

BACKDIRT

ANNUAL REVIEW OF THE COTSEN INSTITUTE OF ARCHAEOLOGY AT UCLA
DECEMBER 2020



Archaeology and Pandemics





BACKDIRT

ANNUAL REVIEW OF THE COTSEN INSTITUTE OF ARCHAEOLOGY AT UCLA

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FRONT COVER: Empty corridors of the Cotsen Institute with directions for one-way traffic and a hand sanitizer dispenser in place. (Photograph by Vanessa Muros)

BACK COVER: Symbols of life in 2020: face masks and meetings through Zoom. (Screenshot by Matei Tichindelean)

ABOVE: Sonia Zarrillo, postdoctoral fellow at the Cotsen Institute, presents a lecture for the Andean Working Group: "New Approaches to Tracing Cacao's Dispersal from the Amazon Basin," January 23, 2020.

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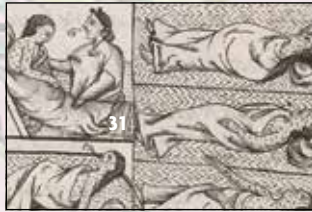
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Message from the Director

THE YEAR 2020 WAS memorable for many reasons, and most events fundamentally affected our community. Most importantly, of course, it was the year that the Covid-19 pandemic forced UCLA and the Cotsen Institute to close. From mid-March onward, all classes, meetings, and research could take place only in an online environment. Field projects and internships were canceled, depriving students and faculty of indispensable experience, data collection opportunities, and contact with colleagues and communities in our homes away from home. This issue of *Backdirt* is partly dedicated to the effects that this pandemic, which is ongoing at the time of writing, has had on our discipline. I foresee this as a time that will lead to deep contemplation of how we are doing archaeology and conservation.

Several other events profoundly affected academia, archaeology, conservation, and our institute. In May the Department of Education amended Title IX legislation in ways that provide less protection to survivors and more to perpetrators. It diminished protection off-campus, which is detrimental for archaeologists, for whom fieldwork is part and parcel of the job. Later in May, George Floyd was killed by police officer Derek Chauvin, one event in a pattern of police brutality against Black Americans, resulting in worldwide demonstrations in support of Black Lives Matter. July saw expiration of the exemption to the rule that foreign students can only get visas when they receive in-person education. This exemption was put in place because of the Covid-19 pandemic and was extended only after a number of universities filed lawsuits against the federal government. An effort to discuss, address, and respond to these disturbing developments began at a town hall meeting on June 11, followed by the work of several dedicated, student-driven working groups, and a retreat on November 20. Much more needs to be done, but the Cotsen Institute works hard to remain at the forefront of our field.

In 2020 we lost Marilyn Beaudry-Corbett, our former director of publications, affiliated researcher, and donor; Gregory Areshian, our former assistant director; Ofer Bar-Yosef, the first recipient of the Cotsen Lifetime Achievement Award (together with Carolina Mallol), and Norma Kershaw, longtime donor to the Department of Near Eastern Languages and Cultures and our institute. Finally, 2020 was a year in which wars affected the populations of Armenia, Ethiopia, and Yemen, and



Cotsen Institute Director Willeke Wendrich

people with whom we have developed relationships of friendship and collegiality.

To end on a more upbeat note, despite the difficulties of doing research during a pandemic, many of our students received important fellowships and awards. We also welcomed three new graduate students in the archaeology program, Taylor Carr-Howard, Lucha Martínez de Luna, and Syon Vasquez, as well as our new manager and chief administrative officer Bronson Tran and office coordinator Alfonso Lopez. We have made all Cotsen Institute publications freely available online, either as direct downloads or, for the most recent publications, to be read online. Our remote public lectures, Pizza Talks, and Conservation Conversations have attracted hundreds of participants, and our outreach has increased greatly compared to in-person events. With the onset of the pandemic, our website (ioa.ucla.edu) became increasingly important for keeping in touch with colleagues, students, donors, and everybody interested in our work. We will continue to do our best to keep in touch, hoping for better times ahead.

A handwritten signature in blue ink, which appears to be 'Willeke'.

Willeke Wendrich
Director, Cotsen Institute
of Archaeology

Writing for the Public: Advancing a Meaningful Archaeological Practice

— Stephen Acabado¹ and Marlon Martin²

The five-month Covid-19 stay-at-home experience had me thinking about ways to engage the broader community. This was spurred by a news article on our work in the Philippines that elicited varied responses from the public. Although our archaeological investigations of the Ifugao rice terraces have been known since 2009 and well received by peers, the wider Philippine public was surprised by our arguments for a very young rice terracing tradition (Acabado et al. 2019). For the most part, responses to the news feature were positive, especially the idea that the long-history model of the terraces (which proposes an age of at least 2,000 years) is not based on any scientific data, that the model reprises colonial perspectives about the Philippines. As Eunice Novio wrote, “Acabado emphasizes that claiming that the Ifugao Rice Terraces as ancient is a caricature of the un-colonized, isolated peoples and *original Filipinos*. This colonial perspective depicts not only the Ifugao and the rest of upland Filipinos as unchanging and backward.”³ However, there were a few who actively questioned the validity of the archaeological dating.

To familiarize those new to the issue of the dating of the Ifugao rice terraces, pioneer American anthropologists argued that the terraces had to be at least 2,000 years old because the Ifugao were using basic implements (Barton 1919; Beyer 1955). This dating has become received wisdom in the Philippine historical narrative, although the model is not based on “a single shovelful of archaeological evidence,” using Robert Maher’s (1973:40) words. It entered the national consciousness when it began to be repeated in schools, and it remained an unchallenged “fact” in textbooks. Connie Bodner (1986), working in another

region in the Cordillera (Bontoc), strongly argued for the later inception (after 1600 CE) of wet-rice cultivation in the region. Her argument, as with the case of Ifugao, is also supported by archaeological datasets. Yet the long-history model persists.

The negative reactions to the dating of the terraces were mostly centered on the news article by Novio and, probably, the inaccessibility of scholarly articles. We thus decided to write for the public, with Acabado writing the first article, which calls for Indigenous history and inclusivity.⁴ This piece calls out the apparent ethnocentrism of mainstream Filipino society regarding Indigenous groups in the Philippines. It was also written in the context of the Black Lives Matter protests and the anti-Black sentiments among the Filipino diaspora (and Filipinos generally). Acabado writes, “The recent protests against injustices in the United States catalyzed by the death of George Floyd underscored anti-Blackness sentiments of some Filipino immigrants. In a sense, these echo the attitudes of many Filipinos against Indigenous populations, particularly, the many Aeta groups. In this essay, I invite the readers to critically examine what we learned in the Philippine educational system and how the lessons characterize our sense of being Filipino, especially in relation to the apparent anti-Blackness sentiments or pro-white concepts of beauty and kindness.”

The first article was succeeded by several articles that we wrote together. Leveraging our productive collaboration (Acabado and Martin 2020; Martin and Acabado 2015; Martin et al. 2019), we set out to contextualize the archaeological dating of the rice terraces in terms of knowledge production. Using various Covid-19 scientific undertakings to control the pandemic as a backdrop, we stressed that scientific argumentation is only as good as the data that support it. We reasoned that scientific knowledge is thus a tentative truth.⁵ Seizing on the opportunity to share our

1. Associate professor in the Department of Anthropology and core faculty member of the Cotsen Institute.

2. Save the Ifugao Terraces Movement.

3. Eunice Novio, “UCLA Archeologist Busts Myth of ‘2,000-Year-Old Rice Terraces,’” *Inquirer*, May 28, 2020, <https://usa.inquirer.net/55341/ucla-archeologist-busts-myth-of-2000-year-old-rice-terraces> (accessed August 31, 2020).

4. Stephen Acabado, “A Call for Philippine Indigenous History, a Call for Inclusivity,” *Inquirer*, June 17, 2020, <https://usa.inquirer.net/55789/a-call-for-philippine-indigenous-history-a-call-for-inclusivity> (accessed August 31, 2020).



Figure 1. Apo Romana, an elderly weaver at the Ifugao Indigenous Peoples Education Center, demonstrates traditional weaving to local senior high school students.

work with the larger community and promote social justice, we also situated our archaeological investigations in terms of the dismantling of monuments that glorify colonialism and injustices.⁶ As the bulk of our work focuses on a UNESCO World Heritage Site, we discussed how the UNESCO designation has serious ramifications in terms of presenting the Ifugao as a static and unchanging people.⁷

Because the focus of UNESCO is on conservation for tourism purposes, the cultural and historical contexts of sites have been largely ignored. The UNESCO listing of the Ifugao rice terraces embodies the Western tradition of conservation, overlooking the cultural context of rice and rice production in the region. The concept of “universal value” applied in the UNESCO nomination process becomes problematic because it is based on Enlightenment philosophy. It emphasizes cross-cultural generalizations to establish universal laws of culture, but in practice, these have the effect of erasing variability, reducing humanity to a set of standardized themes. Thus, we argued that these types of spaces are defined by outsiders for local

communities, but that we can always respond to these impositions by involving Indigenous stakeholders. We can facilitate the creation of a venue where these communities can represent themselves. Indigenous and local communities are now their own place makers; they can now define their own identities.

To highlight the colonial foundation of Filipino identity, we wrote an essay emphasizing that Filipino identity is actually a recent development. Using “Bahay Kubo,”⁸ a song that almost all Filipino kids learn in school, we provided a window on the Philippine connection to the world. The children’s song is a great example of the Homogenocene, the widespread expansion of plants and animals brought by maritime exchanges that started when Columbus accidentally landed on the island of Hispaniola in present-day Dominican Republic. Among the plants mentioned in the song, the only ones potentially of Filipino origin are *upo* (wax gourd, which is also native to South and East Asia), garlic, and *labanos* (radish, which is possibly of Southeast Asian origin). The rest of the plants in the song originated in the Americas, Africa, or mainland Asia. So the quintessential Philippine garden is a product of global connections that started more than 1,000 years ago.

5. Stephen Acabado, “Bakit Walang Forever? The Impermanence of Scientific Knowledge,” *Rappler*, July 1, 2020, <https://rappler.com/voices/ispeak/opinion-impermanence-science-archeology> (accessed August 31, 2020).

6. Stephen Acabado and Marlon Martin, “Monuments and the Power of Memory,” *Inquirer*, July 20, 2020, <https://usa.inquirer.net/57041/monuments-and-the-power-of-memory> (accessed August 31, 2020).

7. Stephen Acabado, “Demystifying the Age of the Ifugao Rice Terraces to Decolonize History,” *Rappler*, April 14, 2019, <https://rappler.com/science/society-culture/demystifying-age-ifugao-rice-terraces> (accessed August 31, 2020).

8. Stephen Acabado, “The Bahay Kubo and the Making of the Filipino,” *Rappler*, June 26, 2020, <https://rappler.com/voices/ispeak/opinion-bahay-kubo-making-filipino> (accessed August 31, 2020).

Writing for the Public (continued)

To stress that colonial experiences help define Filipino identity, an ensuing article called for the rethinking of history to inspire the future.⁹ We wrote that race is a social construct and that the concept of race reinforces colonial structures that favor Eurocentric views. For example, the concept justified conquest and colonialism through the view that non-Western peoples needed to be civilized, articulated by the “white man’s burden” perception. In the Philippines this view proceeded through the benevolent assimilation policy of the American colonial government.

Indeed, this observation is still seen in the Philippine educational system. As a product of Americanization,¹⁰ Philippine curricula invested heavily in assimilating various ethnolinguistic groups into Filipino society. Using our work in the Philippine Cordillera, we articulated how the United States incorporated policies used to assimilate Native Americans into those that indoctrinated Cordilleran peoples. Continuing to apply what it learned in the Native American experience, the United States employed the same educational curriculum it had developed for Native Americans. William Howard Taft, the U.S. governor-general of the Philippines in 1901, said that Native Americans who received white-style education would be similar to Euro-Americans “in industry, in loyalty to the country, in law abiding character, and in morality.” Conceivably, this was the basis of the Philippine education curriculum developed by the United States. The educational system was the agent for Americanization of the Philippines. Education became the venue where Indigenous peoples were required to learn and acquire the Filipino identity. However, this approach focused mainly on the history of the dominant lowland groups; the histories of Indigenous peoples were never part of the curricula.

To address this marginalization, the Philippine Department of Education mandates that history curricula must be contextualized in local realities. However, teachers are under-equipped to carry out this directive since there are yet no initiatives to properly train teachers in Indigenous history and heritage. To train teachers in Ifugao, we established the Ifugao

Community Heritage Galleries in Kiangan, which now serves as the Ifugao Indigenous Peoples Education Center, a venue where teachers can work with each other and community elders to infuse the curriculum with local knowledge and recent archaeological findings. Our recent article in *Sapiens* highlighted the success of our community engagement programs.¹¹ In this essay, we showed how the local community took control of its heritage, which was on display during the pandemic. The Ifugao Indigenous Peoples Education Center includes a weaving component (Figure 1), and the textiles produced by Ifugao weavers provide an income that helps Ifugao weaving communities and at the same time facilitates conservation of a fading tradition. These public-facing essays were meant to engage a wider public, to provide information, and to help correct misconceptions about archaeology. More importantly, the work brings archaeology to the public and enables us to advance a more meaningful practice.

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Volume of Studies Honors Giorgio Buccellati and Marilyn Kelly-Buccellati

— Roz Salzman¹

The long, distinguished, and prolific careers of Giorgio Buccellati and Marilyn Kelly-Buccellati are honored in the recent publication of a volume of studies, *Between Syria and the Highlands*, authored by 51 scholars from universities and research centers around the world. Giorgio Buccellati is a professor emeritus of the Departments of History and Near Eastern Languages and Cultures and the founding director of the Institute of Archaeology at UCLA (now the Cotsen Institute of Archaeology). He is also director of the Mesopotamian Laboratory. Marilyn Kelly-Buccellati is professor emerita of archaeology and art history at California State University–Los Angeles. Both are researchers affiliated with the Cotsen Institute. They have worked for many years in the Near East and served as directors of the archaeological expedition to Tell Mozan (ancient Urkesh) in north-eastern Syria.

In her contribution to the volume, Willeke Wendrich, director of the Cotsen Institute, writes: “When I think of Giorgio and Marilyn, I think of . . . equally impressive scholars, who have always worked closely together, but who remain distinct persons, with their own careers. Co-directing excavations, authoring articles and books together, requires great talent in delivering and accepting input, ideas, and critique. . . . They are the scholarly giants on which next and future generations of archaeologists stand. Most importantly, they treat the people with whom they work as members of an extended family: their American, Italian, and Syrian students; the women of the villages around

1. Director of the Cotsen Communications Group.

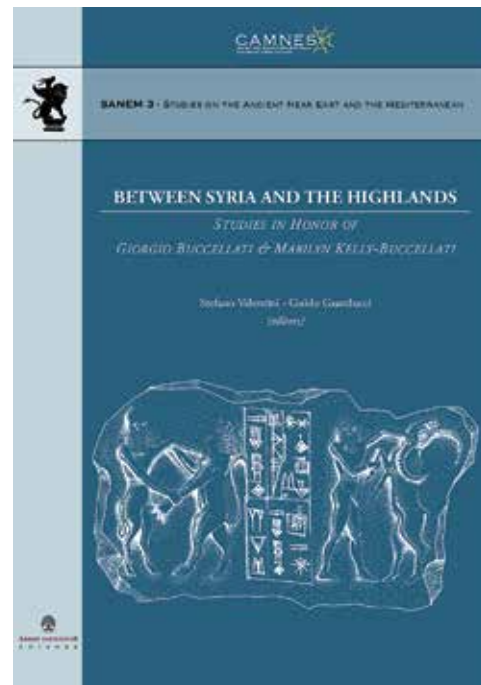


Figure 1. *Between Syria and the Highlands: Studies in Honor of Giorgio Buccellati and Marilyn Kelly-Buccellati*.

Mozan; and their close colleagues in the Department of Near Eastern Languages and Cultures, as well as the Cotsen Institute of Archaeology at UCLA, of which Giorgio was the founding father and Marilyn, the ever-present mother.”

In discussing this Festschrift (a collection of writings published in honor of a scholar or scholars), the Buccellatis admitted that they had no idea that the volume of tributes was in the works until late 2019, when their son Federico, also an archaeologist, who was appointed director of the Mozan/Urkesh Archaeological Project in May, brought out the book during a Christmas visit. This followed a Skype call with Stefano Valentini and Guido Guarducci, two colleagues from their excavation in Syria and editors of the volume. “They were excavating near us in Syria, and they pretty much knew which colleagues to approach for contributions,” Giorgio Buccellati explains. “We said, almost immediately, that we wanted it to be open source online,” which it now is. The Buccellatis are currently in the process of writing individual letters to each contributor because, Giorgio adds, “we are carefully reading what they have

Giorgio Buccellati and Marilyn Kelly-Buccellati Honored (continued)



Figure 2. Marilyn Kelly-Buccellati, Giorgio Buccellati, and Federico Buccellati discuss the site of Tell Mozan, ancient Urkesh, in northeastern Syria.

written and are responding to their arguments.” The book is included in the series *Studies on the Ancient Near East and the Mediterranean*, published by the Center for Ancient Mediterranean and Near Eastern Studies in Florence, Italy.

Valentini says about Marilyn and Giorgio, “I have always appreciated their empathy and their intellectual honesty, supported by an innate ability to communicate, share, and involve the scientific community with the ultimate goal of giving life to an archaeology full of humanity: made up of people and of faces, not only of pottery and of dust. Thanks to them, I gained the awareness that the archaeologist, wherever he is working, must also fulfill his task as cultural mediator: between the cultures of the past and those of the present and between our Western culture and that of the countries we host.”

Guarducci adds, “I would like to deeply thank Giorgio for accepting, since the very first day back in 2010, becoming a member of the scientific committee of the newborn Center for Ancient Mediterranean and Near Eastern Studies, as well as his and Marilyn’s constant support in the ensuing events that we organized. Thank you Giorgio and thank you Marilyn for your remarkable academic and scientific effort and for your precious friendship.”

In their contribution to the volume, “Integrating Conservation, Archaeology, and Community at Tell Mozan (Urkesh),” Neville Agnew and Martha Demas of the Getty Conservation Institute in Los Angeles describe the Buccellatis as “having woven a beautiful tapestry, integrating archaeology, conservation and community from their deep attachment for the place and people. Their work reflects a blend of scholarly erudition and pragmatic commonsense. They see near and far. Practicing archaeologists who have embraced both site and artifact conservation, innovators and experimentalists, networkers across multiple disci-

THE INSTITUTE IN THE NEWS

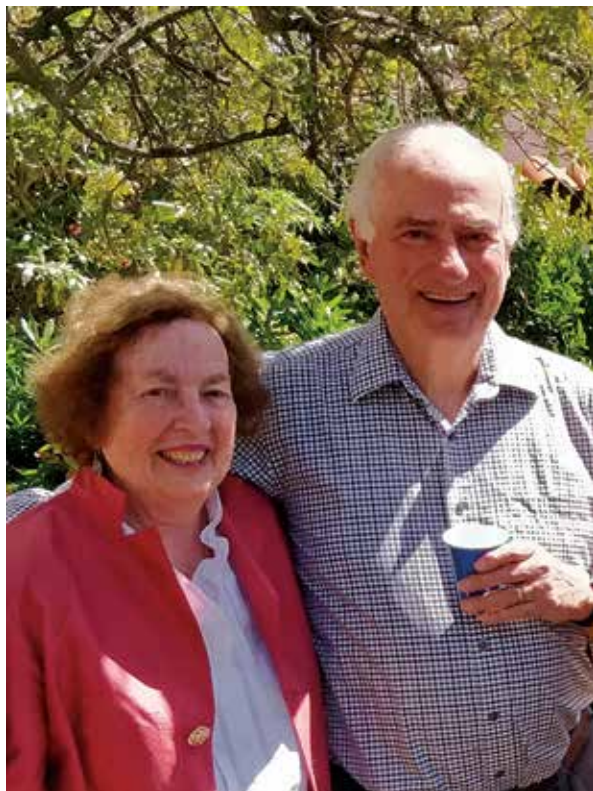


Figure 3. Marilyn Kelly-Buccellati and Giorgio Buccellati.

plines with the ability to engage help from others with different expertise—these are the attributes of the Buccellatis. We stand in admiration of their inventive ways of harnessing the benefits of archaeology for a larger purpose and in ways they never would have imagined—as a bulwark against the ravages of war.”

The chapter “The Terqa Cloves and the Archaeology of Aroma” was contributed by Monica L. Smith, professor in the Department of Anthropology and the Institute of the Environment and Sustainability and a core faculty member of the Cotsen Institute. She notes that the starting points for her paper were the tiny botanical remains found by the Buccellatis in 1976 in their excavations in Terqa, where they reported cloves from a second millennium BCE context. She writes, “It is a great pleasure to offer this modest chapter in honor of Marilyn Kelly-Buccellati and Giorgio Buccellati. Throughout my many years at UCLA, they have been gracious and generous colleagues and friends, with whom it has always been a wonderful pleasure to share conversations about archaeological theory interwoven with warm observations about family life and some wonderful meals.”

“The Scepter from Sitagroi and Early Bronze Age Symbols of Power” is a chapter written by Ernestine Elster, alumna of the Cotsen Institute and former director of publications. She describes how she first met Giorgio Buccellati in the 1960s during an extension course, which culminated in an optional trip to visit sites and museums. The original Friends of Archaeology formed as a result of this trip, with Buccellati becoming the faculty adviser. Subsequently, after she received her MA and Buccellati had been appointed director of the newly established Institute of Archaeology, he asked her to be director of the fledgling publications program, a position she held from 1974 until 2003. She claims that the Buccellatis “served as unofficial godparents” to *The Archaeology of Grotta Scaloria: Ritual in Neolithic Southeast Italy* (Cotsen Institute of Archaeology Press, 2016), which she coauthored. “Our friendship is a long one, studded with family meetings and memorable travels,” she writes.

Studies on the Ancient Near East and the Mediterranean is a scientific monographic series of the Center for Ancient Mediterranean and Near Eastern Studies, created with the support of Arbor Sapientiae of Rome. A digital copy of *Between Syria and the Highlands: Studies in Honor of Giorgio Buccellati and Marilyn Kelly-Buccellati* (394 pages) is available through www.avasa.it/en/publications.htm; a hard copy may be purchased for \$157.50.

PANDEMICS IN HISTORY

People often say that we are going through unprecedented times. But epidemics and pandemics have been part of the human experience for millennia and have often determined the course of history. In this section of *Backdirt*, some earlier pandemics are briefly presented.

Ancient Epidemics in Chinese Archaeology

Zichan Wang¹

Collapse, resilience, and reorganization are current archaeological buzz words; they are perennial concerns of human beings throughout history, as well as topical headlines in the face of the global pandemic. For my dissertation research, I am exploring continuities and discontinuities during the transition from the Late Neolithic (2300–1900 BCE) to the early Bronze Age (1900–1600 BCE) in China; in other words, the collapse of Late Neolithic societies in multiple regions in China and its aftermath. Zhang Chi (2017) has suggested that the drastic decline in the size and number of settlements in the archaeological record about this time may reflect depopulation caused by a plague. Although we have at present no direct evidence, such as a DNA-based identification of *Yersinia pestis* (the bacteria causing plague), this topic has certainly attracted a great deal of attention since the breakout of Covid-19.

The interest in exploring ancient epidemics has various reasons. On the factual level, Chinese archaeologists are interested in establishing whether such

¹ Graduate student in archaeology, Cotsen Institute.



Figure 1. Map of eastern Asia showing the location of the sites discussed here.

epidemics took place at the specific times indicated, and they are striving to find out possible impacts on demography, subsistence, social life, and material culture. Furthermore, epidemics serve as an example of crises through which one may better understand the social response to challenges; hence archaeologists all over the world look for clues to how they may have promoted decision-making, agency, collaboration, and identity formation or assertion. Thinking about pandemics as a student of archaeology today, I intend to approach this topic from at least two different angles. On the one hand, I can try to uncover archaeological evidence for epidemics to understand how research into ancient epidemics can further our comprehension of past societies. On the other hand, I feel moved to rethink how the present crisis generated by Covid-19 can shape future research interest and perspectives. These two agendas are closely interconnected: how we understand the current global crises will define our interpretation of evidence from the past. After all, “all history is contemporary history.”

How will the present crisis change the life we are accustomed to? And what new opportunities may it generate for the future? Such real-life concerns inspire

The current crises will define our interpretation of the past.

archaeologists to dig deeper into the past. By doing so, we hope to address some confusion, uncertainties, and doubts about today and tomorrow. Although this did not enter my considerations when I chose my dissertation topic, the outbreak of the pandemic and other social issues aggravated by it unfortunately have imparted my work with a special urgency and contemporary pertinence. By articulating how ancient societies responded to similarly compounding problems, I may be able to help determine what attitude we should take as individuals and as a community as

ANCIENT EPIDEMICS IN CHINA

we face the shared challenge in the future of humanity.

Before the pandemic, the study of paleoepidemics was not popular in Chinese archaeology. In previous research, pathological studies of prehistoric skeletal remains mainly focused on malnutrition, dental caries, injuries, and other unspecified pressures. This lack of archaeological investigation into prehistoric epidemics was partially due to the technical challenges in identifying their traces in the record; acute epidemics rarely leave behind any lesions on skeletons. DNA analysis, however, shows great potential in such a discussion, and I believe it will enrich our understanding as soon as it is applied to the study of Chinese archaeological sites that have mortuary features showing signs of epidemics. Another challenge in studying epidemics through archaeological materials comes from the lack of middle-range theory based on ethnographic and historical materials to help us understand how a prehistoric community would have reacted during an outbreak, what material traces such a response would have left in archaeological records, and what nuanced social impact such pandemics would have had on different groups and individuals. To generate such a theory, historically documented plagues as well as pertinent ethnographic evidence should be thoroughly investigated.

Even though the study of the subject is still in its infancy, Chinese archaeologists have made some insightful observations in discovering epidemics and their possible consequences in material culture based on indirect evidence in burial patterns, lithic tools, and faunal remains. Through multiple lines of inference, Zhu Yonggang and Ji Ping (2016) showed that the abandonment of the site of Hamin Mangha (around 3500–3000 BCE), located in the Kerqin steppes (Figure 1), was caused by a plague outbreak. The site had first caught the attention of archaeologists on account of an unprecedented number of skeletal remains and their abnormal placement. More than 97 corpses were found piled layer over layer in a 19 m² (205 square feet) house, with the bottom layers being more orderly while the top layers were in disarray (Neimenggu and Jilin 2012), which indicates decreasing respect and

energy in treating the deceased. The piles closer to the doorway were higher than those in the rear, showing that people were afraid of walking into the house to deposit bodies evenly. The house was burned before abandonment, which was probably a sterilization measure. In addition to these indications in the field, the results from laboratory analyses further increased the plausibility that a breakout of plague had taken place. The age profile of those buried in the house shows an abnormally high percentage of individuals under the age of 15. Moreover, here, one of the major carriers of *Yersinia pestis*, accounts for more than 75 percent of the mammal bones in the zooarchaeological remains from Hamin Mangha. Zhu Yonggang and Ji Ping (2012) suggested that the hunting and consumption of hares and other infected wild animals may have caused the spread of plague and the die-off of human population that led to site abandonment. Around the same time, the site of Miaoziyou in Xinfeng County, Inner Mongolia, about 900 km. (560 miles) southwest of Hamin Mangha, presented a similar abnormal concentration of human skeletons with an uncommonly high percentage of younger individuals in burials (Neimengguzizhiqu 2003). Thus it is considered to be another case of the spread of epidemics at the end of the fourth millennium BCE.

Investigation along such lines might also prove enlightening in the case of the social transformation at the end of the third millennium BCE, which is the focal point of my research. During the third millennium BCE, motivated by herding, trading, and the prospecting of metal and jade, long-distance communication across Eurasia expanded to unprecedented magnitude and scale. Such communication was first evidenced as the so-called food globalization (Jones et al. 2011), during which wheat, sheep, and cattle were introduced to East Asia. Meanwhile, characteristic bronze spearheads from the Altai, for example, were found along the middle reaches of the Yangzi River in central China, further confirming the intensity and scale of interactions. The large-scale interchange of population and material opened up new economic opportunities while also enabling the transmission of contagious diseases over long distances. Considering that tests have revealed the incidence of plague in the Yamnaya culture on the western Siberian steppes



Figure 2. A female skeleton found at the bottom of Ditch HG8 in Taosi. Note the cattle horn stuck in the pelvis. (Photograph courtesy of Gao Jiangtao.)

(Spyrou et al. 2018), it is plausible that Late Neolithic groups in China in contact with steppe cultures may have also been involved in the spread of plague. In addition, the second half of the third millennium BCE was characterized by unstable climate changes. Although it is disputed whether climate change has an impact on the prevalence of epidemics (Brook 2017; Tian et al. 2017), unstable climate change-induced food insecurity may increase the possibility of epidemic outbreaks (Roberts and Manchester 2010:401).

In discussing the third to second millennium BCE transition, Zhang Chi (2017) suggested that epidemics, especially plague, might be one reason that multiple once-prosperous archaeological cultures suddenly disappeared in China. Moreover, the expansion into arid and semiarid regions that had been previously sparsely inhabited may have also increased the risk of transmission of epizootics into human populations previously unfamiliar with local animal species. Similar processes took place during the outbreak of plague in northeastern China (Manchuria) in 1910–1911 CE, when newcomers unwittingly caught it by hunting and processing infected marmots.

The consequence of the breakout of epidemics is another research emphasis. Let us take the Hongshan culture in northeastern China as an example. This archaeological culture dates to the latter half of the

Studying an epidemic becomes an opportunity.

fourth millennium BCE and is characterized by sophisticated elite, complex religious structures, distinctive ceramic assemblages and jades, and large agricultural villages. At the turn of the third millennium BCE, however, it suddenly vanished from the archaeological record. The following Xiaohayuan culture featured only sparse settlements, low-quality ceramics, and little discernible elite culture. This sudden transformation has puzzled archaeologists for a long time. Given the geographical proximity and similarities in pottery assemblages, the sites of the Hongshan culture were probably in contact with the sites at Hamin Mangha and Miaozigou, which, as suggested above, may have been abandoned because of a plague outbreak; we may speculate that perhaps epidemics were one of the factors affecting the Hongshan transformation. Of course, the impact of a plague on material culture

is never a direct one, but instead the result of the complex dynamics in relation to human livelihood, social structure, and religious beliefs. The Hongshan case deserves further detailed investigation from such an angle.

In addition to exploring the impact of epidemics at a subsistence and demographic level, future exploration should focus on the social reaction to crises, whether anthropogenic or naturally induced. In this sense, I believe the study of epidemics takes on a broader significance as an outgrowth of social crises. Studying an epidemic becomes an opportunity for understanding how a social crisis can unify or divide a group and how a group can become vulnerable or resilient as a result. To date, arguments along this line are still in their early stages, and better middle-range theories and ethnohistoric studies are needed. For instance, the ethnographic research undertaken by historical anthropologist Wang Mingke (2008) is valuable for this investigation. Based on his work in the Qiang villages in southwestern China, Wang proposed that the Qiang story of “poison cats,” which refers to women who were believed to bring bad luck to the villages, largely resembles the history of witch-hunting in medieval Europe. He postulated that the two folk beliefs are rooted in a common social psychology that labels the underprivileged group in a collectivity as evil and misjudges it as the cause of collective misfortune. Such a psychology aims to overcome the fear of incomprehensible phenomena by transforming it into tangible enemies and aims to bond the collectivity together through blaming outsiders, in this case women married in from other lineages or other villages. The psychological hostility to “Others” can quickly develop into actual violence in the face of social crisis, as evidenced by the case of witch-hunting at the time of the Black Death (Briggs 1996).

During the Late Neolithic and Early Bronze Age transition, there is evidence showing increasing violence toward women. Although this may not necessarily have resulted from the threat of epidemics, an increasing number of weaponries, inappropriately

Fear, enmity, and violence are symptoms of social crises.

buried corpses, and destroyed buildings all indicate social disorder that may have been the source of gendered brutality. At the site of Taosi in Xiangfen (Shanxi; 2300–1900 BCE), one of the largest proto-urban sites of Late Neolithic China, excavators found a female individual with a cattle horn stuck into her pelvis (Zhongguo 2005), which has been interpreted as a punishing ritual directed at women (Figure 2). At roughly the same time, the site of Shimao in Shenmu (Shaanxi), another large-scale proto-urban site, 450 km. (280 miles) northwest of Taosi, yielded three pits near the eastern city gate filled with 64 skulls (Figure 3); most of them were of young females (Sun et al. 2017). They are thought to be the remains of a foundation ritual. Although it is not clear what the specific meanings of these acts of violence were, it is evident that they accompanied social discord; the hostility targeting the female gender resembles a sort of “poison cats” belief, whereby women were blamed for being “Others” in relation to men, who saw themselves as the mainstream of the collective.

Fear, enmity, and violence are the typical pathological symptoms of social crises, and the cure for them is openness, collaboration, and acceptance of diversity and flexibility. The research of social scientists has shown this, and we constantly experience this in our lived reality in the age of the unprecedented Covid-19 pandemic. Cross-culturally, as the discussion of social resilience proceeds, scholars are making efforts to define and delineate the diversity and flexibility of certain communities through their archaeological remains. At the same time, collaboration and competition are also current focal points in social archaeology. I embrace such lines of investigation in my dissertation. Just like the pandemic of today, the epidemics and the compounded social crises of the past serve both as challenges and as opportunities vis-à-vis the existing and emerging overarching social orders of their times. And beyond the study of epidemics, getting a clear understanding of how we should respond to environmental and social crisis is perhaps a more critical issue, both in the past and today.



Figure 3. A pit near the eastern city gate at Shiamo. Most of the skulls deposited here are of young females. (Photograph courtesy of Shao Jinguu.)

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The Plague of Athens

John K. Papadopoulos¹

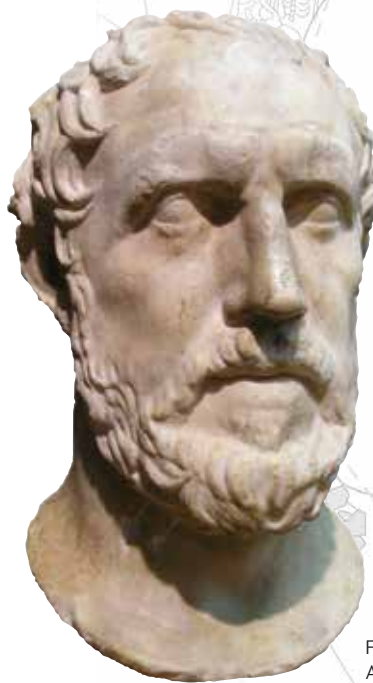


Figure 1. Portrait bust of the Athenian historian Thucydides (circa 460–400 BCE). Royal Ontario Museum, Toronto, inventory number 957.159. (Wikimedia Commons.)

What we know about the plague of Athens—*Λοιμὸς τῶν Ἀθηνῶν* in Greek—comes from the Athenian historian Thucydides (circa 460–400 BCE; Figure 1). The outbreak of the plague began in the second year of the Peloponnesian War, in 430 BCE, and as with the Spanish influenza pandemic (February 1918 to April 1920),² there were subsequent waves; the plague returned at least twice to Athens, in 429 BCE and again in the winter of 427–426 BCE. As our knowledge of the symptoms and course of the Athenian pandemic relies so heavily on the testimony of Thucydides, who himself contracted the disease and survived, it is important to begin with his text. The relevant passage, Book 2.47–55, is too long to quote in full, so I summarize and select critical portions.³

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2. Although the origin of the Spanish influenza remains unknown, that name was used from the first wave of the pandemic. In 1918 Spain was neutral and not involved in the First World War, and was thus free to report the course of the pandemic, which also affected the king of Spain, Alfonso XIII. It was this widespread reporting of the disease that gave the impression that Spain was hit hard.

3. All quoted translations are taken from the 1972 Penguin Classics edition of Rex Warner's 1954 translation of Thucydides's *History of the Peloponnesian War*.

Like many pandemics, the plague of Athens arrived from elsewhere: “The plague originated, so they say, in Ethiopia in upper Egypt, and spread from there into Egypt itself and Libya and much of the territory of the King of Persia” (2.48).⁴ It appeared suddenly in Athens, first at the port of Piraeus, and there is no evidence that the disease was as virulent elsewhere as it was in Athens. The primary reason the plague hit Athens so hard was that the leaders of Athens, faced with annual invasions by the Spartans and their allies, decided to evacuate the rural population to retreat within the city walls of Athens. This policy was the brainchild of the Athenian statesman and general Pericles. The idea was that the Athenians would rely on their maritime supremacy—their thalassocracy, or control of the seas—bringing in supplies of food via their port while at the same time harassing Spartan troop movements. The policy, however, resulted in overcrowding in an already heavily populated city, estimated to hold at least 100,000 people even before those living in the countryside came into Athens. The resulting overpopulation; shortages of resources, including adequate housing; and pressure on limited

4. “Libya,” in Greek, generically refers to Africa. Unlike some modern politicians, ancient authors did not blame the supposed place of origin for the disease.



Figure 2. Michiel Sweerts (1618–1664), *Plague in an Ancient City*, painted between 1652 and 1654. Los Angeles County Museum of Art, gift of Ahmanson Foundation, AC1997.10.1. (Image in the public domain.)

water sources created a perfect breeding ground for the disease.

As for the symptoms, Thucydides (2.49) writes, “People in perfect health suddenly began to have burning feelings in the head; their eyes became red and inflamed; inside their mouths there was bleeding from the throat and tongue, and the breath became unnatural and unpleasant. The next symptoms were sneezing and hoarseness of voice, and before long the pain settled on the chest and was accompanied by coughing. Next the stomach was affected with stomach-aches and with vomitings of every kind of bile that has been given a name by the medical profession, all this being accompanied by great pain and difficulty. In most cases there were attacks of ineffectual retching, producing violent spasms; this sometimes ended with this stage of the disease, but sometimes continued long afterwards. Externally the body was not very hot to the touch, nor was there any pallor; the skin was rather reddish and livid, breaking out into small pustules and ulcers. But inside there was a feeling of burning, so that people could not bear the touch even of the lightest linen clothing, but wanted to be completely naked, and indeed most of all would have

Thucydides lamented that human art or science were no help.

liked to plunge into cold water. Many of the sick who were uncared for actually did so, plunging into water-tanks [cisterns] in an effort to relieve a thirst which was unquenchable; for it was just the same with them whether they drank much or little. All the time they were afflicted with insomnia and the desperate feeling of not being able to keep still.” The symptoms in this account, thus far, are evocatively captured by Flemish painter Michiel Sweerts (1618–1664) in a work painted between 1652 and 1654, generally referred to as *Plague in an Ancient City* but thought to represent the plague of Athens (Figure 2). The painting is kept in the Los Angeles County Museum of Art.

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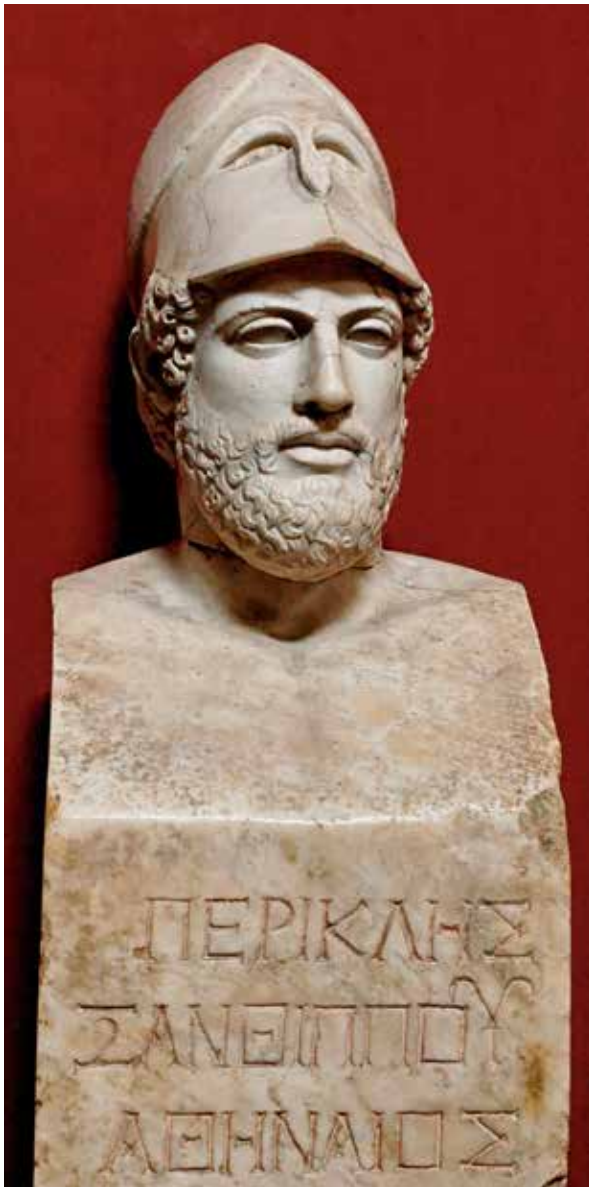


Figure 3. Portrait bust of the Athenian statesman and general Pericles (circa 495–429 BCE), with inscription “Pericles, son of Xanthippos, Athenian.” Museo Pio-Clementino, Vatican, Rome, inventory number 269. (Image in the public domain.)

These were not the only symptoms of the Athenian plague, as Thucydides continues (2.49–2.50): “In the period when the disease was at its height, the body, so far from wasting away, showed surprising powers of resistance to all the agony, so that there was still some strength left on the seventh or eighth day, which was the time when, in most cases, death

The Athenians lost not only the war but also their empire.

came from the internal fever. But if people survived this critical period, then the disease descended to the bowels, producing violent ulceration and uncontrollable diarrhoea, so that most of them died later as a result of the weakness caused by this. For the disease, first settling in the head, went on to affect every part of the body in turn, and even when people escaped its worst effects, it still left its traces on them by fastening upon the extremities of the body. It affected the genitals, the fingers, and the toes, and many of those who recovered lost the use of these members; some, too, went blind. There were some also who, when they first began to get better, suffered from a total loss of memory, not knowing who they were themselves and being unable to recognize their friends. Words indeed fail one when one tries to give a general picture of this disease; and as for the sufferings of individuals, they seemed almost beyond the capacity of human nature to endure.”

Doctors were unable to do anything, and as with most pandemics, those caring for the ill not only perished in large numbers; they were among the first to die. One of the strangest phenomena of the plague that Thucydides relates is that birds and animals that usually ate human flesh either did not come near the corpses or, if they did taste the flesh, died of it afterward. The pandemic affected both rich and poor; it led to bodies—dead or dying—piling up in the streets and a certain amount of lawlessness, for “the catastrophe was so overwhelming that men, not knowing what would happen next to them, became indifferent to every rule of religion or of law” (2.52).

Funerals were disorganized and curtailed; the dead were heaped on top of each other, left to rot, or thrown into mass graves. Many Athenians resorted to self-indulgences, resolving to spend their money quickly in the pursuit of pleasure. “As for the gods, it seemed to be the same thing whether one worshipped them or not, when one saw the good and the bad dying indiscriminately” (2.53). Thucydides lamented that no human art or science was of any help, and equally useless “were prayers made in the temples, consultation of oracles, and so forth” (2.47). Tragically, as with Covid-19, many people died alone, as no



Figure 4. General view of the excavations by the German Archaeological Institute at Athens in the Kerameikos. (Photograph by the author.)

one was willing to risk caring for them, and in many cases entire households perished from the disease.

Nevertheless, in his typically cold, almost clinical manner, Thucydides is, as far as I know, the first person in history to articulate the concept of immunity. In Book 2.51 he states, “Yet still the ones who felt most pity for the sick and the dying were those who had had the plague themselves and had recovered from it. They knew what it was like and at the same time felt themselves to be safe, for no one caught the disease twice, or, if he did, the second attack was never fatal.”

The pandemic brought the city to its knees, and one of its most prominent victims was Pericles himself (Figure 3), who succumbed to the plague in 429 BCE. It was not until 415 BCE that, according to Thucydides, Athens had recovered enough to mount a major offensive, the ill-fated Sicilian Expedition (Thucydides Books 6–7).⁵ By the end of the fifth century BCE, the Athenians had lost not only the war but also their empire, and one wonders what they could have achieved were it not for the pestilence. The historical and philological dimensions of the plague,

largely determined and defined by Thucydides, gave rise to all sorts of speculations as to the disease and what caused it, everything from bubonic plague to most recently Ebola or a related viral hemorrhagic fever; in all some 30 pathogens have been suggested.⁶ But what of the archaeological evidence?

The critical evidence appeared in the mid-1990s during excavations connected with construction of the Athens Metro in the area of the Athenian Kerameikos, or Potters’ Quarter, one of the main cemeteries of the Classical city of Athens (Figure 4). A rescue excavation at the corner of Iera Odos and Piraeus Streets revealed the southwest continuation of the Kerameikos cemetery. A total of 1,191 graves were uncovered, ranging in date from the seventh century BCE into the Roman era. The most spectacular find was a simple, roughly circular pit, some 6.5 m. (21 feet) in diameter, containing 89 bodies of men, women, and children in successive layers, tightly packed, and in disorder

5. Details prior to this expedition indicate that the plague may have been more fatal to adults than children—as with Covid-19—as a sufficient number of young men had reached military age in 415 BCE (Thucydides 6.26.2). See Hillard 2006–2007.

6. Papagrigorakis et al. (2006) lists 47 scholarly papers dealing with the pathogens for the plague of Athens.

Figure 5. Plan of the mass burial in the Athenian Kerameikos cemetery dating to 430–420 BCE and associated with the plague of Athens. (Adapted from E. Baziotopoulou-Valavani 2002:191, Figure 3; reinked by Tina Ross.)



(Figure 5). It was estimated by the excavator, Effie Baziotopoulou-Valavani, that the original number of those buried was more than 150. The few pots buried with the dead, including a white-ground *lekythos* and a small black-glazed closed vessel, all point to a date around 430–420 BCE. The large number of dead, the hasty manner of burial, and the date of finds all point to circumstances of the plague of Athens as described by Thucydides.

Among those buried in the pit was the skeleton of an 11-year old girl, dubbed Myrtis, whose cranium was reconstructed (Figure 6). In 2005 a DNA study of Myrtis's dental pulp, led by Manolis Papagrigorakis of the Dental School at the University of Athens, found DNA sequences similar to those of *Salmonella enterica*, the organism that causes typhoid

Let's hope that this time history does not repeat itself.

fever (Papagrigorakis et al. 2006). A second team of researchers, including Beth Shapiro of UC Santa Cruz, disputed the results, noting that the technique used by Papagrigorakis et al. was prone to “contamination-induced false-positive results,” a statement that is remarkably reminiscent of false positives in the testing of Covid-19 (Shapiro et al. 2006). Moreover, it is clear that symptoms described by Thucydides and those of typhus or typhoid fever are at variance in certain details. Consequently, we do not know the cause of the plague of Athens, and only future analyses might reveal the pathogen at play. But this is the beauty of

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archaeology, as new techniques and future analyses might uncover all sorts of alternative narratives.

As an archaeologist and a classicist, I want to end where I started, with Thucydides, and more specifically with a passage in Book 1.22, in which the historian writes, “And it may well be that my history will seem less easy to read because of the absence in it of a romantic element. It will be enough for me, however, if these words of mine are judged useful by those who want to understand clearly the events which happened in the past and which (human nature being what it is) will at some time or other and in much the same ways, *be repeated in the future* [emphasis mine]. My work is not a piece of writing designed to meet the taste of an immediate public, but was done to last forever.”

This may seem a dour note to end this overview, but pandemics are not upbeat phenomena. The Spanish influenza in the early twentieth century infected some 500 million people, and the death toll has been estimated at between 17 and 50 million people.⁷ We do not know the death toll of the Athenian plague, but it has been estimated that it killed one-quarter of the population of the city. By early September 2020, Covid-19 had infected 25.8 million people worldwide and had caused 858,000 deaths, 188,000 in the United States alone. The primary lesson from the archaeological evidence of the plague of Athens is that there is a whole lot we do not know or understand about the disease and that we need better science and more analyses to determine its nature. The main takeaway from Thucydides is the frighteningly similar accounts of a pandemic 2,500 years ago and the one we are experiencing today (Papadopoulos 2018). As noted above, the pandemic brought Athens to its knees; Covid-19 has already brought the U.S. economy to its knees, as it has the economies of many other countries around the world, including Greece, my present location, where Myrtis has been enlisted in the campaign against coronavirus, with a video advising viewers to follow medical instructions.⁸ And as a state—a political entity—Athens never really recovered. Let us hope that this time around, history does not repeat itself.

7. “Spanish Flu,” Wikipedia, https://en.wikipedia.org/wiki/Spanish_flu (accessed September 1, 2020).

