Culture, and Settlement in Byzantine Cappadocia.* Dumbarton Oaks Studies 46. Washington, D. C.: Harvard University Press, 2017. Published in Turkish as *Bizans Toplumunu Görünür Kılmak: Kappadokya'da Sanat, Maddi Kültür ve Yerleşim*, GABAM Series. Istanbul: Koç University Press, 2020.

Öztürk, Fatma Gül. "A Comparative Architectural Investigation of the Middle Byzantine Courtyard Complexes in Acıksaray—Cappadocia: Questions of Monastic and Secular Settlement." PhD diss., Middle East Technical University, 2010.

-----. "Açıksaray 'Open Palace': A Byzantine Rock-Cut Settlement in Cappadocia." *Byzantinische Zeitschrift* 107 (2014): 785–810.

Peker, Nilüfer. "Agricultural Production and Installations in Byzantine Cappadocia: A Case Study Focusing on Mavrucandere." *Byzantine and Modern Greek Studies* 44 (2020): 40–61.

Peker, Nilüfer, and Tolga B. Uyar. "Güzelöz-Başköy ve Çevresi Bizans Dönemi Yerleşimleri 2010." *Araştırma Sonuçları Toplantısı* 29, no. II (2011): 251–65.

Restle, Marcel. *Byzantine Wall Painting in Asia Minor*. 3 vols. New York: Bongers, 1967.

Rodley, Lyn. *Cave Monasteries of Byzantine Cappadocia.* Cambridge: Cambridge University Press, 1985.

Thierry, Nicole. L*a Cappadoce de l'Antiquité au Moyen Âge*. Turnhout: Brepols, 2002.

Uyar, Tolga B. "Art et Société end pays de Rûm: les peintures 'byzantines' du XIIIe siècle en Cappadoce." PhD diss, University of Paris I, 2011.

Uyar, Tolga B. "L'église de l'Archangelos: la décor de la nef sud et le renouveau de la peinture byzantine en Cappadoce au début du XIIIe siècle." *DChAE* 29 (2008): 119–30.

Uyar, Tolga B. "Thirteenth-Century 'Byzantine' Art in Cappadocia and the Question of Greek Painters at the Seljuk Court." In *Islam and Christianity in Medieval Anatoli*a, edited by Andrew C. S. Peacock, Bruno de Nicola, and Sara Nur Yıldız, 215–31. Burlington: Routledge, 2015.

Uyar, Tolga B. "Thirteenth-Century Byzantine Painting in Cappadocia: New Evidence." In *First International Sevgi Gönül Byzantine Studies Symposium*, edited by Ayla Ödekan, Engin Akyürek, and Nevra Necipoğlu, 617–25. Istanbul: ANAMED, 2010.

Uyar, Tolga B. "Digital Modeling and Interpreting Settlement Patterns in Byzantine Cappadocia." Unpublished paper delivered at the *Fifth International Sevgi Gönül Byzantine Studies Conference*. Istanbul, 2019.

Warland, Rainer. *Byzantinisches Kappadokien*. Darmstadt: Philipp von Zabern, 2013.

Woodbridge, Jessie, and Neil Roberts. "Late Holocene Climate of the Eastern Mediterranean Inferred from Diatom Analysis of Annually-Laminated Sediments." *Quaternary Science Reviews* 30 (2011): 3381–92.

Xenaki, Maria. "Recherches sur les églises byzantines de Cappadoce et leur décor peint (VIe-IXe siècles)." PhD diss., University of Paris 1, 2011.