8. Nikos Vatopoulos, “The Inspiring Journey of Ancient Athenian Plague Victim Myrtis, Ekathimerini, June 11, 2020, <https://www.ekathimerini.com/253536/article/ekathimerini/life/the-inspiring-journey-of-ancient-athenian-plague-victim-myrtis>. (accessed September 1, 2020).



Figure 6. The face of the 11-year-old girl dubbed Myrtis, who died in the plague of Athens and was buried in the mass grave in the Kerameikos cemetery (see Figure 5), as reconstructed by Manolis Papagrigorakis and his colleagues. (Photograph courtesy of Manolis Papagrigorakis.)

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Viral Legacies

Georgi Kyorlenski¹

At the time of writing (October 2020), the Covid-19 pandemic has claimed the lives of more than one million people around the world. The global scope of the epidemic, reflected in the term *pandemic*, is perhaps its most striking feature, exposing it as a shared experience. We all worry about loved ones we have not seen in months, we are all making smaller or bigger daily sacrifices, and we all miss human interaction. Remote happy hours only go so far. But on the global, national, and even regional level, we are all having dramatically different experiences. There is a marked difference between the prolonged disaster experienced in Brazil and the United States, the ups and downs of wavelike devastation in Europe, and the relative success stories of South Korea and New Zealand, which raise other worrisome questions of privacy and government surveillance. Some are asked to risk their lives on the front lines, while the biggest concern of others is how to fix their hair. They refuse to accept that a global event has disrupted the lives of all of us.

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The transatlantic encounter was a pandemic rather than a conquest.

The history of globalization goes hand in hand with the history of epidemics. Although long-distance interactions (and the diseases associated with them) between the peoples of the Afro-Eurasian landmasses have been a constant for millennia, the arrival of European ships on American shores in the sixteenth century marked the beginning of globalization. The narrative of the transatlantic interaction is often framed in the most sensational military terms: a handful of intrepid Spanish adventurers toppled the great empires of the Inca and the Mexica. Alternatively, a gang of religious fundamentalists destroyed Indigenous ways of life with one swift swing of their swords. Regardless of the inflection, the singularity, finality, and military character of the event remain intact. Naturally, the story is much more complicated and is also a story of pandemics. I am not sure why the white horse of the Apocalypse pales in front of its red brother. Perhaps it is the lack of consciousness of the culprit or the chaotic nature of its infliction that



Figure 1. Map of Peru and Ecuador, showing the places mentioned in the text.

turns diseases into bad narrative villains. Wars, on the other hand, are easily framed as epic battles between good and evil. Even when scholars such as Alfred Crosby (2003) or Jared Diamond (1999) acknowledge the role of disease in the conquest of the New World, it is always veiled as a tool of war.

It is this military rhetoric that dominates the discourse of the Ibero–Andean interaction of the sixteenth century. The series of smallpox, typhus, measles, diphtheria, and plague epidemics that ravaged the Andes are usually portrayed as Spanish allies or even weapons. Not only do we imagine these events as a supporting cast for the blockbuster star that is war and direct interpersonal violence, but we also see them as unilaterally, if unwittingly, deployed as means to an end. History is, of course, messier than that. The first time I read John Hemming’s (1970) *Conquest of the Incas* I was more surprised by failure of the Inca

opposition to get rid of those pesky Spaniards than by the number of opportunities they had, even though I was familiar with the end. So how did we get to that neat story of Pizarro, his merry men, and their guns, germs, and steel creating history at Cajamarca?

EPIDEMIC DISEASE AND THE FALL OF THE INCA EMPIRE

Facing fewer obstructions than their human carriers, first came the germs. European diseases made their way from Panama, where it appears that smallpox was present as early as 1514, to the Andes by 1524. According to Noble David Cook (1981), Henry



Figure 2. A member of the Peruvian army and his dog enforce a curfew enacted because of the Covid-19 pandemic in Lima, March 2020. (Image courtesy of the Peruvian Ministry of Defense, used under the Creative Commons Attribution 2.0 Generic License.)

Dobyns (1963), and Linda Newson (1993), no fewer than three distinct epidemics of hemorrhagic smallpox, smallpox, and measles may have halved the Andean population before 1532. Among the numerous victims was the last legitimate Inca ruler, Huayna Capac, who spent the final years of his life on a military campaign in the northern province of Quito in modern Ecuador. There, an epidemic spread through his troops, finally felling him as well. Garcilaso de la Vega, a Spanish chronicler and son of Huayna Capac's cousin Isabel Chimpu Ocllo, describes the cause of death as a trembling chill, called in Quechua *chuchu*, and a fever known as *rupu*. Other writers of the

The white horse of the Apocalypse pales in front of its red brother.

sixteenth and seventeenth centuries, such as Pedro Sarmiento de Gamboa (2007 [1572]) and Bernabé Cobo (1991 [1653]), claim the disease was smallpox or measles. Juan de Betanzos (1996 [1576]) describes a leprosy-like skin affliction. Whatever virus it was, it took Huayna Capac quickly. In another week or so, it also took his appointed heir, Ninan Cuyochi. Inca rules of royal succession are still relatively unknown, but they did not recognize primogeniture. Instead, the living ruler nominated his successor, who was then vetted by the nobility before being confirmed. The death of both the nominee and Huayna Capac ignited a civil war between Huascar and Atahualpa that lasted until the arrival of Pizarro some five years later.

INCA CIVIL WAR

Huascar is recognized by most Spanish chroniclers as the legitimate heir, primarily because his mother, Raua Ocllo, was Huayna Capac's primary wife. While his father was campaigning in the north, he remained in the capital, Cuzco, to prepare for his future reign, at least in his mind. On the other hand was his half brother Atahualpa, who at first seems an unlikely candidate but who had a strong rapport with the semi-professional Inca army, as he was one of his father's most skillful generals. In his view, Huascar was just a placeholder while Huayna Capac was really grooming Atahualpa by taking him on the northern campaign. This aligned with Inca understandings of masculinity, which was an important prerequisite for rulership. While women were born as such, boys were required to perform masculine acts to become men. Having completed his apprenticeship, Atahualpa was ready to take his well-earned reward. Although few details are known about this period, it seems that Huascar was crowned in Cuzco, but his entire reign was plagued by the civil war, in which he lost battle after battle to his much more strategically adept half brother. Atahualpa's army slowly marched from the north, defeating Huascar's makeshift forces of local conscripts along their path to Cuzco, culminating with the Battle of Quipaipan. Atahualpa's hurried return to Cajamarca may have been, in part, inspired by rumors of Pizarro's landing in Tumbes on the north coast of Peru.



Figure 3. The author at Kañaraqay, the royal estate built by Huascar during the Inca civil war in Lucre, Peru. (Photograph by Alba Menéndez Pereda.)

The Inca civil war was a bloody and devastating affair. The chroniclers of the sixteenth and seventeenth centuries provide various estimates of the numbers of troops involved in the conflict. Betanzos (1996 [1576]) reports Huascar raising armies of 15,000 warriors on several occasions, with all or almost all of them dying in battle soon after, while Atahualpa's semiprofessional army numbered 60,000. Augustin de Zarate (1968 [1553]) and Pedro Cieza de Leon (1946 [1553]) report half of Betanzos's numbers but claim that at least 35,000 died at Quipaipan. Sarmiento (2007 [1572]) is even more modest, reporting about 10,000 combatants for Atahualpa and about double that for Huascar. Even if we believe Betanzos (1996 [1576]) that more than 100,000 soldiers gave their lives in the conflict, this number still pales compared to the loss of life in the three epidemics that swept the Andes during the civil war. Accurate numbers do not come easily, and most writers preferred a more colorful way of describing Indigenous death, mostly speaking of people dying in heaps or being killed

like bedbugs. Cieza de Leon (1946 [1553]) provides the only figure, claiming that in the 1520s, epidemics killed 200,000 people. Martin de Murua (2008 [1616]) simply gave up and spoke of infinite thousands. And all of that before any guns or steel made an appearance.

THE COLUMBIAN EXCHANGE AND ANDEAN POPULATION DECLINE

As much as the death of Huayna Capac set these processes in motion, diseases are not picky about this type of thing, and they do not recognize the theatricality of great men histories. The first century after the Cajamarca encounter in 1532 saw an even more dramatic population decline in the Andes. Noble

David Cook (1981) estimates that in 1520, the population of present-day Peruvian territories was around 9 million. A century later, the number was 600,000. Linda Newson (1993) estimates population declines in Ecuador of 80 percent in the sierra and 95 percent on the coast. Even if we assume that the Amazonian populations were not affected at all, that still results in a decline from 1.6 million in 1533 to 400,000 in 1635. Although other factors, such as loss of political and social structures, famine, and violence, contributed to the decimation of Andean populations, disease was certainly the prime factor. Unlike the civil war, the sixteenth-century smallpox and measles epidemics wiped out vast portions of the population. Cook (1981) and Henry Dobyns (1963) document more than 20 epidemic events between 1524 and 1635 in Peru. Newson reports on 18 such outbreaks during the same period in Ecuador. Although the actual numbers of cases and deaths were never recorded in that period, mortality rates of each epidemic are relatively reliable. Based on those, Cook (1981) constructed a mortality model that estimates that between 1524 and 1619, the cumulative mortality rate was between 80 and 92 percent.

On a global scale, the fate of the Andes in the sixteenth century mirrored that of the Caribbean islands and Mesoamerica. While total numbers may vary dramatically, depending on the estimating model, the introduction of European diseases to the Americas was certainly one of the most devastating events in human history, akin to the Black Death in Europe in 1346–1353, which killed about 50 million people, and the Spanish Flu of 1918–1919, which resulted in at least 25 million deaths. These are numbers comparable to the largest and deadliest human conflicts, the two world wars in the early twentieth century. The psychological effects of both the death toll and the

Globalization goes hand in hand with epidemics.

swiftness of diseases such as smallpox, which physically disfigures a healthy person within days, are also not dissimilar to the horrors of warfare. So why do we still think of the transatlantic encounter largely as a conquest rather than a pandemic?

COMBATTING THE INVISIBLE ENEMY

The militaristic rhetoric has a lasting legacy that remains important in the current Covid-19 crisis. The first case of the novel coronavirus in Peru landed in Lima via a 25-year-old Peruvian man who had returned from his travels in Czechia, France, and, yes, Spain. Viruses might not care much for political borders, but we humans cannot fail to register the grotesque, poetic serendipity of the Spanish origin of yet another deadly disease that shook the Andes. Currently, Peru has the seventh highest number of Covid-19 deaths in the world, with more than 32,000, and is second in terms of fatality, with a fatality rate of 1.0 in 1,000, behind only San Marino (with 1.2 in 1,000). And this despite an objectively swift and seemingly decisive government reaction. Ten days after that first case was announced, President Martin Vizcarra declared a nationwide quarantine that bordered on martial law. All interprovincial travel was banned, schools were closed, and borders were immediately closed, leaving myriad tourists stranded. All of this was enforced by armed military personnel patrolling the streets. By April 2020, there were various curfews, including all-day ones for Thursday and Friday of Holy Week, normally a very busy time in Peruvian cities. The severity and the swiftness of the measures taken echo the deep colonial trauma so tightly related to viral illness.

Despite several disturbing incidents, support for the president and the current measures remains strong. On August 22, the police broke up an illegal gathering in the Los Olivos district of Lima, which resulted in a stampede killing at least thirteen people and injuring six others. In a statement, Vizcarra encouraged further judicial action against those who broke the law. It appears that the fear of the virus is much greater than any fear of state surveillance or army abuse, even when there are precedents such as the 1990s raids against the Maoist terrorist organization the Shining Path. At least among my Peruvian

friends, support for Vizcarra and the military remains strong, and soldiers are commonly depicted in memes on social media in similar fashion to doctors and other essential workers. The sentiment is that even though the measures do not seem to be particularly effective, Peruvians have a chance to combat the virus only if they remain united and vigilant.

At first glance, this seems the most logical response in the wake of this dangerous disease. However, in the Peruvian case, we need to consider the historical precedent from which this national unity stems. Unlike the Inca state, which was a vast multi-ethnic and multicultural empire, the Peruvian republic requires an imagined national unity in the European tradition of the nineteenth century. This round holes versus square pegs problem occurred in many postcolonial nations, not to mention some European states. Peruvian national unity is thus predicated on both the conquest and on what Alberto Galindo calls “the Andean utopia,” an imagined precontact Pax Incaica that informs the later republican collective identity. If “their” Inca army was once defeated by the Spaniards via a deadly epidemic, then “their” Peruvian army must venture a response to the current disease with a Spanish culprit.

The current Covid-19 crisis might not be as severe as the smallpox and measles epidemics in the Andes in the sixteenth century. Mortality rates are hundreds of times lower; modern medicine is reasonably capable of dealing with the disease, and for most of us the experience is more one of boredom and isolation than one of death and devastation. Yet the global death toll is more than one million now. Diseases might not make for neat sensational stories, and Pizarro and Atahualpa meeting face to face in Cajamarca might still be a sexier story than smallpox and measles, or even civil war. If you ever need a reminder of the power of historical narrative, just look at the image of soldiers with guns fighting the virus as much as doctors and nurses are now in Peru. Although the Covid-19 pandemic is unlikely to mark the end of globalization, despite what us grounded archaeologists might feel right now, it is perhaps important to think of its legacy. What will we be doing next time a deadly virus strikes? Will we be baking sourdough and adopting pets hastily or will we be waving guns and discrediting science?

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Sixteenth-Century Epidemics and Colonial Legacies in the Americas

Anthony Meyer¹

Aoc vel nenemja, ça onoca in jmonoian in incuchian, aoc vel molinjaia, aoc vel mocuechinjaia, aoc vel mocuecuetzoaia, aoc vel monacaciteca, aoc vel mixelapachtecaia, aoc vel maquetziticaia. Auh in jquac mocuechjaia, cenca tzatzia.

No longer could they walk; they only lay in their abodes, in their beds. No longer could they wiggle, no longer could they move, no longer could they stir, no longer could they stretch out on their side, no longer could they stretch out face down, no longer could they stretch out on their backs. And when they stirred, much did they cry out (de Sahagún 2012, Book XII, Chapter 29, p. 83. English translation modified by the author).

One of the earliest Franciscan friars to arrive in the Valley of Mexico, Bernardino de Sahagún saw an immediate need to understand its Indigenous communities. In the 1540s, de Sahagún began to work with Nahuatl elders, scholars, and healers to record aspects of their culture, from religion and philosophy to artistic and medicinal practices. Filled with Nahuatl images and multilingual text, these drafts were later compiled to help friars identify non-Christian behaviors throughout New Spain and aid them in the forced conversion of Indigenous communities.² Three decades later, in August 1576, as de Sahagún finished arranging and adding prologues to his commissioned volumes, a third wave of smallpox struck the region. His coauthors, a group of multilingual Nahuatl men, provide us, in the excerpt above, a glimpse of the first wave of the disease in 1520 and its excruciating nature. Written in the men's native tongue, the Nahuatl text glosses the convalescents' anguish; the verb *tzatzia* indicates a deep vocal cry, while the alliterative use of the *tz-* evokes its repetition. Moreover,

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2. Ironically, in his prologues, de Sahagún (2012, Introduction and Indices, p. 45) likens this process of "curing" idolatry to a physician understanding the symptoms of a disease. The concurrent epidemic likely inspired this phrasing.

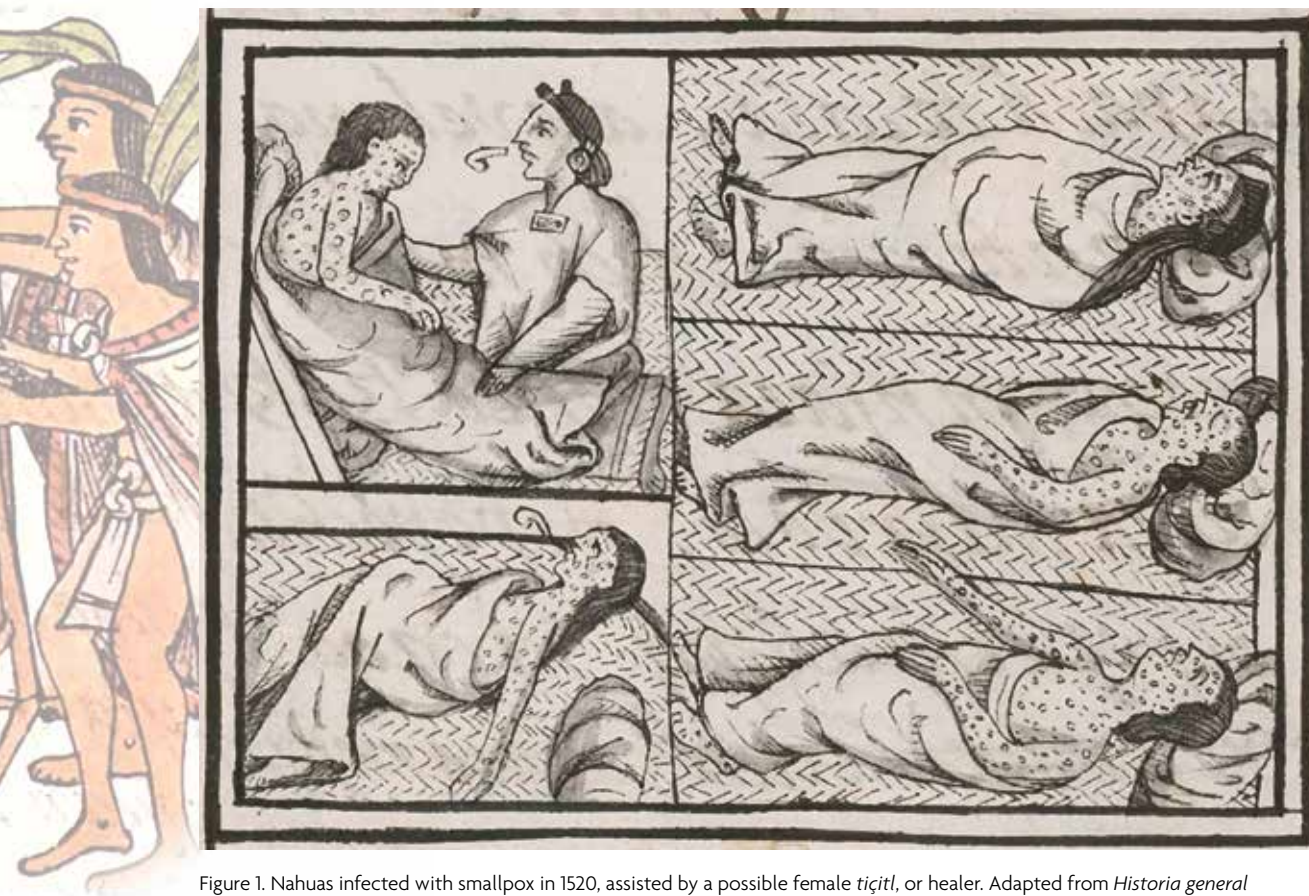


Figure 1. Nahuas infected with smallpox in 1520, assisted by a possible female *tiçitl*, or healer. Adapted from *Historia general de las cosas de Nueva España*, Book XII, Folio 53v. (Image in public domain. Wikimedia Commons.)

the Nahua authors juxtapose a scene of intense immobility with the screams, so that we, as readers, feel the victims' melancholy and pain as the words unfold.³ Reading these words today, their power resonates profoundly as communities across the world deal with the many upheavals caused by a pandemic. Quarantined at home and unable to venture outside, we are poised in our own immobile situations to reflect on the underexplored impacts of disease, those who have suffered at its hands, and the harmful effects that pandemics continue to have on Indigenous communities in the Americas today.

In this essay, I explore how an understanding of the epidemics that ravaged Nahua communities in the sixteenth century can help us reflect on the ongoing present. Living in a world that had—within a single generation—witnessed invasion, violence, and enslavement, the Nahua were unprepared for the invisible enemies that Europeans brought with them across the

Once disease entered the Americas, it spread like wildfire.

Atlantic Ocean. Having built up immunity to these diseases over centuries, Europeans were at a distinct advantage, while the Indigenous groups in the Americas found themselves particularly susceptible compared to their colonizers. In the first part of this essay, I trace current studies on sixteenth-century epidemics and their effects on Nahua communities. As diseases spread through these communities, whose physical and intellectual labor was exploited by Europeans, projects such as de Sahagún's *Historia general* slowed for several years. This link between epidemics and hindrance resonates for scholars today, as libraries, archives, and museums—the bedrock institutions of research—remain closed, forcing researchers and writers down new paths of accessing materials.

3. Although it is unclear which Nahua scholars worked on this particular text, we do know many of the Nahua men involved in writing and producing de Sahagún's volumes: Antonio Valeriano of Azcapotzalco; Martín Jacobita, Diego de Grado, and Bonifacio Maximiliano of Tlatelolco; Pedro de San Buenaventura and Alonso Vegerano of Cuauhtitlan; and Mateo Severino of Xochimilco (Terraciano 2019:6, 13).



Figure 2. Nahua religious leaders performing during the One Flower ceremony. Adapted from *Historia general de las cosas de Nueva España*, Book IV, Folio 19v. (Image in public domain. Wikimedia Commons.)

In the second part of this essay, I demonstrate how de Sahagún's volumes and other colonial projects that relied on Indigenous labor, such as building, were greatly affected by sixteenth-century epidemics, inviting us to take a closer look at how we study material production in the past. I close by reflecting on the links between Indigenous communities and epidemics today, as government inaction continues to affect Indigenous communities in Mexico and the United States disproportionately. Turning to sixteenth-century New Spain and its epidemics not only allows us to bring awareness to the various communities affected by widespread disease but also underscores the necessity of preparation and the traumatic effects that modern nation-states continue to have on the Indigenous communities whose lands they dispossessed.

THE SPREAD OF INVASION

More than 500 years ago, the invasion of the Americas brought together groups with diverse biological histories. Native Americans, West and Central Africans, and Europeans all hailed from different environments, and their experiences with disease and resulting immunities created discrepancies between them. Having interacted for centuries prior, Europeans and Africans had grown accustomed to bacteria and viruses that flourished on each continent, but the communi-

Histories of epidemics allow us to reflect.

ties in the Americas had never before dealt with these specific microbes. Diseases such as smallpox, measles, salmonella, and influenza ravaged Indigenous groups, and scholars are still trying to unpack the ways in which diseases aided Europeans in their conquests of the Americas, as well as how they hindered Native resistance to colonization. We know that disease took hold almost immediately, with outbreaks mirroring the paths that conquistadors took from the Caribbean to the Mexica (Aztec) capital of Tenochtitlan. One early instance comes from the Yucatán Peninsula in 1520, with cases of smallpox reported quickly after Pánfilo de Narváez's pursuit of Cortés in Cozumel (Hays 2005:82–83). Though it is tempting to associate these two events, the Maya in Cozumel also traded with other groups both in and around the Caribbean, so it is equally likely that diseases like smallpox came by way of canoe and market exchange. What this early example illustrates, however, is that the avenues for disease to travel in the Americas were many, either directly by Europeans through conquest or indirectly by way of other Native communities that already had some level of physical contact with colonizers.

Once disease entered the Americas, it spread like wildfire. Not only did it cover ground quickly, but epidemics in the early colonial period were cyclical, and outbreaks flared with each surge of newcomers. During Cortés's campaign in the early 1520s, a major epidemic in the Mexica Empire plagued its armies, making disease an important factor to consider for understanding how a small force of Spaniards was able to defeat the mighty Mexica. Once the capital, Tenochtitlan, had been mostly destroyed and Europeans began to raise colonial buildings, epidemics continued to be a recurrent element of life in the Spanish colonies. Based on ethnohistorical sources, we know that epidemics struck central New Spain in 1520 (smallpox/salmonella), in 1545 (salmonella), and again in 1576 (possibly smallpox), with other regions experiencing their own outbreaks; Tlaxcala to the northeast experienced a terrible bout in the 1530s (possibly smallpox).⁴ This ebb and flow was similar to the situation today, where an outbreak occurs in one region and affects another through contact, only

4. Recent studies of human remains from an early colonial cemetery at Teposcolula-Yucundaa, Oaxaca, indicate that salmonella was likely responsible for the 1545 epidemic (Vágene et al. 2018).

SIXTEENTH-CENTURY EPIDEMICS



Figure 3. Exconvento de San Franciscano, Tlaxcala, Puebla, Mexico. (Photograph by the author.)

for the initial community—which has by then mostly recovered—to reexperience the illness as it rebounds. As the sixteenth century teaches us, epidemics come in waves, and even with herd immunity, a community can experience the damaging effects of an illness again. In a transatlantic world characterized by increasing exchange and decreasing distance, virulent diseases like smallpox and salmonella had an ideal environment to grow, disseminate, and thrive.

Although we know of these epidemics from colonial sources, the exact types or strains of these viruses have been debated. Traditionally, colonial authors write of smallpox as the primary culprit, but it is more likely that a mixture of diseases contributed to widespread illness, so greatly that some studies have argued that at least 90 percent of Native Americans died.⁵ Colonial documents from Tlaxcala present similar figures, with a decline of about 80 to

90 percent by the 1630s. Estimates such as these put into perspective the gravity of epidemics for sixteenth-century Indigenous communities. Other scholars have considered the role of syphilis in disease exchange between invading European and Indigenous communities. Syphilis has a deep history in the Americas and, as revealed in travel logs, flared up among men on Columbus's voyages (Tampa et al. 2014). Though its history and origins are complicated, syphilis underscores how disease can bring attention to patterns of colonial abuse, including sexual violence and exploitation.

Among the Nahua, many of these new diseases were inexplicable, though Nahuatl texts such as the one above this essay show clear recognition of their European origins. Although these diseases were foreign, the Nahua did not borrow a Spanish term to describe them, instead applying the Nahuatl term *cocoliztli* (“sickness” or “pestilence”) broadly (Dufendach 2017). To describe these epidemics, Nahua

5. A study conducted at University College London argued that this population decline cooled the climate worldwide as CO2 levels declined (Koch et al. 2019).

SIXTEENTH-CENTURY EPIDEMICS

writers often categorized them as *hueyi* (“big” or “grand”) to underscore the impacts these illnesses had on their communities. Not only do we have a sense of the impacts through texts, but Nahuatl artists also captured the devastation in images that echo the harrowing immobility and screams that accompanied these *cocoliztli* (Figure 1). Even now, the global effects of a new disease that carries unprecedented characteristics will continue to dominate the ways we describe and visualize it for future generations.

LABOR, LOSS, AND RESILIENCE

While communities grappled with and suffered from disease, colonial institutions saw a dramatic decrease in material production. As discussed earlier, New Spain relied heavily on Indigenous communities as the backbone of colonial labor. Not to mention, the materials used for colonial buildings and objects were also extracted from many of the same tributary networks that the Mexica Empire oversaw prior to Iberian invasion. Once these networks became occupied with and devastated by disease, material resources became harder to acquire and the hands that would have transformed these materials became unavailable (Magaloni Kerpel 2019:153–54). This relationship makes sense when we look at de Sahagún’s other pages. If we return to the image of the *cocoliztli* (Figure 1), comparing it to other illustrations that appear in earlier books of the *Historia general*, there is a distinct lack of pigment (Figure 2). For parts of Books XI and XII, both of which were redrafted during the 1576 epidemic, images are rendered in black and white, some of them unfinished.⁶ At the time, de Sahagún was under great pressure to finish his volumes before the issue of King Philip II’s 1577 decree, which discouraged collecting and reproducing Native knowledge for fear of a return to idolatrous practices. In the fast final touches of the Nahuatl artists and their use of black inks, we sense the expediency and lack of resources—both materials and labor—that accompanied raging epidemics. Many pigments used in prior images were part of Indigenous exchange systems that brought resources from across the valley and beyond, so when

6. Book VI of de Sahagún’s text, on moral philosophy and rhetoric, is also illustrated with black-and-white images. However, as de Sahagún notes in the prologue, this color scheme mirrors contemporary printed books to elevate the material alongside works of European philosophy.

the procurers of these traded materials lay sick in their beds, supplies were consequently limited.

Not only did material exchange and text production slow while epidemics seized New Spain; building projects also took a considerable hit. For example, during the Tlaxcala epidemic of the mid-1540s, construction on its central mission complex experienced significant delays (Carballo 2020:258). Construction of the Convento Franciscano de la Asunción began in the early 1530s, but due to the local epidemic, it was not completed until 1564 (Figure 3). Early mission complexes in New Spain were made of perishable local materials such as lime, timber, and volcanic rock, meaning they could be raised quickly, and the Indigenous communities that engineered these buildings helped speed up the process. This first version of the Tlaxcala complex thus took far longer than anticipated. Friars who ran these complexes likely experienced anxiety over the decline in conversions, with their buildings standing unfinished and the communities they sought to evangelize unable to gather inside. Between the Tlaxcala complex and de Sahagún’s manuscript, we see how epidemics affected modes of making, from manuscript production to spaces of conversion. A similar pattern exists today, as new stores and building projects along Wilshire Boulevard in Los Angeles push back openings, and scholarly work at universities slows and reroutes into new modes of connecting across virtual space.

Even though Indigenous communities were disproportionately affected by epidemics in New Spain, this does not mean that friars were exempt from disease or that these communities did not recuperate. De Sahagún himself notes how he fell ill during the production of his manuscript but fully recovered, and many friars who arrived in the sixteenth century met their demise at the hands of disease, maladaptation to new tropical environments, or Native insurgency.⁷ What these historical instances show is that disease can affect anyone, but it is institutions like colonialism that influence how a community is afflicted. Looking at the sixteenth century, overlapping similarities with the present force us to think about colonial institutions and how epidemics isolate and accentuate their lasting impacts, which continue centuries after official

7. De Sahagún notes in his prologue to Book XI that he buried more than 10,000 individuals near Tlatelolco to the north of Mexico City, eventually catching the disease himself (de Sahagún 2012, Introduction and Indices, pp. 94–95; McCaa 1995:426–27).

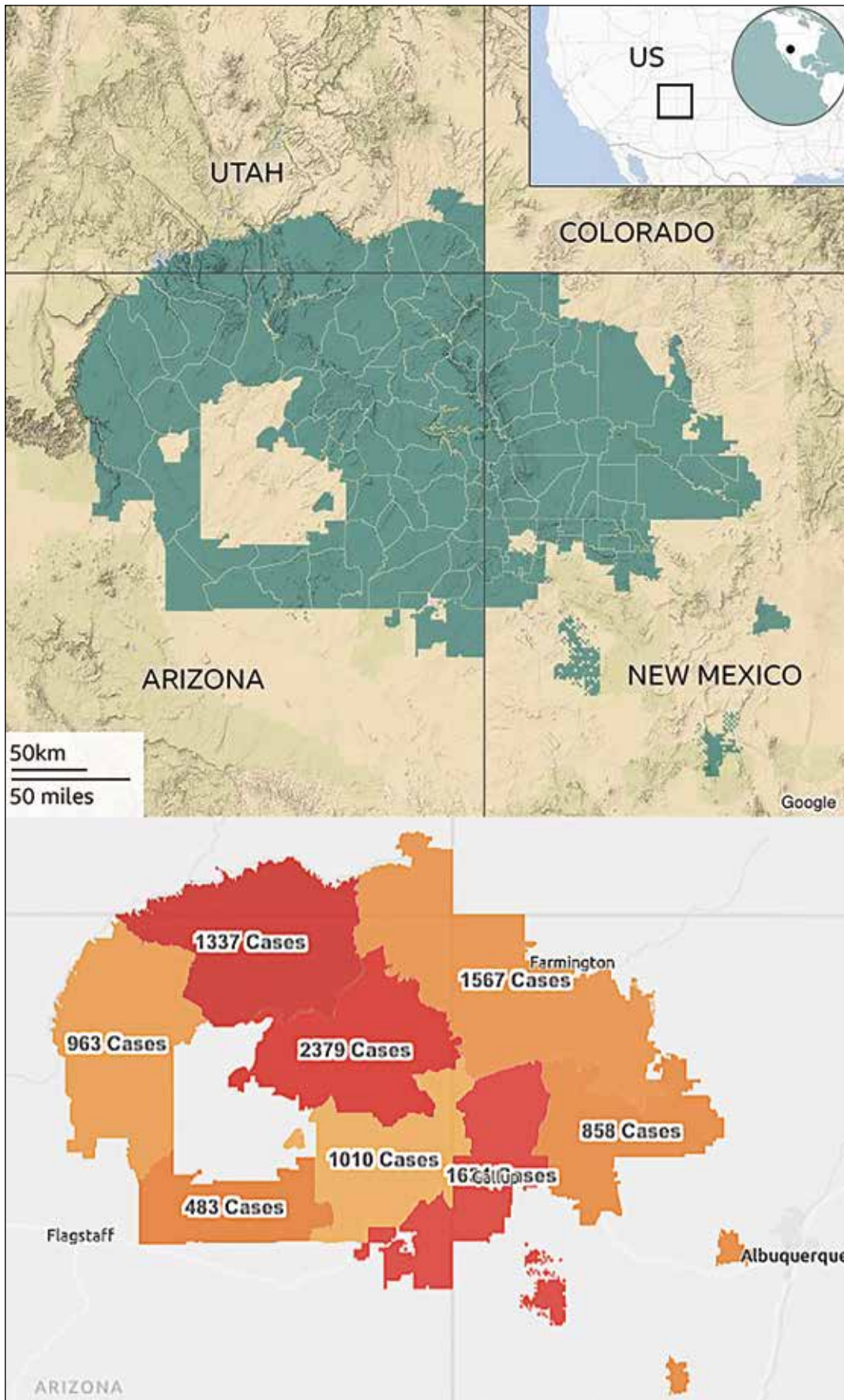


Figure 4. Map of the Navajo Nation and Covid-19 cases as of September 25, 2020. (Top image adapted from the British Broadcasting Corporation; bottom image adapted from Navajo Department of Health.)

colonial rule has ended. It is also worth noting that colonial authorities became aware of these discrepancies, using illness to their advantage. As imperial nations invaded North America, for instance, there were many cases of soldiers and settlers weaponizing blankets used by smallpox patients or exchanging these blankets with groups deliberately.⁸ Similar tactics likely occurred in New Spain, especially as conquistadors continued to campaign throughout present-day Mexico and south into Guatemala and Honduras while de Sahagún and his coauthors toiled away on their *Historia*.

Yet histories of epidemics allow us to reflect not only on loss but also on community strength and, in particular, the resilience of Indigenous peoples. In a paragraph that follows the introduction to this essay, the Nahua writers state that after 60 days of relentless plague in 1520, “the Mexica, the brave warriors were able to recover from the pestilence” (de Sahagún 2012:, Book XII, Chapter 29, p. 83). In Mexica society, being a warrior, especially one who had conquered in battle, was a most admirable status. Here we see the Nahua scholars characterize those who recovered from disease with the same title, indicating both the gripping severity of the illness and the valiant bravery of these survivors.

A MORE REFLECTIVE PRESENT

Having explored some of the historical patterns between epidemics and Indigenous communities in the Americas, we can better assess the legacy of those histories. In Mexico, epidemics continue to have a strong impact on Indigenous communities, as spotlighted in recent numbers of Covid-19 infection. Censuses note that some 11.8 million Indigenous people lived below the poverty level in Mexico in 2015, almost the entirety of Indigenous groups that make up the national population (INEGI 2015). Already facing extreme living conditions due to a continued lack of support from the Mexican government, Indigenous peoples thus have lower access to medical resources and potable running water, and are physically distanced from major city areas with hospitals,

8. Written records indicate that French Jesuit missionaries infected Huron communities with smallpox blankets in 1633, while a British commander wrote of his order to inoculate Native Americans by way of blankets in 1763 (Fenn 2001; Nies 1996:135).

We should recognize these histories and voice them

conditions that have been a reality for Indigenous communities since the colonial period. As seen in our historical tour of the Nahua world, Indigenous labor was extracted for little to no compensation in New Spain, and communities were even relocated to rural, less habitable areas through the *congregación* system.⁹ Moreover, when colonial and later Mexican governments informed Indigenous groups of policies and crises, they did so only for sizable language groups such as speakers of Nahuatl, Yucatec Maya, Zapotec, and Mixtec. As a result, most of the 68 language groups and their 364 variants in Mexico continue to have inadequate access to updated information on pandemic-related issues. These present-day language barriers echo those evidenced in sixteenth-century public readings of the *requerimiento*, a document written in Spanish that told linguistically diverse Native communities that they were now subjects of the Spanish crown. It comes as no surprise, then, that these communities are uniquely disadvantaged to viruses, which wreak havoc in the continued absence of suitable resources and distilled information.

A similar pattern emerges if we look at settler-colonial nations like the United States and the disadvantages Diné (Navajo) communities face. The Diné, like many Indigenous communities in the United States, reside on reservations that were sanctioned by the U.S. government during its expansion in order to silo and contain these groups. Separating these groups from major urban centers and thereby limiting their access to medical resources and amenities, this settler-colonial legacy of dislocation and disenfranchisement underscores the current impacts we see in places like the Navajo Nation (Figure 4). Once a virus enters these communities, it spreads swiftly because of close proximity, a pattern the Navajo Nation experienced during the 1918 influenza pandemic, which likewise saw a slow response from the government.¹⁰ Yet, as

9. Encomienda and repartimiento systems distributed Indigenous labor to conquistador landholders and mission systems, respectively. The congregación system uprooted Indigenous communities and “congregated” them near mission complexes to facilitate control over these sources of labor.

10. In maps that represent Covid-19 infections, hot spots across Arizona and New Mexico map onto the Navajo Nation.

Benjamin Brady and Howard Bahr (2014) noted, the Diné people demonstrated bravery and compassion in their handling of the 1918 pandemic in the absence of government aid. Even today, the Navajo Nation has initiated its own frontline defense as its independently run department of health continues to work with outside groups to provide fast relief to those afflicted, a model that health officials have praised.¹¹ Because of the slow response of the current administration to the unfolding pandemic and its unequal distribution of resources to these communities, as well as its refusal to acknowledge and deal with its own settler-colonial legacies, Indigenous groups such as the Diné continue to experience disadvantages in the face of a disease that the United Nations says “does not discriminate.”¹²

Though officials speak of viral disease in these neutral terms, epidemic histories in the Americas reveal that the effects of pandemics have not been even across communities, with colonial legacies and derivative policies privileging certain groups over others. Indigenous communities from the sixteenth century to the present day were and continue to be subject to such inequalities, facing some of the harshest consequences of slow governmental response and limited aid. As scholars, we should recognize these histories and voice them by thinking more critically about how we can support communities during the pandemic and enacting structural changes to existing policies. As we experience a lag in our own academic projects, just as the sixteenth-century Nahua scholars of de Sahagún’s texts did, let us channel our energies in productive ways by focusing on more important issues at hand, particularly those that endanger the lives of folks who do not benefit from the government in the same ways. And, more generally, let us challenge our approaches to the histories and material culture we study and teach, accounting for how disease and epidemics played a crucial role, especially since these histories and their legacies have resonance for the communities we work with and represent as scholars today.

11. Mary Annette Pempfer, “Dr. Anthony Fauci Praises Navajo Nation, Talks Vaccine Trial,” *Indian Country Today*, September 21, 2020, indiancountrytoday.com/news/dr-anthony-fauci-praises-navajo-nation-talks-vaccine-trial--qhx47s4AU27BcmqltO3aA (accessed September 13, 2020).

12. “Covid-19 Does Not Discriminate; Nor Should Our Response,” United Nations Human Rights, Office of the Commissioner, 2020, www.ohchr.org/EN/NewsEvents/Pages/DisplayNews.aspx?NewsID=25730 (accessed September 13, 2020).

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Social Distancing: A Brief Historic Perspective

Hans Barnard

It is obviously impossible to predict the future, but at times it may be advantageous to look at the past for guidance in the present. In light of the current Covid-19 pandemic and the measures taken to mitigate its effects, now may be one of those times. Among the best recorded and studied epidemics in history are the 1665–1666 bubonic plague in England, which was an episode within the so-called Second Plague Pandemic, and the 1918–1919 influenza pandemic (the Spanish Flu, so called because of its most famous patient, King Alfonso XIII of Spain, who did ultimately survive the ordeal).

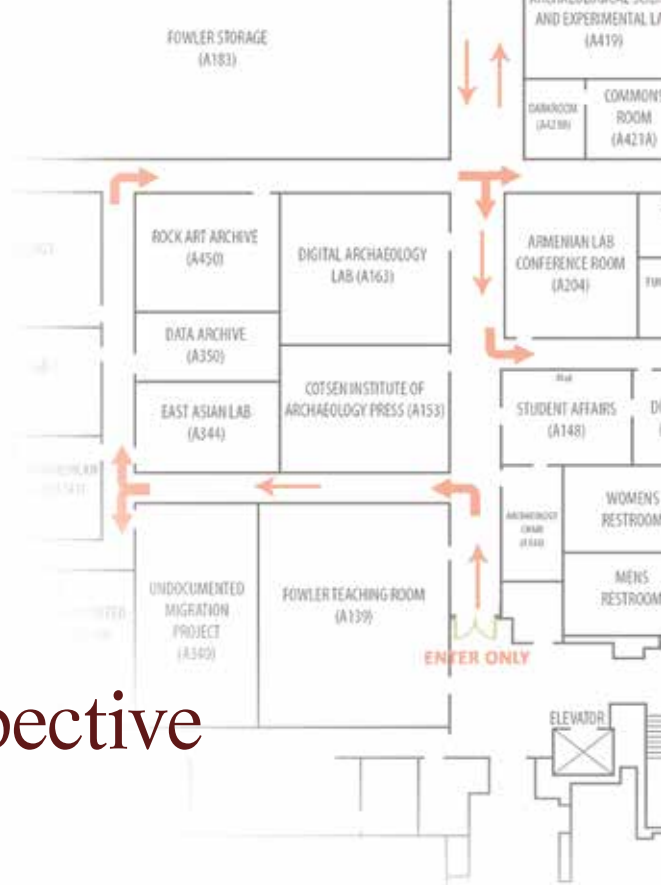
Looking back at the latter in January 2006, the Defense Threat Reduction Agency (DTRA) published a report with the title *A Historical Assessment of Nonpharmaceutical Disease Containment Strategies Employed by Selected U.S. Communities during the Second Wave of the 1918–1920 Influenza Pandemic* (DTRA 2006, summarized and published in Markel et al. 2006). In this report, the authors focus on lessons

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We cannot
translate history
into contemporary
situations.

that might be learned from communities in the United States where the influenza pandemic resulted in significantly lower numbers of deaths than might have been expected. These included, among others, the town of Gunnison, Colorado, and Princeton University in New Jersey.

To justify their research, the authors started with the prediction that “in the absence of adequate stocks of an effective vaccine and/or antiviral drugs, the United States may have to rely on non-pharmaceutical interventions (NPI) to contain the spread of an infectious disease outbreak until pharmacological means become available” (DTRA 2006:1); a prediction that became painfully true in early 2020 with the arrival of an infectious and potentially deadly novel coronavirus. After a discussion of a number of case studies, the authors write in their conclusion, “We should not be seduced into thinking we can easily translate these historical examples into contemporary situations” (DTRA 2006:134). Next, however, they emphasize



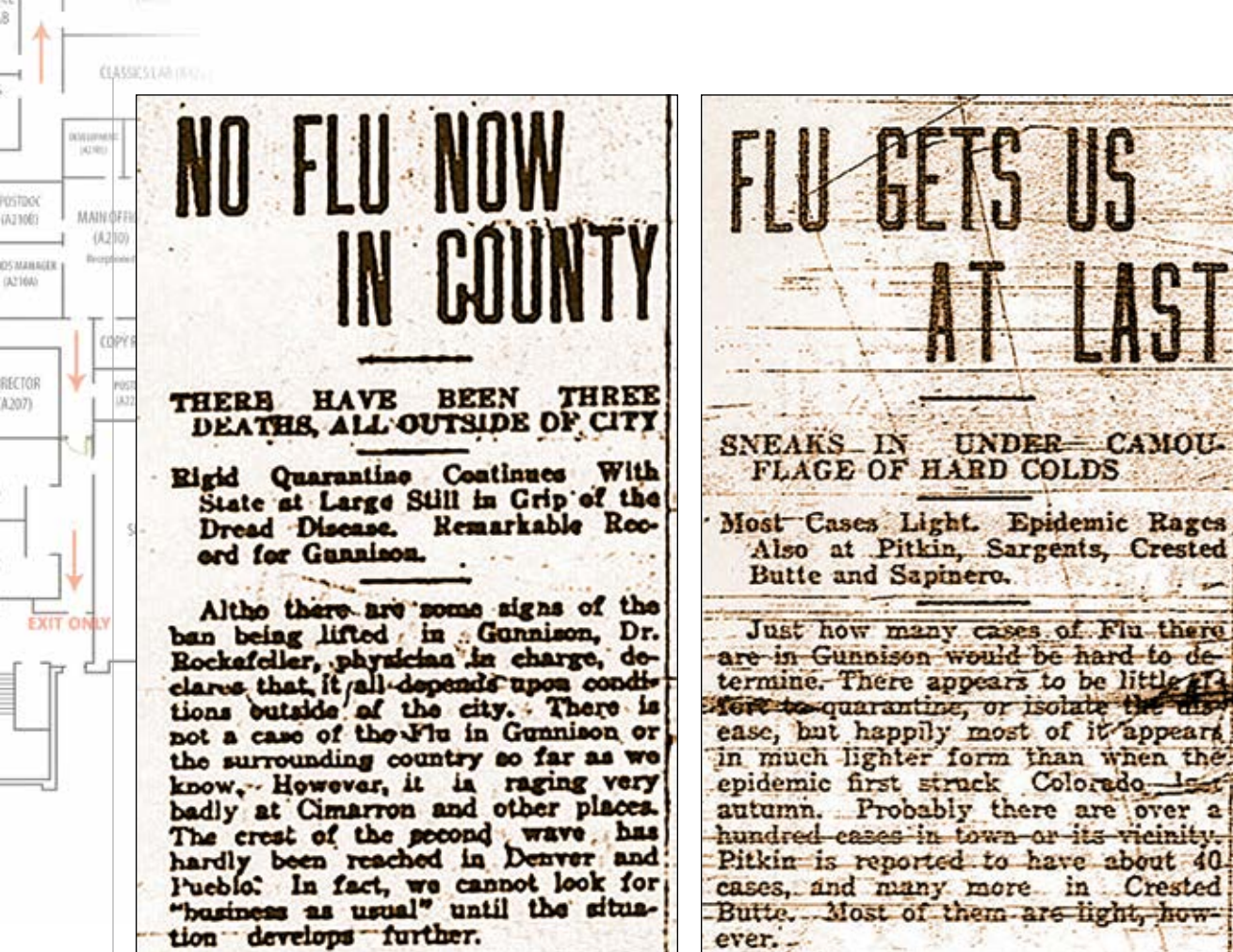


Figure 1. Headlines from the *Gunnison News-Champion* (Gunnison, Colorado), dated June 12, 1918 (left), and March 14, 1919 (right). (Images courtesy of the Center for the History of Medicine, University of Michigan, <http://chm.med.umich.edu/research/1918-influenza-escape-communities/gunnison/#gnc>.)

that “protective sequestration (the shielding of a defined and still healthy group of people from the risk of infection from outsiders), if enacted early enough in the pandemic, crafted so as to encourage the compliance of the population involved without draconian enforcement measures, and continued for the lengthy period of time during which the area is at risk, stands the best chance of protection against infection” (DTRA 2006:134).

At the beginning of the twentieth century, Gunnison, Colorado, was a small silver-mining town with about 1,500 inhabitants and 5,500 in the surrounding Gunnison County. Unlike most other western Colorado towns, Gunnison took an active interest in the influenza pandemic (DTRA 2006:56–73, summarized and published in Markel et al. 2006). On October 31, 1918, local physician F. P. Hanson suggested strict social measures to be taken throughout the county. Residents were allowed to leave, but no one was allowed to enter unless first being in quarantine for 48 hours, which was later increased to five days. At

times, travel within the county was also prohibited. Barricades with lanterns and warning signs were erected on the main roads. Public gatherings were prohibited, and all schools and public institutions were closed. Violators faced the full force of the law, and several were fined or jailed. As a result, no one died of influenza in Gunnison County until March 1919 (Figure 1).

Over time, the combination of fear, cabin fever, and restrictions on travel and social events started to wear down morale, and in mid-January 1919, schools were allowed to reopen. Attendance was on a voluntary basis, and nurses were hired to monitor the health of students. All other restrictions were lifted on February 5, 1919. In mid-March 1919, the third wave of influenza reached Gunnison County, resulting in approximately 140 cases and the death of at least

SOCIAL DISTANCING

five young residents. The impact of the pandemic, however, was significantly less in Gunnison than in surrounding counties, where the measures were less strict and lifted earlier. “Gunnison was quick to enact NPI to reduce if not outright prevent the spread of influenza within county lines, and its public officials, medical officers, and residents should be commended posthumously for their boldness in action and cooperation in following these NPI” (DTRA 2006:71). Award-winning author Thomas Mullen cites the event in Gunnison as a source of inspiration for his 2006 novel *The Last Town on Earth*.

Despite justified Cartesian doubt, the lesson from Gunnison seems clear: “In the event of another influenza pandemic, many specific subcommunities (e.g., military installations, college and university campuses, nursing homes) may wish to consider protective sequestration measures as potential means to prevent or delay the onset of epidemic influenza in their populations” (Markel et al. 2006:1963). The main issue faced by legislators and community leaders seems equally clear: “With children at home and with few social outlets, residents eventually grew impatient with the imposed isolation” (DTRA 2006:73).

The first wave of any epidemic may be impossible to prevent, as developments are swift and unpredictable. The effects of a second wave, however, can be mitigated by sensible, strict, and long-lasting measures, as shown in the case of Gunnison and others. A third wave may occur if these measures are abandoned or ignored too early. The main and most difficult task of leadership in these circumstances may be clarification and motivation to keep morale high and the measures in place.

An older but even more striking and touching example of the effects of quarantine on the course of a pandemic is provided by the small lead-mining town

The Eyam plague is celebrated as an act of self-sacrifice.

of Eyam in Derbyshire, Great Britain (Race 1995; Massad et al. 2004; Wallis 2006; Whittles and Didelot 2016). Late in the year 1665, Alexander Hadfield, a tailor in Eyam, received a shipment of cloth or clothes from London, which at the time experienced a large outbreak of bubonic plague (the Great Plague of London). Within a week, Hadfield’s assistant, George Viccars, had opened the shipment and been attacked by fleas hiding within it. He and several members of his household became ill and died of bubonic plague soon after. As the disease started to spread, William Mompesson and Thomas Stanley, the religious leaders of the community, took decisive action. In May 1666, they moved church services outdoors, ordered families to bury their own dead, and had boulders placed around the village which no one was allowed to pass to leave or enter the village (Figure 2). These measures were not aimed to protect the villagers but instead to prevent the spread of the disease into the surrounding area.

In the course of 14 months, at least 257 lives, out of an estimated 700, were lost within the boundary stones. Within a week, Elizabeth Hancock, who herself survived, buried six of her children and her husband. “This Eyam plague episode is celebrated as a remarkable act of collective self-sacrifice. The village community realized that the whole surrounding region was at risk from the epidemic, and therefore decided to seal themselves off from the other surrounding villages. Thus their tragedy did not become a disaster for their neighbors” (Massad et al. 2004:915). Since 1866, the bicentenary of these events, the village has remembered the dead every last Sunday in August (Plague Sunday). With the decline of both lead mining and the small-scale manufacturing of cloth and shoes in Eyam, tourism centered on the response of the village to the plague has become a major source of income (Wallis 2006). Over the years, the events have inspired poems, books, and even operas (such as *Plague upon Eyam*, by John D. Drummond and Patrick Little, and *The Plague of Eyam*, by Ivor Hodgson).



Figure 2. A boundary stone between Eyam and Stoney Middleton, England. The depressions in the stone were meant to be filled with vinegar and to receive coins, which in this way were allowed to be passed across the boundary. (Photograph by Bill Boaden, March 2007, used under a Creative Commons BY-SA 2.0 license.)

Recent evidence of the efficacy of social distancing is the observation that numbers of influenza cases during the austral winter (May–July) of 2020 in Australia, Argentina, Chile, New Zealand, Paraguay, and South Africa were lower than ever since 1952, when the World Health Organization started systematically recording this data. Influenza is a viral infectious disease, caused by a virus unrelated to the coronavirus causing Covid-19 but spread in the same way—by direct transmission, airborne transmission, or contact transmission—and thus blocked by the same measures taken to stop the spread of Covid-19. In Australia, an average of 86,000 Australians tested positive for influenza between May and mid-August each year from 2015 to 2019. Yearly, around 130 died of the disease. In 2020 the Australian government registered only 627 influenza infections and just a single death.²

The first lesson that can be learned from these case studies is that quarantine, protective sequestration,

and social distancing, which are more or less different words for the same thing, are effective nonpharmaceutical interventions to mitigate the effects of a pandemic. The second lesson is that the main challenge, once the measures are in place, quickly becomes providing inspiration and motivation to maintain them as long as possible, certainly much longer than feels necessary. “Historically, the introduction of the *cordon sanitaire* has been considered remarkable, foremost as an act of altruism by the villagers under the direction of the rector William Mompesson and previous incumbent Thomas Stanley, and further because similar contemporary public health measures were unpopular and often disobeyed” (Whittles and Didelot 2006:2). To keep morale high and measures

2. “The Southern Hemisphere Skipped Flu Season in 2020,” *The Economist*, September 12, 2020, p. 77, www.economist.com/graphic-detail/2020/09/12/the-southern-hemisphere-skipped-flu-season-in-2020 (accessed September 30, 2020).



Figure 3. UCLA campus in November 2020.

The success of any measure depends on personal choice.

in place, charismatic figures, such as Doctor Hanson, the Reverend Mompesson, and the Reverend Stanley, seem of indispensable importance.

In the course of 2020, California governor Gavin Newsom, Los Angeles mayor Eric Garcetti, and UCLA chancellor Gene Block have been relatively cautious in their approach to the threat of Covid-19 (Figures 3 and 4), some may say overly so, while the U.S. federal government has been more cavalier, to a level seen by many as irresponsible. Irrespective of the approach of the authorities, it seems increasingly the case that the success of any measure—be it social distancing, mask wearing, vaccination, or otherwise—depends on personal choice. Striking examples of how personal choice may clash with social responsibility include the visit of Nancy Pelosi, speaker of the House of Representatives, to a hair salon in September 2020, when all such nonessential enterprises in San Francisco were closed and the wearing of face masks was compulsory.

Examples that made the international news include a road trip to visit family and Barnard Castle made by Dominic Cummings, chief adviser to British prime minister Boris Johnson, in June 2020 (while the United Kingdom was under lockdown and his wife was showing symptoms of being infected with Covid-19); the appearance at an indoor golf event attended by more than 80 people of Dara Calleary, the Irish minister of agriculture (one day after the government of which he was a member placed tight restrictions on social gatherings); and the wedding of Ferdinand Grapperhaus, minister of justice and security of the Netherlands and directly responsible for measures against the spread of Covid-19, during which all recommendations of social distancing appeared to have been ignored. It is interesting, and perhaps comforting, that the understanding that a universal quarantine of four weeks—twice the incubation period of the novel coronavirus—would likely have stopped the spread of the virus is so readily overruled by basic psychosocial instincts.

SOCIAL DISTANCING

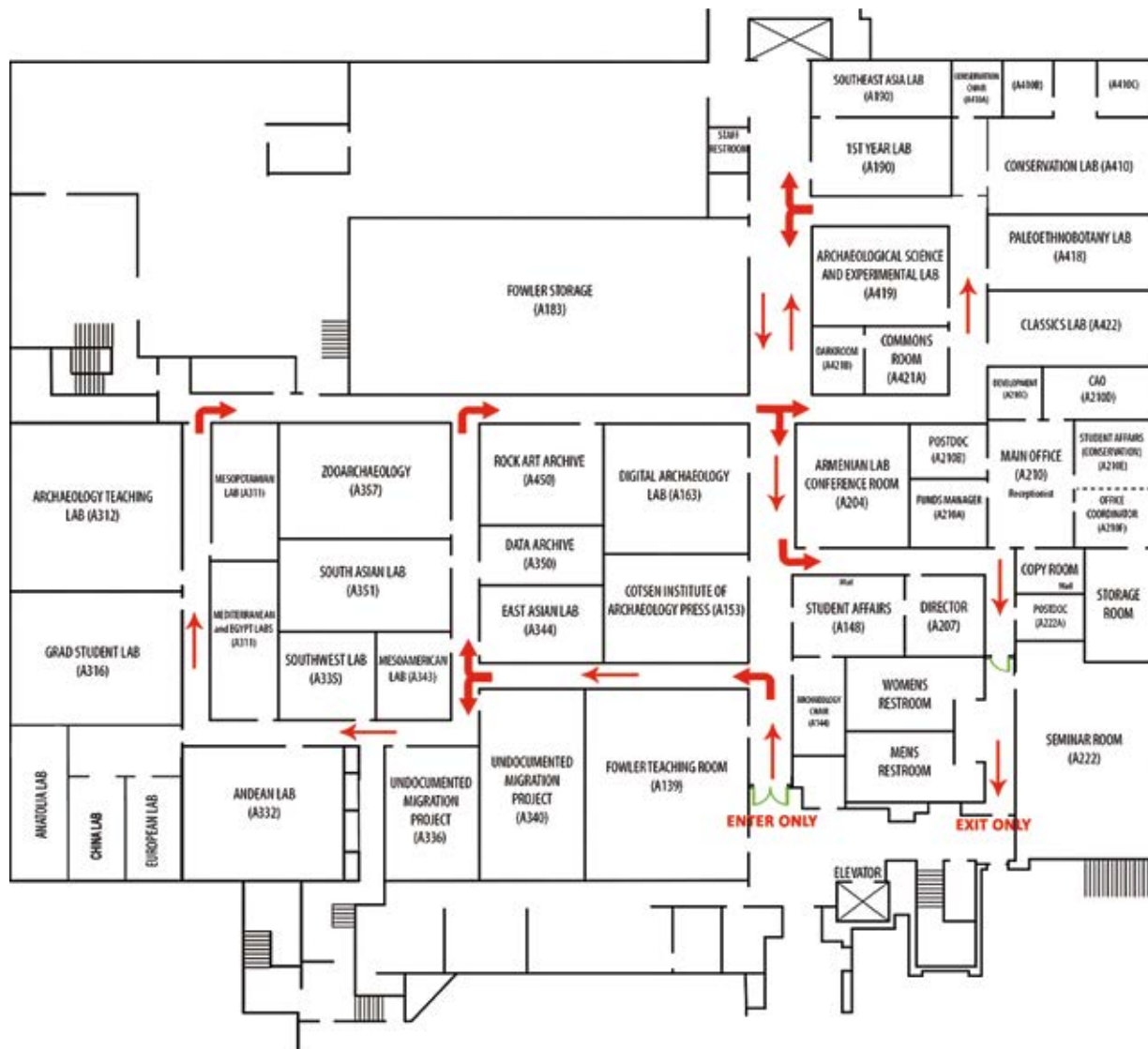



Figure 4. Plan of the Cotsen Institute showing the movements allowed through the corridors, with restrictions put in place because of the Covid-19 pandemic.

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An Archaeological Reflection on Plague and Prehistoric Globalization

Li Min¹



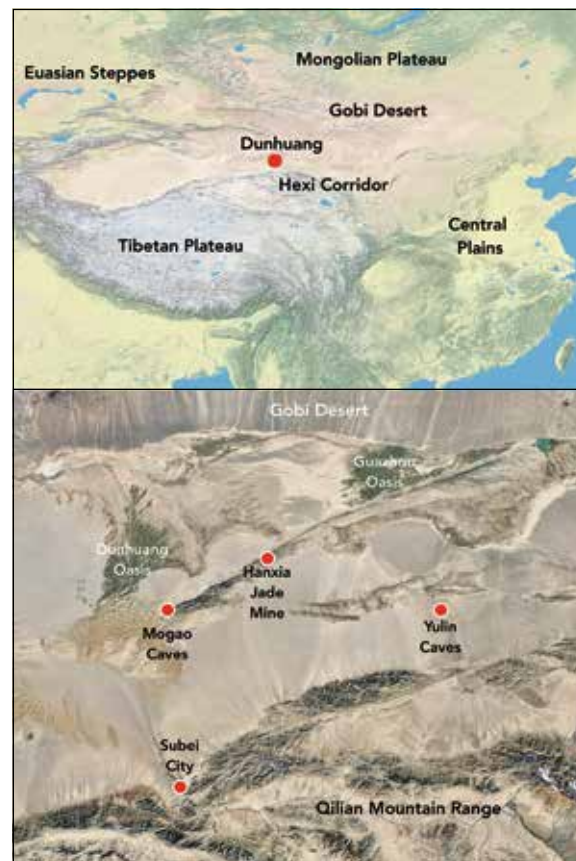
I knew that something was not right when two policemen boarded our bus at a checkpoint on our way to the Yulin Caves (Figure 1), a historical Buddhist site approximately 160 km (100 miles) outside the Dunhuang Oasis in western China (Figure 2). Although they claimed to check our seat belts, a safety protocol rarely enforced on tour buses in China or elsewhere, their intense look suggested otherwise. Searching for fugitives, I thought. The bad news eventually came when the taxi driver I had arranged to pick me up for an early departure to the airport called and informed me that she had been stopped at the checkpoint by police because the nearby region of Subei was under quarantine due to a recent plague outbreak. No outsiders were allowed to travel into Subei and no local residents were permitted to leave. At the end of my

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Figure 1. The Buddhist Yulin Caves in the Yulin River valley, Gansu, western China.

Figure 2. Map of the Hexi Corridor and the Dunhuang Oasis.



research trip to Dunhuang in the winter of 2017, I had my first encounter with the plague as a contemporary public health issue rather than a historical concept. The fear of being stranded crossed my mind.

After a telephone conversation between the police and the local administration responsible for the caves, the taxi was let in. Soon I was saying good-bye to my travel companions. It was confirmed that the taxi was not going into the city of Subei and no local residents would be taken out. On my way back to Dunhuang, I had a crash course on oasis life from the perspective of locals and, of course, on the epidemiology of plague from my driver. In a nutshell, the consumption of infected marmot meat by unsuspecting migrant workers or local herders was usually given as the reason for occasional outbreaks of bubonic plague in Subei, and a system of quarantine measures was in place, ready for immediate implementation to contain such outbreaks. While Subei County looks like a dot on a map, the Yulin Caves and the epicenter of the outbreak belong to two different oases hundreds of miles apart.

PREHISTORIC GLOBALIZATION



Figure 3. Our taxi driver secures exit permission at a police checkpoint.

Our taxi was once again stopped at the checkpoint (Figure 3). As the driver negotiated with the public health police for permission to exit, I noticed a permanent, two-story building on the roadside for epidemic control and signs prohibiting the consumption of marmots. For an archaeologist working on the east coast of China, I found it unimaginable that Dunhuang, a World Heritage Site, was located next to a hot spot for plague outbreaks. As I reflected on the archaeological sites I had visited in the days before my departure, however, I started to put this unusual association into perspective.

The Buddhist sacred landscape was part of oasis society, which in turn served as a way station along the Silk Road. While our UCLA group, led by Susan Jain and Peter Sellars, was visiting the Buddhist caves from the medieval period, the late professor Duan Qingbo (Figure 4), a leading archaeologist from Xibei Univer-



Figure 4. The late professor Duan Qingbo from Xibei University examines prehistoric sherds from the Hanxia jade mine.



Figure 5. The landscape around the Hanxia prehistoric jade mine east of the Dunhuang Oasis.

sity in Xi'an, and I had embarked on a quest for evidence from the initial colonization of the oasis during the Bronze Age. At a prehistoric jade mine, located approximately 68 km (42 miles) east of Dunhuang, we saw pottery sherds dating from the turn of the second millennium BCE, as well as basalt hammers made on the site for jade mining. Located deep in the desert, the terrain around the Hanxia (Dry Gorge) site resembles a moonscape (Figure 5). Yet the presence of adobe houses and ceramic wares suggests relatively permanent lifestyle in this desolate place almost 4,000 years ago (Figure 6). Jade from prehistoric mines in Dunhuang, Subei, and the Qilian mountain range was shipped to the Chinese Loess Plateau and farther east, where it was carved into ritual objects with elaborate iconography by master artisans, as seen in the great highland centers of Qijiaping, Shimao, and Taosi during the Longshan period (around 2300–1800 BCE; Figure 7).

Jade lapidary tradition appeared in the western highlands only after the collapse of the great coastal jade-working centers—located more than 3,000 km. (1,850 miles) to the east—around 2300 BCE. The

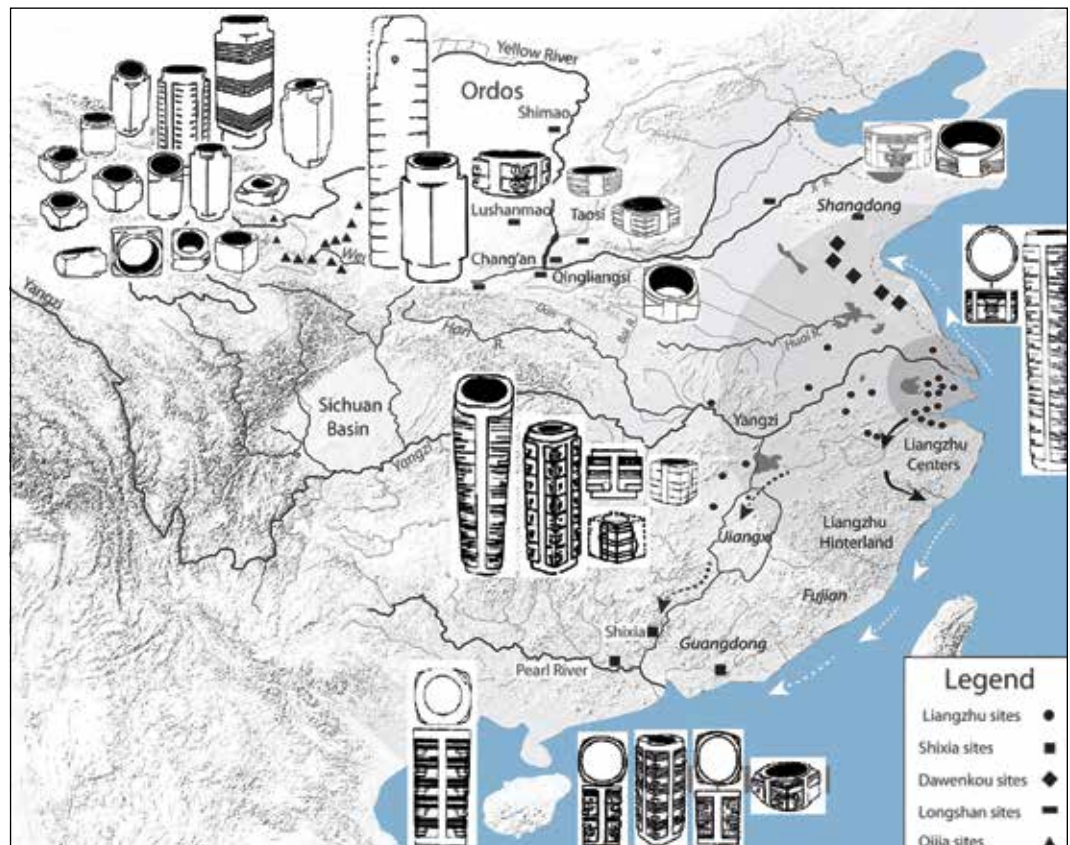
beginning of jade-mining activities in such remote places outside the Dunhuang Oasis suggests extraordinary efforts of interregional exchange, population movement, and prospecting expeditions.

The western expansion of jade-prospecting and jade-mining operations into the Hexi Corridor coincided with the southern and western expansion of metal prospecting and herding from North and Central Asia, a process propelled by the mobilization of the Eurasian steppes during the Bronze Age. These oases of the Hexi Corridor, therefore, became a converging place for western highland millet farmers with jade-working traditions and Eurasian herders with metalworking traditions. Extensive interactions unfolded in numerous oases rich in minerals, pastures, and other resources. The turn of the second millennium BCE marked the onset of the Late Bronze Age in the Eurasian steppes, as represented by the Andronovo Horizon, and the inauguration of the Early



Figure 6. The remains of prehistoric building foundations, pottery sherds, and a stone hammer at Hanxia.

Figure 7. The western expansion of coastal jade forms during the Longshan period (2300–1800 BCE).



PREHISTORIC GLOBALIZATION

Bronze Age in prehistoric China, as represented by the first metal-using communities of the Xichengyi-Siba material culture in the Hexi Corridor and the Qijia material culture in the western highlands (Figure 8).

This was the story of the initial colonization of the oasis along the Hexi Corridor approximately 4,000 years ago, which ushered in the first Bronze Age technology, the beginning of agropastoral economy in East Asia, and the first use of tract animals and wheeled vehicles. The expansion of herding, prospecting, and mining activities from the mobilization of the Eurasian steppes expanded the range of human habitat to areas like the Dunhuang Oasis, thus exposing Bronze Age communities to challenges of a new environment. As I briefly experienced on my way to the Yulin Caves, bubonic plague was among the emerging risks for the new settlers of the Hexi Corridor and the extensive interregional exchange network behind them.

The Longshan period coincided with severe climatic anomaly in the northern hemisphere known as the Holocene 3 Event, which created extreme climatic conditions against a general backdrop of an increasingly drier and colder world. Could the same climatic factors that propelled the expansion of herding in the Eurasian steppes have led to a rise of plague outbreaks? Could the spread of plague from these oasis communities in the Hexi Corridor be among the potential causes for the extensive societal collapse at the end of the Longshan period? As I reflect on my experiences at the oasis, I notice an intriguing entanglement of a religious landscape associated with the Silk Road trade, an economic landscape associated with herding and the mining of copper and jade as part of prehistoric globalization, and an ecological map of human–animal relationships that results in recurrent outbreaks of plague. The local entanglement in turn has global implications in world history.

There will be a long time before any academic outcome emerges from this line of inquiry. Nevertheless, it makes my unexpected encounter with the plague relevant to a better understanding of historical ecology. This is even more relevant as we are living through yet another episode of global pandemic in world history, with the many social, political, racial, and economic implications that define this unprecedented time. While archaeologists are frequently observers of the distant past, this is the time to put the wisdom we have learned from the past to the test of history in the present.



Figure 8. Wen Chenghao, a recent alumnus of the Cotsen Institute, now at the Chinese Academy of Social Sciences, works on the early metal-using sites in western China.

PERSONAL EXPERIENCES

In 2020 we witnessed several dramatic events, including the Covid-19 pandemic and the killing of George Floyd followed by the globalization of the Black Lives Matter movement. In this section of *Backdirt*, authors affiliated with the Cotsen Institute present their personal experiences in these trying times.

An Unintended Study of the Impact of Protective Facial Coverings during Pandemics

Wendy All'

It began as a good deed and a safety measure, not a gathering of data.

I LEARN TO MAKE MASKS

Masks have had myriad meanings throughout history. Masks are a near-universal phenomenon, but their uses and implications vary greatly among cultures (Figure 1). They are objects that cover the face for a variety of reasons, utilized for religious ritual, protection, disguise, and entertainment, and are made from various materials, depending on their use (Mack 1996).

In the uncertain days of March and April 2020, one of the multiple news programs that my husband and I watched introduced a twentysomething woman wearing a mask. She was speaking from Italy, the most ravaged country at that moment. She stared into the camera and said she would not have believed ten days

before that she would be wearing a mask because she did not think they looked cool. She cautioned us that we, in the United States, would be wearing them in ten days and that we better believe it. Within two weeks, retail stores began to close. Almost everything locked down, like lights winking out one or several at a time. In mid-March, there was panic buying at grocery stores. Personal protective equipment was in short supply. News services reported the hoarding of medical-grade N95 surgical masks. They urged the public to find alternatives, such as homemade masks, to protect themselves from the novel coronavirus causing Covid-19. We had to make do. People began posting a variety of mask patterns on social media. I immediately began investigating the efficacy and practicality of making protective facial coverings.

Various sources, including MasksSaveLives.org, ranked the best materials. Number one: HEPA-filter vacuum cleaner bags (we had only one left, and it was non-washable). Number two: dish towels (plentiful and washable). Number three: cotton fabric in

1. Volunteer, Rock Art Archive.

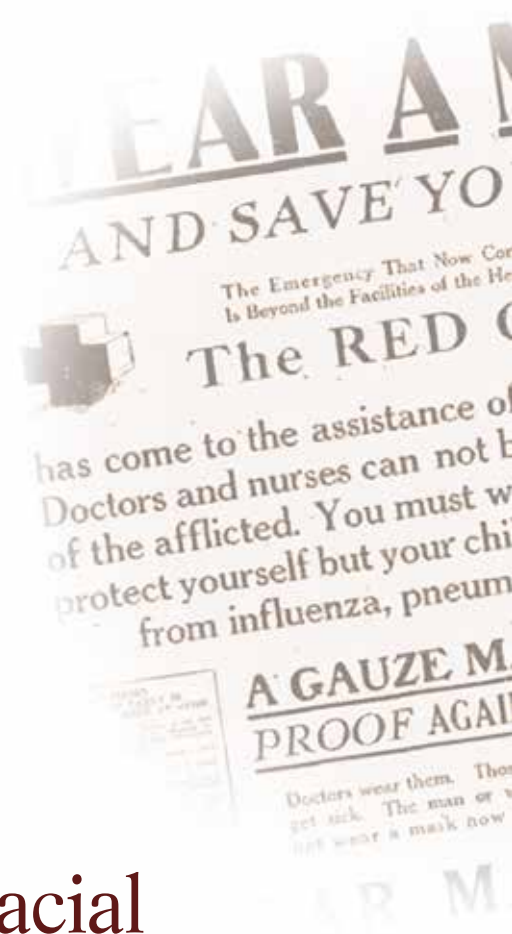




Figure 1. Copper engraving of Doctor Schnabel (doctor Beak), a plague doctor in seventeenth-century Rome, 1656. (Image in the public domain.)

multiple layers (supplies I had from my career as a toy designer and cotton bandanas from my forays in desert archaeology). The experimentation began. The first masks I sewed for my husband and myself were composed of dish towels, elastic, and twist-ties for nose crimps. I constructed them out of a sense of desperation fueled by panic. It was like being at war and having limited information; uncertain whether a source of protection might cause more harm than help.

The sensations of crisis, determination, and uncertainty reconnected me with the spirits of both of my grandmothers. They had survived two world wars, the 1918 Spanish Flu pandemic, and the Great Depression. My Polish grandmother had only a second-grade education because her school had been bombed during the First World War. My Hungarian grandmother was required to work in her family's store after she finished eighth grade, but they were both creative problem-solvers.

My Polish grandmother was a seamstress who taught me to sew on a treadle Singer machine at

age five. By the time I was 12, I could tailor my own clothes. Sewing was a valuable skill for creating stuffed toy prototypes in my career as a toy designer. My Hungarian grandmother worked in an automobile parts factory, AC Spark Plug in Flint, Michigan. During the Second World War, she became one of the patriotic "Rosie the Riveters" when the factory retooled to assemble munitions.² She worked full-time, raised two sons, and did her own housework. She explained that when she ironed dish towels, the steam helped sterilize them. For me ironing has a Zen quality; taking something wrinkled and making it smooth, an activity of caring. I felt that sewing and ironing with the noble purpose of mask-making would ease anxieties and be empowering.

2. David Vergun, "Rosie the Riveter Inspired Women to Serve in World War II," Department of Defense, March 21, 2019, www.defense.gov/Explore/Features/story/Article/1791664/rosie-the-riveter-inspired-women-to-serve-in-world-war-ii/ (accessed October 6, 2020).

PROTECTIVE FACIAL COVERINGS

We now know that in the early days of virus spread in the United States, the Centers for Disease Control and Prevention (CDC) was trying to keep a huge rush of civilians from buying up N95 surgical masks. Anthony Fauci, the foremost infectious disease expert in the United States, had expressed concern that medical professionals would not be able to get enough of them.³ Later, the CDC reversed previous recommendations and said that everyone should cover their face in public.⁴ I imagined communities rushing to make masks, like the American Red Cross did during the 1918 pandemic; some donating them to hospitals, some selling them by the roadside, others selling them on Etsy. As my activity was a mitzvah, a good deed, mine were not to be sold. Rather they were to be given away to family, friends, and local frontline workers.

I had limited fabric prints immediately available at the mid-March lockdown: vivid florals that the males in my family would reject, classic paisley bandannas, Japanese *furoshiki* (gift wrapping) cloth with pictures of samurai and carp (my husband liked those). A petroglyph print with generic southwestern-style images got a smile from my colleagues at the Rock Art Archive (Figure 2). Fabric stores were closed, and I scanned the internet for appealing fabric designs. A number of websites warned that they might not be able to ship for several weeks. I considered animal prints, comic book heroes, mid-century modern (with amoeba and boomerang shapes), Disney characters, ethnic prints, camouflage prints, and cartoon bugs for that visual pun. There were intended and unintended messages in the print designs. How could there not be?

RESPONSE TO MASKS

Research on the internet demonstrated that countries where people did not regularly wear masks, such as Italy and Spain, were experiencing higher rates of



Figure 2. Jo Anne Van Tilburg, director of the Rock Art Archive, models a petroglyph-patterned face mask while practicing social distancing.

Covid-19 infection than countries where people regularly wear masks, such as Japan, Singapore, and North Korea. One source, MasksSaveLives.org, offered an explanation, which appeared to have historical and practical aspects. Many Asian countries have dealt with ongoing outbreaks of cholera, typhoid, and other transmittable diseases, including SARS in 2001 and more recently avian influenza. Frequent dangerous outbreaks have helped maintain a mask-wearing culture, whereas Europe and the Americas have not seen such outbreaks with similar regularity. So it appears that the idea of masks as a nonpharmaceutical or prophylactic measure may have skipped the consciousness of several generations in the Western world. All statements as to why facial coverings made a difference were supported by citations from an impressive list of respected medical journal articles from around the world.⁵ The website MaskBuilders.com offered techniques for creating masks.

During the 1918–1919 Spanish Flu pandemic,

3. Mia Jankowicz, “Fauci Said U.S. Government Held Off Promoting Face Masks because It Knew Shortages Were So Bad That Even Doctors Couldn’t Get Enough,” *Business Insider*, June 15, 2020, www.businessinsider.com/fauci-mask-advice-was-because-doctors-shortages-from-the-start-2020-6 (accessed October 6, 2020).

4. Allison Aubrey, “CDC Changes Course, Says Everyone Should Cover Their Face in Public,” National Public Radio, April 4, 2020, www.npr.org/2020/04/04/827241603/cdc-changes-course-says-everyone-should-cover-their-face-in-public (accessed October 6, 2020).

5. Jeremy Howard, ed., “Papers about Effectiveness of Basic Masks #masks4all,” Google Docs, docs.google.com/document/d/1HLrm0pqBN_5bdyysOeoOBX4pt4oFDBhsC_jpbIXpNtQ/edit# (accessed September 4, 2020).

What science can know improves over time.

mask wearing was eventually linked to patriotism, but it did not start that way. Many men and boys saw masks as symbols of weakness. The American Red Cross and other health organizations staged a rebranding campaign that linked mask wearing to the Great War: “Gas masks in the trenches, cloth masks at home.” There was even a song: “Wear the gauze for the cause.” Those who did not wear masks were dubbed “mask slackers.” While Red Cross volunteers toiled to make thousands of gauze masks, the impact of the Spanish Flu on fashion was demonstrated in a *Women’s Wear Daily* advertisement of October 23, 1918: The “Safety First Veil” was dubbed a flu preventive (Figure 3). On October 25, 1918, the *San Francisco Chronicle* reported that “everyone is compelled to wear masks by city resolution” and noted “a great variety of styles of face adornments in evidence.” Patriotism worked for the most part as an incentive to wear masks until the armistice was signed on November 11, 1918, signaling the end of the war. Citizens in San Francisco raced outside, without masks, to celebrate, which created a great rebound in influenza cases.

As masks became mandatory in 2020, signs were posted in all essential businesses, such as markets and pharmacies, often with employees at entrances as monitors. Masks were alternatively referred to in some areas by the less provocative term *protective facial coverings*. First responders were working eighteen-hour shifts, and thousands were being infected and died, yet, at the same time, there were still anti-mask demonstrations by large non-mask-wearing crowds. It had become, essentially, a mask war in which one side claimed that masks would slow the pandemic and save lives, and the other claimed that the pandemic was a hoax, that Covid-19 was no worse than influenza, and that enforced mask wearing violated their personal liberties. Similar to the armistice ending the First World War, surging crowds not wearing masks would ultimately undermine quarantine precautions intended to flatten the curve.

Because of the controversy surrounding masks and the commentary from various news sources and social media, mask memes bloomed: emojis with masks; iconic structures, such as the Statue of Liberty, wearing masks. There were Queen song lyric



Figure 3. Masks during the 1918–1919 Spanish Flu pandemic. Top left: Advertisement in the *Berkeley Gazette*. Top right: Advertisement in *Women’s Wear Daily*. Bottom: Red Cross volunteers assemble masks during the pandemic. (Images courtesy of the National Archives.)

parodies: “No mask on your face; you big disgrace. Spreading your germs all over the place.” There were jokes: “Masks are the new bra. They aren’t comfortable, you only wear them in public, people notice when you don’t wear one, and now you can get them in every color, pattern, and style,” and “Masks are the new neckwear. People only put them on when it is demanded of them.” Designers created pro-mask graphics (Figure 4), and high-end clothing manufacturers created designer masks. People posted endless mask-making videos, instructional and comedic, to make money or to amuse themselves during the relentless quarantine.⁶

6. Mathew Wilson, “28 of the Most Creative Face Masks from around the World,” *Insider*, July 17, 2020, www.insider.com/most-creative-face-masks-people-have-designed-2020-5 (accessed October 6, 2020).

PROTECTIVE FACIAL COVERINGS

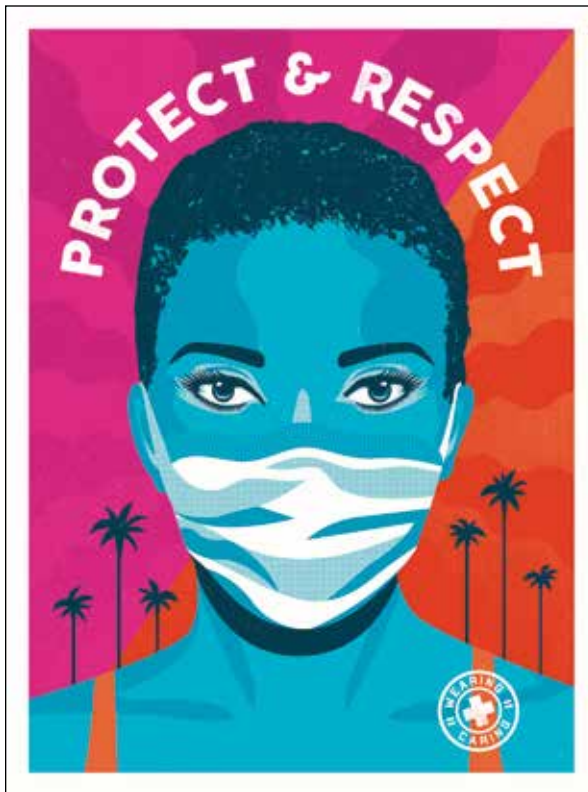


Figure 4. A poster created for free use by Studio Number One, Los Angeles.

My husband and I are both at high risk for medical complications should we become infected, so trips outside our home were few, but I still observed awkward behaviors in this new “dance of the masks.” With ambiguous social distancing rules, two strangers approaching each other would veer suddenly, like repelling magnets. With fewer visible facial cues, evaluating nonverbal signals hindered communication. When someone swerved without speaking, it was difficult to glean their emotional state. In some cases, eyeglasses further obscured eye contact, so eyebrows and body language were the only visible sources of information. Some wore cloth masks over paper masks or included a clear plastic face shield. People constantly had to repeat, shout, or use hand signals to be understood. This churned the anxieties of isolation.

The politics and meaning of the masks took another turn when I found remnants of African kente cloth on Etsy, thinking they would look incredible as masks. Kente is made by the Asante peoples of Ghana

How did pieces of cloth become infused with politics?

and the Ewe peoples of Ghana and Togo and is one of the best known of all African textiles.⁷ By the time the masks were sewn in late May, George Floyd’s death was headline news.⁸ Black Lives Matter demonstrations began. Many people were fed up with a multitude of issues, including quarantine, as the Memorial Day weekend began. Depending on location or political affiliation, wearing or not wearing masks became another polarizing political statement. Demonstration posters proclaimed, “Don’t Mask Our Freedom!” Kente cloth, which I had chosen for its beauty and solidarity with the Black community, became a polarizing issue with some African Americans, who claimed that white people had no right to wear it. For me it was a design choice. Was it insensitive? Meanwhile, the Covid-19 tagline “We’re all in this together” continued on news programs, commercials, and public service announcements. It did not really feel that way.

ENVIRONMENTAL IMPACTS AND THE LIFE CYCLE OF MASKS

Discarded paper masks began appearing regularly in parking lots in April 2020. In June, I noted the first discarded fabric mask. Photographs on social media showed how discarded masks were making their way into the environment. An online search found a post from Moores Creek National Battlefield, near Wilmington, North Carolina (Figure 5). An unidentified bird, believed to be a Carolina wren, had built a nest and laid eggs in a discarded paper mask left in a golf cart by a groundskeeper. Later posts showed baby birds safely hatched, and because the area was closed to the public, they would likely continue to flourish. However, this charming upcycle ending is not the norm. As more protective equipment is discarded, its impact on wildlife and further endangerment of the

7. “Wrapped in Pride,” National Museum of African Art, africa.si.edu/exhibits/kente/credits.htm (accessed September 5, 2020).

8. Evan Hill, Ainara Tiefenthäler, Christiaan Triebert, Drew Jordan, Haley Willis, and Robin Stein, “How George Floyd Was Killed in Police Custody,” *New York Times*, May 31, 2020 (updated August 13, 2020, www.nytimes.com/2020/05/31/us/george-floyd-investigation.html (accessed September 5, 2020)).



Figure 5. Online post from Moores Creek National Battlefield, near Wilmington, North Carolina, showing how a bird incorporated a paper face mask into its nest.

environment will be problematic, with tragic results as we move forward. Ultimately this gear will become one of the markers of 2020 CE strata.⁹

I continued to offer a variety of fabric designs (Figure 6), including the kente cloth and other African prints, sports logo prints, florals, Australian Aboriginal prints, and Aloha prints, to an ever-widening group of essential workers, first responders, and women's shelters, at no cost. It became apparent that observing and gathering mask information had become a behavioral study for me, albeit more anecdotal than scientific, but worth documenting. As the summer began, there was a significant trend toward masks with team logos, cartoon faces, and political commentary, and masks coordinated to match outfits. There were also commercially produced masks in different sizes, and prints for children.

Since March 2020, my mask-making project has become a rich collection of information. At the time of writing, the outcome of the mask wars is yet to be seen, with many developments likely to come to light as human nature continues to demonstrate itself in all its forms of behavior. How is it that these little pieces of paper or cloth, some with printed words and designs, have become so infused with politics and meaning? Then I remind myself that postage stamps, banknotes, and flags, which all represent countries or affiliations, are also little pieces of paper or cloth with printed words and designs, and are also deeply infused with politics and meaning.

During my mask-making journey, I read John Barry's (2018) book on the 1918 Spanish Flu pandemic, searching for historical context and insight. I concluded that not a lot has changed in the last hundred years. What science and medicine can know improves over time. Viruses and human nature remain consistent. Influenza pandemic scenarios are what keep the CDC staff awake at night, not diseases like Ebola. The basic challenge of a global pandemic is



Figure 6. Masks in a large variety of fabrics sewn by the author.

that it is a war launched against all humanity, the virus versus us, and that humans cannot seem to agree that we are all together in this war. In addition, there is a propaganda war. Humans cannot seem to agree that there even is a pandemic, much less on a basic set of tools to defend ourselves.

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How I Survive Life in Quarantine

Hans Barnard¹

Archaeologists do not usually study a changing society firsthand but rather much later infer what happened from its scant material remains. The year 2020, however, provided us a unique, albeit unwelcome, opportunity to do the former. Below are some of my own experiences and observations, based on an incomplete dataset and biased by my personal perspective.

The Covid-19 pandemic has dramatically disturbed daily life, including the work of those in disciplines such as archaeology that heavily depend on collaborative fieldwork, usually with colleagues from multiple countries and often in places that require international travel for many of the collaborators. At the same time, Covid-19 has provided significant learning opportunities. It has enabled the medical sciences to learn more about the human body—for instance, that preadolescent children seem to have biochemically slightly different lungs and blood vessels than adults—and about how a novel coronavirus, not previously encountered by the human immune system, can affect organs other than the lungs, such as our heart or brain. It has also allowed us to learn more about how viruses spread across the globe and viable ways to slow such a spread.

More importantly, especially for those in the social sciences and the humanities, the pandemic has shown how vulnerable our increasingly internationally

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The pandemic
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interconnected society has become. Almost all of us, including leaders of many businesses and institutions, were confused and anxious as transportation (especially by air) ground to a halt, while most bars, restaurants, and other workplaces (including UCLA) closed their doors, either voluntarily or when mandated to do so by the authorities. At the time of writing, it remains to be seen what the long-term economic and psychosocial impacts of these sudden changes turn out to be. It is quite likely that our society will emerge from this quite different, but it is obviously impossible to predict exactly how. We can only hope that it will be a (slightly) better world.

Most noteworthy, however, is our collective inability to adjust to an inevitable new situation and respond in a dispassionate, evidence-based fashion to a primeval threat. We were all shocked and disappointed to learn that all our modern knowledge and understanding, partly reflected in the myriad of hard- and software surrounding us, appeared powerless as we faced what seemed like a shadow of the past, comparable to a medieval Black Death epidemic or an ancient battle decided by an infectious disease rather than strategic brilliance or military might. Instead of sheltering in place, epidemiologically the most sensible response, many traveled significant distances to reach people or surroundings more comfortable. Some did so in chartered airplanes, many more by car or even on foot. Others tried to ignore the events or denied them access to their minds. These instinc-



tive responses, although understandable, contributed to the worldwide spread of the virus. The immediate threat posed by the resulting pandemic managed to put us in our place in a way that the ongoing mass extinction of many plant and animal species and even looming climate change seem unable to do.

Comments heard since the pandemic began often include references to a new normal and often implicitly or explicitly incorporate an expectation of return to an old normal in due course. Born in 1959, I am not yet old enough to be considered at high risk when infected by Covid-19. I do, however, remember times without smart phones, and even without cell phones, as well as times without personal computers and the internet, and thus also without Facebook, Twitter, Google, and even email. A time in which fruits and vegetables were available only during certain times of year, when they were said to be in season, and inter-continental travel was a once-in-a-lifetime event for all but the very few. This was all considered normal at the time, as normal as a world without cars, airplanes, and antibiotics was when my grandparents were young. I would be the last to advocate trying to revert to a previous era, if such were even possible, but what we consider normal is far from a static reality. Instead it is in constant flux. Any new normal will get old sooner rather than later, but an old normal must be considered lost forever. Pushed by a microscopic agent, barely alive, we experienced about six years' worth of changes in just six months and understandably struggled to come to grips with that.

AN ARCHAEOLOGY OF MY PERSONAL EXPERIENCES

When UCLA leadership urged us in mid-March 2020 to leave campus for an indefinite period of time, I was severely upset. I packed my laptop and some books and tools, cursorily cleaned my desk and refrigerator, and went home in a depressed mental state. The first few days I could only lie on the couch and read



Figure 1. Top: View of our living room just before a remote piano lesson, with the kitchen table, laptop, and external microphone put in place. Bottom: View of our bedroom, now also housing a temporary film studio.

a book. I canceled all my appointments, including my upcoming piano lesson and my trip to Chicago to see the Lyric Opera perform *Der Ring des Nibelungen*, Richard Wagner's operatic magnum opus in four installments. I filed my unused tickets for April 20–25, 2020 with those of performances that I was lucky enough to have attended in the past.

After a few days I picked myself up, arranged for my weekly piano lessons to resume,² obviously now remotely (Figure 1, top), and created a temporary office in our guest room (Figure 2, left). One of my first activities to ease myself into a working mood was to create about a dozen virtual backgrounds for Zoom. My favorites became an image of Royce Hall,

2. Hans Barnard, "Robert Schumann: Träumerei (from: Kinderszenen Op. 15)," www.youtube.com/watch?v=MeWfjGqs4k (accessed September 13, 2020).

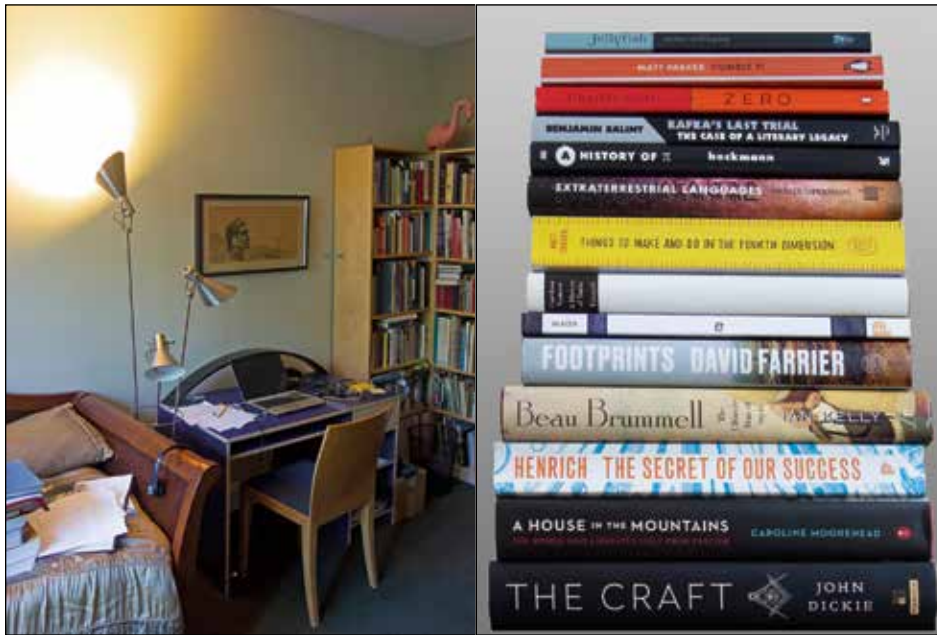


Figure 2. Left: View of our guest room, now my temporary office. Right: The fourteen books that I read for pleasure between March and September 2020.



Figure 3. Two of my favorite virtual backgrounds for Zoom meetings. Note the number of engines on the aircraft at the top.

to be used for UCLA business, and a picture taken at Charles de Gaulle Airport in Paris just before my last flight to date (Figure 3). This image can serve as a paradigm for our changing world as it likely represents my last flight in a four-engine airplane. The collapse of the aviation industry during the Covid-19 pandemic

has resulted in most carriers retiring their Boeing 747 (the jumbo jet) and Airbus 380 (the double-decker) aircraft from passenger service. Fortunately Willeke, my spouse, and I had decided to pay for an upgrade onto the upper deck, which was all business class, so at least I have good memories of what was destined to become a historic event.

In addition, I started a collection of the more interesting graphs and memes on the developing events to bring the mood of the times back into memory, maybe as the basis for a future article once the copyrights have expired. These range from cartoons mocking the hoarding of toilet paper and photographs of mass graves in New York being filled with Covid-19 victims, to graphs showing the spread of the virus across rooms and the world, and a touching remote performance by the Ballet de l'Opéra national de Paris.³

Since the end of 1994, I have not slept in the same bed for more than three consecutive months and have often moved between continents to find the next place to lay my head. When in Los Angeles, I used to spend seven days a week on campus, not out of necessity but simply because I like to be there. I was therefore surprised to notice how I seamlessly adapted to a life in quarantine and that I remain perfectly at ease after not leaving home for more than six months. To me it feels remarkably like being in the field: limited geographical movement, social contacts, and entertainment. I do, of course, realize that I am in a very privileged position. Fortunately we have a comfortable and spacious home, quiet and with a fast internet connection, and with no children, pets, or plants to take care of. If any-

3. Chun-wing Lam, "Confinement 2020—Remerciements du Ballet de l'Opéra de Paris," www.youtube.com/watch?v=hllbH71TfZE (accessed September 13, 2020).

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thing, time seems to be going faster than ever before. Another analogy would be living in a spaceship; or rather a space station, as space ships currently exist only in our imagination. It is certainly more comfortable than that, if only because of gravity. This does not mean that I want to make light of the situation. I fully appreciate that I have been lucky and that these times are very stressful for many others, including students who are deprived of not only vital fieldwork and research opportunities but also income.

In the small world of our home, we spend most of our time behind our computer screens, much as always (Figure 1, bottom). Having ordered almost everything through Amazon for years, it was a small adjustment to have our groceries also delivered. Classes, meetings, and lessons proceeded almost as normal, albeit now remotely (Figure 4). As we had experience with this as well—we had our first online

What we
consider normal
is far from a
static reality.

meeting for our volume *The Archaeology of Mobility* in 2006—this was not too much of a transition either. New of course was that social events were now also conducted through Zoom or Skype, occurring in the comfort of our own home but necessarily remaining two dimensional. At the same time, we are now in frequent contact with many people we did not often see in the past.

One of the unexpected advantages of staying at home was that I was again able to read for pleasure (Figure 2, right), something that had become increasingly difficult over time. I have always enjoyed cooking, for more than one reason, and as our world increasingly got smaller, I decided to capture pictures



Figure 4. My new normal as displayed in a Zoom environment. Note the archaeologically themed virtual background at the bottom.

Figure 5. Two of our meals during quarantine. All forty can be viewed at www.barnard.nl/Dinner_2020/.



Figure 6. Time to relax with a Negroni (left) or a game of Beat Saber (right).

of forty of our meals in quarantine,⁴ as a record for posterity (Figure 5).⁵ Dinners were, of course, preceded by a cocktail (Figure 6, left), while the calories were burned off using our newly purchased virtual reality system (Figure 6, right). In addition to studying the urban wildlife in the treetops surrounding our home (mostly squirrels and hummingbirds), I also closely followed the construction of a new luxury

4. The English word quarantine is derived from Italian quarantena ("40 days"), referring to how long those arriving by ship in fourteenth-century Venice had to wait before going ashore to prevent the spread of infectious diseases.

5. Hans Barnard, "La Cena en los Tiempos de la Corona," www.barnard.nl/Dinner_2020/ (accessed September 13, 2020).

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condominium building going up in Century City (Figure 7), hopefully in time to catch the Metro Purple Line (or rather its Wilshire/Western to Westwood/VA Hospital extension, scheduled to be finished around the same time).

Born out of a fear of flying, another of my guilty pleasures is an interest in aviation, and as a result from time to time checking on the aircraft overhead through Flightradar24.com. On several consecutive days in May 2020, I noticed a Beechcraft King Air

It would be a shame to let this opportunity go to waste.

flying patterns above Los Angeles (Figure 8). First I thought this was a surveillance project associated with the riots that tarnished some of the justified and mostly peaceful demonstrations urging an end to police violence that erupted around the world after the killing of George Floyd by police officer Derek Chauvin in Minneapolis on May 26, 2020. The feasibility of such was proven by the successful Eye in the Sky program developed as early as 2004 by Ross McNutt for the American military in Iraq. Research, mostly by a friend knowledgeable about aviation, showed that this instead was a federal project to release sterile male Mediterranean fruit flies (*Ceratitis capitata*) to reduce damage done by this invasive species. The target for Los Angeles County was to drop about 50,000 flies per square kilometer (about 125,000 per square mile) every week during the summer months. Like learning about jellyfish or the history of Freemasonry (Figure 2, right), such unexpected and irrelevant trivia helped alleviate some of my anger and anxiety.

SOME THOUGHTS ON THE FUTURE

At the outbreak of the First World War, in July 1914, the general consensus was that it would all be over by Christmas. About four years and 40 million deaths later, the world was a little wiser and certainly much sadder. It was also a different place in many ways. We do not now know how or when the Covid-19 pandemic will end or what the world will look like at the time. In the course of 2020, several countries in the



Figure 7. The luxury condominium building Century Plaza goes up near the intersection of Constellation Boulevard and Avenue of the Stars. Left: My view on July 4, 2020, with a celebratory five-story Stars and Stripes and the working platforms and third crane still in place. Right: Two months later, the concrete skeleton of the top floors is finished and the working platforms and third crane have been removed.

Middle East amended the Muslim call to prayer—the well-known *azan* that daily sounds from minarets at regular intervals—to include the words “pray at home” (“*al salatu fi buyutikum*”) instead of “come to prayer” (“*hayya alla al salah*”). This is likely to revert in due course, but other changes may become permanent, especially those that were mostly the result of the acceleration and consolidation of already ongoing trends.

For instance, remote classes, meetings, lectures, and conferences are likely to remain frequent and popular. Not only because we have become used to them and found them more acceptable than expected but also because they eliminate the need for lengthy commutes, saving precious time and fossil fuels. Online shopping and the home delivery of everything from furniture to groceries can likewise be expected to remain more common than before.⁶ Many restaurants, shops, and malls that had to close during the pandemic may never reopen. The increased popularity of home cooking may not only save households money—especially the brewing of coffee at home—but may also

6. “Covid-19 Seems to Have Changed Lifestyles for Good,” *The Economist*, August 8, 2020, p. 73, www.economist.com/graphic-detail/2020/08/08/covid-19-seems-to-have-changed-lifestyles-for-good (accessed October 7, 2020).

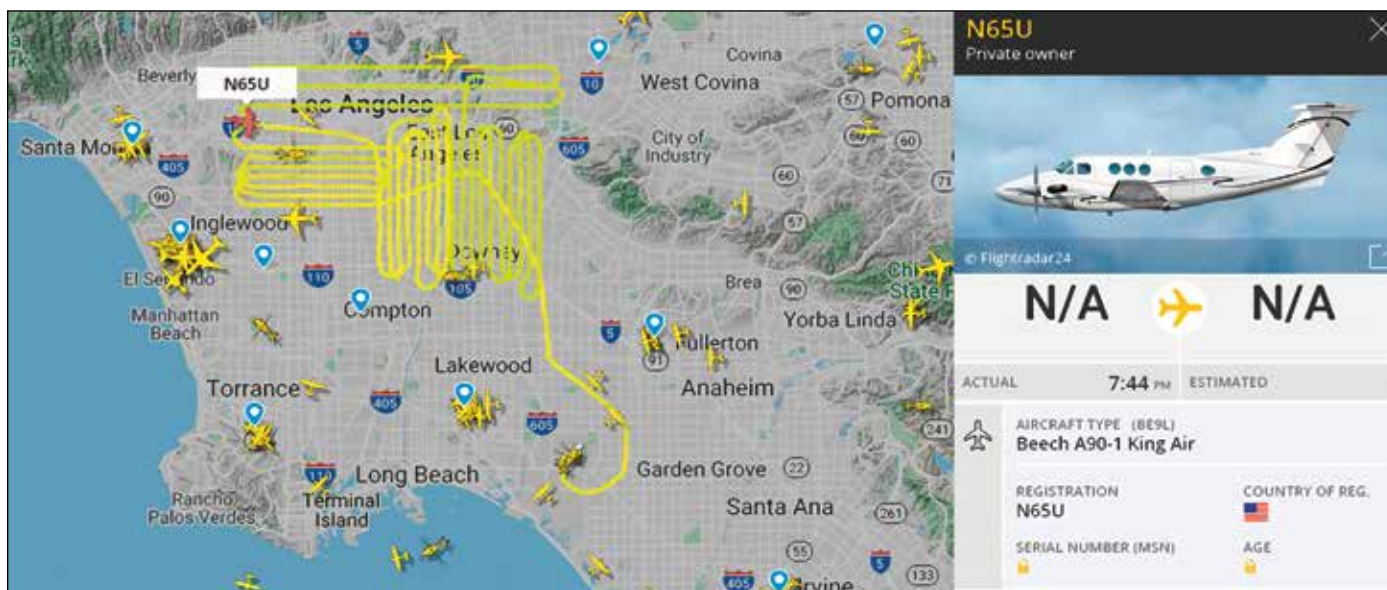


Figure 8. A Beechcraft King Air, registration number N65U, owned by Dynamic Aviation, flies a pattern above Los Angeles. (Image courtesy of Flightradar24, www.flightradar24.com.)

result in a reduction of (plastic) waste and an overall healthier population. The balance between this and the inevitable economic damage can only be assessed in the distant future (Nicola et al. 2020). Even more remote in time is the possibility of 2020 leaving a more or less subtle horizon in the archaeological and geological records, similar to the thin layer of iridium marking the K–Pg (or K–T) transition between the Cretaceous and the Paleogene periods around 66 million years ago (Farrier 2020). The collapse of the travel industry may make the most significant contribution to this, especially if its recovery takes years rather than months (Lecocq et al. 2020; Venter et al. 2020).

Archaeology as a profession and a scholarly discipline is also likely to be permanently altered. It is obvious that the discussions about its colonial history and the underrepresentation of certain groups among its practitioners will and should not subside. Fieldwork may become prohibitively expensive, at least temporarily, depending on developments in the travel industry and any quarantine measures that may remain required by local or national governments. This will be amplified by the economic hardship to be expected and the priorities identified by institutional and individual donors. We must also prepare for being unable to eliminate the virus causing Covid-19 and for other pathogens making the leap from animals to humans, forcing us to remain more vigilant than

before to protect our health and that of those that we work with, including students, colleagues, and local communities (Allegrante et al. 2020; Killeen and Kiware 2020).

In the process of rethinking our fieldwork strategies, we should give priority to an open scientific community, meaningful partnerships with all stakeholders, and the protection of local communities as well as the global environment. This will require difficult discussions with colleagues, administrators, publishers, and donors in a search for new arrangements and preferably consensus, a discussion that has already started (Barton 2020; Chirikure 2020; Ogundiran 2020; Scerri et al. 2020). Now that improvement of our discipline appears more urgent and achievable than ever before, it would be a shame to let this opportunity go to waste.

Willeke and I have canceled all our travel plans until the end of 2020 and already several projects scheduled for 2021, although we left a window open to work in northern Italy in the summer.⁷ Some of the liberated time I used to coauthor two articles—now submitted for publication in *Current Anthropology* and *Quaternary International*—to finish an edited volume aimed to make archaeology more relevant and germane to the general public, and to assist in the creation of the issue of *Backdirt* in hand, including this contribution. The latter is meant as an archaeology of my personal daily life in a new normal; it is idiosyncratic because it is a narrative with an open ending. The past six months seem to have flown by. How will those that follow unfold?

7. Hans Barnard, “Il Nostro Messaggio di Speranza,” www.youtube.com/watch?v=in7hCrqMbtl (accessed September 13, 2020).

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Child Enslavement in a Roman Fresco

Sarah Beckmann¹

The fresco in the Villa of the Mysteries in Pompeii, Italy, is a veritable icon of Roman art. Excavated in 1909, this painting dates to around 50 BCE and preserves a continuous frieze of 29 life-size human and divine figures. They sit, stand, walk, kneel, and cower on the red walls of a 5 by 7 m (16.5 by 23 feet) room in the villa (Figure 1), probably used for dining and entertainment (a triclinium in Latin). Although other contemporary megalographic paintings have been found in Roman Campania, the Villa of the Mysteries holds a special place among scholars and enthusiasts of classical antiquity due to its excellent preservation and its compellingly ambiguous imagery. The figures have traditionally been interpreted as participants in secret rituals, namely, a bride's initiation in the mysteries of Dionysus (or Bacchus or Liber, Roman iterations of the god). Images used to make this argument include the unveiling of a phallus, a

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The fresco
perpetuates
institutionalized
hierarchies.

scene of ritual whipping, the styling of a bride's hair, and a nude boy engaged in reading a scroll, the text of which is invisible to the viewer (Figures 2 and 3).

RESEARCH IN CONTEXT: COVID-19 AND BLACK LIVES MATTER

Although I was initially fascinated with this fresco when I first saw it as a college student, my more recent scholarly interest in it can be linked to three events over the past two years. The first of these occurred in an introductory lecture on Roman art and archaeology that I offered to more than 150 students in the spring of 2018. As I set out to unpack the complex iconography of this painting for my class, I stumbled over an explanation for the aforementioned reading boy. He stands on the north wall near a secondary entrance to the room where the fresco narrative presumably begins (Figure 3).

The boy is naked but for a pair of high boots and a garland in his hair. The boots resemble those worn by Dionysiac figures and actors in the Roman world,



Figure 1. Composite photograph of the triclinium in the Villa of the Mysteries, Pompeii, as seen from the entrance.
(Photographs by Matthias Kabel, September 2012, used under the GNU Free Documentation License.)



Figure 2. Composite photograph of fresco in the Villa of the Mysteries. (Image in the public domain. Photographs by Shakko-Kitsune, January 2019, used under the Creative Commons Attribution-Share Alike 4.0 International License.)



Figure 3. Detail of the fresco on the north wall of the Villa of the Mysteries. (Image in the public domain. Photograph used under the GNU Free Documentation License.)

while the crown of ivy leaves in his hair, also worn by females in the fresco, is associated with the worship of Dionysus. The boy stands with his legs together; his right knee is slightly bent and his left hip is raised. His prepubescent figure is slim and feminine. His bent arms are held close to his body and his shoulders appear raised, as though his upper body is tensed. His eyes stare down at the scroll he clutches in front of him. A seated woman behind him rests her right hand on the boy's shoulder and directs a stylus toward the scroll, but her uninterested eyes look over the boy to the right and do not engage with him directly.

Previous scholars have interpreted this boy as engaged in sacred reading because of the scroll and other allusions to mystery cult practices in the fresco, but his nudity is rarely addressed. His nudity, moreover, is an uncomfortable thing to explain to a large

audience because it does not make sense. As a prepubescent teen, he is too old and too pagan for nudity to signal childhood purity. Furthermore, he is not directly involved in the mythological tableau and so cannot easily be read as a god. As I told my students then, nudity is somewhat atypical for Roman viewers, even in the Late Republic. The naked body is a heroic image if associated with a deity or Greek athletic imagery. But often, and especially in private contexts, nudity is used to sexualize a figure or to mark their low status, sometimes both.

I do not remember what exactly I did with this boy in that lecture, but I know I could not make sense of him at that moment. In the summer of 2019, the same figure surfaced again in an email exchange I had with Amy Richlin in the Department of Classics. Richlin has long worked on sex, enslavement, and the subaltern in the Roman world and has published on child slaves (Richlin 2015). She emailed me after spending a few days thinking about this boy, whose image decorated the cover of the Latin textbook the

department had adopted for use in her fall course. Latin textbooks often feature ancient images of people reading or writing, so it is not surprising that the publisher had chosen the young reader in the Villa of the Mysteries. Funnily enough, a textbook in one of my fall courses (Mary Beard's *The Fires of Vesuvius*) also featured the boy on its cover. Such a flood of under-age ancient nudity prompted conversations about the figure's identification, which led to a larger discussion in the department and then a joint mini-presentation with Richlin about the depiction of enslaved, sexualized children in the Roman world at the 2020 Annual Meeting of the Archaeological Institute of America.

More pressing academic priorities (like my forthcoming monograph) were such that further dedicated analysis of this figure might have sat on the back burner a bit longer were it not for the events of 2020. Like most people, my plans were put on hold by the coronavirus. Covid-19 delayed preliminary field-work (survey and research) at the Roman-era site of Industria just outside Turin, Italy, and the suspension of both international travel and library access threw wrenches into the completion of several chapters in my monograph on the Roman villa in Late Antiquity.

Yet, to be perfectly honest, 2020 hindered progress on my book less because of the coronavirus and more because of the death of George Floyd and the brutal reality of police violence against Black America. George Floyd's death occurred in week 9 of the spring term at UCLA, at which point I found myself teaching Roman art and archaeology remotely. I remember feeling confused as I came into lecture that week. Alone and in front of my computer, I was expected to talk about religious pluralism at Dura Europos in Roman Syria while the world around me mourned and raged. Most of the time, Dura Europos is an exciting site to discuss with students because it bears witness to the multiculturalism of the ancient world, with remarkable similarities across the plan and decor of mid-third-century CE religious spaces dedicated to Mithraism, Christianity, Judaism, and the Imperial cult. But on the Thursday after the death of George Floyd, the rosy optimism of religious pluralism at Dura Europos felt like an unwelcome punch in the gut. I could not help but draw parallels between syntheses of the Durene paintings and images of college admissions brochures, which celebrate the racial diversity of the student body without giving voice to the challenges that nonwhite students face in the ivory towers of American academia.

Classics is only now reckoning with its past.

In particular, study of the Greco-Roman world has long been dominated by white scholars of European descent. Racist attacks against Black voices in our field at the 2019 Annual Meeting of the Archaeological Institute of America and the Society for Classical Studies in San Diego highlight an ongoing problem.² Classics as a field—long dependent on literary and material evidence of the elite—is only now reckoning with its past, stumbling through discussions about how to make our discipline more equitable more inviting to non-white students and scholars (Black, Indigenous, and people of color), whose varied life experiences stand to complement, challenge, and critique synthesis of classical antiquity.

So a perfect constellation of factors stopped me in my tracks this summer. As Covid-19 statistics made clear the disproportionate impact of the virus on minority populations in the United States, protests against the deaths of George Floyd, Ahmaud Arbery, Breonna Taylor, and countless other Black Americans decried the institutionalized racism that pervades our country. Calls in 2020 for large-scale reform against police brutality and other systems of oppression—which have gone unheard for too long—challenge each one of us to reflect on what we are doing to support necessary transformations and make substantial changes.

In my professional life, the Black Lives Matter movement has encouraged a revised approach to my monograph on Late Antique Roman villas and their wealthy, privileged owners. For, despite its attention to regional interactions and local permutations of villa culture, the book project was focused on the habits and customs of those with *auctoritas* in the Late Antique world: those who held positions of power and authority, who influenced, persuaded, and shaped social and intellectual discourse, necessarily at the expense of others. Therefore, as 2020 draws to a

2. Dan-el Padilla Peralta, "Some Thoughts on AIA-SCS 2019," Medium, January 7, 2019, <https://medium.com/@danelpadillaperalta/some-thoughts-on-aia-scs-2019-d6a480a1812a> (accessed November 3, 2020).

close, the book is under renovation as I explore ways to incorporate non-elite persons and subjects into my synthesis of the Roman villa, to provide a more holistic and more critical perspective on the material remains. As I contemplate the best ways to do this, I have returned to the boy in the Villa of the Mysteries fresco, whose story has not yet been given adequate attention by scholars. What follows is a brief summary of previous interpretations of this figure, together with my own observations and directions for further investigation.

MAKING SENSE OF THE BOY IN THE VILLA OF THE MYSTERIES FRESCO

Since the early twentieth century, this naked boy has been interpreted as a reader of initiation rites or other rituals associated with mystery cult. Early scholarship cited evidence in Greek cult for such children, who surface in the literary record. For example, Jocelyn Toynbee (1929) and other scholars reference a part of Demosthenes's speech "On the Crown." In this speech, the fourth-century BCE Greek orator insults his opponent Aeschines by mentioning his involvement in menial tasks as a young boy. Chief among these are assisting his mother in preparations for and practice of mystery cult: Aeschines reads the service book, mixes libations, and washes and clothes the initiates. According to Demosthenes, such work reflects Aeschines's poverty and depravity (Yunis 2001). It might be argued that this political invective was designed precisely to assail Aeschines's character, but it is equally clear from this that the reading of cultic mysteries is a lowly activity. This was an immediate red flag for me, even if the text predates the fresco by 300 years. For we know that in the Roman world, enslaved persons played a major role in mystery cults through the Imperial period (Scheid 1986) and were used as readers by the Roman elite in a variety of contexts..

Interestingly, in my quest to find Roman-era comparanda of children in mystery cult, I turned to a funerary inscription dated to the first or second century CE and mentioned in early discussions of the boy in the Villa of the Mysteries frieze. This inscription

The boy is a window into the harsh realities of the Roman world.

was found in Rome but is written in Greek. The deceased is a seven-year-old named Herophilos, who is identified as a "speaker of Dionysiac rites." Although previous scholarship referenced this inscription when discussing the Villa of the Mysteries boy, none of the scholars marked Herophilos as an enslaved person, which he certainly was. Epigraphic habits of the early Roman Empire are such that citizens were identified in funerary epitaphs by their three-part names to suggest their family lineage and belonging. In Herophilos's case, however, the single Greek name suggests he was an enslaved boy.

With this in mind, the nudity of the reading boy at the Villa of the Mysteries becomes further problematic. I am hardly the first to be troubled by this. Citing the figure's nakedness, some scholars have identified the boy as a young Dionysus; that is, as a god rather than a mortal human being (Sauron 1998). This is not widely accepted because of the dress and carriage of the female figures who surround the boy and belong to the mortal world. Nor are images of pubescent Dionysus, much less reading Dionysus, common in Greco-Roman art. True, there are occasional images of mythological boys being educated by an older figure (such as Chiron and Achilles in Figure 4), but these appear to reference Greek forms of mentorship involving an older male (*erastes*) and a young man (*eromenos*) on the verge of adulthood (Greek pederasty). This hierarchical relationship often had a sexual character.

On that note, I have noticed that more recent scholarship on this fresco appears ambivalent or perhaps even uncomfortable with this boy (Clarke 1991; Gazda 2006), probably for some of the same reasons I am. Most contemporary syntheses describe him but rarely incorporate him into interpretations of the surrounding scene. Perhaps he has been forgotten (or worse, ignored) because he is a window into the harsh realities of the Roman world. His nakedness is not becoming to a freeborn Roman child, nor is it a clear sign of his divinity. The other option is an interpretation of the figure as an enslaved person, a sexualized



Figure 4. Chiron and young Achilles as depicted in a fresco from Herculaneum, now in the Museo Archeologico Nazionale di Napoli (inventory number 9109).

figure (perhaps in the context of cultic rituals), or both. For my part, I see the boy as a participant in the ritual activities the fresco alludes to, but I associate the act of reading while naked as a mark of his enslavement and sexualization.

ENSLAVED CHILDREN IN THE ROMAN WORLD

Although this interpretation is still a work in progress, there is great deal of evidence for sexualized child slaves in the Roman world to back it up. Recent studies have drawn attention to enslaved nude youths in art, from Roman statues of Eros in chains (George 2013) to elite bronze service objects (lamp stands, table legs, and so on) shaped like young boys (Figure 5; Lenski 2013). Such material culture backs up a rich corpus of literary testimony for enslaved children, which frequently takes place at dinner parties in the triclinium (D'Arms 1991).

For example, Juvenal's fifth satire, a biting commentary on the Roman patron–client relationship written in the early second century CE, begins at a dinner party. Juvenal spends some time comparing his own waiter, a dark skinned “Ganymede,” to his host Virro's waiter, dubbed “the flower of Asia.” The poet suggests that Virro has spent too much on this beautiful slave, which is part of a larger critique about the way Virro handles his wealth. Reading this as a social historian,



Figure 5. A candelabrum in the shape of a young boy from the House of the Ephebe (I.7.10-12) in Pompeii, now in the Museo Archeologico Nazionale di Napoli (inventory number 143753).



Figure 6. Banquet scene from the House of the Triclinium (V.2.4) in Pompeii, now in the Museo Archeologico Nazionale di Napoli (inventory number 120030).

however, it is clear that the youthful serving staff in the Roman triclinium was regularly objectified and that dining provided a venue for ogling and interacting with such persons on an intimate level (Green 2015).

Young nude boys—presumably slaves—also provided entertainment at some Roman dinner parties. Again, there is evidence in both the literary and material record. A poorly preserved fresco in Pompeii at the House of the Triclinium features what appears to be a male nude dancing in front of the diners, one of whom brings his hands together in a pose that suggests delight (Figure 6). In Petronius’s *Satyricon*, written in the mid-first century CE, a rich but socially gauche freedman (an enslaved Roman who has bought or been granted his freedom) named Trimalchio hosts a dinner party that features a performer who resembles the nude boy in the Villa of the Mysteries. As the narrator, one of Trimalchio’s dinner guests, recounts, he was “a beautiful boy with vine-leaves and ivy in his hair [who] brought round grapes in a little basket,

impersonating Bacchus . . . and rendering his master’s verses in a most shrill voice.”

With such evidence, my preliminary conclusions about the nude boy in the Villa of the Mysteries fresco suggest his objectification in what is arguably the most important room for elite interactions in the villa. Within the visual narrative itself, the act of reading while naked clearly marks his status as an enslaved child. As an enslaved minor, moreover, his nudity was not his decision, even though one might argue that nudity was a feature of mystery cult practice. The hunched shoulders and clenched legs underscore this act of oppression.

Quite independent of any narrative within the fresco, it is also important to note that the boy was painted primarily for the enjoyment of the elite audience that controlled conversations in this room and the Roman world more broadly. This youthful two-dimensional boy did not need to be undressed by any interested viewer and could not put up any resistance to their sexual advances. Moreover, this painted boy could not age and would never lose the blossom of youth. Such thinking recalls the comments of the first-century CE Roman poet Martial, who bemoans

a basic fact of life in one of his epigrams: sexy wine pourers age and eventually leave the dining room for the kitchen.

In summary, the naked boy in the Villa of the Mysteries fresco is a distressing reminder that elite decorative schemes reinforce established social hierarchies of the ancient world. For the villa owners and their guests, the naked boy in this fresco was decorative and easy on the eyes; his enslaved status was a non-issue. Alternatively, among the enslaved staff of the villa, this image (and those of the nude women in the room) was a less-than-subtle reminder that sexual violence was a basic fact of life. The display of the painting in the triclinium of the villa further reinforced these power dynamics.

NEXT STEPS

What I have presented here is a work in progress, but in fashioning a revision to received interpretations of this figure and this fresco, I am conscious of the ways the argument builds on what I am learning from the Black Lives Matter movement and the Covid-19 pandemic. This is not to say that my concluding thoughts are skewed by present circumstances. Rather, I am acknowledging contemporary institutionalized systems of oppression, which compel me to reconsider what I see in the contemporary world but also the ancient. For the moment, then, understanding that the Villa of the Mysteries fresco perpetuates brutal, institutionalized hierarchies is powerful in and of itself. The final publication will further contextualize this argument within a broader study of child enslavement in the Roman era and unravel the role of the villa in perpetuating social hierarchies. With this work I join other classical archaeologists and historians challenging established disciplinary narratives and various barbarisms that have been sanitized over the ages, working to deconstruct the emphasis on the elite. Together with broader conversations in classics about racism and exclusionary practices,³ these efforts stand to open the discipline to new voices, new approaches, and new lines of inquiry as much as to further our understanding of the ancient Mediterranean and rewrite the dominant narratives within it.

3. Pria Jackson, "Fight or Die: How to Move from Statements to Action," *Eidolon*, June 11, 2020, <https://eidolon.pub/fight-or-die-a5613e249d9a> (accessed November 3, 2020); Mathura Umachandran, "Fragile, Handle with Care," *Eidolon*, June 5, 2017, <https://eidolon.pub/fragile-handle-with-care-66848145cf29> (accessed November 3, 2020).

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“I’m again not doing well . . .”

Giorgio Buccellati¹ and Marilyn Kelly-Buccellati²

We knew Gregory Areshian’s strength of character, and we knew as well his abiding commitment to scholarship. It was all encased in a very gentle manner, without any display. But it was deep and enduring. This strength, and this gentleness, came to life for us during what turned out to be the final correspondence we had with him.³ As we look back, it is as if we were able to see him, in his hospital bed. The email messages from this bed became progressively more poignant, and in retrospect we read in them the darkening that was gathering around him. Until the last one: “I’m again not doing well...” He was not well indeed. For that was his last email message to us.

Gregory was completing his work on the publication of the figurines from Terqa, Syria. We had excavated the site in the 1970s and 1980s, and the small finds were awaiting publication. Knowing of his interest in probing the deeper layers of meaning even in the most minute of artifacts, we had asked him if he would like to publish them. He took up the challenge immediately, and he worked on them assiduously. During a visit he paid to us at our new excavations in Tell

Moza, also in Syria, we arranged for him to go the museum in Der ez-Zor where the figurines were kept. After that, he continued with his research on and off, and when we had to close the volume, he committed himself to this task. It turned out to be a more tragic end than any of us ever suspected.

By June 2020 he had finished everything. He only needed to sort for the typesetter the individual files, the drawings he had produced and gathered on collective pages. This he started doing right away, and then came the first email message from the hospital:

July 16

It seems that there is some kind of force preventing me from meeting the deadlines nowadays. I contracted Covid-19 and started having acute symptoms (including high fever and incipient signs of pneumonia) since last Thursday evening. Now I’m hospitalized for the third day, and, unfortunately, have a very poor wi-fi connection. So, I must apologize for the inconvenience that my situation is causing, but with this email I start sending my work on Terqa done in the last 10 days in relatively small portions, determined by the capability of my wi-fi connection. Please see attachments.

Stay safe,

Three more messages on the same day brought us three additional batches of drawings. They were perfect, and though we were concerned about the ominous term *Covid-19*, we did not become too alarmed. We were, without knowing it, being comforted by his strength and gentleness.

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3. See also the obituary of Gregory Areshian elsewhere in this issue.



Figure 1. Gregory Areshian in Terqa, Syria.

July 17

I'm so sorry, I had a very hard day with fever up to 103°F. Otherwise, I would have sent you more batches. Please find attached Batch 5.

Again, this message was followed by one additional batch. It was a struggle, we could tell, but it was all so professional that we attributed the slowness to the Wi-Fi, as he was telling us. We insisted, in our return message, that he should not worry, that we could send the finished drawings to the typesetter after he got better, that he should keep his strength.

July 21

I'm again not doing well, still on oxygen and ridiculous doses of intravenous medications. I really can't work in bed on the computer for more than 20 minutes per day, because I'm very weak and losing concentration. But I want to send you everything ASAP because it's all completed. Please find attached Batch 7.

On the same day, two more batches followed. The task was practically all complete. He had indeed kept his strength. But not for himself. This was to be his very last email.

* * *

On the occasion of his visit to the museum in Der ez-Zor, where he had gone to see the figurines from Terqa, he took a side trip to Ashara, the site of ancient Terqa. Both moments were typical of him: to study an item autoptically and to become familiar with its original environment. When corresponding a few weeks before he was taken to the hospital, in an email message dated May 28, 2020, he attached photographs of his visit to the site. Here is the message that accompanied them:

As a sweet memory, I'm also attaching the photo of the tell of Terqa taken when, thanks to you, I had the chance of visiting Terqa.

It was his gentleness coming through once again. We share the image, and all it stands for, with you.

Material Entanglements in 2020

Adam DiBattista¹

Like many of us who spend much of our lives involved with archaeology, I tend to think about how our actions will shape the material record of the future. I wonder when numismatists and pottery experts will be replaced by specialists in iPhone typologies and plastic water bottle shapes. There will be much for future archaeologists to study; we have an addiction to plastic packaging and a continuous physical engagement with the material. Microplastic builds up in our organs, silicone coats the medical devices that keep us alive, and wireless earbuds alter our engagement with the world. One might deduce that we are not humans living in the Anthropocene but post-humans in the Plastocene. In short, there is a lot to be excited about if you are an archaeologist living in the year 2666.

While our reliance on plastic might be a defining characteristic of modern life, it has its roots in the Industrial Revolution of the eighteenth century. For most of us, the timespan of 250 years is difficult to appreciate. Even the internet was scaffolded by decades of technical developments; most of our modern engagements with material culture have long

histories. Since the start of the Covid-19 pandemic, I have felt that our relationship to material culture has quickly changed. In only a few months, I have watched deposition patterns change in the streets of Los Angeles (Figure 1). Abandoned masks accumulate on street corners and latex gloves can be spotted in trash cans, sadly waving at passersby. Businesses, perhaps too hopeful, have spray-painted small X's at 6-foot (2 m.) intervals outside their doors. With the fabric of the city rewoven in small ways, I think about whether future archaeologists will recognize the minor changes we made in our material entanglements in 2020.

As masks have become both a regular and a contentious part of life, I reflect on what the introduction of new forms of material culture was like in the past: I wonder whether certain individuals in the ancient world bemoaned the introduction of an innovative pottery style or railed against a novel alloy simply because the technology was new. I am not wholly surprised that something as simple as a mask can provoke so much ire, because as humans, we are hardwired to imbue objects with meaning. Masks have become entangled social signifiers; they enmesh us with ideas of community, collective action, and optimism as well as reminders of sickness and death. Yet masks have also been viewed as threats to personal liberty, and some men even refuse to wear them because they are not masculine. Masks bring with them many aspects of our societal insecurities and disagreements. In archaeological discourse, objects are often thought of as polyvalent and are understood using contradictory

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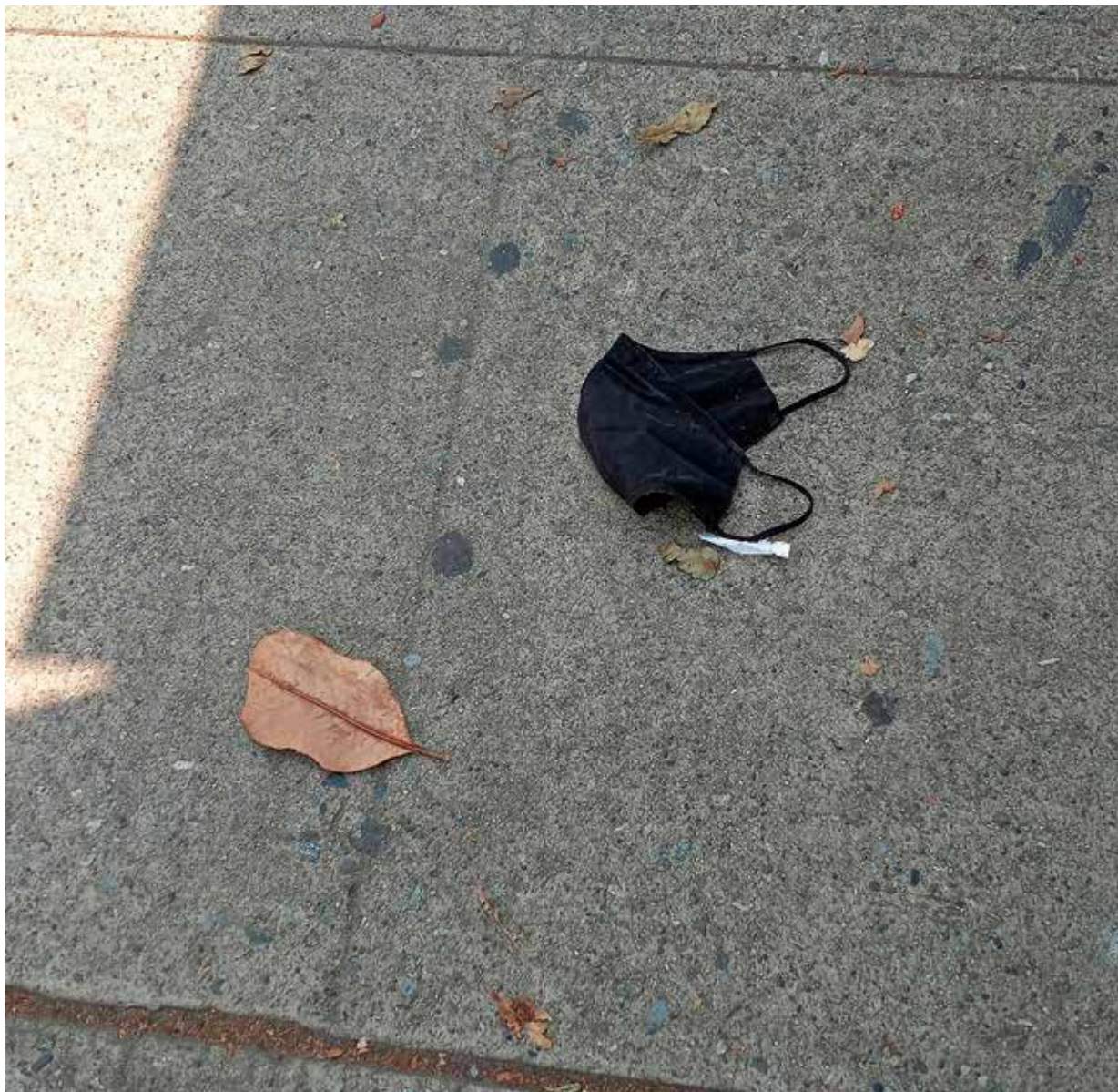


Figure 1. A used face mask carelessly and dangerously abandoned on a sidewalk in Los Angeles.

interpretations. In this way, masks do not seem so different from the objects recovered on an excavation.

As I write this, more than 1,000 Americans are dying from Covid-19 every day. It remains a serious problem that has exposed systematic flaws in the country. While I wonder about the future depositional history of masks and latex gloves, I am certain that the legacy of the pandemic in the archaeological record will be the mass graves of Hart Island, New York, and Vila Formosa Cemetery in Brazil. It often feels like archaeology can offer very little when we are dealing with a pandemic in the age of globalized travel and weaponized disinformation. If nothing else, this discipline should serve as a reminder that our relation-

ship with material culture is a powerful aspect of the human experience. We should expect some people to construct their identities around the use of a mask. However, this is not an excuse to equivocate about the fact that individuals in this country are making choices about mask-wearing that put others in danger. Archaeologists are obsessed with looking for material correlates for breakdown and collapse, and we cannot become complacent about the fact that some engagements with material culture (or lack thereof) can have deleterious effects for the society at large.

A Space of One's Own

Moupi Mukhopadhyay¹

After five months of continuous confinement to a 8 km (5 mile) radius from my place of residence, I recently went to the beach to escape a sweltering mid-August heat wave. Somehow, I managed to keep myself at a safe distance from the mask-less sunbathers and runners, and eke out a reasonably deserted spot for myself. It was all worth it because for the first time in my life I managed to spot dolphins from the shore. As someone whose total dolphin sightings are in the single digits, this was a very exciting experience. I tried my best to take pictures (Figure 1), but they did not do the experience justice, so I resigned myself to watching the dolphins, with the setting sun reflecting off their glistening fins. They were keeping a certain distance from the shore, of course, and appeared unaffected by the few boogie boarders who had waded out far enough to reach them. During the past few months, dolphins have managed to reclaim some of the space in the ocean that has been invaded by humans for centuries. The novel coronavirus pandemic has caused people on the beach, pollution, and overfishing to decrease sufficiently for these dolphins

1. Graduate student in the UCLA/Getty Conservation Program.

A work–life balance becomes an abstract thing.

to feel safe close to the shore. Our current global situation has strongly highlighted, for me, the importance of spaces: personal spaces, work spaces, and safe spaces.

It is difficult to construct a narrative encompassing my thoughts on these spaces without addressing temporal structures, as they go hand in hand. Of particular interest to me is time management and work–life balance during the pandemic. Since our campus closed in March (Figure 2), it has been very interesting to see the novelty of quarantine turn into deep restlessness over the months. *Zoom fatigue* is an oft-used term, recognizing that sitting in one place for all your education and networking needs is not very appealing. The travel bans and the flurry of panicked international travel meant that many of us got scattered to different time zones. For a lot of people this also meant having to be available at unusual times of the day. Indeed, increased online availability due to the pandemic—and its effects on relationships, both personal and professional—is a fascinating topic. Even before the pandemic, there were conversations about how taking your laptop and phone on vacation was becoming the norm, and about pushing the boundaries between work and home. Our pandemic work habits have ruptured those boundaries entirely,





Figure 1. Video still of a dolphin, taken with the author's cell phone.

dissolving time-bound routines into a nebulous soup of moments that last an eternity and hours that pass in the blink of an eye.

SPACE AND THE BALANCE OF LIFE

A work–life balance becomes an increasingly abstract thing when you do not have distinct spatial and temporal structures. Before the pandemic, most of us had a clear separation between our work spaces and our personal lives. As I was working mainly at UCLA this past academic year, securing a desk at the Cotsen Institute made a world of difference to my efficiency compared to working at a library or at home. It made for an excellent separation of space; I had the desk to handle heavy workloads and the library for a more immersive atmosphere for reading (Figure 3). Leaving these spaces was a cue to disengage from work and to relax. Afterward, being in public spaces outside the university campus automatically shifted my mind-set. It was easy not to think about classes and papers while spending time with my friends in parks and on the beach. Finally at home I could unwind and rejuvenate, and occasionally make conversation with my roommates. Apart from the occasional late-night session to complete an assignment, it was easy not to allow a mind-set associated with a specific place and hour to seep into a different combination of space and time. Lying on my bed at 10 p.m. was as good a barrier to



Figure 2. Powell Library seen across an empty campus at dawn. (Note the light coming in from the east.)

worrying about work as sitting at my desk at 10 a.m. in the morning was a deterrent to the urge to binge watch Netflix. Entering and leaving physical spaces automatically accounted for the separation of time as well. This type of automatic mind-set switching was

A SPACE OF ONE'S OWN

something I just took for granted and never thought about until very recently.

After leaving home for college almost a decade ago, I never relied on my ever-changing living space for more than a couple of functions, mostly to get ready for the day and to unwind after work. It was best to utilize the space this way because it is challenging to study or write while sharing a room with one or more people. One-off work emergencies allowed for inconsistent use of the spaces in my room, bringing food to the study desk or working in bed was not a big deal when I did it occasionally. However, this sort of inconsistency is not sustainable in quarantine. At first, I spent a lot of time during lockdown using my room the same way I had used it pre-pandemic, wondering why I was unable to reach my full potential. A steep learning curve led to the realization that I was trying to use one room to execute functions that were previ-

ously undertaken at several different locations and times. This created a lot of unnecessary friction in my life, introducing constant, intrusive thoughts about pending projects when I was trying to relax and, similarly, launching distracting thoughts of entertainment options when I was trying to work. Flummoxed by what I assumed was my inability to discipline myself, I turned to the one source most of my generation turns to when in doubt: the internet.

REMOTE ADVICE

My suspicions were confirmed right at that first Google search; my experience was certainly not unique but instead was shared by thousands of people writing articles about this exact conundrum. I read a lot of helpful pieces. “Don’t bring your work to bed,” they said, and “don’t respond to emails after 5:00 p.m.” All very good advice but somehow harder to implement than it sounded. On some days, I was unable to do any work all morning and then frantically responded to



Figure 3. Composite photograph of the author hard at work in the library.



Figure 4. The author on one of her daily walks in Holmby Hills.

emails in bed at seven in the evening, hoping I was not too late. What was I doing wrong and why did I find it so difficult to implement such simple advice? Some articles advised assigning particular spaces to certain activities; cordon off a space to work in, eat only at the dining table, work only in a specific area, pick a spot to meditate, and so on and so forth. The mantra was “change your environment.” It was around that time that I recognized that separation of spaces is essential to every person. I began noticing this being practiced by people around me. A consistent, nonvirtual Zoom background was only one of the observations that clued me into this convention. People also mentioned sectioning off portions of their day to concentrate on just one activity, like watering their plants on the balcony or crocheting tea cozies in their favorite armchair. Each combination of time and space for a certain activity offered a way for them to be completely present in a specific mind-set instead of having other aspects of life leak in and muddy the waters.

I had also created a separate space for myself. This summer, my only respites from the roiling uncertainties of the day were the long walks I took around the UCLA campus and Holmby Hills (Figure 4). I noticed that I spent less time worrying about my work and family during the walks. At some point, the experience became a new combination of space and time that facilitated a specific mind-set for me. I did not have to walk at the same time every day, or even the same route; that much specificity would be hard to maintain and get boring soon. Just spending time outside my room and experiencing continuous movement was enough to define a new mind-set. What I am describing is nothing new; it is common knowledge. It is just easily forgotten sometimes, especially when there are big changes in life. I just needed time to recognize my

Why did I find it difficult to implement simple advice?

ability to create a separate space, as I had done with the walks, and replicate it in my room. It is challenging, though, to create separate spaces or nooks in a dorm-style room. Here, the living room, bedroom, dining room, and makeshift kitchen blur into one single rectangular space in which one spends nearly all day. How do you set up separate spaces for activities when there are no clear boundaries and everything merges into one another?

TRANSFORMING SPACES

One answer to that can be found in the architectural and social trend called the tiny house movement.² It promotes living in small spaces, tiny homes with inspiring versatility, to enable environmental consciousness and self-sufficiency. In these small spaces, staircases double as storage drawers, collapsible walls turn a living room into a kitchen, and beds and showers fold out of the way during the day. Each element completely changes the environment of the tiny space. The initial investment in a tiny home can sound like

2. “What Is the Tiny House Movement?” Tiny Life, <https://thetinylife.com/what-is-the-tiny-house-movement/> (accessed August 31, 2020).

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a lot, but it pays off in the long run. Sometimes, the versatility is elaborate. Hong Kong resident Gary Chang has lived in one apartment for many decades with his family. A video of this space transforming into 24 different rooms went viral many years ago and continues to impress and inspire.³ A more practical example of such a transformation of space is the seminar room A222 at the Cotsen Institute (Figure 5). A few years ago, this room looked completely different, with a central projection screen on the south wall and two unfortunate rugs, which suffered many soda spills (including one of mine) during the weekly Pizza Talks. Now the room has been completely redecorated, with two television screens, one of which is mounted on

3. Kirsten Dirksen, "Extreme Transformer Home in Hong Kong: Gary Chang's 24 Rooms in 1," <https://www.youtube.com/watch?v=WB2-2j9e4co> (accessed August 31, 2020).

There is more
to adapting
to quarantine than
better WiFi.

rollers and can be moved to free up space. A subsequent, relatively low-effort change in the arrangement of the chairs has had a significant impact on the environment of the room, allowing events to be organized in a variety of formats. Such low-effort transformation is something that Gary Chang addresses when discussing the architectural design of his home: it is something you need to be willing to do all the time.

The "low-effort" aspect is key to making a sustainable change. I do not have Gary Chang's resources, but there are many ways to get creative and invest in additions that can transform a space to suit a particular activity. A friend suggested that I light a scented



Figure 5. Seminar room A222 in the Cotsen Institute before (top) and after (bottom) redecoration.



Figure 6. Composite photograph of the transformed room of the author, with a forest scene tapestry hanging from the bunk bed.

candle every time I read for pleasure, and I have found that it works tremendously well. Once I connected the sensation of slipping into an alternate universe with the aroma of an admittedly cheesy Balance + Harmony candle, I was able to finish a book I had been struggling to read all summer in a single sitting. Gradually, I started to assign specific arrangements in my room to different activities. For instance, I now sit facing the window for Zoom meetings and turn my chair around when I want to read. When I am facing the window, I am automatically in the Zoom mind-set and find it easier to separate myself from the worries of all the papers I have to read and all the emails I have to send. I also use fabric to change my environment: I hang a light tapestry of a forest scene over the large bunk bed in my room—an immovable relic of my two erstwhile roommates—when I do yoga indoors (Figure 6). The tapestry is secured neatly to the top of the bunk bed so I can roll it out when I need it instead of having to unfold and hang it each time. This path-of-least-resistance transformation has proven to be sustainable so far, and I am hoping it will help me weather the remainder of the quarantine period.

As with any other skill, adapting to the new climate we are living in takes practice. Different people have definitely responded differently to life in quarantine, and their revised routines have a lot to do with lifelong habits and attitudes, as well as their privileges. It is important to understand that there is no one-size-fits-all solution for this kind of problem, and there are many caveats that I have not addressed or even considered due to my limited experience. Opening up safe spaces to have conversations about pandemic-induced coping mechanisms is something that would greatly benefit everyone. It is difficult to be vulnerable

about everyday struggles when you know that there are a ton of solutions that already exist and that you think everyone is already implementing, leaving you the sole struggler. A safe space allows for listening rather than just suggesting remedies, recognizing that sometimes all people need to do is verbalize their predicament before they can move on to seemingly simple solutions. These conversations can help us undertake nonjudgmental reassessments of our lives and enable us to find our own solutions. There is a lot more to adapting to quarantine than just getting better WiFi. Small changes in behavior and environment can help with productivity and protecting our personal space-time from being invaded.

In conclusion, I would like to acknowledge the privileged place that these thoughts are coming from. Not many are as lucky as I am. I have a physically safe bubble to live in, I can support myself and my family during these difficult times, and I have the time to discuss these thoughts with people with diverse perspectives. We do not live in an ideal world where every single person has a room of their own, even without the barriers of overprioritized capitalism, discrimination, and a skewed distribution of global resources among a burgeoning population. However, with some creativity, initiative, and compassion, everyone can at least have a space of their own.

Reflections on 2020 Thus Far

Iman Jamal Nagy¹

The beginning of 2020 was seemingly normal. I had returned from a field school in Ethiopia with my adviser, Willeke Wendrich. This was a life-changing experience that altered the course of my graduate studies, for which I express endless gratitude. Exposure to community and ethnoarchaeology, gaining technical field skills (Figure 1), and working with the Indigenous population showed me where I belong (Figure 2). It provided clarity with respect to my course of academic action, which had hitherto been obscured. I was on track to become an Egyptologist, having spent the last two years studying ancient languages and historical analyses of the ancient Near East. However, this future looked daunting and seemed more unwelcoming than I had ever anticipated. It became increasingly clear that, because of my disenfranchised socioeconomic and ethnic backgrounds, there was little to no place for me in this field, and if there was, it would be a long, hard fight, which would eventually exhaust whatever passion and expertise I could bring to it. This prompted me to understand the historical context of this reality, to understand why departments are dominated by particular ethnicities, clearly lacking diversity. This point is important and will motivate my actions farther down the line.

1. MA student and departmental scholar in the Department of Near Eastern Languages and Cultures.

Being of Ethiopian-Yemeni descent on my father's side, I was conditioned into a religious bias that discouraged me from studying the ancient history of Ethiopia. Admittedly, as an American and as a North-east African, I was socially conditioned to romanticize the grandiosity of ancient Egypt. It became increasingly clear to me that I was studying the 1 percent. It became increasingly clear to me that I was looking into the history of the ancient world with tunnel vision, focusing solely on aspects of monumentality, trying to understand the ancient ways of life, the lives of my ancestors, through the evidence of the most privileged. In my opinion, it was a reflection and projection of our own modern society onto the ancient world. Both my parents are from villages. Am I to perceive some aspects of their lives by studying their far-removed state governments?

Thus I shifted my focus to studying ancient wisdom texts, for which I received guidance from Giorgio Buccellati, whose profound work and insights continue to motivate my endeavors. It was through his encouragement that I felt the impetus to branch out. I felt as though ancient wisdom texts allowed insight into a kind of emic thinking, that I might penetrate the psyche of the ancient individual. What I did not understand, at this point, was that my quest was leading me toward understanding the prolific importance of Indigenous knowledge. Again, shifting my focus toward archaeological theory, I began to see the pitfalls of Western scholarship and its colonial worldviews. I was privileged to access classes in the Cotsen Institute and be exposed to the exemplary work of Stephen Acabado. His inclusion of Indigenous epistemology inspires me, and he was kind enough to allow me to join his projects in Taiwan and the Philippines,



Figure 1. The author excavates Trench 2 in Mai Adrasha, Tigray Province, northern Ethiopia.

where I had hoped to gain technical skills in archaeology and anthropology that would allow me to better serve the project of my adviser in Ethiopia.

ENTER COVID-19

Everything is canceled, future prospects postponed indefinitely with the increasing chaos of these unprecedented times, a phrase that is now entirely normalized. Opportunities for technical learning are out the window; a selfish statement in light of the amount of suffering incurred to our global society. With my father being abroad, my first concern is for the welfare of my two younger sisters, and I now have the added responsibility to ensure their safety. UCLA had very quickly, compared to other institutions, switched to remote teaching. The schools of my sisters did not act so quickly, and my anxiety went through the roof, as one of them is at high risk when getting infected. Mind you, during this abrupt global shift, we did not really understand what was going on. We still do not. Varying opinions are veering left and right. I cannot imagine what it is like to have children during this time, let alone attempting to maintain some kind of hopeful, reassuring idea of the world after the Covid-19 pandemic. Is there such a thing? The air is filled with anxiety. The situation changes every moment. We wonder whether the act of gathering supplies to assure survival is actually furthering our likelihood of destruction.

All these feelings and many more create a reality that written language is ill-equipped to express. Our endeavors, our life goals, are now overshadowed by the prospect of massive loss. In the beginning, the pandemic seemed removed, targeting only specific groups and specific areas. Now it is everywhere, no longer proximal. For some, the loss is knocking on the front door and has made itself at home. My family is already disjointed, living in the various countries we can find opportunity in, the reality for so many migrants. We are all stuck now, in isolation, separated and yet connected through screens, in my opinion the most superficial experience of humanity, but still something. We should not complain about this reality, even though we still do while reminding ourselves that survival is paramount.

ENTER BLACK LIVES MATTER

Fear of contact has somewhat dissipated, and socioeconomic realities have surfaced: the virus disproportionately affects people of color. Again. The killing of George Floyd, on camera, has caused global uprising. Again. The dark realities of the disenfranchised, the voiceless, have risen. Again. I sit with my younger sisters. Our father is Black African. They ask me if that could ever happen to Baba. "Is this not why we

REFLECTIONS ON 2020



Figure 2. The author meets local inhabitant Selam at Mai Gundo during the regional archaeological survey of the area east of the town of Shire (Indaselassie) in northern Ethiopia.

left Yemen, to escape war?” they ask. I do not have answers. I will not discuss my personal experiences as a person of color here. Instead, I will describe what my 8- and 13-year-old sisters have experienced as citizens of the United States, with their permission. In doing so, it is not my intention in any way to undermine the experiences of Black and Indigenous Americans, who have undoubtedly experienced the absolute worst in this country. Allow me to illustrate what is unclear to so many. Our neighbors have called the police on my sisters countless times, for playing on their scooters, because one of them wears a hijab and because being Ethiopian-Yemeni-Filipino, they are ethnically ambiguous, meaning that they are threatening for some reason beyond my understanding. The FBI has frequented our residence on several occasions. Not only are there Black people in the family but also another threat, Islam, which I imagine is a driving force in the unabashed racism and prejudice. When the riots took over Los Angeles, my sisters were terrified. Not of the protestors but of the police. Would they be targeted if they went outside? This is our normal life.

Now that I have established some context, I would like to revert to the topics discussed in the beginning: my academic pursuits. I cannot help but understand why there is little to no place for me in the field of

Egyptology, the study of the civilization of my ancestors, whose cultural traditions are lived and survive through my mother’s village of Rasheed (Latinized Rosetta), where the famous Rosetta Stone was found. It is now housed in the British Museum and is something that I and many Indigenous Egyptians have never seen due its location. Because of the realities of Covid-19, I have been forced to stay home and reexamine my life and my pursuits. Why am I studying this?

This contemplation has motivated me to rethink my academic education and how I can be of service to the disenfranchised; to establish and elucidate the connection between heritage studies and lived racist and prejudiced realities. It has forced me to stop ignoring the reality that archaeology as a discipline is complicit in the current socioeconomic infrastructure, which has historically and systematically expelled Black, Indigenous, and other people of color from participating in their own historical narratives. It has reduced Indigenous knowledge to superstition and primitivism. This reality is a remnant of colonial expansionism and the systematic destruction of Native peoples and their countries ever since. It manifests itself in the neocolonial realities of the current social justice struggle, in direct contrast to those who are socioeconomically advantaged and who directly benefit from the exploits of their predecessors, allowing them to maintain a privileged ignorance of these issues. I do not want this future to befall my sisters, or anyone else, and so I and Carly Pope, a graduate student in the Cotsen Institute, have endeavored to create a community space where these issues can be discussed, tackled, and realized into actionable changes. This has manifested into an ongoing series of conversations wherein students from the Cotsen Institute and related programs convene to deliberate and strategize on how we, the next generation of archaeologists and heritage studies scholars, can move forward with dignity and produce scholarship that future generations can be proud of. It is in this way that Covid-19, Black Lives Matter, and my life are inextricably intertwined. I am grateful for all I have learned and experienced at UCLA, as it has set me on the path to realizing myself.

2020 and Inclusivity at the Cotsen Institute

Carly Pope¹

On May 25, 2020, we all witnessed the strangulation of George Floyd by a police officer in Minneapolis. This horrific murder, one in a litany of other police brutality against people of color, came two months after UCLA shut its doors for the foreseeable future because of the Covid-19 pandemic and two weeks before a town hall meeting of the Cotsen Institute about changes to Title IX and allegations of sexual harassment at field schools of the Institute for Field Research. This storm of circumstances and social unrest swirled in all our minds as we attended our last week of online classes of the spring quarter. In Core Class C, taught by Willeke Wendrich, first-year archaeology and conservation graduate students, as well as several graduate students from the Department of Near Eastern Languages and Cultures spent most of the penultimate class processing what was

1. Graduate student in archaeology, Cotsen Institute.



Figure 1. The author during a field school in the Four Corners area in 2019, just before starting her PhD research at UCLA.

going on with and around us. We shared our hurt, our numbness, and our shock, or lack thereof. Iman Nagy—an MA student and departmental scholar at the Department of Near Eastern Languages and Cultures—eventually mentioned that the deep inequality reflected in the killing of unarmed Black men by police was also represented in the colonial and racist history of archaeology. I thought this idea needed further discussion, that we should take this moment to come together as a community and work to change our field. When I said this in class that day, Wendrich told me to create the conversations I wanted to see, to make the changes that we needed.

Iman and I set out to do just that over the summer of 2020. We did not know where to begin, just that now was the time to capitalize on our collective shame

INCLUSIVITY AT THE COTSEN

and outrage. In our first meeting, on June 9, 2020, we started brainstorming, collecting resources—including journalistic pieces, scholarly publications, blogs, and videos—and envisioning a future for our field in which people of diverse backgrounds, beliefs, and ideas engage in research and tell the narratives of the past. We eventually settled on beginning with a series of conversations within the graduate student community about the issues we see in the field, the problems we face, and the changes we would like to implement. With the help of the Graduate Student Association of Archaeology—which represents all graduate students in both the archaeology and conservation programs—and Danielle Heinz, also a graduate student at the Cotsen Institute, we set up a survey for graduate students and held a general meeting on July 8, 2020.

Based on this survey and initial discussion, a wide variety of issues and barriers to inclusion were identified. These included ableism, ageism, ambition, apathy, classism, colonialism, ego, homophobia, nepotism, racism, religious prejudice, sexism, sexual harassment, transphobia, xenophobia, and a lack of self-awareness and reflexivity. The amount of problems laid out in front of us astounded and overwhelmed me, but we know that all these issues are related and deeply rooted in the history of archaeology; they are reflective of the conditions that created our field and the sociopolitical contexts in which it developed. These issues play out in our lives in the form of barriers such as the cost of field schools, a lack of mentoring, the

cost of graduate applications, inconsistent funding, the difficulty in maintaining a work-life balance, the costs to stay in academia, an uncertain job market, stereotypes and assumptions based on subconscious bias, students of different backgrounds being held to different standards, and a lack of personal and professional connections. In this first discussion, there was much discomfort and frustration. We did not know how to make progress, but we knew that now was the time to capitalize on the historic protests and momentum visible across society and in the news.

This first conversation led us to plan a series of other conversations focused on different aspects of diversity, equity, and inclusion. Four key themes appeared to be paramount concerns for the graduate students: racism, color, and ethnicity; mental health and stress; sex, gender, sexuality, and sexual harassment; and xenophobia and colonialism. We decided to hold these conversations twice a week during the summer, each one dedicated to one topic and thinking through practical steps that could help create the necessary changes in our fields.

This program was ambitious, more so than I had originally thought. We spent hours on Zoom calls with each other, with other graduate students, with chairs and directors of archaeology and conservation programs across the country, with alumni and other scholars. We sent myriad emails and reminders, drafted Facebook posts, created surveys, took copious notes. We struggled with how to engage the graduate students and encourage participation, especially in the face of the Covid-19 pandemic, which had affected our summer research plans. Everyone was struggling to focus and do something to advance their own projects while not being able to access libraries, laboratories, or archaeological sites. Furthermore, the students at the Cotsen Institute do not all know each other well enough to have open discussions of such sensitive topics, especially after not being in the same room for many months. We needed to create a safe and open environment, so we set up community guidelines and tried to keep the meetings loose and organic, but also



Figure 2. Iman Nagy (left) and the author.

focused and effective. This balance was incredibly difficult to handle, but after some trial and error, I think we eventually managed.

After each conversation, I took our notes and drafted them into a statement of concerns, data, and proposed changes, which Iman and I edited and then presented to the graduate students for them to edit and amend. It is a constant process of writing and rewriting that is still ongoing, especially because we can never please everyone. Some students want to be more radical and rebuild the system from scratch, while others want to work within the system to make changes. Some of us want to focus on racism in particular, in light of the Black Lives Matter movement, while others are more concerned about our constant state of being overworked. The hope is that we will, at the end of this process, have a document of facts and practical changes that we can bring to the administration, faculty, and staff of the Cotsen Institute.

Our efforts are far from done. As the new academic year starts, we hope to continue this work

and make some of the proposed changes. Our next problem will likely be navigating the intricate and baffling bureaucracy of UCLA and the Cotsen Institute to figure out how exactly to implement the changes. It is encouraging that the leadership of the Cotsen Institute has been so supportive of our efforts thus far, but the problem is finding the time and energy to do this taxing work. It is necessary to make archaeology anti-racist and inclusive, but faculty and students are already spread thin across research and teaching. My hope is that as we gain momentum, more members of the community within the Cotsen Institute will join our efforts and work with us on these important issues. Many hands make light work, and there is a lot of work to do.

Laboratory Life

Most fieldwork was rendered impossible in 2020, but our research continued, either despite or because of the events that disrupted our lives. In this section of *Backdirt*, some of this work is briefly presented.

Archaeology and the Impermanence of Scientific Knowledge¹

Stephen Acabado² and Marlon Martin³

For me, Stephen Acabado, it is now the 107th day of the stay-at-home order in Los Angeles. This means more video games than usual for my kids, while my wife and I work from home. One of the games that my 14-year-old son plays is Civilization 6, a more or less historical take on empire building and cultural development. Because I am an archaeologist, my son often asks me about themes in the game. Last night he asked how archaeologists know what they know and if we ever change our perspectives if new information arises. So the question was about knowledge production, data analysis, and changing perspectives; all because of Civilization 6.

In the age of Covid-19, science and data have been thrust into the limelight as they guide our government officials and as university administrators make decisions to mitigate the effects of the pandemic. There is, however, a common misunderstanding about the nature of science: that science seeks the truth. Questions regarding truth have been around for thousands

of years, and people do use the scientific method to seek the truth, but we now know that scientific knowledge is only as good as the data that support it. We know that science is inherently corrigible or open-ended and can always be corrected or revised.

Science does not really provide an answer to the question of what is the truth. It gives us tools to understand observable and even intangible phenomena, but it never aims to commit to offer the truth; particularly not the absolute kind. Rather, it tests hypotheses, which, if supported, become the best explanation—a tentative truth—until they are refuted by a new model or set of data. So science is a method for asking and answering questions that relies on data, testability, and replicability.

As an example, our current theory of evolution is no longer Charles Darwin's theory of evolution by natural selection; it is now the synthetic theory of evolution. Darwin's model was not able to explain trait inheritance. It was only after the discovery of Gregor Mendel's publications on pea plants that Darwin's theory became viable. The synthetic theory of evolution emerged in the 1930s and incorporates genetic inheritance into Darwinian evolution.

Thus, science is dependent on data. Without data to support them, explanations are just anecdotal, or hearsay in legal speak. Covid-19 has once again exposed us to the nature of science. In the absence of data, or the rejection of data, Covid-19 has been dismissed as similar to influenza and no big deal. Even though history has given us fair warning about pandemics, particularly the 1918–1919 Spanish Flu (which was first documented in the United States), misunderstanding or sheer ignorance of how science works has contributed to the unabated spread of the virus, particularly among vulnerable populations around the world. For now, there is much we do not know about Covid-19. Scientists are working around the clock to help us understand the disease by gathering data, developing hypotheses, and running experiments. That is science. It includes observation,

1. A shorter version of this article appeared on Rappler, an online news website in the Philippines. Stephen Acabado, "Bakit Walang Forever? The Impermanence of Scientific Knowledge," Rappler, July 2, 2020, <https://rappler.com/voices/ispeak/opinion-impermanence-science-archeology> (accessed August 31, 2020).

2. Associate professor in the Department of Anthropology and core faculty member of the Cotsen Institute.

3. Save the Ifugao Terraces Movement.



Figure 1. The Batad rice terraces in Ifugao, Philippines.

hypothesis, testing that hypothesis, and then providing explanations. Without this process (the scientific method), elucidations are just anecdotal thoughts.

We recently wrote about the dominant narrative of the 2,000-year-old origin of the Ifugao rice terraces in the Philippines and the waves of migration theory (Beyer 1948). These are examples of anecdotal modeling; they are not testable or replicable. To argue for the inception of the terraces, you need data to develop a model. Our dating of the Ifugao rice terraces is based on this process: develop a testable model, support or disprove the hypothesis with tangible contextual data, and link it with prior explanations. We started by looking for support for the idea that the terraces are indeed at least 2,000 years old, but after assessing 60 years of work, from Harold Conklin (1980) to Robert Maher (1973, 1984, 1985), and Connie Bodner (1986), to our ongoing Ifugao Archaeological Project (Figure 2), no data or evidence to support the long-history model has been produced.

The model is not based on any archaeological or scientific evidence. Nonetheless, the idea has become engrained in the national consciousness because of how history is taught in Philippine basic education. Connie Bodner (1986), working in another region in the Cordillera (Bontoc), strongly argued, based on tangible archaeological datasets, for the later inception (about 400 years ago) of wet-rice cultivation in the region.

Recent discoveries of evidence of early hominid presence on the Philippines—in Callao Cave in Cagayan and Rizal in Kalinga—also correspond to rigorous scientific reasoning. Researchers analyzed multiple datasets to explain the data recovered from these two sites. In the case of Callao, detailed analysis

Covid-19 has exposed us to the nature of science.

of skeletal morphology suggested an early hominid form. The identification of stone tool cut marks on rhinoceros bones from Rizal suggests the presence of hominins in Luzon as early as 700,000 years ago. Clearly these new datasets offer fresh information that changes our ideas about when and how humans arrived in the Philippines. We should be prepared to abandon what we think we know, or what was taught to us, in light of this type of evidence.

Back to the science of dating the rice terraces. The archaeological dating of agricultural terraces requires multiple lines of evidence to develop a robust model that will establish an inception date and subsequent expansion of terrace systems. We do not just look for samples (charcoal or any organic remains) that we can date by radiocarbon analysis. We have to establish the context of each sample (including its location and stratigraphic relationships to other samples) to determine its relative age and probable utility. We record this contextual information because archaeological excavation is destructive by nature. That is why we dig as slowly and carefully as we can. We need to observe and record any changes in soil layers, their con-

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stituents, and the finds we uncover. This contextual record, in the form of maps, images, and field notes, is at the basis of most of our reports. Reviewing such documents and maintaining the collected finds and samples make archaeological research replicable; it is a methodology that provides you with data. How you interpret that data is the larger part of science. Data do not speak for themselves; scientific rigor does, and scientists are committed to scientific rigor.

As an example, we reported the existence of about 50 archaeological radiocarbon dates from the Cordillera (Acabado et al. 2019). Radiocarbon analysis does not date a historical or archaeological event; rather, it dates when an organism died and when that specimen became incorporated into the archaeological record. Thus, archaeological work must be meticulous to preserve the context of the specimen being dated. The result of radiocarbon dating in a contextual vacuum is invalid. So for us to use radiocarbon dates, we have to explain the circumstances of when, where, what, how, and potentially why that sample was used as a specimen for dating. In our case, the more than 50 radiocarbon dates from Kiangnan, Banaue, Hapao, Burnay, Nabyun, Poitan, Lugu, Banghallan, Bintacan, and Bontoc did not support the hypothesis that wet rice was being cultivated in the region 2,000 years ago.

Modeling from contemporary terrace constructions also gives us a glimpse of the speed with which the terraces expanded in the region. Take, for example, the amphitheater-shaped Batad terraces (Figure 1). Spatial and energetic modeling (a combination of number of workers, number of days, earth moved, and stone wall preparation and construction) by Jared Koller suggests that the Batad terraces could have been constructed within 180 years by 4.5 persons working 7.5 hours a day, six days a week (Acabado et al. 2019:12–17). Of course, more than 4.5 terrace builders would have been working in Batad. These numbers are the average of work/energetics data collected from two terrace constructions in Bolar and at the Ifugao Indigenous Peoples Education Center in Kiangnan.

Science reflects truth as we know it for now.

This scientific experiment suggests rapid construction and subsequent expansion of the systems and supports the idea that the people who constructed the terraces had the complex sociopolitical organization suitable for wet-rice cultivation. Ethnographic studies suggest that wet-rice cultivation requires a specific form of social organization, even when compared to other intensified systems (such as millet, wheat, and taro production systems).

The results of radiocarbon and spatial analyses are supported by archaeobotanical datasets. There is a total absence of evidence of wet-rice cultivation in the region dating earlier than the 1600s. We are cognizant of the old adage that absence of evidence is not evidence of absence; however, any archaeological evidence that would support the 2,000-year-old origin theory for the Ifugao terraces has remained completely absent from the five major sites (Old Kiyangan Village, Hapao, Nagacadan, Batad, and Banaue) and has arguably been discredited by the most recent archaeological and ethnographic data.

More importantly, community memory appears to support the scientific datasets. Time reckoning and genealogical reconstruction are valuable tools in understanding the Ifugao, since time reckoning is by generation and not by years. There are two examples of this narrative. The first concerns the origins of the Batad rice terraces, one of the five UNESCO recognized clusters. The story goes that the Batad hillside was discovered by brothers from Cambulo (a village close to Batad) while they were hunting. One of the brothers started a swidden field and subsequently brought his family to Batad. The terraces were constructed soon thereafter. This origin narrative presumably occurred within the last six generations.

The second is the community story in Tokak Village, in Namal, Asipulo. The Tokak community story revolves around Spanish pressure: village elders mention that their ancestors left Amduntog (a village closer to the town center of Asipulo) and resettled in Tokak (an interior village) to avoid Spanish expeditions. Their descendants returned to Amduntog after the Spaniards left. To say that oral history is not a



Figure 2. A buried irrigation ditch (*alak*) at the Old Kiyangan Village site, excavated by the Ifugao Archaeological Project in 2012.

valid source of data is a serious misunderstanding of ethnographic methods and is disrespectful to Ifugao community stories and heritage.

So, for now, the modeling and interpretation of the archaeological data from the Cordillera are the closest we can get to the truth. Unless new data refute the model, it stands as the most plausible explanation. Practitioners of science do not feel sad when their models are disproven. It means that their experiments were not replicable or that new data have arisen. It means that scientists need to address the failures of the model, and reanalyze and reinterpret the available data to get close to the reality we perceive. But there has to be an alternative model to disprove an existing one. Countervailing evidence without a model to support is not very useful in advancing knowledge.

For Covid-19, there is still a lot we do not know about the disease, but that does not mean scientists are wrong. Every bit of new information gives hope that we will gather enough data to develop ways to eventually defeat the virus. But for now, we know we should all wear masks, avoid crowds, wash our hands, and listen to the science as it develops. Even if there is no forever truth in science, it reflects truth as we know it, for now. And people should understand what they are sharing online, because scientific data can be misused by politicians, the media, or laypeople who are only too happy to provide evidence of how right they think they are. We should understand the “principled modesty” informing science when they brandish supposedly scientific information.

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Distancing: One-on-One Heritage Archaeology across Three Continents

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Distancing is a word we hear today the world over. But archaeologists have been practicing distancing for a long time. And overcoming it. It is a chronological distance. We look into a distant past and make it our own. We break the barrier of time.

The Urkesh project in northeastern Syria has been at the forefront of this effort at bridging the distance. Excavations are of course the first step: that is when the buried past is uncovered and brought back to life. But what is life after the excavations? Here too we have been at the vanguard, in three ways. First, site conservation. The site was alive once and it must be kept from dying once its structures are brought back to light, dying through neglect or worse. Conservation is something we have done consistently throughout the 25 years of excavation, and we kept doing it during the 10 years of war. Thus the site remains in excellent shape today, ready for visitors (Figure 1).

Our second duty is to translate this life into a monument of another sort: a conceptual monument. It is the moment of *publication*. A site dies another death if it is not properly published. When it is, it survives in a different incarnation, one that scholars can visit. We have pioneered a dual publication program, one where the new digital embodiment is as rich or richer than the traditional renderings on paper.

Finally, the site, conserved and published, has to be alive with visitors. Site presentation has been another hallmark of our project through the years, and this, too we have maintained throughout the war. It is because of this that a regular stream of visitors contin-



Figure 1. A visit of youngsters to Urkesh led by Amer Ahmad.

ues coming to the site. Are these images not a moving testimony to how alive the Urkesh of yesteryear still is, with the full life of today? What better evidence of how we can effectively bridge the distance in time? Five millennia are here collapsed into a new symbiotic interaction.

THE PROGRAM

We have now launched a special new program: the Urkesh One-on-One Project. It bridges the distance in space as well as time, with links across the continents. And it does so by relying on the young. Here is how it works.

First, the youngsters go through a formation stage, with the help of tutors. Figure 2 shows them in a session in June 2020. Three Syrian youngsters from Qamishli, a city near Urkesh, discuss their plan with three other Syrians—Hiba Qassar, the program director in Florence, Italy; Amer Ahmad, our resident archaeologist at Urkesh; and Carine Tamamian, a UCLA undergraduate student—who advise them with regard to content and form.

The students then prepare by going through assigned readings and by visiting the site. They are thus ready to interpret it and its history with words and images. At this point, each one presents his or her

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Figure 2. A WhatsApp screenshot of a One-on-One meeting of June 23, 2020. Top left: Amer Ahmad, Urkesh supervisor (Qamishli, Syria); top right: Carine Tamamian, Urkesh supervisor (UCLA); middle left: Judy Fendi, Urkesh youngster (Qamishli); middle right: Hiro al-Ali, Urkesh youngster (Qamishli); bottom left: Lana Hussain, Urkesh youngster (Qamishli); bottom right: Hiba Qassar, program director (Florence, Italy).

discovery, individually, to a youngster who lives in a completely different cultural setting. At the same time, non-Urkesh youngsters go through a similar process and respond with their own presentations about an archaeological monument in their country, also under the supervision of a young archaeologist from their country. Sometimes they choose a cultural icon, even if not properly archaeological in nature.

Figure 3 shows a slide from a presentation given by a young Syrian man from Qamishli to a young Greek woman from Corinth in Greece. The small

The project fosters shared identity.

images in the upper right of Figure 3 show the participants in this session. Figures 4 and 5 show us a similar encounter, with the participants being in Corinth, Rome, and Florence, and of course Urkesh.

Next we encourage participants to continue the initial contact and develop a sustained conversation. We continue to provide supervision, so there remains a substantive dimension to the interaction. They do this on an individual basis, talking with one another across borders with the use of online connectivity, primarily Skype and WhatsApp.

In the summer of 2020 we did a test run, with a total of 18 youngsters involved, eight from Urkesh, eight from Corinth, and two from a small city in northern Italy, Domodossola. They were all middle school age, but their participation was not tied to the school setting: it was all done on a personal basis. We are now expanding the program to include young people from other places, not only in Syria (Sweda) but also in China (Xi'an).

The roster of project tutors is impressive. The director of the project, Hiba Qassar, hails from Qamishli and is on the staff of the Urkesh archaeology project; she now lives in Florence. The tutor in Greece is Eleni Gizas, the Steinmetz Family Foundation Museum Fellow of the Corinth Excavations. Laura Sartor is in Domodossola; Arwa Kharobi in Bournemouth in the United Kingdom; and Samer Abdelghafour is in Rome. We also have several UCLA graduate and undergraduate students: Carine Tamamian, Arpine Lilinyan, and Ronida Cheko are Syrian; Amr Shahat and Maryan Ragheb are Egyptian. Our new tutors are Murhaf Karmoushi in Sweda and Qin Yu in Xi'an.

IN THEIR OWN WORDS

The cyberspace is thus being populated by figures from ancient Urkesh, brought to life by their young compatriots of today. You might enjoy reading some of their comments as they reflect on their experiences (we provide them here as we received them):

Hiro: When I visited Urkesh I felt like visiting a different world. Strange and a beautiful one. I felt the contrast between the present we are living in

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and the past. It helped me to imagine *how can life be in a different Syrian reality*. Urkesh taught me a lot of things: It taught me that my city contains very wonderful things and we overlooked them, and I didn't know their importance and greatness. *I'm very proud that these monuments were built in the same region I was born in*, and when I look at it, *I feel that I'm in a war between the past and the present*. Urkesh introduced me to the most beautiful people, and they taught me a lot about the beauty of life, as if they are giving me a box of knowledge, as I realized, even if there are millions of kilometers between us, we still feel and understand each other. *I feel that one of the goals of these ruins is to connect the world from different . . . nationalities*. Thank you all for this opportunity to tell everyone that *there is someone who loves you in Syria*.

Judy: Learning about the Abi was interesting but visiting it was an amazing experience. *I thought of all the ancients who were surrounded by the same walls we are surrounded by. I invite you to visit it as soon as the war is over. It's worth it.*

Akkash: It was very important for me to learn about ancient Urkesh because it adds a lot to my culture, and I could understand the history of something I am not familiar with, which inspired me to write a story about it.

Steve: I have learned that *these ruins are Syrian ruins which made me proud*, since there is no similar site in any other place on earth.

Layan: *My self-confidence increased* when speaking in other languages, as well as exploring new archaeological sites.

And here are some comments from their Italian counterparts:

Lucrezia: Imagine that *you can see your best dreams with open eyes*. It touches me deeply and makes me believe more in myself.

Giulia: I studied about this civilization in school books, but Hiro's voice and her presentation made these topics more alive and real. It gave me a lot of pride to *introduce other guys like me to the Italian*

culture. I learned to relate to a foreign girl, share aspects of her life as a girl, and to be interested in a very different culture than mine. *I learned to proudly tell others about my country*.

Two of our tutors also shared their feelings about the project within the context of their report on the work done. We can give only brief excerpts here. The first is from Samer Abdelghafour, a long-standing member of the Urkesh staff, who has worked at length on various UNESCO projects and took on this project as a personal challenge:

As someone who lived in Syria before the conflict, I had a hard time imagining how our Iraqi neighbours would live through the long years of war. *Imagining war is never equivalent to living it*. . . . The unknown becomes a companion to one's everyday thoughts, and the certainty disappears with one exception—that war is relentless.

As the project aims precisely at young middle school students, it deals with *a generation moved from crawling to walking* to find itself living the daily life of war or its consequences.

This pride is a feeling that is generated within them, as a result of their interaction with the site spatially and temporally, and it is sometimes difficult to describe. Through the program they interpret the site and its history for youngsters in Greece.

In light of the isolation that surrounds the country, this project comes to form a unique platform without any competitor, that takes upon itself the role of an incubator for these young people. *It places them at the beginning of the intellectual bridge that leads to the other side of the world, which is Greece in this case*.

The project comes at *a difficult time for a country that has been torn apart*, to teach this new generation the meaning of partnership and coexistence. It opens their eyes to see that *there are many things that can be shared with others without owning them*.

The second excerpt comes from Amr Shahat, an Egyptian graduate student in Archaeology at UCLA:

[The project] fosters . . . shared identity, especially among youngsters who face a lot of psychological and mental problems as they say "we do not know who we are." The sense of shared identity as

One result of the project is finding points of relevance.

learned from this project *transcends the different stereotypes that have been used by different forces nowadays under the war to split the communities in Syria and fuel more wars.*

While working with the student to translate his knowledge from Arabic into English, I realized that we need to work on more activities to encourage the student [to] share their personal connections; it is already there. We just have to make it salient and expressive in the other language. One interesting result of the project is *finding points of relevance of the history of the site to modern times, which is something important for identity perception and presentation.*

The students are not only the long-term sustainable power to preserve the site, but also the *cultural ambassadors who bring this knowledge to the international community* by attempting to present their knowledge and personal connection of the site with other students in other parts of the world. One of the most significant results of the community archaeology efforts in Tell Mozan is the *protection of the site from ISIS, war activities and looting.* While *reflecting on what happened to Egypt due to the lack of similar projects targeting school young students following the revolution,* the local communities have attacked the museum and destroyed the monuments at the city of El Menya as a stance against the government. If we do not maintain *educational programs to maintain and nourish the multi-faceted relevance of the site with its community,* both the community and the site may fall victims to the current politics and war in the region.

The benefits of the educational program go from regional to international benefit, by educating students on cases of climate change, and food and water sustainability. I shared with him [Steve, an Urkesh youngster] what is *my focus in archaeology in paleoethnobotany* and what this means in simple Arabic terms. He reflected *back to me by mentioning that the archaeological site in Tell Mozan yielded the discovery of kitchen areas which ignited important discussion with the student on the environmental history of the site,* the drought and lack of water that led to the abandonment of the site around 1300 BCE, and the relevance to modern-

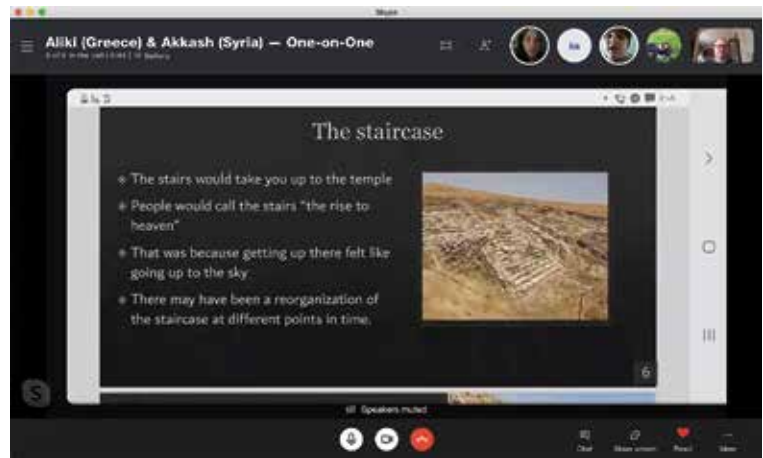


Figure 3. A Skype screenshot of a One-on-One meeting of September 9, 2020, showing a slide about Urkesh made by Akkash Joseph.



Figure 4. A Skype screenshot of a One-on-One meeting of September 16, 2020. Top left: Hiba Qassar, program director (Florence, Italy); top right: Sotiris Mantas, Corinth youngster (Corinth, Greece); bottom left: Judy Fendi, Urkesh youngster (Qamishli, Syria); bottom right: Eleni Gizas, Corinth supervisor.

day issues of climate change as related to agriculture, food and water sustainability. . . . Discussing the kitchen and bathroom area of the palace from a food and water systems sustainability [standpoint] makes the preservation of the archaeological sites and community engagement *a powerful tool to preserve this deep-time knowledge and create points of inspiration for next generations to tackle large-scale problems in this region and beyond.*

The focus on children and youngsters in the Urkesh archaeology program is of particular significance as *the forces of war involve children in looting all over the regions in the Middle East.* Youngsters are [an] important focus of this program. Considering that looting activities mostly victimize children, *the program enriches and is enriched by children as the future stakeholders of*

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the sites and the transmitter of its knowledge. . . .

In other words, this time of war has made the lives of the community and the lives of the archaeological sites deeply interlinked. . . . This sustainable community archaeology program as practiced by the Urkesh project makes a paradigm shift in archaeology tailored and suitable to Syria and the larger region in the Middle East rooted in the past and relevant to the present. *It is more than a case study, it is a paradigm shift to the archaeology of the ancient near East transferrable to other regions* facing similar crises in site preservation, looting as we see in Egypt, Iraq and other regions where either revolution or wars have dismantled the archaeological sites and the local communities as well.

To finish, we give in full the most touching witness as to the impact of the project, that of Amer Ahmad, our staff archaeologist, who has been our lifeline to the site. He tells us how Urkesh has become a lifeline for him:

When I finished high school and I was on the verge of entering the university, aside from my desire to study archeology I was always trying to move away from any field that could make me teach students in the future. For two years I have been working on a project that depends on young students, and contact with them was the basis of my work in the project. In the beginning, I was afraid that I could not communicate ideas to young people because I did not like teaching at all. From the second meeting with them, *I began to feel that my mind was changing towards the innocence of childhood.* I saw the enthusiasm they have. Though young children do not have any idea about the heritage and antiquities, they are trying as much as possible to prove themselves. Some of them were not very proficient in English. They were struggling to show all their English words they had mastered. I saw in them seriousness and interest and things that I did not expect to discover in children of their age. What surprised me most was that girl who was speaking about Urkesh in three languages without hesitation or confusion. All this made me

Imagining war is never equivalent to living it.

think more seriously, as everything I mentioned played a role in changing my viewpoint towards teaching, *as long as I have students who possess all these qualities also they have affected even on my family life.* I started thinking, for example, why won't my young son not have these qualities in the future? I started giving him more attention in order to give him this determination. After my first and second experience in this project, *I now finally feel as if I have lost something that I may never get a second time because I will probably not meet these students who were in constant contact with me and who are ready to give their best. They have become interested in heritage despite their young age. Some of them were even insisting to their family that they go to Tell Mozan (Urkesh). Urkesh was the only city that tried hard to open up prospects for them to communicate with the world and made them aware of the customs, heritage, and culture of foreign countries.* Perhaps it was the first time for them when they heard about it, and they were in contact with their counterparts from those countries. Perhaps it made them forget the pain of the war years of their lifetime. They were eager for every interview we conducted via Skype, and each of them tried to highlight everything he/she has in a spontaneous way to show the extent of his/her mental abilities and his/her ideas, things that made even their families show all kindness towards this project. In fact, *I can't imagine that one day we will lose projects like this, as it has shown children that they have talents that may not have been discovered in them even by their families.* Some of them are seriously thinking to be involved in the archeology field in the future. All of them have communicated with children of their age from countries that they never expected to communicate with, such as Italy and Greece. They had only heard the names of these countries. I hope that initiatives like [this] will never stop. *Initiatives which gave children confidence that there are people outside the border of their country who support their ideas and care about them and assure them that they are not alone despite everything that happened in their country Syria.*

IMPACT AND ASSESSMENT

The One-on-One Project is a new way to discover heritage. Local heritage is being shared by the young Urkesh inheritors on a global and yet personal basis. We had done this work previously at the level of the classroom.³ The Covid-19 pandemic urged us to change the model to a one-on-one basis, and the fact that we started in summer, when school was out of session, added another incentive. Even vacation time was affected by the novel situation. Thus the project, instead of interfering with other fun events, added a measure of interest. The Italian name for the project is evocative: *a quattr'occhi*: “in a four-eyes mode.” That more intimate four-eyes setting turned out to be a godsend. We crafted it carefully, so it would not be just a pen pal type of arrangement. Worthwhile though that is, our aim was to provide substance to the interaction. The very fact of selecting the topic for the presentation, and then articulating it in an organic way, entails critical judgment. But sharing it with another youngster of the same age, yet coming from a completely different cultural background, provides the greatest incentive for this reflection. If it matters to me, how can I convey this feeling to another? And when I compare my story with theirs, how do I evaluate the relative merits?

We have at our disposal exceptional communication tools, which are broadly available at no additional cost. What matters then is not the technological but the human infrastructure. Technology has its own fascination and can lead us to where it wants, whereas we must harness it with a clear awareness of which defined goals it may serve. In a small way, our project does that. We were very mindful, in designing the project, that we did not want it to be just an opportunity for social contact, in a pen pal mode. We remain solidly anchored to the archaeological dimension because we see a deeper value in archaeology than we were accustomed to. It is an aspect we are developing on the theoretical side of our project.

What is cultural heritage? Going back to the beginning of this article, how do we help the youngsters in Urkesh bridge the millennial distance in time? How do we help them bridge the “million-kilometer”

3. See Giorgio Buccellati, “A Children’s Hermeneutics,” *Backdirt* 2018, pp. 32–37.



Figure 5. A Skype screenshot of a One-on-One meeting of September 16, 2020, showing a slide about Corinth made by Sotiris Mantas.

(as Hiro put it) distance in space when they talk with their counterparts in Italy, Greece, or China? It seemed a daunting task. But it was not. The youngsters resolved it for us. Values emerge of their own accord, through their own inner force. And what we are learning is that cultural heritage is not a thing. It is a value that speaks through things. To paraphrase Samer: we share it because we do not own it in a possessive mode. We have helped the youngsters visualize their past: and this visualization adds immeasurably to our own competence. We invent the past in the etymological sense of the term: we discover it; we do not fictionalize it. And to see how this happens with the young ones has been a great lesson for us: they respond to a reality precisely because it is real. We are learning more and more that to convey meaning in archaeology (as perhaps in everything else) does not mean to water down a complexity but rather to let the complexity emerge in its wholeness and speak with its own immediacy. In the process, this very complexity of a site we knew so well has spoken to us with a new voice. That of its young inheritors.

If you wish to follow the progress of the project and to see in greater detail its various aspects, please visit <https://www.avasa.it/EN/>.

Some Reflections on Qin Studies

Lothar von Falkenhausen¹

The following short essay appears, in Japanese translation, as the afterword to a volume with the title The Birth of the Qin State: A Crossroads in the Study of Ancient History, edited by Professor Momiyama Akira (Tokyo University) and the author (Momiyama and Falkenhausen 2020). It is presented here as an example of the long-term, fruitful intellectual exchanges and cooperation across international boundaries in which affiliates of the Cotsen Institute are engaged. The author is currently working on a book on the economic archaeology of late pre-imperial China, in which the issues mentioned at the end of the essay will be explored in greater detail.

On account of its pivotal importance in ushering in China's imperial age, Qin has always commanded privileged attention among early Chinese states. In the past half century or so, dazzling archaeological discoveries—by no means limited to the First Emperor's world-famous Terracotta Army (Figure 1)—have even more firmly implanted Qin in the popular imagination. Moreover, original bamboo-strip manuscripts newly excavated from Qin tombs have challenged and inspired philologists and historians. As a result, our knowledge of Qin—both the Qin polity that arose in the northwestern part of the Zhou culture sphere dur-

ing the late ninth century BCE and the short-lived Qin Empire unified by the First Emperor (reigned 247–210 BCE)—has become immeasurably enriched. To take preliminary score of the new perceptions gained and the degree to which they supersede the traditional accounts hitherto accepted, Professors Yuri Pines and Gideon Shelach in 2008 convened a workshop at Hebrew University in Jerusalem. Over the course of one week, scholars from the diverse academic traditions of North America, Western Europe, Russia, Israel, the People's Republic of China, and Taiwan—representing several different disciplines—had the opportunity to engage in an intense and productive dialogue on many aspects of Qin studies. The resulting book, published after six years (Pines et al. 2014), presented a multitude of converging perspectives but—understandably, given the complexity of the subject—fell far short of reaching a full consensus.

Having played a minor part in organizing the Jerusalem workshop and editing the resulting volume, I was delighted when I learned that the book had been subjected to serious scrutiny and discussion by learned colleagues in Japan, and I felt tremendously honored when Professor Momiyama Akira invited me to participate in a panel at the Sixty-Third Annual Conference of the Society for Oriental Studies (Tōhō Gakkai), held in Tokyo on May 19, 2018. There, leading Japanese Qin specialists presented their sophisticated investigations into various problems in Qin history. The vigorous discussion at the conference left me with the profound impression that the field of Qin studies, while remaining a highly dynamic one, has become considerably more mature over the past couple of decades. This is amply shown by the volume that grew from the Tōhō Gakkai panel: not only does it complement its 2014 precursor, but it also promulgates significant advances in scholarship. Above all, I hope it will contribute to the bridging of existing intellectual gaps that have historically resulted from insufficient communication among scholars from different academic traditions, writing in different languages. This goal is furthered in particular by the inclusion of Professor Robin D. S. Yates's extensive account and

1. Distinguished professor in the Department of Art History and core faculty member of the Cotsen Institute.



Figure 1. Part of the Terracotta Army (circa 210–209 BCE) in Lintong County, Shaanxi, China, associated with the tomb of Qin Shi Huang, the First Emperor. (Photograph by Jean-Marie Hullot, April 2015, used under Creative Commons Attribution 3.0 unported license.)

bibliography of Western scholarship on Qin. Perhaps in the future, someone will compile a similar bibliography of Japanese contributions to this field; it will be greatly appreciated. More needs to be done to alert the rest of the world about the high-quality research on ancient China undertaken by Japanese specialists. In retrospect, their absence from the Jerusalem workshop (probably inevitable for pragmatic reasons at the time) strikes me as particularly unfortunate. The new book may retroactively compensate for the resulting insufficiencies in the 2014 volume.

Both the new book and the 2014 volume present archaeological and historical perspectives side by side. For methodological reasons, integrating the data generated by these two disciplines into a coherent synthesis often presents difficulties, and the time may not yet have come to attempt such a synthesis for Qin. Still, the communication of historians and archaeologists may be expected eventually to lead to a merging of viewpoints. Let me give just one example: it should at some point become possible to show concretely the effects of Shang Yang's (circa 390–338 BCE) political reforms during the mid-fourth century BCE in the archaeological record and simultaneously to use archaeological materials to bring about a clearer and

more concrete understanding of those reforms. In light of my own research, I can think of the following five preliminary clues.

1. Okamura Hidenori (1985) has noted a break in the typological sequences of Qin funerary pottery and bronze vessels that occurred approximately at that time: the traditional ritual vessel types established in the Late Western Zhou period were suddenly replaced by vessels of household use. Even though Okamura cautiously warned against assuming a direct connection—and he is surely correct in the sense that Shang Yang presumably did not legislate funerary vessel assemblages as such—it seems likely that the demise of the traditional assemblages is an indirect outcome of Shang Yang's abolition of the Zhou-derived aristocratic hierarchy and its associated ritual system.

2. Forty years ago, in an article based on his scrutiny of Japanese military maps from the late 1930s and 1940s, the geographer Frank Leeming (1980)

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suggested that the contours of field systems corresponding to Shang Yang's "thill fields" (*yuantian* 輿田) could still be seen (or could be seen before the "Learning from Dazhai" campaign of the Cultural Revolution) on the ground in various parts of northern China, including the Guanzhong region and northwestern Shandong. This, if true, would be of tremendous interest; some follow-up is called for. Perhaps the traces of the alleged *yuantian* can still be located by archaeological survey. If sufficiently extensive, such a survey effort might verify the degree of exactitude to which the textually known stipulations were followed, as well as possible regional variations in their application. This article has been little-noticed in Western or Chinese scholarship, but in Japan it attracted the attention of Professor Satake Yasuhiko (2006).

3. The occurrence of wood-and-clay models of cattle-drawn carts in modest tombs from the Middle to Late Warring States period may also reflect upon Shang Yang's reforms (Cao 2019), for these reforms removed any remaining associations with elite privilege that cattle might have previously possessed (Okamura 2005). These carts often occur in association with granary models (*qun* 困; Liu Xinglin 2017:249–50). Together, these two kinds of funerary items may have been intended to evoke the obligatory tax-grain deliveries stipulated by Shang Yang's fiscal reform.

4. If it is true that Shang Yang's reform enabled non-elite access to cattle, this might also explain the rise of traction plowing during the Warring States period, especially in the Qin area, where it seems to have been linked to wheat cultivation (Lander 2015).

5. Concomitantly, the partial replacement of millet by wheat as the dominant staple crop in northern China, starting in the Warring States period (Lu et al. 2019; Zhao and Bei 2011; Zhou and Garvie-Lok 2015), may likewise have some connection to Shang Yang's reform, which presumably made previous elite taste preferences for millet irrelevant and may have broadened the range of grains acceptable for tax payments.

Admittedly, these five points are, at this time, mere speculations based on observations in the archaeological record. But future research may be able to tie them more tightly to Shang Yang and his reforms. Perhaps there will be news on this topic—as no doubt there will be on many others—when Qin specialists meet for their next international symposium.

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The Himalayan Institute of Cultural and Heritage Studies Foundation

Sonali Gupta-Agarwal¹

It all started in 1986, when I was a little girl who visited Kullu Valley, in the Indian Himalayan state of Himachal Pradesh, with my family (Figure 1). There was something surreal about the place; I knew I belonged there, but how? I had no clue. Time flew, I grew, and my fondness for the valley quadrupled. I ventured out to become a criminal lawyer dealing with bail matters, narcotics, and everything exciting but eventually gave it all up for the love of archaeology. The desert beckoned, and I completed my doctorate in Egyptian archaeology under the supervision of Willeke Wendrich. I am often asked why I work in the Himalayas after having spent a decade in Egypt. My answer is, “Sometimes one must be parched in a desert and then finally quenched in the mighty Himalayas.” To me, both Egypt and the Himalayas in India are home.

The Himalayan Institute of Cultural and Heritage Studies Foundation was recently established in a small hamlet in the Kullu Valley (Figure 2). The inspiration for setting up the institute came from a place of deep insight. In our quest toward settling in life, we focus on specializing in a particular subject or following a profession. While the focus helps us strike and sustain the balance necessary to take on the rigors of a pressured life, the choice sometimes negates other areas that may be of intrinsic value. Settled in life with paying jobs, we sometimes yearn to relive bits and pieces of what has also defined our journey. Thus the Himalayan Institute of Cultural and Heritage Studies was envisioned as an alternate solution for knowledge seekers, striving to reach the academic and nonacademic alike. The institute seeks to stand out as a place of learning that facilitates dissemination of knowledge in an immersive yet professional manner. Apart from

1. Alumna of the Cotsen Institute and director of the Himalayan Institute of Cultural and Heritage Studies, Kullu, Himachal Pradesh, India.



Figure 1. Map of India showing the location of Kullu in the state of Himachal Pradesh.

Figure 2. Logo of the Himalayan Institute of Cultural and Heritage Studies. (Designed by Manish Bhatnagar.)

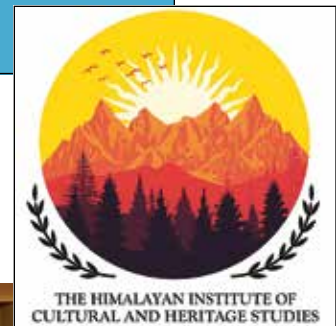


Figure 3. Students at a workshop on the principles of archaeology receive their certificates of completion.

myself, the team includes our field school codirector Parth Chauhan, an assistant professor at the Indian Institute of Science Education and Research (Mohali, India). We held our first workshop in March 2020 and are now on our way to curating workshops that deal with archaeology, anthropology, history, art history, geology, art, theater, music, and heritage (Figure 3). Our institute has an all-in-one concept of learning in a retreat-type setting. A local commercial establishment with beautiful cottages provides accommodation and

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Figure 4. The author in conversation with an old lady in the hamlet of Chichogi in Kullu Valley (Himachal Pradesh, India) to document oral stories for an intangible cultural heritage digitization project.



Figure 5. The author in the modest library of the Himalayan Institute of Cultural and Heritage Studies.

food to those who partake in our workshops and field schools. The setup feels like a home away from home. We recently started a barter program, where a volunteer stays at the Himalayan Residency in exchange for a skill benefiting our institute. Twice a week the institute hosts a small café, which is a platform for the exchange of intangible cultural heritage. We invite elders of the town to share local legends, tales, and myths (Figure 4). We also have a small pottery workshop and a kiln to resurrect the art of pottery-making in the region, as well as a weaving loom to teach those interested in local textiles. We screen documentaries made by freelancers with a passion in their respective fields.

The local community is an integral part of this endeavor. They learn about their past and create a sustainable present assisted by our research. We hope to establish slowly but surely a research center with a well-equipped laboratory and library for researchers from around the world. To achieve this goal, we started a book drive, asking the public at large to contribute books, both new and old. A few such books have been delivered and now grace our shelves (Figure 5). We also recently set up a free library for village children with Sanskriti, a nongovernmental organization, to inculcate reading habits and offer storytelling, art projects, and cultural activities. We are digitizing oral histories, legends, and folk tales through rigorous ethnographic fieldwork.

On the academic front, in response to the Covid-19 pandemic, we have completed about 35 webinar lectures for our Unlocked series, where scholars from around the world remotely share their research on the Himalayas or on concepts relating to archaeology and anthropology (Figures 6 and 7). These lectures may be accessed on our YouTube channel. Soon we will publish a journal with articles contributed by all the scholars on our forum for the benefit of all who work in the Himalayas. We hope to implement the third iteration of our Himalayan myth and reality field school in the summer of 2021. Together with Ania Kotorba of Flinders University in Australia, we recently secured a grant from the Australian government to conduct research with students in the Himalayas for the next three years under its New Colombo Plan.

The Himalayan Institute of Cultural and Heritage Studies wants to collaborate with academics who are interested in the model we have built. The Himalayas



Figure 6. The Tripura Sundari Temple in Naggar in the Kullu Valley (Himachal Pradesh, India) is rebuilt every 70 to 80 years to refurbish the home of the deities.



Figure 7. The author in Spiti (Himachal Pradesh, India) in front of ancient Buddhist *chortens* (stupas) housing important relics.

have great potential, and we would love you all to follow our Facebook page (@TheHICHS) and our Instagram handle (*the_hichs_himalayan_institute*) to engage with and join us in this sojourn. It has been a tough journey. I have experienced ups and downs in an effort to fulfill a purpose so close to my heart. As my dreams unfold and bring more dreams and aspirations to the fore, please follow the journey of the

Himalayan Institute of Cultural and Heritage Studies to learn what lies beyond the majestic Himalayas, Kullu, and its ancient name, *Kulantapitha* (“end of the habitable world”). *The Himalayan Institute of Cultural and Heritage Studies can be contacted through hichskullu@gmail.com.*

Looking Deep into the Weave: An In-Depth Investigation and Protection of a Gold Woven Textile

Skyler Jenkins¹

During graduate studies undertaken in the UCLA/Getty Conservation Program, I felt a need to fill a personal gap in knowledge about archaeological metallic artifacts. I sought out and had the wonderful opportunity to undertake an independent study with the Antiquities Conservation Department at the Getty Villa from January to March 2019. The facilities of the department are located in several buildings adjacent to the laboratory and classrooms of the UCLA/Getty Conservation Program. One building north of the main museum, the so-called Ranch House, contains a library, curatorial spaces, and two of the four conservation laboratories. On our way to the library, I and my fellow students often ambled back and forth across the Monkey Court, so called because the fountain in the courtyard contains three bronze monkeys, but we did not often get the chance to view the work undertaken by our future colleagues in the Antiquities Conservation Department.

Throughout the history of the UCLA program at the Getty Villa, the conservation staff has provided students with lectures, demonstrations, and X-radiography instruction, graciously offering their time and expertise. Conservation students past and present are grateful for this. In late 2018, I met with my independent study advisor, Ellen Pearlstein, and Susanne Gäensicke, senior conservator and head of

the Antiquities Conservation Department, to discuss projects to accommodate my desire to gain a greater understanding of ancient metal artifacts.

COLLABORATION AND RESEARCH

Under the supervision of Associate Conservator Susan Lansing Maish, I was assigned to study Getty #79.AO.75.125.1–56, a delicate, highly fragmentary archaeological gold textile object (Figure 1), which was part of research undertaken by Mary Louise Hart, associate curator of antiquities. She had become intrigued with the textile, which consisted of 49 ribbonlike woven gold fragments and seven pieces of gold cordage that originated in Italy. My goal was to provide comprehensive research and analysis, and to rehouse the 56 individual fragments as both a protective measure and to allow for easier research access.

During the course of my independent study, I collaborated with Mary on her research queries and learned about the technology behind the object. I worked one day a week, navigating both Susan's work agenda and my class schedule, which included classes at the Getty Villa and on the UCLA campus. Initial meetings with Susan and Mary consisted of presenting new findings about the technology of the textile, inquiring whether or not Mary wanted certain information obtained by various techniques—for instance, portable X-ray fluorescence analysis to confirm the composition of the object—and considering whether any cleaning would be needed or wanted. (It was not.) More informal collaboration occurred when I saw something I had not seen before and asked for an extra pair of eyes. For instance, a superficial ruby red color appeared in small areas on some of the fragments. The true nature of this material was never determined. Susanne and Susan both steered me to study alluvial gold and how it often contains other metal impurities, such as silver and copper. With each further meeting with Mary, I provided new information, and she shifted my focus to different queries that had not been fully developed or investigated.

Work began with organizing the individual fragments into groups, giving each one its own number for tracking, and updating the collection information

1. MA in conservation, UCLA, 2020.

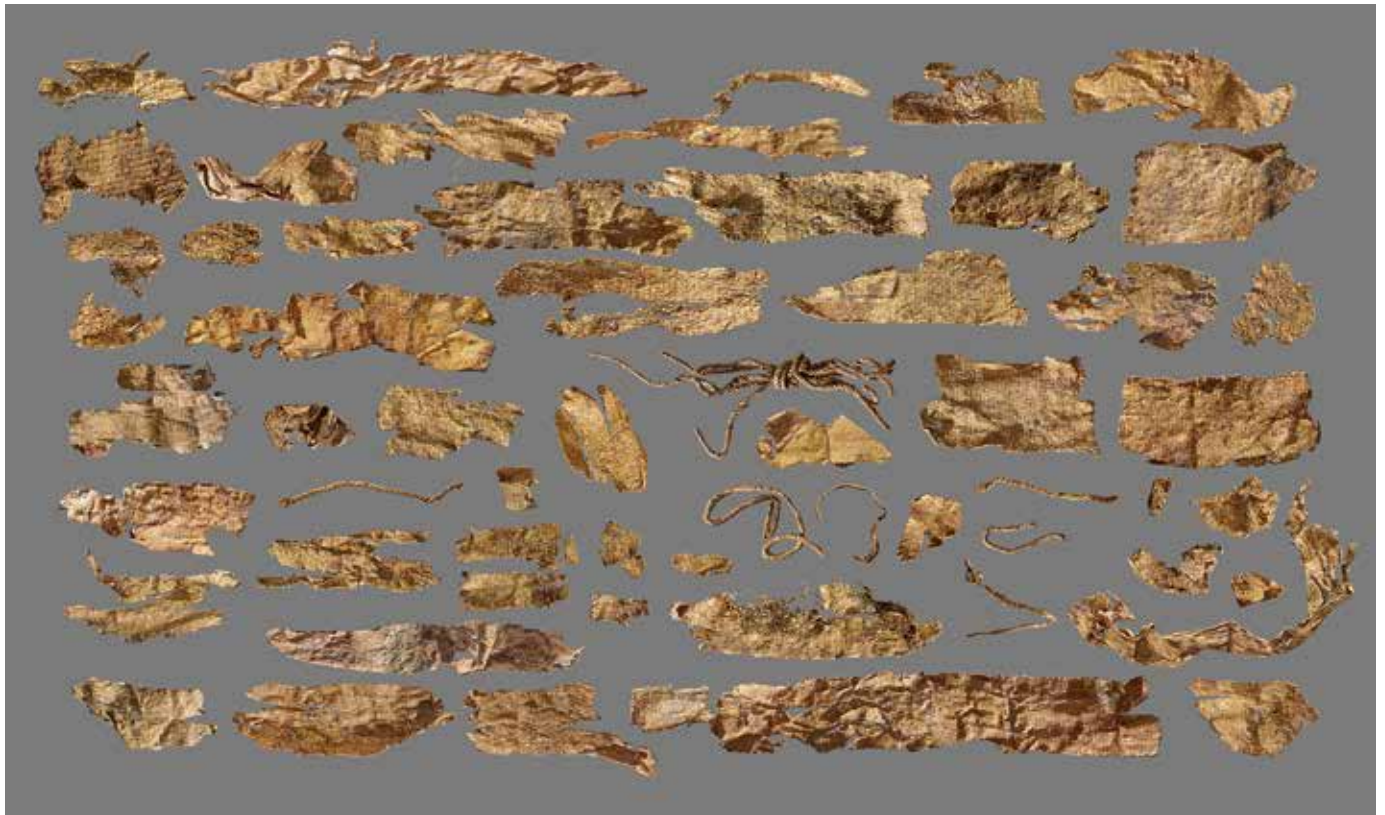


Figure 1. An overall mosaicked image of all fragments of gold textile object Getty #79.AO.75.125.1–56. (Photograph by Niki Nakagawa; courtesy of Getty Digital Open Content.)

to provide easier access for future researchers. Each fragment was analyzed and photographed with digital microscopy, measurements were taken, and the condition of each piece was documented. While working in the conservation laboratories, I became acquainted with many curators, curatorial assistants, guest scholars, mount makers, and departmental conservators. Everyone I encountered was very welcoming and enthusiastic about the collaboration.

Both the woven gold sections and the cordage had been examined and analyzed in 1989–1990 by Madeleine Hexter, at the time a graduate intern at the Antiquities Conservation Department, and by David Scott, former Getty Conservation Institute museum scientist and former chair of the UCLA/Getty Conservation Program. This initial technical study employed scanning electron microscopy, benchtop X-ray fluorescence spectroscopy, atomic absorption spectroscopy, and metallography. The metal was determined to be 98.23 weight percent (wt%) gold, with 1.46 wt% silver and 0.32 wt% copper.² This result was based on analysis of a single sample tested by atomic absorption spectroscopy.

2. David Scott (1989), Getty Conservation Institute internal report.

What makes this piece extraordinary is that it is woven of gold.

Each fragment of the gold textile (ribbon) is constructed of strip twisted gold lengths, each with a thickness of approximately 5–10 μm (0.0005–0.0010 cm). Each “thread” is a thin strip of gold, most likely cut from beaten metal foil and then woven (Hacke et al. 2004). What makes this piece extraordinary is the fact that it is extremely fine, delicate, and woven only of gold. There is no organic core in any of the fragments and the scale of the weaving is incredibly impressive. In similar objects, the threads are usually wound around a fibrous core to enhance flexibility,



Figure 2. Fragment 42, with the working face seen on the recto (left) and a nonworking face on the verso (right). Images taken with a Keyence digital microscope.

but no core material has been discovered in the fragments I studied. Pliny the Elder noted that gold could be spun and woven like wool without a core material (Gleba 2008). According to textile scholar Elizabeth Wayland Barber, the gold textile fragments are a warp-faced plain weave (personal communication 2019), which is confirmed visually: each piece seems to have a working face, where the wefts are more easily seen on one side, while on the other side the wefts are indistinguishable (Figure 2). In 1989, Scott obtained a sample for a metallographic cross section, and the results from that study indicate that hammer work and annealing were performed.

Each strip is Z-twisted (with the threads in the direction of the central line in the capital letter Z, as opposed to the capital letter S). While most of the fragments are woven 1-over-1-under (plain weave), some fragments are easily legible as 2-over-2-under (Figure 3). Those that are 2-over-2-under also exhibit a double weft that does not appear to be plied. The limited legibility of the weave is due to loss and damage (Figure 4). It is difficult to attribute the other fragments as either 1-over-1-under or 2-over-2-under due to the tightness of the weave and other condition

issues that makes it difficult to discern the technology. Because of the two different weaving techniques, it is unknown if there are two separate objects or one single object with different weave patterns. The diameter of a well-preserved twisted “thread” is 0.66 mm. The cordage consists of seven fragments, with one of them forming a square (Hercules) knot. Each fragment of cordage is constructed with a strip of twisted wire, with a total of approximately 15 Z-twisted strands that were 2, S-plyed together. Only one fragment (number 18) is believed to have a well-preserved selvage.

Each fragment is structurally and superficially stable, but at the same time extremely fragile. Several fragments are unstable due to possible corrosion and related damage. A handful of fragments exhibit a “melted” appearance either overall or in localized areas. Some of these pieces exhibit coagulation in the shape of oval beads at the ends, an indicator of exposure to extreme heat. As mentioned earlier, some surfaces present a deep ruby red color, possibly cuprite or silver sulfide. Burial deposits are also present and range from gray to black in color, with impressions of surrounding burial features (roots or twigs?), as well as a possible resin-like material that is dark brown-red and possibly originated from a burial context or human remains.

ANALYSIS AND HOUSING

Characterization of the fragments was carried out through digital microscopy, ultraviolet-visible light photography, X-radiography, X-ray diffraction, and Fourier-transform infrared spectroscopy. These different methods answered different questions relating to surface deposits to help us better understand the burial context and the general construction and technology of the fragments. All the fragments were

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studied under a Keyence VHX 6000 digital microscope. The digital microscope allowed for minute measurements and documentation of weave structure, thickness, and diameter (where present) to be taken and documented. More in-depth analysis began with examining the fragments under ultraviolet radiation to characterize surface deposits seen under the digital microscope. The fragments were exposed to both long- and shortwave ultraviolet light. Nothing could readily be identified with this method. Digital X-radiography was undertaken by Jeff Maish, conservator at the Getty Villa. This work provided insight into construction of the piece (Figure 5), as confirmed by Barber. A sample from fragment 15, which exhibited a gray-colored concentration of material, was analyzed with X-ray diffraction to look for the presence of burial environment accretions. The sample was analyzed with a Rigaku R-Axis Spider powder diffractometer. The results were a match with calcite (CaCO_3), which could be an indication of ash, as the accretion has an ashy appearance, indicative of a fire or perhaps a volcanic eruption.

Collaboration with the Arizona State Museum at the University of Arizona in Tucson ensued when a sample from a fragment that exhibited a red-brown, resin-like material on the surface was sent for analysis by Fourier-transform infrared spectroscopy with attenuated total reflectance analysis. This was performed by Wendy Lindsey, scientist and instructional specialist in the preservation laboratory of the museum. Two spectra were captured. According to Wendy, “There is mostly a carbonate peak ($\sim 1400\text{ cm}^{-1}$), another peak grouping that corresponds to minerals ($\sim 800\text{--}1100\text{ cm}^{-1}$), and a grouping up near 3700 cm^{-1} that indicates kaolinite or similar. There is a hint of an organic component in a group of weak absorbance near 3000 cm^{-1} that corresponds to C–H stretch, but it is very weak, and no other diagnostic peaks are visible. This may mean that some organic compound like a resin is possible, but in a small enough quantity that we cannot characterize it.” The sample was most likely too small to fully characterize and was possibly contaminated with surrounding burial environment material.

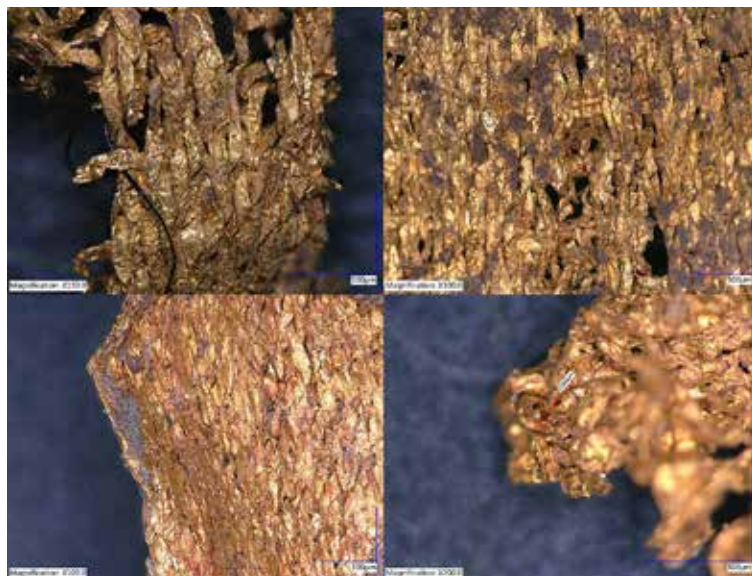


Figure 3. Examples of 1-over-1-under (top left; fragment 38) and 2-over-2-under (top right; fragment 11). Bottom left: Fragment 18 with its preserved selvedge. Bottom right: A well-preserved diameter of the twisted “thread” from fragment 28. Images taken with a Keyence digital microscope.

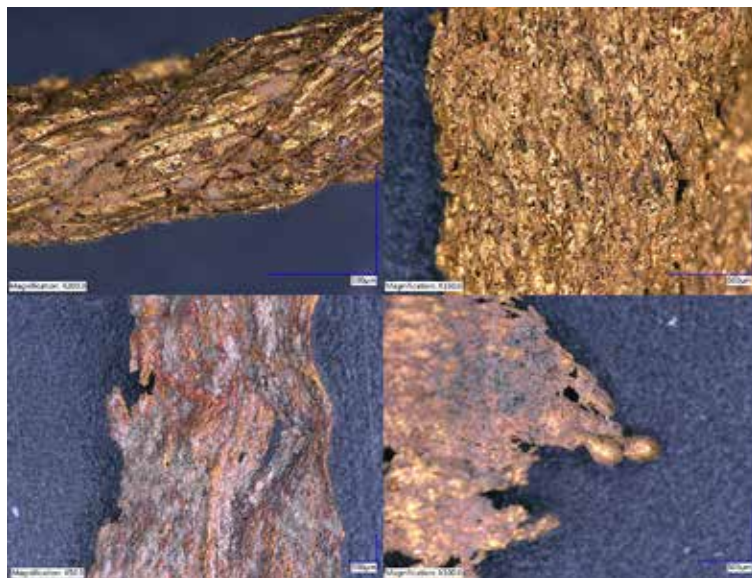


Figure 4. Corrosion and related damage on fragment 48 (top left) and fragment 56 (top right). Fragments 22 (bottom left) and 4 (bottom right) exhibit the “melted” appearance. Images taken with a Keyence digital microscope.

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Looking Deep into the Weave

It is important
to highlight
the collaborations
that happen.

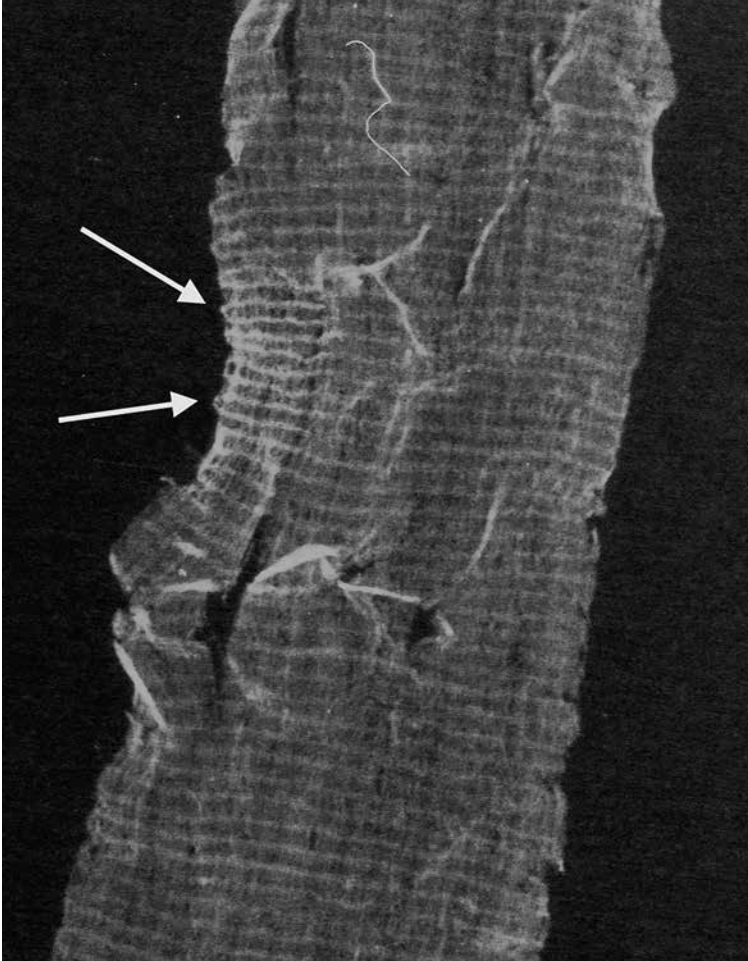


Figure 5. Detail of an X-ray photograph of fragment 1. The arrows indicate where the wefts were looped at each selvedge (X-ray settings: 175 kV, 5mA for 30 seconds with a copper filter.)

The textile segments when presented to me were stored in a plastic case with an attached lid, with five vertical dividers creating six separate areas. As the box was quite deep, the sections were built up with varying layers of Volara (a closed-cell polyethylene) to keep the fragments near the surface. The pieces were secured with small pins protected with silicone tubing. The pins caused unnecessary distortion and

sometimes damage and made it difficult to retrieve the pieces individually. Small pieces came loose and fell between the dividers and the layers of Volara. New housing was constructed using prefabricated archival boxes. This allowed for more organization and custom support for each fragment. Volara in two different thicknesses was used to line the boxes—a thick lower layer and a thin upper layer. The thin layer has custom cavity cuts for each fragment as well as small areas for picking up fragments with cushioned tweezers, if need be. Because of these boxes, as well as previous research, the fragments do not need to be directly handled. To ensure that the fragments do not slip between the two Volara layers, the layers are secured to each other with double-sided tape.

FURTHER RESEARCH

Hart and Maish continued research on the gold textile from May 2019 until January 2020, along with Monica Ganio, assistant scientist at the Getty Conservation Institute; Douglas MacLennan, associate of the Collections Research Laboratory; and Karen Trentelman, senior scientist. In October 2019, Susan presented the ongoing investigations on the woven gold in Granada, Spain, at the seventh *Purpureae Vestes International Symposium: Redefining Textile Handcraft: Structures, Tools, and Production Processes*. The presentation “*Auratae Getty (now Vittae Auratae)*” was coauthored by Mary, Susan, Monica, Douglas, and myself. We introduced unexpected elemental patterns revealed during the macro-X-ray fluorescence scanning of the fragments at the Getty Conservation Institute in July and August 2019. The results of this study, including confirmation of some technical details of the 1989 study, possible origins, date, and purpose of the narrow gold ribbons, are scheduled to be published in August 2021 in the *Getty Research Journal*.³

3. The Getty Research Journal is distributed in print and electronically by the University of Chicago Press, Journals Division, and is also archived on JSTOR. Beginning February 2021, it will be published twice a year.



Figure 6. The author documents the condition of the gold fragments with a Keyence digital microscope. (Photograph by Laura Horan.)

CONCLUSION

I am not the first student of the UCLA/Getty Conservation Program to work with our neighbors in the Antiquities Conservation Department (Figure 6); nor will I be the last. I think it is important to highlight the collaborations that happen, big and small. The relationship between the UCLA/Getty Conservation Program and the staff of the Antiquities Conservation Department continues to grow. I was able to fill a gap in my knowledge of one small aspect of ancient metal artifacts and was also introduced to much more subject matter, which created even more gaps, which I now am working to fill.

ACKNOWLEDGMENTS

I thank all who contributed to my involvement in this project, especially Susan Maish, Ellen Pearlstein, Mary Hart, Susanne Gänsicke, Jeff Maish, Elizabeth Wayland Barber, David Scott, and Niki Nakagawa. The UCLA/Getty Conservation Program, the Antiquities Conservation Department, and the Cotsen Institute of Archaeology all assisted in making this opportunity possible.

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Learning to Do Research under the “Pandemic Normal:” Notes from the Armenian Laboratory

Kristine Martirosyan-Olshansky'

In early February 2020, I thanked my undergraduate student volunteers for their dedication and released them of their duties early, as I was about to go on a short medical leave. I said I would contact them again upon my return in June, when they would be welcome to come back and resume their work. Soon after, as the news of the coronavirus begin to surface, few of us could imagine that we would be locked out of our research laboratories and classrooms for months to come. It is hard to tell what the long-term impact of coronavirus on research will be, although there have been several studies (Alon et al. 2020; Collins et al. 2020; Pfefferbaum and North 2020) and a plethora of opinion pieces on how the pandemic is impacting gender equality, early career scholars, and mental health. A research impact metric model from the Council of Governmental Relations, an association of research universities and affiliated medical centers, estimates research output loss and the financial impact of the pandemic.² The outlook is grim. The pandemic has generated an unprecedented amount of uncertainty and stress for many of us, as our research projects, fieldwork, and material analyses have shifted or halted. How are those of us based in the Armenian Laboratory navigating through these difficult times and continuing research?

Despite the pandemic and restricted access to our laboratory and materials, we have been able to carry out most of our work from the comfort of our homes, though this has not been without challenges—read: two children under the age of two, a plastic table that

serves as an office desk, and an endless number of interruptions as the home–work boundary has been completely obliterated (Figure 1). During the fall of 2019, with the help of Alan Farahani, an assistant professor of anthropology at the University of Nevada–Las Vegas, we began building a relational database for the Masis Blur Archaeological Project. Because Alan is based in Las Vegas, our work had to be largely online from the beginning, so our transition to working remotely during the pandemic was quite smooth. Unfortunately, the effects of “pandemic normal” have not been as slight on our work with undergraduate student volunteers, who are an integral part of the process. In the early months, while Alan was writing code and building the framework, a few student volunteers at UCLA and I were reorganizing, categorizing, and cleaning up the various digital spreadsheets and documents on which the project had been keeping track of finds. We were also going through thousands of excavation and artifact photographs and drawings, which will eventually be incorporated into the relational database. This part of the project, much like the fieldwork we do, was truly an international collaboration, as we had student volunteers and contributors in both the United States and Armenia.

With the start of remote learning, undergraduate students have faced increased levels of stress and anxiety (a topic outside the scope of this report), so I was not surprised to get one email after another from volunteers who had been part of our dedicated team for more than a year, letting me know they would not be able to continue their work. As a result, the progress our team of six (five volunteers and myself) was making on the data cleanup of the Masis Blur Archaeological Project slowed significantly. Nevertheless, Alan and I have been able to keep in touch and push our work forward through weekly online meetings, chats, and shared cloud storage, a scenario that will be all too familiar to most readers.

Another area of research within the Masis Blur Archaeological Project, which we are conducting in the Cotsen Institute, is the study of a large collection of pigments found at the site. This work is done in collaboration with Vanessa Muros, director of the Experimental and Archaeological Sciences Laboratory. Fortunately, with the initiation of Phase II (limited research ramp-up) at UCLA, Vanessa has been able to access some of the necessary instruments housed in the institute, so we have made progress on this front

1. Postdoctoral scholar and director of the H. O. Z. Chitjian Armenian Laboratory at the Cotsen Institute.

2. “Research Impact under COVID-19: Financial Crisis and the ‘Pandemic Normal,’” Council of Governmental Relations, August 25, 2020, https://www.cogr.edu/sites/default/files/Research_COVID_August2020_COGR_FINAL.pdf.



Figure 1. The author at work in the relative comfort of home.

as well. We have been able to review and discuss the preliminary results of the pigment analysis via various online meetings. The results are quite interesting and suggest that the Neolithic farmers of the settlement were very familiar with the iron and copper oxide sources available to them, which they acquired in substantial quantities, mixed with fine clays, and likely used for decorating various surfaces. We had hoped that during the 2020 field season in Armenia, we would add to our analysis several small mortars and fragments of turtle carapace with pigment residue, using a portable X-ray fluorescence instrument, and compare the results with those obtained from the pigment samples. This part of the research will have to wait until we are once again able to travel safely and conduct fieldwork.

Even if at a slower speed, and despite all the challenges posed on our research and daily lives, we have adapted to the pandemic normal and pressed onward with our research. In September 2020, Alan and I shared some of our work and discoveries not only with the Cotsen community but also with a much larger audience, far beyond the physical confines of UCLA. Thanks to the now widely accepted remote lectures and talks, we presented our results on a Zoom platform to participants not only from all over the United States but also from Europe and the southern Caucasus. All things considered, ongoing research at the Armenian Laboratory has not suffered terribly as a

result of the pandemic, but we are all looking forward to the day when we will be able to safely return to our laboratories, fieldwork, regular social interactions, and the pre-pandemic normal. We again thank our student volunteers for the time they dedicated to the Masis Blur Archaeological Project and look forward to seeing them again in the Armenian Laboratory. In full agreement with English poet John Donne that “no man is an island,” we patiently but eagerly await coming together once again.

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Research Before and During the Pandemic: The Experimental and Archaeological Sciences Laboratory

Vanessa Muros¹

The 2019–2020 academic year marked the first full year of operation for the Experimental and Archaeological Sciences Laboratory, and what a first year it was! The emergence of Covid-19 and the ensuing global pandemic had a significant impact on all our lives. The way we did everything had to change, and we had to rethink how we approached even the most basic daily tasks. Research and education activities were not immune to the impact of Covid-19. The “shelter at home” advice put in place across California in mid-March, and the closure of the UCLA campus, forced us all to change how we conduct research and how we teach students. We began working remotely. Classes moved to an online format. Summer fieldwork was canceled. Through it all, though, research projects at the Experimental and Archaeological Sciences Laboratory continued, albeit looking very different than initially planned.

In the fall 2019 quarter and through the end of the winter 2020 quarter, graduate students, researchers, and volunteers were busy using the facilities at

the laboratory to conduct archaeological research. During that period, our small kiln got plenty of use by Gazmend (Gazi) Elezi, an archaeology graduate student who is conducting research on Late Neolithic pottery from the Balkan Peninsula with a focus on southern Albania and northern Greece. Gazi collected clay from sources that could possibly have been used for the production of pottery at the sites in his research area. He then used this clay to make small bricks, which he fired at different temperatures (Figure 1). These were then analyzed using portable X-ray fluorescence analysis, and thin-sections for petrographic analysis were made, to be compared to his archaeological samples.

In addition to graduate students, other researchers and volunteers used the equipment in the laboratory, in particular the polarized light microscope with a camera attachment. During the winter quarter, Marci Burton, Mellon Fellow in Objects Conservation at the Fowler Museum, looked at wood samples taken from African objects from the Sir Henry Wellcome Collection (kept in the Fowler Museum). Marci is conducting research into the technology of the objects in the collection to gain insight into the materials used to make the objects (Figure 2). This work includes wood identification as one component of a much larger project to document and conserve the collection. Just before the shutdown, Maddy Biebel was working with Hans Barnard, core faculty member at the Cotsen Institute, on a study of Eastern Desert Ware vessels from Egypt (Figure 3). She received her degree in geology from UCLA in 2019 and used her previous experience in petrography to examine thin-sections made from this pottery and to practice applying this technique to archaeological pottery.

The Experimental and Archaeological Sciences Laboratory also provides support for laboratory-based courses and made microscopes available for a class in the winter quarter. Sonia Zarrillo, postdoctoral researcher and director of the Ancient Agriculture and Paleoethnobotany Laboratory at the Cotsen Institute, taught students about paleoethnobotany in her course Selected Topics in Archaeology. In this class, students learned how to prepare and identify both macro- and microbotanical samples. They used the stereomicro-

1. Director of the Experimental and Archaeological Sciences Laboratory at the Cotsen Institute.



Figure 1. Gazmend (Gazi) Elezi (left), an archaeology graduate student at the Cotsen Institute, creates small bricks from clay collected from several sources in Albania (right) that could have been used to make pottery in the Late Neolithic period.

scopes in the laboratory to look at the remains of seeds and used the polarized light microscopes to examine starch grains.

Teaching also included workshops offered to students and affiliates of the Cotsen Institute. Two workshops were on the use of portable X-ray fluorescence (pXRF) spectroscopy. The first was held in person in February 2020 which I taught with Kristine Martirosyan-Olshansky, director of the Armenian Laboratory at the Cotsen Institute. Titled *Analysis: Setting up a Research Methodology*, the workshop focused on the qualitative and quantitative analysis of archaeological materials and how to approach the study of both archaeological samples and artifacts in collections that do not allow sampling. A second workshop was taught during the summer as part of the 2020 Summer Workshop Series organized by the Digital Archaeology Laboratory at the Cotsen Institute. This remote series focused on data and digital tools that can be used for



Figure 2. Marci Burton, Mellon Fellow in Objects Conservation at the Fowler Museum, examines a wooden object from the Fowler Museum teaching collection.

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Figure 3. Maddie Biebel, who graduated from the Department of Earth and Space Sciences at ULCA in 2019, examines thin-sections made from Egyptian Eastern Desert Ware ceramic vessels.

archaeological research. The workshop in this series discussed the different types of data that can be generated through analysis and of questions it can address within research on archaeological materials.

The pandemic had an extreme impact on fieldwork, and most archaeological excavations that were scheduled to take place in the summer had to be canceled. However, I was luckily able to participate in the Shire Archaeological Project in the Tigray region of northern Ethiopia, directed by Willeke Wendrich, the director of the Cotsen Institute. This project took place during the first quarter of the academic year, before the world was even aware of Covid-19. In Shire, I worked on the preservation of excavated materials and aided with archaeological research (Figure 4). I conserved metal and ceramic finds, and I conducted analysis of metals, stone and glass beads, and clay crucible fragments using a portable X-ray fluorescence instrument. The pandemic has slowed field-based archaeological research for the foreseeable future, but the hope is that next summer some of these projects can resume and that this type of work can continue, depending, of course, on global developments regarding Covid-19.

In the meantime, we are all still trying to figure out how to adjust to the new normal and find new ways to teach, conduct research, and learn. Over the summer, UCLA allowed a limited, low-density reopening of research laboratories. The Experimental and Archaeological Sciences Laboratory, along with selected other laboratories in the Cotsen Institute, have restarted their research activities (Figure 5). Graduate students have returned to continue work on their MA and PhD research. Researchers are picking up projects put on hold in the spring. Though the laboratories are not as busy as they were, there is a return in some respects to how they were operating before, especially in facilitating and offering resources for graduate student research. As we approach the start of the 2020–2021 academic year, we will continue to move ahead with our archaeological research and will adapt and modify our work in response to the ever-changing public health situation.

To find out more about our activities, please visit ioa.ucla.edu/labs/experimental/ or follow us on Instagram: @easl_ucla.



Figure 4. The author conserves a large ceramic vessel at the Shire Archaeological Project in the Tigray region of northern Ethiopia.



Figure 5. The author at work in the Experimental and Archaeological Sciences Laboratory after the arrival of the Covid-19 pandemic.

A Participatory Exhibition in the Time of Covid-19

Nicole Smith,¹ Gabriel Canter,²
Austin Shipman,³ and Jason De León⁴

One year before the time of this writing (September 2020), the Undocumented Migration Project team had freshly arrived in Los Angeles. We were thrilled to be at UCLA, to be at the Cotsen Institute, and perhaps a bit less thrilled to unpack the many boxes stacked from floor to ceiling in our laboratory (Figure 1). With little time to rest, we quickly dove into our most ambitious project to date, *Hostile Terrain 94* (HT94), which we introduced in the 2019 issue of *Backdirt*. In short, HT94 is a participatory art exhibition that illustrates the human cost of border enforcement policies and memorializes those who have died along the Arizona–Mexico geopolitical boundary. The exhibition is composed of more than 3,200 toe tags, filled in by hand by volunteers, with the forensic details of each individual who has died in the Sonoran Desert of Arizona since the mid-1990s (Figure 2). Each completed tag is placed on a map of the border in the exact location where the remains of that person were discovered.

We spent the latter part of 2019 planning, meeting, and organizing with people in nearly 130 locations around the globe who would be hosting HT94. We had anticipated that these installations would take place over a span of six months, gearing up toward the presidential election. By February 2020, our

laboratory was once again filled from floor to ceiling with boxes of exhibition materials that were slowly being shipped out to HT94 hosting partners (Figure 3). Every hour of every day seemed to be occupied with either online meetings, answering questions in our never-empty email inboxes, or packing exhibition kits. In March, everything suddenly came to a halt. We closed the door to our laboratory, not realizing the amount of time that would pass before we would open it again.

ADAPTING TO THE PANDEMIC

With the advent of the Covid-19 pandemic, our team had to rethink everything in terms of the exhibition. While we still attended online meetings more often than we probably would have preferred, everything else was changing as we adapted to new and uncertain times. The official launch of HT94 was originally planned for the beginning of May in Santa Fe, New Mexico. Our team planned to spend the entire summer traveling across Latin America and Europe to help install the exhibition and conduct workshops with participants. Our travel itinerary made us look like a band of anthropologists on tour. Our opening in Santa Fe was postponed, and subsequently many other venues followed suit. There would be no summer tour, however, and there was no clear vision of what the fall of 2020, when the majority of our national exhibitions were to take place, would look like.

HT94 is a participatory exhibition designed to emphasize in-person interactions with the exhibition materials and other community members. Because this was no longer possible, we extended the timeline of the exhibition into the fall of 2021. This extension also meant that we needed to generate new content to keep our hosting partners and their communities engaged in the project for an additional year without the physical installation.

VIRTUAL PROGRAMMING

Our physical Santa Fe launch did not happen in May as we had hoped. However, we were able to virtually open HT94 on July 17, 2020. In conjunction with the School for Advanced Research, SITE Santa Fe, and the Center for Contemporary Arts (CCA), we were able to mobilize enough people to fill out the more than 3,200 tags memorializing the dead and safely install the exhibition at CCA. Although the venue

1. Exhibition coordinator of the Undocumented Migration Project.

2. Exhibition coordinator of the Undocumented Migration Project.

3. Program manager of the Undocumented Migration Project.

4. Professor of anthropology and Chicana, Chicano, and Central American studies; core faculty member of the Cotsen Institute; and executive director of the Undocumented Migration Project.



Figure 1. Boxes of laboratory materials and artifacts that made the move to UCLA from Ann Arbor, Michigan, where our project was previously located.

The project seeks to memorialize thousands who died.

was not open to the public, audiences could virtually tour the exhibition through a webinar opening event. The event included a prerecorded introduction from HT94 head curator Jason De León. The next day De León participated in a lively discussion with MacArthur Fellow Steven Feld about the different ways in which research and data can be translated for public consumption through the arts. The success of our first virtual exhibition left us optimistic that we could still reach people with this project even in the midst of a pandemic.

Around the time of the Santa Fe opening, we launched a new video project called *A Moment of Global Remembrance*. During this time of social distancing, we wanted to create ways to engage safely with those who are committed to remembering the thousands of people who have died along the Arizona–Mexico border. With this initiative, we are asking people to film or record themselves reading the names, along with other details, of those who have died in the Sonoran Desert of Arizona. These recordings will be compiled into a single video. Each participant will honor one individual; with more than 3,200 files, we anticipate the final video compilation to contain more than twelve hours of footage.

Much like the Say Their Names call to action in the Black Lives Matter movement, *A Moment of*

NAME Zhagui Pulla, Carmita Maricela		ML# 12-01567
AGE 31	SEX Female	REPORTING DATE 7/2/2012
SURFACE MANAGEMENT Private		CORRIDOR Sasabe
CAUSE OF DEATH Exposure		OME DETERMINED COD Probable Hyperthermia
BODY CONDITION Decomposed		COUNTY PIMA
LATITUDE 31.8322	LONGITUDE -111.278	STATE Arizona

Figure 2. A toe tag filled in with details for Carmita Maricela Zhagui Pulla, whose remains were discovered in the Sonoran Desert of Arizona in 2012.

Global Remembrance is about standing in solidarity with communities affected by social injustices and bearing witness to the fatal realities of the policies of the United States. The project seeks to memorialize the thousands who have died in southern Arizona. Through this digital participatory event, communities from around the world will come together virtually for a shared moment of reflection. As of September 2020, we had received requests for participation from more

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Figure 3. Tags for the exhibition, together weighing 635 kg (1,400 pounds) arrive on campus. They were later divided and shipped to *HT94* hosting partners.

than 500 locations internationally (Figure 4). When the final cut of the compilation is complete, the video *A Moment of Global Remembrance* will be posted publicly and will be an additional feature that *HT94* hosts can play during the exhibition.

With so many people around the world becoming more comfortable within digital environments, virtual programming offers new methods for hosts to interact with their communities and beyond. Although many of 130 hosts of *HT94* have decided to postpone their exhibitions until at least 2021, some have organized special one-time events that community members and the general public can attend in the interim.

For example, at St. Olaf College in Northfield, Minnesota, a digital programming team meets weekly to discuss virtual programming and to plan events. The team has spearheaded an initiative to digitize the process of filling out toe tags. After months of

planning and weeks of workshops, they began hosting Zoom webinars, which are open to everyone. There, the team explains the project to participants and assigns each person two digital toe tags to fill out in Google Docs. During the sessions, participants are split into smaller groups, using the breakout room function in Zoom, and are aided by a team member in case of technical difficulties. Because of the lengthy block of time and the ability to be at home and stay connected via the internet, some participants have taken the opportunity to investigate the coordinates that are written on the tags and to find the locations on Google Maps. Being able to see the exact locations where remains were discovered gives people new ways to connect and empathize. The tags that are filled out during digital webinars will likely be printed out and placed on a future installation at St. Olaf College, along with tags that get filled out in person. Although the digital tags will look different, they will showcase how many people came together to work on this project during a global pandemic.

St. Olaf College has hosted many remote events and instructional sessions to train other *HT94* hosts on how to hold digital events for their communities. In a recent meeting, the team at St. Olaf College discussed how *HT94*, which began as a simple exhibition that would go up and come down before November 2020, had turned into a wider initiative on topics of migration that very well may turn into an ongoing student group on campus.

In Topeka, Kansas, Washburn University installed its exhibition at the Mulvane Art Museum in August 2020, and it is up for display during the fall 2020 semester. Our primary contact, Jason Miller, asked community members to fill out tags in the spring of 2020, at the beginning of the pandemic. He organized this work by leaving blank tags on his porch, to be picked up and returned, after being disinfected for 24 hours. Washburn University also recently hosted digital *HT94* events, including film screenings and panel discussions. Miller commented that at one event, “Over 120 people attended from all over the world. Folks from Africa, Australia, and Central and South America. [There were] lots of conversations and great questions from our students, but also from forensic anthropologists and their students from around the world in both English and Spanish. It was really amazing if I say so myself!”



Figure 4. A map marking the locations of people who have participated in A Moment of Global Remembrance. As of September 2020, this project had reached people in more than 516 spots around the world.

HT94 is also currently in progress at Texas State University in San Marcos. Our hosts there have developed a series of online programs, including lectures, panel discussions, and musical performances. Texas State University was one of the first hosts to experiment with filling out tags with hybrid workshops. This involved sending physical tags and the data to be written to participants via snail mail and then convening through Zoom to fill out the tags together. With social distancing measures in place, these workshops were a great compromise; allowing participants to physically handwrite the details represented in *HT94*.

These examples of how *HT94* has transformed during these trying circumstances are just a handful of the many that are currently taking place or are slated to begin in the winter of 2021. Although many of our original plans have been delayed, we do think there is a silver lining. We have been able to reach an audience far larger than we could have imagined through many virtual events that likely would not have occurred had this pandemic not forced us to adapt. The creative and inclusive online events that continue to transpire have already mobilized hundreds, if not thousands of people from all around the world to come together to witness the humanitarian crisis occurring at the southern border of the United States and to stand in solidarity with the communities most affected by cruel

Digital tags
will showcase
how people came
together.

border enforcement policies. The commitment of our hosting partners to continue to support and advocate for this cause has been incredibly humbling and inspiring for our team. It is sometimes strange to think that all those boxes of materials that were once stacked in our laboratory in the Cotsen Institute—many of which are now stacked in Gabe's garage—have sparked all these different things. We still have a long way to go but have been inspired by our hosting partners, whose dedication to this project has given us the energy to keep fighting for positive social change during these difficult times.

A Virtual Field Season: Digitizing a Roman Granary

Matei Tichindelean¹ and Doris Vidas²

For most archaeological projects, summer is the time when data are collected and organized. We travel to sites and spend most of our time outside, surveying, excavating, and recording. However, restrictions due to the Covid-19 pandemic have made this an impossibility, so many have turned their attention to the organization of data and their publication. Our project, named Re-Imaging Scholarly Exchange in Three Dimensions (Rise 3D), aims to reconstruct past environments in a virtual realm, not only for educational purposes but also for further research. Within this framework, our project builds upon the legacy of the Fayum Project—a collaboration between UCLA, the University of Groningen (the Netherlands), and the University of Auckland (New Zealand)—which began its archaeological exploration of the Greco-Roman site of Karanis (modern Kom Aushim) in Egypt in 2005. Since 2005, a multidisciplinary, international team has investigated the rich history of the northern edge of Lake Qarun, where the Greco-Roman town of Karanis is located.³

Although archaeological excavations were concluded in 2015, the long-term goals of the project are aimed at creation of a digital platform that will not only serve as a digital repository but also allow for the gathered data to be displayed and disseminated

to a broader audience. Our virtual field season in the summer of 2020 set out to create geospatial and three-dimensional models using the innovative recording techniques of the project as our starting point. Our team, including Willeke Wendrich and Deidre Brin (director of the Digital Archaeology Laboratory), has been meeting weekly to create an environment that will allow the public to access and interact with the archaeological data recovered from the eastern part of the ancient city. We specifically focused on a building called the East Karanis Granary. This building became the focal point of our project because it allows us to build upon digital work done during the 2008–2012 field seasons, as well as to showcase the potential of Rise 3D. While the pandemic moved our discussion into a digital environment (Figure 1), the silver lining was that this allowed us to meet and work across continents. The ability to share our computer screens and allow computer takeovers has made collaboration on the digital three-dimensional project almost seamless, exemplifying the power and importance of digital technologies in archaeological inquiry.

PHOTOGRAMMETRY

The team excavating and recording the site displayed impeccable foresight in the way they recorded the East Karanis Granary. Thousands of photographs allowed us to reconstruct a photogrammetric model of the archaeological features as they were excavated (Figure 2). Software such as Agisoft Metashape allows us to stitch together hundreds of photographs to create an accurate digital three-dimensional representation of the archaeological features. Photogrammetry not only allows us to visualize and manipulate objects in three dimensions but also produces a highly accurate representation (up to an accuracy of 0.001 m., equivalent to 0.04 inch). Figure 2 provides a snapshot of the remains of the East Karanis Granary looking southward. The living or administrative quarters of the building are in the lower right of the image. The storage vaults, now filled with sand, are on the left and lower left of the image, while the partially collapsed subterranean vaults are visible through holes resulting from their collapse.

One of the goals of our project is to make our photogrammetric model the focus of a virtual reality environment, where visitors can walk through and experience the archaeological features themselves.

1. Graduate student in archaeology at the Cotsen Institute.

2. Graduate student in archaeological science at Saint Peter's College, University of Oxford, and a UCLA alumna.

3. "Fayum Project," UCLA, RUG, UOA, <http://www.archbase.com/fayum/project.htm> (accessed September 13, 2020).



Figure 1. The Rise 3D team. Clockwise from top left: Deidre Brin, Matei Tichindelean, Doris Vidas, and Willeke Wendrich



Figure 2. Still of our photogrammetric model of the partly excavated East Karanis Granary.

This will not only allow them to visit the site virtually but will also serve as a laboratory where new research questions can be generated. First and foremost, the combination of the photogrammetric model (Figure 2) and our three-dimensional reconstructions (Figure 3) was developed as an educational tool, an intersection where archaeology and history meet. Virtual guides

and labels will describe archaeological finds and explain their significance. The virtual visitor will have the ability to toggle between the photogrammetric model (Figure 2) and the three-dimensional reconstructions (Figure 3), thereby virtually traveling back

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in time. Our hope is that each visitor will experience the virtual environment in their own way, moving through and observing space and things from a unique perspective. This will result in new questions that will further our understanding of the past.

GEOGRAPHIC INFORMATION SYSTEMS

Geographic information systems (GIS) combine software for gathering, mapping, and analyzing geospatially referenced data. Like many tools used in archaeology, GIS was not originally developed for archaeology but rather to support industries such as urban planning, transportation, banking, health care, and human services. GIS has since been adopted for the storage of archaeological data, as its ability to store information that can be projected onto an image of the surface of the Earth allows researchers to gain a better understanding of spatial relationships. Rise 3D is utilizing this powerful data storage and manipulation framework to map the units excavated in the East Karanis Granary in order to store the full body of data in the geographical context in which it was found. Our complex database was constructed in several stages: collecting and planning GPS points in the field, digitizing plans and excavation data, creating a map of the different excavation units, integrating the excavation database into the map, adding the location of finds, incorporating site photographs, and finally migrating the map to a three-dimensional format. The final product (Figure 4) is a geospatially located, highly visual, interactive, and user-friendly three-dimensional representation of the site with an embedded centralized database.

The methods implemented in mapping the granary were data collection, digitization, data cleanup, consolidation, and visualization. The first stage took

place on-site, where data were collected using paper unit and finds recording sheets. Additionally, a plan of each unit was created prior to excavation, and geographic coordinates were taken using a differential GPS instrument and a total station. Post-excavation efforts involving the digitization of these sheets and plans provided the foundation upon which the current East Karanis Granary was reconstructed. The work in these stages was conducted by many individuals over the five-year history of the excavation project. The critical phase following digitization was data cleanup, standardization, and consolidation. Once this was achieved, the mapped units were merged in ESRI ArcMap to make the map easier to navigate as well as to simplify integration of the database data. Following this step, centroid points were added to the center of each unit and joined with the finds data; clicking on a point reveals an archive of all finds associated with that unit. After the data were integrated, finds and unit photographs were added to the map through the creation of a Python script that populated the attribute table with the uniform resource locator of each individual image. The final stage involved converting the map into three dimensions using ESRI ArcScene. The final product was a three-dimensional geospatially located map of the units excavated in the granary, complete with an integrated database of unit and finds data as well as site photos. Modeling the data made it much more accessible and interactive.

The current map of the East Karanis Granary facilitates the centralization of excavation data, aids in the interpretation of finds, and allows users to interact with data in a more visual and intuitive way. Engaging in this process streamlined the steps to joining the database with the geospatial data, identified key elements to enhancing the experience as users interact with the model, and customized the map to model the data in a way most advantageous for visualizing and interpreting archaeological data. The digitization and georeferencing of the site would not have been possible without the scrupulous and diligent recording of the excavation team as well as their careful collection of geographical coordinates. The digitization of the unit, finds sheets, and plans allows for the digital preservation of each stage of excavation. The user-friendly features—such as being able to click directly on units

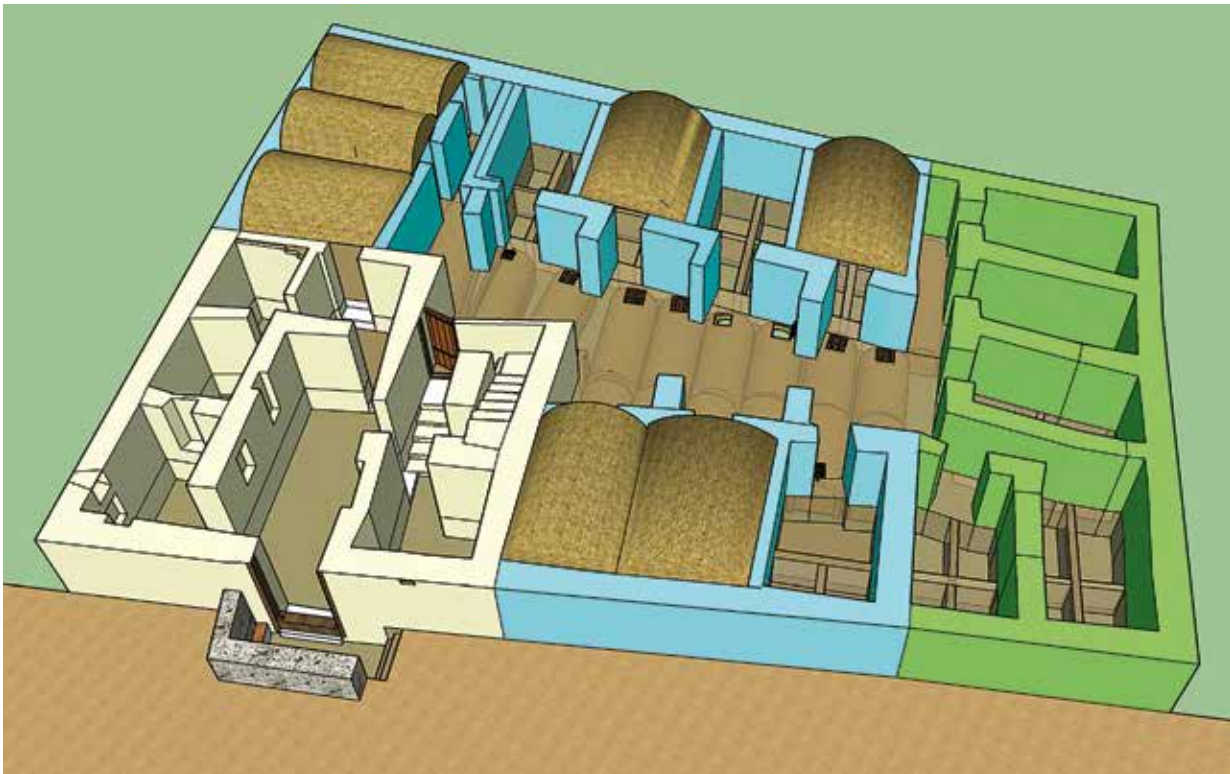


Figure 3. Still of the current state of our digital three-dimensional reconstruction of the East Karanis Granary.

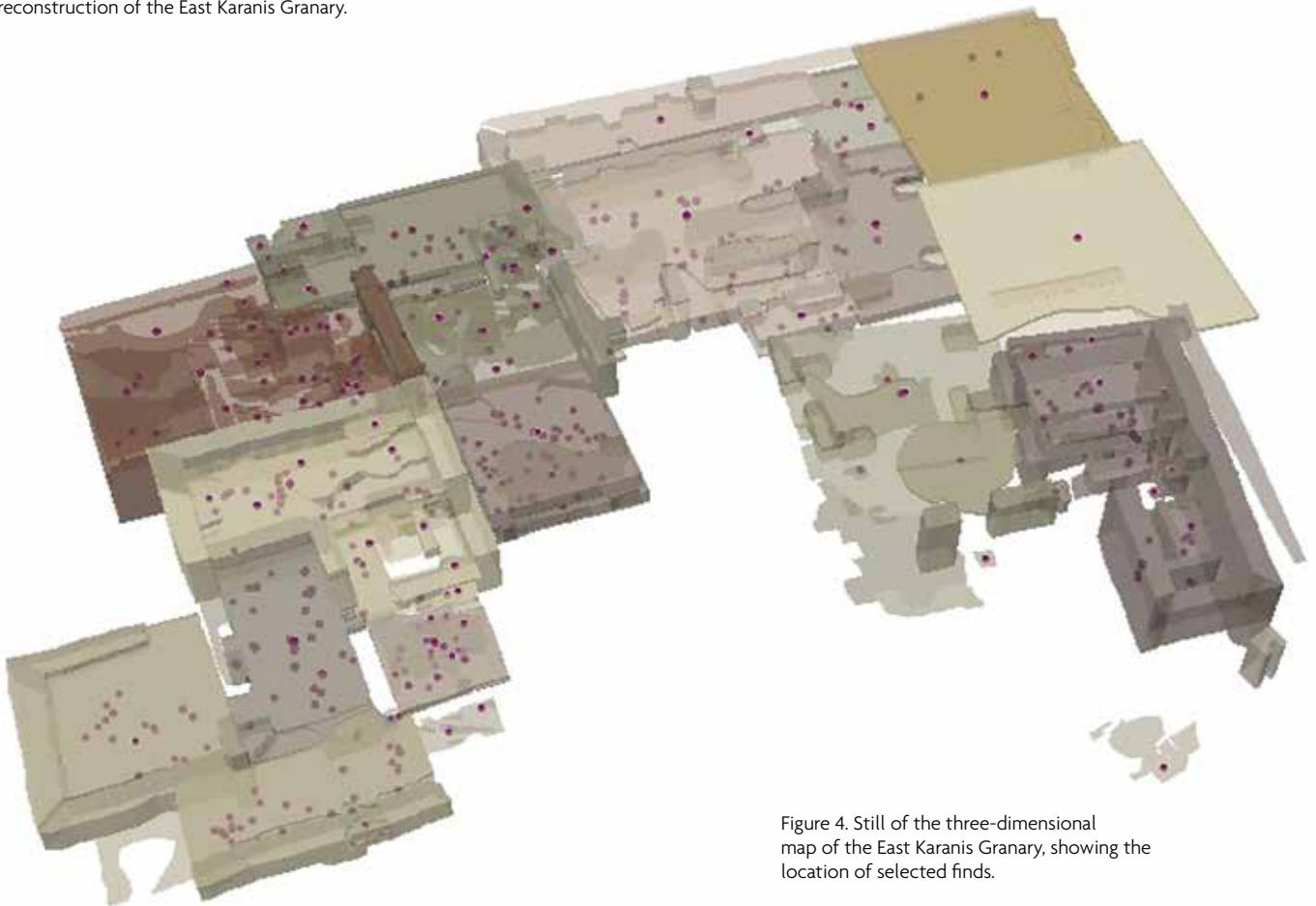


Figure 4. Still of the three-dimensional map of the East Karanis Granary, showing the location of selected finds.

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or finds to see their associated information, or pulling up multiple units to compare information—allow for a more enhanced and accessible user experience. Furthermore, the interplay of these elements will allow users to make better-informed inferences about the uses of different spaces within the granary. This will facilitate a greater understanding of the development of the granary, its day-to-day operation, and the lives of its patrons and custodians.

DIGITAL RECONSTRUCTION

To develop an educational tool that can be used by a wider audience, we decided to create a variety of three-dimensional reconstructions based on the

archaeology of the East Karanis Granary. The popular architectural software package Sketchup 2020 allows users to import a two-dimensional plan and build up three-dimensional features within a user-friendly and practical interface that can be mastered in a relatively short time. The plan chosen as the starting point for the model (Figure 5) was produced by Barnard et al. (2016) during excavation of the area between 2008 and 2012. Although the plan represents the situation during recent work at the site, our three-dimensional reconstruction also takes into account fieldwork undertaken by the University of Michigan during the 1920s and comparanda from elsewhere in the city of Karanis to present three different construction phases. The three different phases are represented in our three-dimensional model (Figure 3)—which is still a

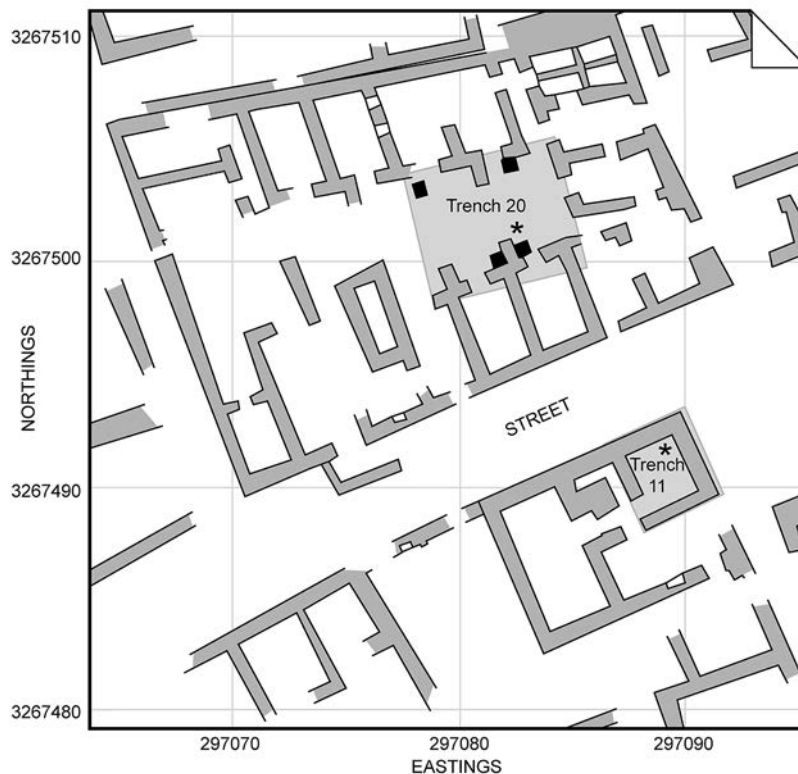


Figure 5. Plan of the East Karanis Granary used as the two-dimensional foundation for our three-dimensional model (Adapted from Barnard et al. 2016:95.)

* = HOBO (Onset®) temperature and relative humidity data logger

Coordinates projected onto Zone 36R (N) of the WGS84 spheroid
North is at the top of the map — Each box is 10 m. square

HOUSE 65

Section N-O from North to South, looking East

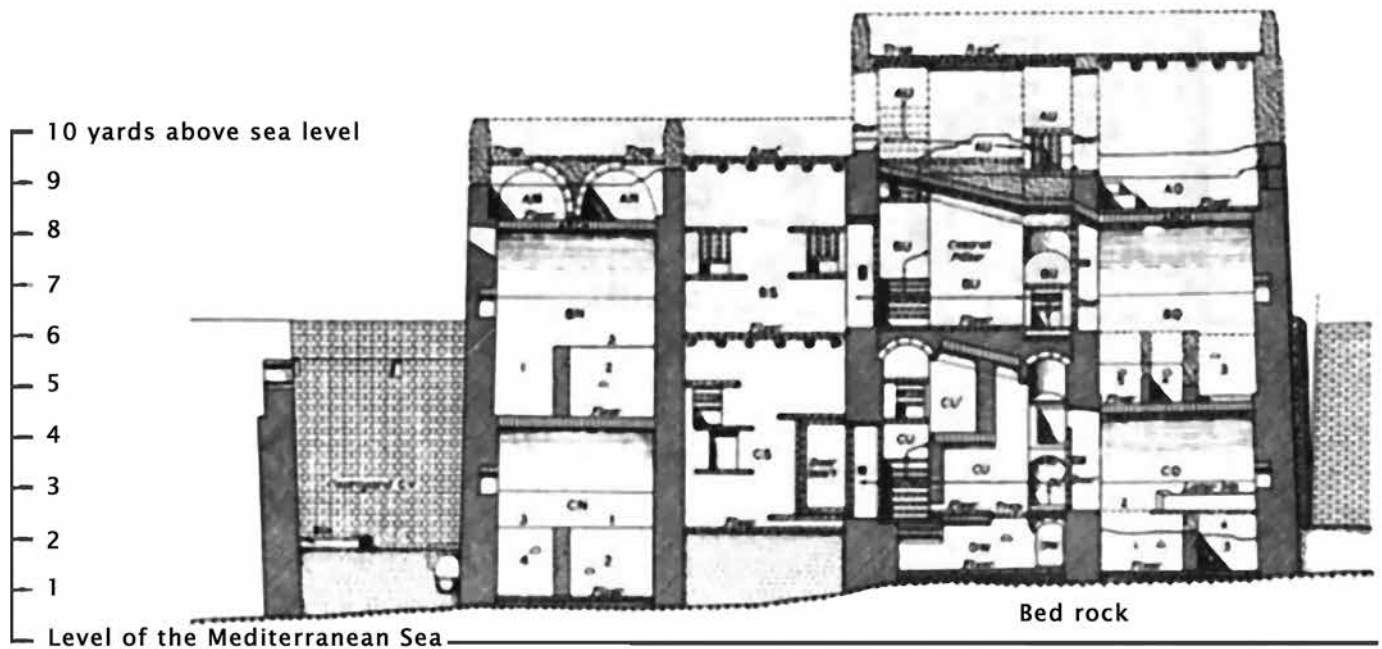


Figure 6. Section drawing of House C65.
(Adapted from Husselman and Peterson 1979:176)

work in progress—by three different colors. The first and oldest phase, which appears to be the living or administrative quarters of the administrator of the granary, is represented in yellow-brown. The second phase, represented in blue, appears to be the transformation of a stereotypical house in Karanis into a much larger storage facility. During the same phase, subterranean vaults were added in the courtyard, made visible by the transparent rendering of the floor, as well as 10 vaulted storage rooms designed to house a substantial amount of grain or other bulk commodities. The third and final phase of the granary is represented in green. During this phase, the ancient builders added five aboveground vaulted storage rooms as well as one subterranean vault beneath a hallway.

It is important to stress that although this three-dimensional reconstruction is informed by archaeological features and was produced in consultation with architectural expert Anthony Caldwell, the final product is only an educated guess as to the original design of the building. The site of Karanis suffered a significant amount of degradation after the initial excavations in the 1920s and 1930s. As much as 60 percent of the mudbrick architecture fell prey to the natural elements and human activity in the area (Barnard et al. 2016). Even though the eastern part of Karanis was never excavated, this ancient neighbor-

hood was built in the later phases of occupation and did not have the same height of buildup over time as the central city. It was less protected by later deposits, so the natural degradation here was considerable and the heights of the walls are necessarily educated guesses based on parallels informed by the University of Michigan excavation of a larger granary, designated as House C65 (Figure 6). In the current reiteration of the model (Figure 3), the wall stands 2 m (6.5 feet) above street level, represented in our reconstruction as a sand-colored trapezoid. The vaulted ceilings, which are about 0.75 m (30 inches) high, would bring the total height of the roof to around 3 m (10 feet).

Perhaps the most difficult decision to justify in this reconstructed model is the addition of a second floor. Once again, our decision relied on prudent and lengthy conversations based on two key pieces of evidence: the archaeology and the comparanda. Our main source, House C65, excavated by the University of Michigan between 1926 and 1935, is described by Husselman as the largest granary excavated in the city, a “remarkable building, preserved three stories in

Laboratory Life

A Virtual Field Season: Digitizing a Roman Granary

height” (Husselman 1952:62). The detailed architectural plans and reconstructions presented in the earlier University of Michigan reports are sometimes hard to interpret. While photographs show an impressive level of preservation, some of the drawings appear to blur the line between recording and reconstruction (Figure 6). Nevertheless, the archaeological remains indicate that House C65 was truly impressive in size. The plan of the compound was similar to our granary, although on a grander scale, and the storage rooms show similar layouts and vaulted construction. The sheer size of House C65, however, provides clues that it served a much more prominent purpose. In House C65, vaulted storage rooms were present on all three stories, as well as in underground vaulted bins (Husselman 1952; Husselman and Peterson 1979). In contrast, archaeological evidence from the East Karanis Granary shows vaulted storage rooms abutting only the courtyard and the creation of additional storage space in the form of underground vaulted bins built under the courtyard during the second phase. No conclusive archaeological material was recovered to indicate that our granary held a second story as complex as that of House C65. Nevertheless, the staircase indicates that a person could have accessed the roof above the administrative center of the house and any rooms possibly located there.

These short discussions about the height of the walls or whether there was a second story are perhaps the most exciting and fun parts of this project. They illustrate the process that we as researchers need to question, not only when reconstructing a model but also when reconstructing the past. These ideas

or questions can be big-picture ones: What was the purpose of this room? How was this space used? Or they can be more narrow questions that focus on small aspects of everyday life: Which way did the door open? Would this room have had a window, and if so, how big was it? In a similar way, we hope that importing all the reconstructions of the granary into a virtual environment will allow others to generate their own questions and pursue their curiosities.

VIRTUAL WALK-THROUGH

Unity is a game engine with the ability to store a diverse range of data and graphics, as well as create virtual scenarios. For this reason, it was selected as the primary platform for the creation of a virtual walk-through of the East Karanis Granary. The walk-through will be accessible across a variety of different platforms, either through a computer interface or in a virtual reality environment. The latter will allow users to interact with two different iterations of the granary: its excavation and its reconstruction. The excavation scene will be based on our photogrammetric model of the site and will allow users to experience the excavation as visitors to the modern site. The three-dimensional reconstruction will allow visitors to experience the granary as it would have stood in the fourth century CE (Figure 7). Meanwhile, clickable elements will reveal curations from specialists about different functions of the granary’s features, objects, and spaces. The dual representation will enable visitors to understand the process of archaeological inquiry, from excavation to interpretation and reconstruction.

This first-person experience will be assisted by interactive features containing additional information and original site photos to enhance and promote a better understanding of the site. Beyond just data consolidation and visualization, virtual reality affords users a lived, immersive experience. It enables players to put themselves in the shoes of past peoples and experience a small slice of what their lives and livelihoods might have looked like in the fourth century CE. The creation of the East Karanis Granary virtual walk-through brings the past to the forefront of cutting-edge research and digital innovations, creating an exciting educational tool that can be accessed by a general audience.



Figure 7. First-person virtual reality view in Unity, looking toward the entrance of the East Karanis Granary.

CONCLUSION

The East Karanis Granary case study, in line with the goals of Rise 3D, is an experiment in data management, consolidation, and visualization. By digitizing excavation records and data diligently collected by the excavation teams, Karanis was transformed into interactive maps, models, and a virtual walk-through. Despite limitations imposed by the Covid-19 pandemic, our team continues to work and generate visualizations that promote our ultimate goal of providing greater public access to data and research. In fact, the importance of digital preservation and accessibility of data in archaeology is highlighted by the unusual times we find ourselves in. Covid-19 restrictions have halted many archaeological projects through the interruption of fieldwork and lab activities. By contrast, the digital nature of Rise 3D, facilitated by the resources of the Digital Archaeology Laboratory in the Cotsen Institute, has allowed its unhindered progress in spite of the pandemic. Its open-source publication will enable people from around the world to interact with archaeological research from the comfort of their homes. Future endeavors will build on these efforts with the implementation of new technologies.

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Alumni Adventures

After spending years in close contact with faculty, staff, and students affiliated with the Cotsen Institute, those finishing their education go out into the world to engage in bigger and better things. In this section of *Backdirt*, we ask those who recently graduated to reflect upon their adventures since leaving UCLA.

Careers after the Cotsen: Alternatives to Academia

Roz Salzman¹

AFTER MANY LONG YEARS of study and research, graduates of the Cotsen Institute are ready to enter the world with PhDs from UCLA. The skills they have learned and the knowledge they have gained are obviously appropriate for careers in academia, archaeology, or conservation. If, however, they are considering an alternative route, how can they apply that experience to a career in the private sector? How can they go about getting a job?

During interviews with alumni from the archaeology program of the Cotsen Institute who found success in the private sector, even though they started their graduate programs with the intention of going into academic archaeology, several themes became apparent. Although none gave up their love of archaeology, their priorities changed in the time between entering the program and graduation. By then, they had seen colleagues face the difficulties of establishing a career in academia, finding a job while competing with others with more experience, having to relocate, and not earning enough to support their families after years of struggling through graduate school.

What does a PhD in archaeology qualify you for if not academia? It may come as a surprise, but there is

as much value in years of experience in research, field study and analysis, technology use, on-site management, and problem-solving within archaeology as there is in many other fields. In other words, our graduates have a skill set that can be applied to many positions in the private sector. Below are five stories of successful careers outside academia and archaeology with a degree from the Cotsen Institute. Each story contains hints and tips on how to go about beginning such a career, offered in the words of those who have successfully made the transition from academia.

TAKE ADVANTAGE OF CAREER COUNSELING AND NETWORKING

Career counseling events on campus helped illustrate this transfer of skills to Rachel Moy, who obtained her PhD in archaeology in 2019. Through these events, which she started attending more than a year before graduation, she was able to create a network with other graduates who had gone on to private sector careers. According to Moy, expanding your network is most important. She is now a project manager for GMV Syncromatics, a transit technology company in Los Angeles. Moy emphasizes the importance of learning how to sell your experience and how to present yourself differently: you never know when your background is going to strike a chord during an interview. There is a lot of research and learning involved in networking. She used LinkedIn and Indeed.com as resources but advises everyone to be prepared for rejections.

Moy originally wanted to become a professor. Her views evolved throughout graduate school and took a long time to mature. The reality is that there are very few jobs in academia, and the field is very competitive. She watched several friends go through the process and struggle for years just to get invited for an interview, and they were up against other very qualified people. She decided she did not want to enter the postdoctoral circuit, which, according to Moy, “Now seems nearly inevitable. Most people who have been

1. Director of the Cotsen Communications Group.



Figure 1. Clockwise from the top: Abigail Levine, Chelsey Fleming, MaryAnn Kontonicolas, Ben Nigra, and Rachel Moy. (Image created by Deidre Brin.)

successful in obtaining an academic position have had two or three postdoctoral positions, which could easily have taken ten years. They are almost always picking up and moving between those jobs.” Not wanting to do that was a big part of her decision. When she began her studies, Moy did not have a partner, but when she got married, she and her husband wanted to stay in Los Angeles. “Priorities change. Life changes,” she points out.

“One of the attractions of a job in the private sector is the ability to work with other people, as opposed to the often solitary work of doing research and compiling data in academia,” Moy explains. At the interview for her current job, the employers were impressed with the various software and time management tools Moy had mastered. When they asked how she would deal with clients and tough situations, she was able to relate that to dealing with field school students and local community representatives.

START WITH INFORMATIONAL INTERVIEWS

Geography also played an important role in the decision to look outside academia for a career path for MaryAnn Kontonicolas, who obtained a PhD in archaeology in 2018. Like so many others, her initial intention when starting at the Cotsen Institute was to become a professor. She soon discovered that to achieve that goal, she would have to be geographically agnostic. She instead wanted to stay in Los Angeles. The tight job market was another major consideration. She began her job search the year before her graduation with informational interviews with other graduates who had found nonacademic jobs. She signed up for a free trial of a premium LinkedIn

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account, which allowed her to use more sophisticated search criteria, such as filtering by industry, functional areas, and even the term *PhD*. Through this search, she found many people who were willing to speak to her and answer her questions for 15 minutes.

Both Kontonicolas and Moy found jobs through referrals by colleagues who had themselves been approached by companies and passed along the opportunities. Uniquely, the firm that hired Kontonicolas was looking for applicants with a PhD in the social sciences for the position of project manager. After three rounds of interviews and a half day on-site (which included problem-solving, an Excel test, and personality assessments), she was offered the job while she was still finishing her dissertation.

In her current position as engagement manager for ECA Partners in Santa Monica, she manages a team of recruiters and oversees projects related to hiring executive-level managers. ECA Partners is an evidence-based, data-driven executive search firm founded by former management consultants. Kontonicolas thinks their emphasis on a PhD for internal management positions reflects their goal of finding people with rigorous training in the scientific method, plus the intellectual curiosity, creative problem-solving skills, and project management skills that transfer well from academia. According to Kontonicolas, “Those with a social science background, including archaeology, furthermore have an ingrained interest in working with people and understanding their decision-making processes.” Although there was a transition period in adapting to the fast-paced, demanding environment while creating client relationships and coming to grips with different industries, Kontonicolas now loves her job as well as her colleagues. “There is a lot of

opportunity for progress in my career, whether within ECA Partners, on the partner track, or by moving to a similar position elsewhere,” she adds.

In terms of recommendations for a job search, Kontonicolas advises you to use your LinkedIn profile as a résumé. Highlight concrete, transferrable skills, such as being able to use software packages like Python or R, as well as research, writing, and public speaking skills. She also highly recommends conducting informational interviews with professionals working in an industry or company that is appealing, especially with people with a similar background, such as the same alma mater or another connection. Also, prepare in advance for your interviews. In her current job, Kontonicolas has interviewed many applicants with PhDs, and common pitfalls include verbosity or not showing a clear interest in the job. Finally, never be shy about your archaeology background, even if you are targeting work in a completely unrelated field. Kontonicolas was initially hesitant about sharing her background with clients, worried that she would lose credibility with them. It turns out that it instead allowed her to build better relationships with clients, as archaeology is interesting to many people.

LEARN TO MANAGE WHILE STILL IN SCHOOL

According to Ben Nigra, who obtained a PhD in archaeology in 2017, the biggest benefit of that degree was learning to manage people, budgets, and projects. When he started in 2010, his intention was to be an academic archaeologist and to vie for a position at a major research university. “You may know what your passions are at age 23, but you do not really know what it takes to live the kind of life that you want,” he explains. Nigra realized that landing a job at a great university, in a place he wanted to live with his family, while battling for tenure, was going to be extremely difficult. So he talked to people who had taken a different path, and a lot of the feedback he got was the same: You will find that some of the skills you have are really valuable.

He made the first two years after graduation into a grand experiment to see what he really had to bring to the table. The goal at this point was just to get and hold down a job. His initial efforts were to find something interesting that paid the bills, so he could put that experience on his résumé and show that he had

What does a PhD in archaeology qualify you for?

worked in a nonacademic environment for a couple of years. Initially, he applied all over the place just to see what would stick. He took the first job offer that paid a reasonable amount of money.

As Nigra puts it, “You have to back off the microscope for a second, after spending so many years focusing on something incredibly specific for your dissertation.” He considers himself lucky to have spent a sizable portion of his young adult life doing exactly what he wanted to do, immersing himself in something he was, and still is, very passionate about: archaeology. He acknowledges that the resources provided by the Cotsen Institute would have allowed him to take this work as far as he wanted to go. He was handed every possible tool and kind of support he needed. So it was not for the lack of backing that his direction changed.

He eventually became associate director of strategic management and planning at Helixmith USA, a Korean biotech company, with an office in San Diego. In every interview he ever had, the first question was invariably about archaeology. “It is a great talking point because it sounds cool. So take it to the bank. They are going to want to talk to you about it, and it automatically puts you in people’s good graces,” Nigra explains. He furthermore urges everyone still in school to jump at any opportunity to direct an excavation or a big survey project where you will supervise five people or more, be accountable for a sizable budget, write reports, and negotiate with the local authorities. He considers that experience invaluable.

USE YOUR RESEARCH BACKGROUND

Working on her dissertation, Chelsey Fleming, who obtained her PhD in archaeology in 2016, asked herself if there was a way she could do research but take it a step beyond the resources available to her in academia. While still in school, she ended up in a partnership with a technology start-up to do large-scale quantitative data synthesis for her dissertation.

She had always intended to apply her work in classical archaeology broadly; to do more than just field archaeology. She originally wanted to work in an art museum. While writing her dissertation, she tried to collect real-time data on real people and realized how hard it was with the resources she had as a graduate student. Working on the dissertation also showed her what she liked about the work, where there were shortcomings in her own skill set, and what she needed to work on. “In academia, you really take the work where you want it to go. There are no real stakeholders other than your dissertation committee,” she adds.

After graduation, Fleming discussed her dissertation research with anyone who would listen, including friends and friends of friends. Some people told her she might not succeed; others said that she might, but that they were not really sure how she was going to do that. Eventually she determined that her social science background provided a good foundation and skill set in the area of user research. She felt she needed hands-on experience and landed a couple of consulting jobs to obtain that exposure. With that experience, she got a one-year contract with Google and at the end was able to convince them to hire her full-time. She started at Google in 2017 and is currently a user experience researcher, studying what users like visually and how they engage with experiences, processes, and physical spaces. It was her dissertation that got her interested in such overarching questions. Now she leads her own research and decides where she wants to go while taking business into account.

FIND A JOB AND SUCCEED (EVEN IN A RECESSION OR PANDEMIC)

When Abigail Levine, who obtained a PhD in anthropology in 2012, started searching for a job, the economy was still recovering from the 2008–2009 recession. Universities had clamped down on hiring, and few faculty members were retiring. There were

Priorities change. Life changes.

limited jobs available, and those were becoming more and more specific. Even though the student population was increasing, teaching needs were being met by contingent faculty. Levine had taken a general approach to her degree, simply wanting to hone her skills as a scholar. She was originally interested in research that dealt with major questions in the field. But after obtaining her PhD, she had to come to terms with a reality that had shifted since she had entered the program.

According to Levine, “When you enter a program at UCLA, the expectation is that you are going to be a professor. These expectations are based on the facts that you have been successful so far and that you were accepted into an outstanding program. Most people assume that this success will continue in an academic position.” While doing postdoctoral work as a research and development analyst at the Cotsen Institute, however, Levine realized that academia was not going to provide her with the rewards she originally anticipated. So she started strategizing about how to make her skills marketable outside academia. “It is not about selling out. I had put enough of my life on hold to get my degree and now wanted to take this wonderful education and put it to use in a field where I could have an impact,” she adds. She found her first job through Monster.com at an oncology research nonprofit, where she awarded grants and stewarded donations.

She had received many job rejections saying that she did not have sufficient practical experience or that she was too experienced because she had a PhD. But during the application process for that first job, she was asked to write a progress report for a grant the company had made. Scientists had written a very technical report that needed to be rewritten for a lay audience. After looking up the basic science on the internet, she imagined that she was trying to teach this material to undergraduate students. That approach to the project landed her the job. She has since moved on from what she saw as limited personal growth opportunities in nonprofit organizations and is currently principal of solutions and delivery at Evidation Health, working from home in Los Angeles.

Levine urges graduate students to break out of the mind-set that what they currently do is the only thing they can do. “Having an academic research background is an asset in certain fields because it brings a whole other lens. It is necessary to be solutions-oriented and understand how to amend your solution to your problem,” she says. She feels that being in academia can be a good preparation for a start-up environment because there you have to manage ambiguity, make decisions based on incomplete information, and be able to weave a narrative from information that may be subject to interpretation. She urges everyone to remember that there is no one book on how to do archaeology and adds, “There is no single recipe. For example, there are a lot of methods of data collection. You have to determine which is the right one for you. Then you have to be able to advise and be a thought partner for others and say: ‘This is what I think is best, and you can trust me.’ You can develop this ability through many years of experience, but the advantage for all graduates out there is that this process is really accelerated when you are literally in a program that trains you to think that way.”

Finding Community

Geneva Griswold

AS A STUDENT IN the UCLA/Getty Conservation Program, I had the honor of completing internships in several different locations that matched my interest in painted surfaces. At the Getty Conservation Institute, I assisted in documenting and cleaning David Alfaro Siqueiros's mural *América Tropical* in downtown Los Angeles. I also performed a condition survey, consolidation tests, and the grouting of painted figurative scenes across the archaeological site of Herculaneum, Italy. At the Settore Conservazione e Restauro Istituto Materi in Varallo in Italy, I documented, cleaned, and consolidated polychrome sculpture and a wooden screen in Chapel 12 of the mountainous UNESCO site Sacro Monte di Varallo. In addition, at the American Museum of Natural History, I completed documentation, cleaning, structural fills, and coatings analyses of two Haida totem poles as part of a multiyear project to update and conserve the Northwest Coast Hall.

After graduating in 2014, I was a project conservator at the Walters Art Museum in Baltimore, where I had completed my third-year internship. My interest in painted surfaces led me to projects such as treatment of a sixteenth-century feathered polychrome wood triptych, technical analysis of a Roman Egyptian Fayum portrait—conducted in partnership with the Ancient Panel Paintings: Examination, Analysis, and

1. MA in conservation, UCLA, 2014.



Figure 1: Geneva Griswold cleaning in the Walters Art Museum in Baltimore.

Research Project of the J. Paul Getty Museum—paint consolidation of an eleventh-century Torah ark door panel from the Ben Ezra Synagogue in Cairo, and treatment of gilt lacquerware in the Doris Duke Collection of Southeast Asian Art. One of my favorite activities was interacting with museum visitors while performing treatments in the galleries and staffing the Conservation Window, where we used objects and didactic materials to discuss the role of conservation with the public.

In 2014–2016 I was the Andrew W. Mellon Fellow in Objects Conservation at the Fine Arts Museums of San Francisco, where my responsibilities included preparation for exhibition, loan, and storage of the African, oceanic, ancient American, American decorative arts, and outdoor sculpture collections. Select

treatments included loss compensation on a late Hellenistic terra-cotta Aphrodite figure, X-ray fluorescence spectroscopy investigation of white paints on African figurative sculpture, and consolidation of painted adobe and cartonnage surfaces on a Twenty-First Dynasty Egyptian coffin. I presented a poster of this project at the Ancient Egyptian Coffin Construction conference at the Fitzwilliam Museum in Oxford. My research projects included training in scanning electron microscopy, Fourier transform infrared spectroscopy, and Raman spectroscopy—at the Nano Shared Facilities Laboratory of Stanford University—to facilitate the examination of Teotihuacan mural mortars and pigments, and cocuration of *Featherwork: Investigation and Conservation*. This exhibition explored feather types, color, and associated damage through feathered objects and textiles in the collection of the Fine Arts Museums of San Francisco.

In 2016 I became associate conservator at the Seattle Art Museum, where I currently oversee the treatment, study, and preventive care of its historic collections in close collaboration with the curatorial, exhibition design, and mount-making departments. I joined the staff just prior to renovation of the historic Seattle Asian Art Museum building, which reopened in February 2020. The move and reinstallation of the collections included condition surveys, box making and packing, and treatment and research of the collection, plus casework materials testing and retrofitting with Marvelseal, silica gel rotation, in-gallery environmental data logging, anoxic display case research, and contract scientific services such as X-radiography, computed tomographic scanning, fiber and protein analyses, and thermoluminescence testing.

I enjoy working across departments at the museum to increase the public visibility of conservation. To that end, I write content for gallery labels to highlight the contributions of conservation to the narrative of the artworks in the galleries, I contribute to the Seattle Art Museum blog, and I deliver special project public lectures annually. Recently, the curator of Chinese art and I spoke about a technical imaging study of a consecrated Chinese polychrome

sculpture. I discuss this and other projects on a self-guided conservation gallery tour accessible via smart phone. There, I introduce the public to noninvasive imaging techniques, X-ray fluorescence spectroscopy, and how we used computer tomographic scanning to understand the internal structure and the consecration history of this particular sculpture.

Meanwhile, I am an affiliated faculty member at the University of Washington, where I coteach the Preservation of Collections II course in the MA museology program, which introduces students to conservation philosophy and standards of practice. We acknowledge that many students go on to work in small repositories, where budgets, facilities, and staff support are limited. So we underline the importance of materials selection for storage and display areas. Students practice an Oddy test, learn to read a safety data sheet, and are encouraged to utilize conservation publications to inform their selection processes. Similarly, I lead a workshop for allied professionals called Art and Archival Materials, which is hosted by Level It: Women's Art Handlers Network. Participants gain hands-on experience manipulating archival materials while we discuss their properties, uses, and limits as related to particular application needs when handling, packing, transporting, fabricating, and installing artwork.

Lastly, I am the board secretary for the Seattle Heritage Emergency Response Network, which helps Seattle-based heritage organizations respond to emergencies and disasters affecting cultural resources and collections, and I am vice president of the Western Association for Art Conservation, a membership organization that allows professional conservators to exchange research and news via quarterly newsletters and an annual meeting. Both positions provide connections with colleagues across multiple specialties and localities, and I am grateful for the community fostered through such organizations.

High on Archaeology: Conducting Research and Fieldwork in the Himalayas

Sonali Gupta-Agarwal

TO CONTINUE MY TRYST with fieldwork, which I very much missed after obtaining my PhD in 2015, I embarked in 2018 on the Himalayan Myth and Reality Field School, under the auspices of the Institute of Field Research and codirected by Parth Chauhan, an assistant professor at the Indian Institute of Science Education and Research (Mohali, India). The shift from Egyptian archaeology in the desert to Himalayan archaeology in the mountains was quite a contrast, but what unified my interest in these two regions was cultural transmission. Here was an opportunity to apply all the acumen gained from my work in Egypt to a place with a very different landscape. Earlier, my work had focused on the transmission of skills in crafts, such as pottery production, to understand continuity and change in traditions. I made an effort to trace this transference of teaching and consequent learning in the archaeological record.

In the Himalayas, my focus on cultural transmission was a little different. My aim was to understand



Figure 1. The author in conversation with the village headman and priest of a hamlet in Kullu Valley.

the transmission of ancient myths and their manifestation in daily life using noninvasive archaeological techniques and anthropological approaches (Figure 1). It was pertinent to engage in this kind of study in a place where Hinduism is practiced with traces of Buddhism and shamanism, entwined with rituals and enactment of myths, making the culture truly unique.

The first year was all about learning through trial and error, but with our eight students, Parth and I made a great team. We went into our second season, in the summer of 2019, with a total of ten students. The first week was spent introducing the students to Kullu Valley and the surrounding region. Even though most local inhabitants speak English, the students were given a crash course in Hindi, including writing. Midway through the project, most were able to pick out phrases, which helped them form bonds with the local population. The students were divided into teams and worked on ancient temple complexes dating from the tenth through the twelfth centuries CE (Figure 2). They observed and conducted ethnographic interviews with the priests of the temples, *gurs* (mediums of gods and goddesses), and entire retinues made up of drummers, drum makers, trumpet players, trumpet makers, families of priests, families of *gurs*, and villagers in the areas around the temples.

1. PhD in archaeology, UCLA, 2015.



Figure 2. The Spiti River skirts the tenth-century Key Monastery in the region of Lahaul Spiti in the western Himalayas.

The students documented ethnographic information on transference of knowledge, stories, and legends through oral and written tradition. They drew and digitized temple layouts and floor plans; collected qualitative data involving interviews and myths, deities, and motifs; and finally quantified all data. Using handheld GPS devices and trackers, the students recorded sacred routes of the divine, witnessed divine trances, and watched processions of the gods and goddesses (Figure 3). Finally, the students made short films on their projects, which were shown to the local community at the palace of the erstwhile kings of Kullu. This allowed community involvement on matters of heritage, increasing local awareness of the importance of heritage and research work.

During the course of the field school, students from the Delhi School of Architecture interacted with our students and discussed nuances of Himalayan architecture. Our students were invited by the Cambridge International School in Kullu to present their experiences of conducting research in the Kullu Valley (Figure 4). The students contributed to the environment by planting Himalayan cedar trees (*Cedrus deodara*), which helped us get closer to the community in which we worked. The former director general of the Archaeological Survey of India, Rakesh Tiwari, visited us for an interactive session addressing many archaeological issues in the Himalayas.

In 2020, just before the global lockdown due to the Covid-19 pandemic, we completed a 10-day workshop with the title *High on Himalayas*. In this workshop, four students from different parts of India and one student from UC–Santa Barbara learned about archaeological concepts in the Himalayas, along with conducting fieldwork. In all, the two seasons of

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Figure 3. The deities Parashar (a mythical sage) and Naag Devta (a serpent god) are worshipped during an annual fair in the village of Shanaag.



Figure 4. The author and students of the 2019 iteration of the field school Myth and Reality share their research experiences in Kullu Valley at the local Cambridge International School.

the Himalayan Myth and Reality Project and our last workshop were a great success, and we look forward to going back in post-pandemic 2021 with renewed zest and vigor. The entire experience is etched in the memory of all who were involved, and we hope to keep engaging in fieldwork and research for many years to come.

Learning and Unlearning

Christine Johnston¹

IT IS HARD TO BELIEVE that it has now been four years since I filed my dissertation. Even though I have moved cities and institutions, I still feel part of the community associated with the Cotsen Institute. I have continued to work with colleagues and professors affiliated with the Cotsen Institute in conference sessions, colloquia, and projects on a variety of topics related to the ancient Mediterranean. Most importantly, colleagues I met at UCLA remain some of my closest friends in and outside of the field.

Since graduating, I have been working in the Department of History at Western Washington University. Originally a one-year visiting assistant professorship, the position was extended for two years before the department had an opening for a tenure-track position in ancient Mediterranean history, which I began in the fall of 2019. I am thankful to have found a permanent position in my field, close to home, and I feel exceedingly fortunate to work in a department with colleagues whom I admire immensely, teaching students who are engaged, intelligent, and inspiring. I am hugely appreciative of my advisers and mentors, including Sarah Morris and John Papadopoulos, who helped me apply for these positions. I am also very aware of the luck involved in being in the right place at the right time.

After graduation I also held a position as a postdoctoral researcher at the University of British Columbia on a project studying the ancient Egyptian environment and climate change. Led by Thomas Schneider, this project was funded by the Social Sciences and Humanities Research Council of Canada, and it supported collaboration between faculty and students from the University of British Columbia and UCLA. The grant sponsored a colloquium held at the University of British Columbia in April 2017; the proceedings of this event were published in late 2020. Thomas Schneider and I also collaborated with

archaeologists and environmental specialists on a chapter on the environmental and cultural history of the River Nile in Egypt for a forthcoming UNESCO volume on world river systems. From 2017 to 2020 I also worked on the editorial team of the *American Journal of Archaeology* as an editorial assistant (2017–2019) and then as the assistant editor (2019–2020).

As a graduate student, I participated in the Tell Atchana/Alalakh excavation project in southeastern Turkey as part of the excavation and ceramics analysis teams. In 2018 I joined the Kissonerga-Skalia Excavation Project in western Cyprus led by Lindy Crewe, director of the Cyprus American Archaeological Research Institute. I am thrilled to work with this brilliant team (Figure 1) and am grateful for the opportunity to bring students of Western Washington University to the field school run by Ian Hill and the Heritage and Archaeological Research Practice.

Kissonerga-Skalia is a settlement founded in the Early Cypriot period (circa 2500 BCE), located near the western coast of Cyprus north of Paphos. Current excavations focus on the large public complex built in the late Middle Cypriot period and used into the early Late Cypriot I period (circa 1750–1550 BCE). The Middle to Late Cypriot transition was a period of rapid social change that preceded the emergence of large-scale urban centers in the Late Cypriot II period, at which point the island was fully integrated into the broader Late Bronze Age Mediterranean trade network. Kissonerga-Skalia is one of the few sites excavated in the southern part of the island that was continuously occupied through this transition.

As part of this project, I am investigating changes in ceramic production technologies at the transition from the Middle to Late Cypriot periods using petrography and other archaeometric methods. This study focuses on the relationship between local Middle Cypriot ceramics and Base Ring ware, the hallmark of the early Late Cypriot period and the most widely traded ceramic export from Cyprus. In collaboration with Artemios Oikonomou from the Cyprus Institute, we conducted a portable X-ray fluorescence analysis

1. PhD in archaeology, UCLA, 2016.



Figure 1. The excavation team at Kissonerga-Skalia in 2019. The author is standing fourth from the right.

of our pilot sample during the 2019 season (Figure 2). The petrographic study of these sherds will take place during the 2021 field season, when I will hold a fellowship as the scholar in residence at the Cyprus American Archaeological Research Institute. This study will also contribute to a book in which I will examine shifts in economic organization and production technology at the formative period preceding the development of Late Cypriot urban society.

COVID-19 AND BLACK LIVES MATTER

However, all of these plans are currently on hold. As I write this update, I am at home, because the Covid-19 pandemic has shut down travel and excavations. I know that many of us feel as though our academic and professional worlds are upended, with libraries and university campuses closed and meetings either moved online or postponed. But as with most aspects of academia and archaeology, I am also aware that the impacts of these events are not experienced equally. School and business closures—as well as the disease itself—are disproportionately affecting Black, Indigenous, and Latinx communities. These traumas are being fatally compounded by institutional and systemic anti-Black racial violence.

We are finally facing a disciplinary reckoning as we confront the long histories of colonialism and white supremacy in the fields of classics, anthropology, and archaeology. Much of the knowledge we



Figure 2. Artemios Oikonomou of the Cyprus Institute (left) and the author conduct portable X-ray fluorescence during the 2019 Kissonerga-Skalia field season.

venerate has been wrought from Indigenous peoples and Indigenous knowledge without consultation or consent. The embeddedness of white supremacy in the historiography of the ancient Mediterranean world has been made painfully explicit of late, as individuals and alt-right organizations have adopted classical texts, imagery, and ideology in the construction of white supremacist and misogynistic political agendas (Zuckerberg 2018).

These ideologies are still present in the academic communities to which I belong. The anti-Black racism targeting Dan-el Padilla Peralta during the Future of the Classics panel at the annual meeting of the Society of Classical Studies and the Archaeological Institute of America in 2019 was an explicit example of the marginalization of people of color in our field. So too was the racial profiling of Djesika Bèl Watson and Stefani Echeverría-Fenn, cofounders of *The Sportula*, at the conference hotel at the same event. Padilla Peralta wrote afterward that the show of white supremacy and the complicity of much of the audience revealed once again the need to acknowledge and interrogate “the collective pathology of a field that lacks the courage to acknowledge its historical and ongoing inability to value scholars from underrepresented groups.”²

Despite ongoing diversity, equity, and inclusion initiatives, the field of Mediterranean archaeology remains disproportionately white. Data from the Society of Classical Studies show that in 2014, minorities represented only 9 percent of undergraduate classics students and only 3 percent of tenured professors.³ Though gains toward gender parity in publication have been made, data on gender identity, sexual orientation, race, and ethnicity reveal the continued underrepresentation of marginalized authors publishing in archaeology journals (Heath-Stout 2020). Even with more women publishing,

knowledge producers remain largely homogeneous: white, cisgender, and heterosexual (Heath-Stout 2020:Figure 1). Increasing gender parity without increasing racial diversity shows the failure of equity action to produce intersectional justice. Institutional oppression persists in the form of disproportionate department service and mentorship labor, and racially hostile environments (Dancy et al. 2018:183–84).⁴

The current crises we face—from racism and #MeToo controversies at professional meetings to anti-Black racism and Covid-19—are exacerbating existing inequities across academia, particularly among intersectional marginalized communities. Economic exclusivity,⁵ ableism, and racism impact recruitment into archaeology and create hostile environments for marginalized students and scholars. Fieldwork contributes significantly to this problem, from the high cost of participation (Heath-Stout and Hannigan 2020) to the lack of disability accommodation and the endemic threat of sexual violence (Clancy et al. 2014). Like other archaeologists and teachers right now I am working to unlearn and confront my biases and the white supremacy in our disciplines, our canon, and my teaching, and to relearn more inclusive and ethical practices. I am learning from work that promotes inclusive understanding of the past and can contribute to the betterment of our field moving forward, such as Debby Sneed's (2018) research on disability in ancient Greece, which was a major part of her graduate work at the Cotsen Institute..

I also believe strongly in public scholarship and am working to become a better and more “democratic” educator by learning to “teach beyond the classroom setting,” and “to move into the world sharing knowledge” (bell hooks 2003:43). This includes volunteering and lecturing at public organizations (Figure 3) and participating in programs that support public participation in archaeology, such as #SkypeAScientist. In collaboration with five female colleagues from the University of British Columbia, we have launched *Peopling the Past*, which creates multimedia learning tools centering on lived experiences in the ancient world,

2. Dan-el Padilla Peralta, “Some Thoughts on AIA-SCS 2019,” Medium, January 7, 2019, <https://medium.com/@danelpadillaperalta/some-thoughts-on-aia-scs-2019-d6a480a1812a> (accessed October 12, 2020).

3. “Departmental Survey Tables 2004–2014,” Classical Studies.org, <https://classicalstudies.org/ckfinder/userfiles/files/DeptSurveyTables2004-2014.pdf> (accessed August 31, 2020).

4. See also #BlackInTheIvoryTower and Academics for Black Survival and Wellness, <https://www.academics4blacklives.com/>.

5. D. B. Watson and S. Echeverría-Fenn, “On Not Knowing (How to Pay for) Greek: Introducing the Sportula,” *Eidolon*, March 5, 2018, <https://eidolon.pub/on-not-knowing-how-to-pay-for-greek-d394596c5d19> (accessed October 12, 2020).

Alumni Adventures



Figure 3. The author delivers a lecture in 2017 at North Shore Eldercollege in Vancouver, Canada.

especially of those silenced in traditional histories. I am working with graduate students at Western Washington University on a project that promotes inclusive and accessible pedagogy through the incorporation of three-dimensional objects in the classroom.

I appreciate the chance to listen to and learn from new and ongoing initiatives supporting participation in archaeology and history, both inside and outside academia. To quote Laura Heath-Stout, “Although archaeologists may not be diverse, the past peoples we study are. In order to understand their experiences, we need archaeologists who hold many different identities and who are working from many different social standpoints. We have to create our knowledge in diverse and multivocal communities in order to rigorously understand the human past” (Heath-Stout 2020:423). Right now I am focused on learning from the scholars driving these changes to try to become a better teacher and researcher.

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Increasing Data and Data Accessibility in Zooarchaeology

Hannah Lau¹

WHEN I GRADUATED from UCLA in December 2016, I was excited to apply the knowledge and skills I had developed as a student to new questions, especially after such a long period of focusing on one particular archaeological story. I am an archaeologist working primarily in Southwest Asia and the South Caucasus, with a methodological focus on zooarchaeology—the study of animal bones recovered from archaeological contexts—and the biogeochemical data contained within them. In the four years since I left UCLA, I have had the opportunity to pursue new zooarchaeological research questions and contribute to how zooarchaeology is conducted. I pursued these goals in two postdoctoral positions at the Research Center for Anatolian Civilizations (ANAMED) at Koç University in Istanbul, Turkey, first as a postdoctoral fellow (2017–2018) and then as an environmental archaeology postdoctoral fellow (2018–2020). I am currently a lecturer in University

Studies at Colgate University in New York. I am still in the unsettled phase that many recent graduates find themselves in: moving among rewarding but temporary positions with the hopes of finding a place to land permanently, in a market made more uncertain by the ongoing pandemic. Without a guarantee that a full-time academic career is in the cards, I have focused on contributing to my field in a concrete way that feels meaningful to me.

In my work, I look at social-ecological systems in the past. I am specifically interested in how choices in animal management practices elicited change in, or were changed by, shifts in sociopolitical relationships and how people have grappled with and shaped their environments to have access to animal resources. This interest allows me to engage in both fieldwork and laboratory work. I love both types of work, and they invigorate one another. My dissertation examined the sociopolitical implications of animal husbandry and feasting practices at the Late Neolithic Halaf-period site of Domuztepe (around 6000–5450 cal. BCE) in southern Turkey. Excavations there were directed by Elizabeth Carter (UCLA) and Stuart Campbell (University of Manchester). The Late Neolithic Halaf period is traditionally viewed as relatively uneventful, with great similarity in material culture across a wide swath of southwestern Asia. However, this similarity belies interesting social phenomena among communities living within this sphere, experimenting with different forms of organization and practicing diverse lifeways. While at ANAMED, I expanded the project, examining zooarchaeological collections from the contemporaneous site of Tell Kurdu in Hatay Province, Turkey, where excavations were conducted by Rana Özbal (Koç University) and Fokke Gerritsen (Nederlands Instituut in Turkije). The opportunity to look comparatively at sixth millennium BCE sites, where inhabitants engaged differently with their local and regional cultural spheres, allowed me to expand the story in new directions.

1. PhD in archaeology, UCLA, 2016.



Figure 1. The author takes notes in a trench at the site of Şağlovo in the Lerik Rayon of Azerbaijan. (Photograph by Lara Fabian.)

One of the most rewarding things about zooarchaeology is the ability to look at the same thematic questions in different contexts. In an ongoing research project, I examine animal management practices of agropastoral and mobile pastoral communities in the highland areas of Azerbaijan from the Middle Bronze Age through the Iron Age (from around 2100 BCE to 300 CE). I began working in Azerbaijan in 2009 as an excavator and zooarchaeologist for the Naxçıvan Archaeological Project, a joint American–Azerbaijani effort directed by Veli Bakhshaliyev (Azerbaijan National Academy of Sciences), Lauren Ristvet (University of Pennsylvania), Hilary Gopnik (Monash University), and Emily Hammer (University of Pennsylvania). My research has documented shifts in animal economies as the area was incorporated at various times into different political entities at the Middle Bronze–Early Iron Age site of Qızqala and the multi-period Iron Age site of Oğlanqala, as well as the relationship between settled and mobile agropastoralists.

After graduating from UCLA, and many wonderful experiences excavating in Azerbaijan, I was able to expand this project to examine similar questions in

another part of Azerbaijan. I have been a member of the Lerik Azerbaijan–America Project since 2016, and in 2018 I became one of its codirectors, together with Lara Fabian (Albert-Ludwigs-Universität Freiburg) and Jeyhun Eminli (Azerbaijan National Academy of Sciences). Our work combines archaeological survey and excavations to understand long-term settlement practices in the marginal highland environment of the Talış Mountains in the south of Azerbaijan. Over the past four years, our project has excavated a number of contexts. We excavated a small Late Iron Age domestic site called Yoladoy Bin. Located just below the rich contemporaneous Late Iron Age necropolis Piboz Təpə, which was excavated by a team led by Eminli, this was the first systematically excavated domestic context in the region. In 2019 I was awarded a grant from the National Geographic Society to expand our



Figure 2. The author (left) and bioarchaeologist Selin Nugent at their work stations at the Naxçıvan Archaeological Project. (Photograph by Jennifer Swerida.)

investigations to look at contemporaneous practices in other parts of the valley system. This grant supported work at a Late Iron Age necropolis and at a settlement nearby with, as it turned out, a very rich Middle Islamic-period domestic trash dump.

One of the most rewarding aspects of this early career period has been contributing to the accessibility of zooarchaeology and zooarchaeological data. This has been in part an outgrowth of my research. As part of my dissertation work, I collaborated with

another zooarchaeologist, Sarah Whitcher Kansa, to correlate our independent analyses on material from Domuztepe. This work raised questions about inter-analyst variation in zooarchaeological analyses, and our study resulted in recommendations for grappling with the effect of this variation on zooarchaeological datasets and how to publish these data in a manner that facilitates their reuse. While not a new problem in zooarchaeology, or in any subfield of analysis involving classification and categorization, interanalyst variation is magnified as researchers take on increasingly ambitious synthetic projects combining published primary datasets. This work was intended to not only improve zooarchaeological analytic practice but also to encourage open-access primary data publication.

My postdoctoral position at ANAMED was a rewarding outlet for increasing the accessibility of zooarchaeological research. I was fortunate to be part of an inaugural initiative at ANAMED, under supervi-

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Figure 3. The author (left) with students at the ANAMED Environmental Archaeology Training Program in September 2019. (Photograph by Naz Uğurlu.)

sion of Koç University faculty, to increase the capacity of environmental archaeological work in Turkey. As a postdoctoral fellow, I contributed to increasing both infrastructural and educational capacities as ANAMED developed a zooarchaeological comparative collection to support research and teach students, and held training workshops for students from institutions throughout Turkey and beyond. Too often, zooarchaeological research takes place outside the countries where sites are located. Facilities like those at ANAMED, and the investment in training students, address this inequity and make zooarchaeological research more accessible.

I do not know yet where, or even whether, I will ultimately land professionally. While this uncertainty is difficult, I appreciate the clarity it has given me about what I want in the future. I hope I will be able to continue to pursue specific stories brought into focus through zooarchaeological data and to contribute to the ability of others to tell these stories through the increased capacity and accessibility of data.

Report of the Conservation Program

Glenn Wharton¹

I HAVE NOW COMPLETED my first year as chair, and what a year it has been! We initiated our PhD program, admitted a new class of students, started a lecture series, launched fund-raising initiatives, and experienced faculty and staff changes. Yet everything was overshadowed by the Covid-19 pandemic, the burgeoning Black Lives Matter movement, climate change-induced fires, and an anticipated economic downturn.

Throughout this tumultuous year we revised our vision for the future of the program. Plans came into sharp focus with dramatic world events playing out all around us. As we build on the strong foundation constructed over the past fifteen years, we aim to increase diversity within our program and expand our efforts to address climate change through research and sustainability initiatives.

The first move of the year was to consider a new name for our program and MA degree. Our faculty, students, staff, and alumni all concurred that the term *ethnographic* is problematic in relation to the cultural materials that we research and conserve. Originating in anthropology to describe a methodology for studying other cultures, the term is rejected today by many Indigenous communities and scholars. I am pleased to announce unanimous support for our proposed name that should soon be approved: Conservation of

Cultural Heritage Interdepartmental Program. Our MA Program will adopt the same name, whereas our PhD program will retain the name Conservation of Material Culture.

We worked on multiple fronts to increase diversity in our program. Ellen Pearlstein continues to direct the Andrew W. Mellon Opportunity for Diversity in Conservation initiative (Figure 1). This program provides outreach and mentoring to prospective students from underrepresented communities, along with annual weeklong workshops on all aspects of cultural heritage conservation. Pearlstein secured a financial partnership with the Metropolitan Museum of Art, hired Nicole Passerotti as a staff member, and strengthened the social media presence of the program. As a trained conservator, Passerotti has extensive experience collaborating with tribal collections in conservation research. During the pandemic, Pearlstein, Passerotti, and their coworker Bianca Garcia have been holding remote office hours for students, mentoring them toward conservation graduate study as well as work in allied fields. Pearlstein also continues to collaborate with two tribal collections: the Agua Caliente Cultural Museum in Palm Springs and the Barona Cultural Center and Museum in Lakeside. In these collaborations, our students work with tribal representatives in their research and conservation work.

Our community outreach included two events to introduce undergraduates and teenagers to the field. The first was the annual UCLA Exploring Your Universe science fair, which draws thousands of children and parents to experience hands-on demonstrations (Figure 2). Together with students in the Archaeology Program, our students set up a booth named “Mummies, Bones and Garbage.” The second event was the annual College Night at the Villa, hosted by the Getty Museum. For this event, our students provided tours and demonstrated their research to undergraduate students interested in museum work.

To address climate change and develop sustainability initiatives, our laboratory manager, William Shelley, worked with two of our students to develop practices and protocols to make our laboratories more sustainable as part of their summer work projects. This work

1. Chair of the UCLA/Getty Program in the Conservation of Cultural Heritage.



Figure 1. The Andrew W. Mellon Opportunity for Diversity in Conservation class of 2019.

involved assessing the ability of recycling locations in Southern California to handle conservation materials, investigating “green” solvents in the field of conservation, and creating a list of local vendors to reduce our carbon footprint.

This past summer, Pearlstein invited Catlin Southwick of Sustainability in Conservation, a nonprofit based in the Netherlands, to conduct a workshop for our students, faculty, and staff. The content ranged from larger issues of the impact of climate change on cultural heritage to specific measures that can be taken in our labs to conserve energy, recycle, and shift to green chemicals in cleaning and stabilizing artifacts at the bench. During the 2020–2021 academic year, Shelley will work with students from 15 conservation programs around the world to develop sustainable practices in the field as part of the Student Ambassador Program of Sustainability in Conservation. This program creates awareness of the environmental impact of our profession and introduces sustainable habits that students can carry into their professional careers.

The pandemic has greatly affected our research and teaching. While we learned that remote instruction has certain advantages, such as the ability to include guest speakers from different parts of the world, it does not replace the hands-on learning our students get by using analytical equipment and working directly on artifacts. Research could not be conducted in our laboratories for much of the year. Faculty, students, and staff rallied to make the best of a difficult situation. We purchased portable microscopes, tools, sample materials, and even artifacts on eBay for students to work on at home. We focused more on critical analysis of published case studies, at times with the authors through conference calls.

Ioanna Kakoulli and Christian Fischer prerecorded demonstrations of analytical protocols and operating



Figure 2. MA student Isabel Schneider answers questions about conservation at the annual UCLA Exploring Your Universe science fair, November 3, 2019.

procedures for instruments for use in their teaching. Instead of instructing students to gather data from analytical instrumentation, they provided datasets to students to simulate technical studies of archaeological and anthropological materials. The focus shifted to data processing, interpretation, presentation, and accessibility. Pearlstein prepared materials kits for student study and manipulation, including donated artifacts from our study collection, material samples, and conservation supplies. She used demonstrations and practicums to teach characterization, cleaning, repairing, and stabilizing of artifacts. She made greater use of guest scientists, community members, and conservators to reflect on multiple analytical and treatment approaches. Lecturer Alice Paterakis sent

Report of the Conservation Program

(continued)

the students metallographic cross sections for analysis using portable microscopes at home (Figure 3). Despite these efforts, we all look forward to getting back to our laboratories.

Over the course of the year, we launched the UCLA Getty Conservation Program Distinguished Speaker Series. The aim of the series is to foster intellectual discussion about the role of cultural heritage conservation in critical readings of the past. In January 2020, we held a successful lecture by computer scientist Brent Seales on his important discoveries from ancient papyri manuscripts (Figure 4). Using reference amplified computed tomography, he virtually unwraps charred remains of burned scrolls that were previously illegible. In September 2020, Spencer Crew, acting director of the National Museum of African American History and Culture at the Smithsonian Institution, gave a lecture with the title “History, Memory and Conservation: Preserving the Past for Future Generations.” Based on his scholarship and experience at the Smithsonian Institution and the National Underground Railroad Freedom Center, Crew made a strong case for the role of conservation in public engagement with the past.

During the summer of 2020, Pearlstein worked with our students to create a weekly remote alumni lecture series. The lectures were so well attended that we decided to hold a series of remote lectures throughout the academic year. We are now hosting monthly conservation lectures by speakers from around the world.

Ioanna Kakoulli is launching a new undergraduate program called Materials Science and Engineering on Ancient Technology, Materials and Forensics, aiming to provide engineering students with an experience that blends STEM (science, technology, engineering, and mathematics) education with social and humanistic theory and methodologies, turning STEM into STEAM (science, technology, engineering, art, and mathematics). Kakoulli continues her research on ancient materials and technology, materials change, and the intersection of material objects

and the human experience, as well as ancient forensics, with the identification of diagnostic fingerprint markers for authentication and provenance of stolen and looted antiquities. She is currently working on an invited chapter for the second edition of the *Handbook of Archaeological Sciences*, to be published by Wiley in 2021. She was also appointed diversity officer of the Department of Material Science and Engineering and will be working with the Diversity Task Force of the Henry Samueli School of Engineering and Applied Science.

Ellen Pearlstein was appointed academic adviser to the J. Paul Getty Foundation Post-Baccalaureate Diversity Conservation Internship Program. Her research continues to include Andean pigments as markers for dating wooden beer vessels called *qeros*. She has recently coauthored articles in *Heritage Science*; written invited chapters in *Materia Americana: The “Body” of Spanish American Images*, edited by Gabriela Siracusano and published by Consejo Nacional Para La Cultural y Artes and the J. Paul Getty Foundation; and published work on *qeros* with the Smithsonian Scholarly Press. Her recent research is on early twentieth-century basketry made from how-to instructions that appropriate American Indian designs and technologies. Pearlstein continues to work on her edited volume *Readings in Conservation: Conservation and Stewardship of Indigenous Collections: Changes and Transformations*.

Christian Fischer continued to mentor PhD students from the conservation and archaeology programs on the petrography of ceramics from Albania, West Mexican ceramics, and the scientific analysis of glass in colonial Mexico. Based on his research on ancient Khmer stone material culture, he has written a chapter with the title “From Quarries to Temples: Stone Procurement, Materiality and Spirituality” for the forthcoming volume *The Angkorian World* (Routledge), as well as a contribution with the title “Stone Material Culture at Phnom Da: New Insights from Recent Scientific Investigations” for the catalog of an exhibition to be held at the Cleveland Museum of Art in 2021. Fischer is working on the publication of research on various topics, including three-dimensional modeling and chemical imaging, Byzantine wall

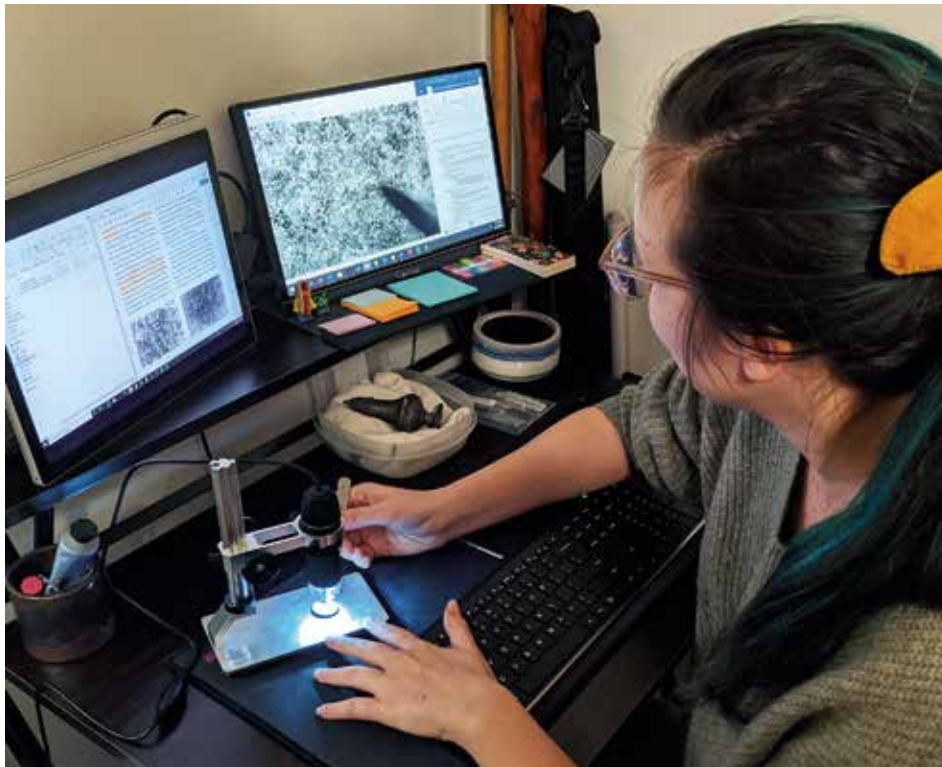


Figure 3. MA student Jenny McGough uses a portable microscope to analyze a metallographic cross section in Alice Paterakis's course Structure, Properties and Deterioration of Materials: Metals.



Figure 4. Brent Seales answers questions after his lecture on the use of reference amplified computed tomography to virtually unwrap the charred remains of burned scrolls, January 14, 2020.

paintings, spectroscopies of madder lakes, and reflectance transformation imaging technology on inscribed stone stelae.

I am navigating three contemporary art conservation research projects. One is the Artist Archives Initiative, which I cofounded with Deena Engel of the Department of Computer Science at New York University. We launched the Joan Jonas Knowledge Base in November 2019. Working with Barbara Clausen, professor in the Department of Art History

at L'Université du Québec à Montréal, we used linked open data to facilitate user queries about Jonas's work as an internationally renowned performance and installation artist. The second project is coediting a book for the Getty Conservation Institute Press to be titled *Readings in Conservation: Philosophical Issues in the Conservation of Contemporary Art*. The third project is the final publication of articles regarding an institutional and collection survey I conducted with colleagues at the Metropolitan Museum of Art concerning their acquisition and care of time-based media art.

In the fall of 2019 we accepted five students into our MA program and four students into our new PhD program. The following are brief descriptions of their research.

Lauren Conway (MA) is conducting comparative research on dry cleaning methods for basketry. Her goal is to identify methods that will allow residues to be left in place to provide evidence of the history and function of a basket. To understand better how baskets are used, she plans to interview weavers from Indigenous communities.

Chris de Brer (PhD) is investigating figurative funerary ceramic vessels from the Late Formative/Preclassic period of West Mexico. He takes a holistic approach by combining material analysis, art historical research, and ethnography to understand better

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(continued)

the function of the vessels throughout their lives, from manufacture and funerary practices to their current role as exhibition and conservation objects.

Tamara Dissi (MA) is assessing the light-fastness of fungal pigments used by artists to create colored patterns on wood artifacts. Although characterizing their light and ultraviolet resistance through accelerated aging will be the primary focus of her research, she also plans to seek less toxic and more environmentally sustainable solvents for the pigments to aid the practice of artists who use them.

Jenny McGough (MA) is researching three-dimensional printing technology and printable media to create fills for areas of loss in historic Asian lacquerware. This novel method aims to replicate lacquer surface finishes and mitigate the potential for surface damage from manual applications of wax or resin fills.

Moupi Muhopadhyay (PhD) is focusing on the little-studied mural tradition in the Indian state of Kerala. She is interested in identifying the materials and techniques used by artists from the seventh to the seventeenth centuries, along with the current revival of mural production and changing practices of conservation within the temples where murals are located.

Jaime Fidel Ruiz-Fobles (PhD) is investigating methods to extend the effectiveness of silver nanoparticles in preventing the growth of microbial biofilms on archaeological stone monuments in tropical environments. In recent years, nanoparticles have been successfully used as biocides, but they are effective for only a few months.

Elizabeth Salmon (PhD) is interested in traditional, Indigenous methods of preservation and how they may be incorporated into the academic and professional fields of preventive conservation. Combining ethnographic and laboratory research methodologies, she focuses on plant materials traditionally used in India with the potential to eradicate pests in collection storage.

Isabel Schneider (MA) is studying the use of laundry bluing products as blue pigments in nineteenth- and twentieth-century sub-Saharan African art. She is developing nondestructive methods to characterize

these pigments, which she will then use in the analysis of selected works from the collection in the Fowler Museum.

Celine Wachsmuth (MA) is investigating consolidation media for potential use in the treatment of low-fired and unfired Pueblo ceramics. Because the consolidators currently used by conservators darken the ceramics, she will explore the potential use of non-darkening materials that are already used in other subfields of conservation.

Student research and course work could not take place without the valuable support of our student affairs officer Shaharoh Chism. She helps keep the program running smoothly throughout the year, from admissions and managing finances and course logistics through to graduation. She is also pursuing a Master of Fine Arts in music at the California Institute of the Arts on the side. We all look forward to hearing her music at her own graduation.

This academic year was one to remember. Challenged by a global pandemic, our students, staff, and faculty managed to continue their research and training remotely. We look forward to returning safely to our laboratories, but we will no doubt take some lessons from the year with us into the future. Through remote teaching and lectures, we have strengthened relationships globally. Continuing some facets of remote communications in the future will help us achieve our goals of environmental sustainability and help build relationships with the communities we serve.

Report from the Chair of the Archaeology Program

Greg Schachner¹

AS ABLY OUTLINED by Glenn Wharton in his report on the conservation program and elsewhere in this issue, this year has been incredibly challenging at UCLA and beyond. Along with the myriad new tasks of daily life during a pandemic, students have completed degrees, advanced to candidacy, finished laboratory research, bolstered public outreach programs, and worked on addressing ongoing diversity, equity, and inclusion issues in our field. So much has happened since the transition to remote operations at UCLA in mid-March 2020, that the first half of our academic year seems a distant and vague memory. The period just prior to that transition seems like another life. In early February, our graduate students hosted a highly successful conference, and during the first week of March, the program welcomed a group of prospective graduate students for a visit to campus. A few short weeks later, our face-to-face interaction shifted to a virtual world. The celebration of our fiftieth anniversary, planned for June 2020, is indefinitely delayed until we can celebrate in person. Despite all these challenges, I have been awed by the creative perseverance of our students, staff, and faculty.

1. Associate Professor in the Department of Anthropology and chair of the interdepartmental archaeology program at the Cotsen Institute.

While fieldwork, laboratory research, the study of museum collections, conferences, and even our ability to offer the critical hands-on coursework of archaeology entered seemingly indefinite hiatuses, our students continued to move forward. Kevin Hill completed his dissertation, “Inca Strategies of Conquest and Control: Toward a Comprehensive Model of Pre-Modern Imperial Administration on the South-Central Coast of Peru,” in the summer of 2020. Although we await a time to celebrate this degree in person, we nonetheless congratulate him on this achievement.

Our students continued to receive numerous accolades from UCLA. Anna Bishop, Brandon Braun, and Amr Shahat received Dissertation Year Fellowships; Matei Tichindelean received a Graduate Research Mentorship; and Edward Cleofe, Carly Pope, Kellie Roddy, and Baisakhi Sengupta received Graduate Summer Research Mentorships. Robyn Price was named a Collegium of University Teaching Fellow and will teach her own course on “How Smell Shapes the World: Decolonizing ‘the Senses’ in Ancient Egypt” during the winter 2021 quarter. Edward Cleofe received a Foreign Language and Area Studies Fellowship for advanced study of Filipino (Tagalog). Alba Menéndez Pereda (Early Modern Studies Summer Mentorship, Center for Seventeenth and Eighteenth Century Studies), Kirie Stromberg (Sasakawa Fellowship, Terasaki Center), and Matei Tichindelean (Bedari Kindness Institute Summer Fellowship) were also successful in securing funding from UCLA research centers. As usual, students received numerous smaller awards for travel and research from across the university and beyond.

Students continued to secure prestigious external awards as well. Danielle Kalani Heinz received a Ford Foundation Predoctoral Fellowship to support her doctoral research in Hawai‘i, while Kirie Stromberg received a Fulbright-Hays Doctoral Dissertation Research Award for study of ancient music and the origins of complex society in China. Karime Castillo secured a David Whitehouse Research Residency at the Corning Museum of Glass, Gazmend Elezi received a short-term fellowship at the Institute for Oriental and European Archaeology at the Austrian Academy of Sciences, and Carly Pope received a Smithsonian Tropical Research Institute Short-Term Fellowship.

Report from the Chair of the Archaeology Program

(continued)

A new cohort of students began their study at UCLA remotely in fall 2020. They introduce themselves elsewhere in this issue, and we hope to see them in person soon. Taylor Carr-Howard (MA, Cornell University) will continue her research on the intersection between Roman archaeology and photography. Lucha Martínez de Luna (MA, Brigham Young University) is a Mesoamerican archaeologist who has led a long-running project on the Formative period in western Chiapas. She was awarded a Eugene V. Cota-Robles Fellowship to support her study at UCLA. Syon Vasquez (BA, University of South Florida) will study the role of ritual in the rise of complexity in the Andes and Mesoamerica. A Belizean national, Vasquez secured a multiyear Wadsworth Fellowship from the Wenner-Gren Foundation. Yen Chun Wang (BA, National Taiwan University) will begin his studies with us in the fall of 2021, with a focus on zooarchaeology in Taiwan, with support from a J. Yang Scholarship from the UCLA Asia Pacific Center.

In closing, I want to thank our students, staff, faculty, and many volunteers and donors for lending their support during this challenging time. We have scrambled to comply with shifting policies and to provide critical financial and institutional support for our students. Our donors generously allowed us to reprogram funds normally dedicated to conference and research travel to support students while they continued to make progress at home, whether home was in Los Angeles, San Diego, Egypt, or India. They also funded endowments that will enable us to maintain and extend our support well into the future. Our students have creatively advocated for rethinking how archaeology functions as a discipline and engages with the world, all while assisting one another in a difficult time. Let us continue to support one another as we move to a new (and preferably better) normal over the next year.



Figure 1. Graduate student Reuven Sinensky investigates an archaeological site in Petrified Forest National Park, Arizona, before the outbreak of the Covid-19 pandemic.



Figure 2. Graduate student Gazmend Elezi studies pottery excavated at Mai Adrasha, an ancient settlement in the Tigray region of northern Ethiopia, before the outbreak of the Covid-19 pandemic.



Figure 3. Graduate student Kellie Roddy processes microscopic plant remains from Mesoamerican pottery in the summer of 2020.

REPORTS FROM THE CHAIRS

Incoming Graduate Students

Willeke Wendrich¹



**TAYLOR
CARR-HOWARD**

studies Roman provincial art and archaeology through the lens of their reception. In particular, she is interested in the role of photography in shaping perceptions of the classical past. Taylor received her BA in art history from Scripps College in 2017 and her MA in archaeology from Cornell University in 2020. As an undergraduate, Taylor studied both photography and Roman archaeology. In 2014 she was awarded a Mellon Fellowship to do research into the life and work of American photographer Dody Weston Thompson and to curate an exhibition of her work. Taylor's undergraduate thesis look at the ways in which local identity is expressed in Roman provincial mosaics. Taylor also combined her interests in photography and archaeology in her master's work. Her MA thesis looks at photographs of Timgad taken

by the Commission des Monuments Historiques de l'Algérie and proposes a decolonial way of using early site photographs to understand better the colonial history of classical archaeology as well as its lasting influence. Taylor has cocurated exhibitions at the Clark Humanities Museum at Scripps College and at the Kemper Museum of Contemporary Art in Kansas City, Missouri. In 2018 she excavated in Italy within the framework of the Marzuolo Archaeological Project.



**LUCHA MARTINEZ
DE LUNA**

was born and raised in Colorado. She has worked on numerous archaeological projects in the American West and Southwest, as well as in central and southern Mexico. She worked for the National Institute of Anthropology and History conducting the excavation and restoration of a palace in the Chichen Viejo sector of Chichen Itza, Mexico. Her interest gravitated toward the role commerce and trade played in the development of ancient states in Mesoamerica. For her master's thesis at Brigham Young University, she analyzed the mural tradition of Chichem Itza to describe the growth of merchant activity in the region and its influence in establishing this site as one of the major centers of long-distance trade by the Terminal Classic period. She served as associate curator of Latino heritage at History Colorado; as a curatorial assistant and research associate at the Denver Museum of Nature and Science, the Museo de las Americas, and the Regional

1. Director, Cotsen Institute.

Incoming Graduate Students

(continued)

Museum of Guadalajara; and as division director for the State Council of Culture and Arts in Chiapas, Mexico. In Chiapas, with the support of the National Institute of Anthropology and History and the Universidad de las Ciencias y Artes de Chiapas, Lucha directs the La Providencia Archaeological Project to record the remnants of a prehistoric-historic trade route in the western portion of the state. She is a visiting professor at Universidad de las Ciencias y Artes de Chiapas, where she directs an archaeological field school at the Zoque site of O'na Tök, Mexico, a Preclassic to Postclassic regional center. Her research interests include Mesoamerican interregional trade networks, merchants, feasting, sociopolitical organization in complex societies, and the Zoque civilization. In Colorado, she actively advocates for cultural inclusivity in scientific and cultural facilities and conducts

research on the Hispano/Chicano people and arts in the American West and Southwest. She is director of the Chicano/a Murals of Colorado Project, a grassroots organization that advocates to preserve the visual heritage of Chicano/a public art in Colorado. The project collaborates with artists, scholars, and cultural and academic institutions to develop programs and exhibitions designed to celebrate and protect this form of public art, which is threatened by rapid gentrification and displacement.



SYON VASQUEZ

received his BA in anthropology from the University of South Florida in 2020. While completing his BA, he participated in fieldwork at several Classic and Postclassic Maya sites in the southern Maya lowlands. Additionally, during his final year of undergraduate study, Syon completed a thesis project in which he analyzed ancient figural geoglyphs associated with the Paracas culture on the southern Andean coast. He maintains an interest in the archaeology of Mesoamerica and the Andes and hopes to pursue future projects within both these regions. In his doctoral studies at UCLA, Syon would like to investigate questions related to ancient ritual and the emergence of ritual specialists as well as hereditary rank.

COTSEN COMMUNITY EVENTS

Community Events

From its inception, the Cotsen Institute of Archaeology has embraced community outreach as a core value. The institute does this through a number of programs, but none so prominent as the Cotsen Institute of Archaeology Public Lecture Program. The year 2020 started with a full calendar of exciting monthly events to celebrate the fiftieth anniversary of the interdepartmental archaeology program. On March 16, the Cotsen Institute transitioned to remote learning and working due to the Covid-19 pandemic sweeping the globe. The doors were physically closed, but our activities continued and some even increased. The many events planned for spring were moved into an online environment. While the gala celebration of the 50-year anniversary of the archaeology program had to be postponed, we expanded access to our Pizza Talks and a public lecture by hosting them remotely. We had a global audience that included alumni, colleagues, and Friends of the Cotsen Institute abroad. We collaborated with the Archaeology Institute of

America and invited its members to our lectures. Over the summer, we continued our Pizza Talks, while the UCLA/Getty Conservation Program organized a series of 10 weekly remote presentations by alumni, sharing highlights from their vibrant careers caring for cultural heritage across the globe. In early fall, September 25–26, 2020, former students and colleagues paid tribute to professor emerita Elizabeth Carter during a two-day remote symposium, celebrating four decades of scholarship and mentorship surrounding the four corners of greater Mesopotamia, where Carter and her students worked. (A more detailed report of this event can be found elsewhere in this issue.)

— *Michelle Jacobson*¹ and
*Roz Salzman*²

1. Director of development of the Cotsen Institute.

2. Director of the Cotsen Communications Group.

The Fiftieth Anniversary Lecture Series

Renowned scholar W. Brent Seales, professor at the University of Kentucky, was the first speaker in our Fiftieth Anniversary Lecture Series. He explained and illustrated the promise of digitally unwrapping previously unreadable ancient scrolls in front of a packed auditorium in the UCLA California NanoSystems Institute. After being introduced by hosts Willeke Wendrich, director of the Cotsen Institute, and Glenn Wharton, chair of the UCLA/Getty Conservation Program, Seales gave an overview of the history of his research, using excerpts from *60 Minutes*, the *New Yorker*, *Smithsonian* magazine, and the *New York Times*. With the aid of imaginative animations, he then described the promise of digitally unrolling highly significant scrolls from Herculaneum, which were burned and buried as a result of the eruption of Mount Vesuvius in 70 CE.

Seales demonstrated how his techniques have already been successfully applied to the En-Gedi Scroll, a third- or fourth-century CE carbonized scroll of parchment hiding an ancient text written with iron-rich ink. This turned out to be part of the oldest-known Hebrew copy of the book of Leviticus other than that contained in the Dead Sea Scrolls. Rapid developments in

The Fiftieth Anniversary Lecture Series

(continued)

both imaging hardware and image-processing software may well make it possible to do the much more difficult task of visualizing texts written in carbon-based ink on the now carbonized papyri from Herculaneum (Figure 1). With humor and humility, Seales explained the computer science involved in the process and the potential for future uses of these techniques. In a private reception prior to the presentation, Friends of the Cotsen Institute met the speaker.

In his presentation “*The Land of Open Graves*,” Jason De León, MacArthur Fellow and professor of anthropology and Chicana/o studies at UCLA, challenged audiences to confront the complexity of international migration and American policy choices. De León is a core



Figure 1. A carbonized papyrus scroll is scanned in an effort to reveal the writing hidden within.

faculty member of the Cotsen Institute and director of the Undocumented Migration Laboratory in the Cotsen Institute of Archaeology. Since the mid-1990s, the U.S. federal government has relied on a border enforcement strategy known as Prevention Through Deterrence (Figure 2). Using various security infrastructure and techniques of surveillance, this strategy funnels undocumented migrants toward remote and rugged terrain with the hope that mountain ranges, extreme temperatures, and other

obstacles will deter them from unauthorized entry. Thousands of people have perished while undertaking this dangerous activity. Since 2009, the Undocumented Migration Project has used a combination of archaeological, forensic, and ethnographic approaches to understand the various forms of violence that characterize the social process of clandestine migration. In his presentation, De León discussed how the archaeology of the contemporary can help make this process visible. With raw emotion, he argued that the types of deaths that migrants experience in the desert are both violent and deeply political. Prior to the lecture, a private reception was held for the Friends of the Cotsen Institute.

Our next lecture, “Chauvet Cave: Masterworks of the Paleolithic,” was scheduled for March 13, 2020. On March 11, with almost 300 reservations, we made the decision to cancel the lecture due to the steadily rising number of cases of Covid-19 in Los Angeles. On March 12, UCLA chancellor Gene Block ordered all in-person events be suspended indefinitely. Almost overnight, we migrated our events onto a digital platform. Zoom became a household brand, quickly turning into a verb and a new way of doing business. The team behind the events organized by the Cotsen Institute retooled



Figure 2. An abandoned, temporary campsite on the Mexico–Arizona border, briefly used by an undocumented migrant.



Figure 3. Detail of ancient depictions of felines in the Chauvet-Pont d'Arc Cave in south-central France.

and adapted to the new reality. The lecture on the Chauvet Cave was rescheduled for May and made into a remote event.

Attendees were treated to an exclusive virtual discussion of Chauvet Cave (Figure 3). The discussion and a question-and-answer session were held in conjunction with the global digital premiere of *The Final Passage*, a 28-minute immersive film experience of the Chauvet-Pont d'Arc Cave and its paintings. Guests at the online event, hosted by the Cotsen Institute, were Jean-Michel Geneste, general curator of cultural heritage for the Ministry of Culture in France and former curator of the Lascaux Caves, and Martin Marquet, producer of the film. Participants were invited to watch the film online prior to the event.

Since its discovery in 1998, the extraordinary rock art of the Chauvet-Pont d'Arc Cave in south-central France has been celebrated for its remarkable realism and demonstration of skills never before seen in cave art. Dating back around 36,000 years, the myriad paintings of horse heads, mammoths, bears, cave lions, rhinoceroses, and more use irregularities of the limestone to impart a sense of three-dimensionality and movement to these animals of the Paleolithic.

Spring Pizza Talks

The first remote Pizza Talk was held April 15, 2020, and attended by an audience of 79, who enjoyed *Methone—The Movie*, introduced by John Papadopoulos, professor in the Department of Classics and a core faculty member of the Cotsen Institute. The movie was filmed at the site of Methone in northern Greece and explained the history of the archaeological work in the area.

Many people were using Zoom for the first time. Guests were welcomed to the online meeting by Deidre Whitmore, manager of the Digital Archaeology Laboratory, who explained that all participants other than the presenters would be muted until after the movie, when questions would be taken by those indicating with the “raised hand” icon that they had a comment or a query. During this question-and-answer session, participants had the option of activating their video or being identified only by their aliases. Whitmore was followed by graduate student Baisakhi Sen Gupta, who, with graduate student Maryan Ragheb, was responsible for inviting the speakers for the Pizza Talks during the Spring quarter.

Historically, the Pizza Talks include pizza and soft drinks while featuring presenters from UCLA and nearby campuses, who address a gathering each Wednesday at noon in Room A222, the seminar room of the Cotsen Institute. A disadvantage of remote presentations may be the lack of free pizza, but

Spring Pizza Talks

(continued)

an advantage is that both speakers and the audience can participate from almost anywhere in the world, hampered only by internet issues and time differences, and not by Los Angeles traffic or finding parking on campus. The first event indeed had a number of international participants. Originally a full complement of Pizza Talks was planned for the spring quarter, but the closure of the campus because of the Covid-19 pandemic and the transition of the Pizza Talks to a remote format resulted in a shorter but certainly not less fascinating schedule.

For the next Pizza Talk, we traveled to Ethiopia for “Lord of the Rings: Archaeology in Shire, Ethiopia,” presented by Willeke Wendrich, director of the Cotsen Institute. After five years of work in Ethiopia, the UCLA Shire Archaeological Project has established close collaborations with four Ethiopian universities; national, regional, and local offices; and the population living around the site of Mai Adrasha. In December 2019 this work culminated in a workshop to discuss the future of the site. Wendrich discussed the preliminary results of this workshop and the archaeological survey and excavations.

Next, Alessandro Vanzetti, professor of archaeology at Sapienza University in Rome, Italy, and a short-term visiting scholar at the Cotsen Institute, presented “Iconography and Symbolism of the Celestial Domain and the Perception of Space in the European Bronze Age.” In his lecture, Vanzetti discussed the main evidence for the symbolic representation

of the celestial domain during the European Bronze Age. Considering the way in which three-dimensional space can be represented, the discussion involved phenomenological, conceptual, cognitive, and religious aspects, which are often difficult to disentangle.

“Wealth, Women’s Labor and Forms of Value: Thinking from the Study of Ancestral Central America” was presented by Rosemary A. Joyce, professor and chair of the Department of Anthropology at the University of California–Berkeley. Her talk built upon feminist scholarship criticizing a tacit distinction between household labor and extra-domestic labor to help advance understanding of gender and labor in societies of ancient Central America.

Our final remote spring Pizza Talk was titled “My Two Pet Peeves in African Arts: Fertility Goddesses and Dolls,” presented by Herbert Cole, professor emeritus of art history at the University of California–Santa Barbara. Cole is a renowned expert on maternity in African cultures. He discussed his latest book, *Maternity: Mothers and Children in the Arts of Africa*, which describes two stereotypes that emerged as he researched the topic. They ended up as the pet peeves in the title of his presentation: *fertility goddesses* as a descriptor of mothers with children in African images—especially those shown suckling—and the word *dolls* applied to images of children, used by many women wishing to conceive. He explored both of these stereotypes to show that they are ultimately racist when applied to maternity and child images.

Summer Pizza Talks

The spring Pizza Talk series was very well received by the general public. We regularly hosted about 150 attendees from across the United States and abroad. Due to popular demand, a first-ever monthly Summer Virtual Pizza Talk series was created. Our first speaker was Caroline Arbuckle MacLeod, an alumna of the Cotsen Institute and now a fellow at the University of British Columbia in Vancouver, Canada. Her presentation was titled “Keep It Secret! Keep It Safe! Hidden Magic and Coffin Construction in Ancient Egypt.” In ancient Egypt, the wooden coffin was often considered one of the fundamental elements of a burial for wealthier individuals. It was a magical vessel that protected the deceased and ensured they would be transformed into a divine being in the afterlife. Due to the importance of coffins, potent magical talismans and symbols were placed in and around them or were included in their decoration. Magical spells and rituals were performed throughout burial ceremonies. In her talk, Arbuckle MacLeod considered a new layer of ritual and magic hidden within the joints of wooden coffins. The secret spells and magical red paint, invisible once a coffin was finished, were added during construction.

COTSEN COMMUNITY EVENTS

Our next summer Pizza Talk featured Davina R. Two Bears, a Navajo from northern Arizona. She recently graduated from Indiana University with a degree in anthropology with an emphasis on archaeology as well as Native American Indigenous studies. Her talk had the title “Shimásání Dóó Shicheii Bi’ólta’—My Grandmother’s and Grandfather’s School” and documented the history of the Old Leupp Boarding School (Figure 4), a federal Indian school on the Navajo Reservation from 1909 to 1942. She explored Diné (Navajo) survivance within the context of this school. Two Bears employs decolonizing research methods framed by postcolonial theory to investigate the Old Leupp Boarding School, which is currently a historic archaeological site. She explores how Diné children, forced to attend the school, utilized their cultural foundations to meet the challenges imposed upon them by a settler society. She relates the positive stories of Native survivance and resistance to assimilation achieved within the Old Leupp Boarding School. Using oral interviews conducted with Navajo elders and a critical review of archival records and historic photographs, Two Bears explores the history of the school and the memories of Navajo students who attended it. Her research contributes to postcolonial anthropology as a study of culture change, decolonizing research, and Native American and Indigenous studies.



Figure 4. The front entrance of the Old Leupp Boarding School, around 1915. The building later became the girls’ and boys’ dormitory. (Photo courtesy of the Old Trails Museum/Winslow Historical Society.)



Figure 5. Kristine Martirosyan-Olshansky in an excavation unit in Masis Blur, an early farming community on the Ararat Plain of Armenia.

Our final summer Pizza Talk was “The Earliest Farmers of the Caucasus: A View from Masis Blur,” presented by Kristine Martirosyan-Olshansky, a post-doctoral scholar and director of the Chitjian Armenian Laboratory at the Cotsen Institute, and Alan

Farahani, assistant professor of anthropology at the University of Nevada–Las Vegas. This presentation summarized research conducted at the archaeological site of Masis Blur (Figure 5), an early

Summer Pizza Talks

(continued)

farming community on the Ararat Plain of Armenia, which was occupied continuously for nearly a millennium, from around 6200 to 5200 BCE. While much is known about how communities in western Asia adopted to a farming way of life, much less is known about the events in the Caucasus region. The Masis Blur Archaeological Project explored the rhythms of everyday life at a Neolithic village in this understudied region using high-resolution techniques to recover, record, and analyze the material remains of day-to-day activities.

Although born out of necessity and often subject to frantic improvisation, fortunately mostly behind the scenes, our remote lectures were very successful. Irrespective of what the future may bring, the format will likely prevail, as from time to time the advantage of access will outweigh the disadvantage of the lack of personal interaction.



Figure 1. Patricia Rubertone, professor of anthropology at Brown University, presents the inaugural lecture of the Eighth Graduate Archaeology Research Conference, February 7, 2020. (Photograph by Baisakhi Sengupta.)

The Eighth Graduate Archaeology Research Conference: Experiencing Destruction and Regeneration in Archaeology

The organizing committee of the Eighth Graduate Archaeology Research Conference at UCLA acknowledges our presence on the traditional, ancestral, and unceded territory of the Gabrielino/Tongva peoples.

The Eighth Graduate Archaeology Research Conference, titled *Experiencing Destruction and Regeneration in Archaeology*, provided an opportunity for graduate students, faculty, and interested members of the public to explore questions on the sensorial experience of destruction—whether deliberate or not—as well as regeneration, reconstruction, and reuse in the past and the present. Conference organizers Eden Franz, Alba Menéndez Pereda, Maryan Ragheb, Baisakhi Sengupta, Zichan Wang, and Rachel Wood involved a diverse group of graduate students

from universities in the United States and the United Kingdom working in various fields, including archaeology, anthropology, and art history.³

The conference was held February 7–8, 2020, beginning on Friday evening with a keynote lecture by Patricia Rubertone, professor of anthropology at Brown University, who gave a lecture with the title “Unsettling Indigenous History: Settler Colonialism and Landscapes of Urban Violence.” With the Charles E. Young Grand Salon at Kerckhoff Hall as the background, Rubertone discussed the commemoration and erasure of Native American monuments in New England in the context of colonialism, as well as the implications of documentary genocide and urban renewal for recovering Indigenous pasts (Figure 1).

On Saturday, February 8, ten graduate students presented their research in three consecu-

1. See <https://ioa.ucla.edu/grad-conference-2020> and <https://ioa.ucla.edu/node/1270>.

COTSEN COMMUNITY EVENTS

tive panels organized around the themes “Converted Spaces and Constructed Memories,” “Ecology and Indigeneity,” and “Resistance and Receptivity to Cultural Heritage.” Panels concluded with a discussant synthesis led by Stella Nair (Department of Art History), Stephen Acabado (Department of Anthropology), and Gregson Schachner (Department of Anthropology), respectively, and were followed by questions posed by members of the audience (Figure 2).

Liza Davis, doctoral student at the Joukowsky Institute for Archaeology and the Ancient World at Brown University, delivered the first student presentation of the conference. Davis discussed Christianization in Late Antique Greece, arguing that what has been conceptualized as the systematic destruction of polytheistic temples instead took place as a more gradual conversion process. This was characterized by the syncretizing of religious practices, as observed in material culture and in sacred spaces. Shobhna Iyer, from Stanford University, discussed the destruction and reconceptualization of the site of Warangal in India, from its construction in the twelfth century CE to present-day times, following the political interests and social needs of the time. This first panel closed with a presentation by Mara McNiff, doctoral student at the University of Texas at Austin. McNiff analyzed construction and reconstruction campaigns associated with political propaganda in Late Republican Rome. She focused her presentation in the intermediate stage between the destruction and

reconstruction of structures and the response of the population to these processes.

The second panel of the day brought together presenters focusing on issues of destruction and preservation of ecologies and interwoven Indigenous knowledge. Coming from University College London, Bianca Bertini presented on accessibility issues experienced by the Baka people of southern Cameroon, who, in the name of ecological preservation, are being excluded from the land they traditionally inhabited. Daniel Rodríguez Osorio, doctoral student at the University of Minnesota, Twin Cities, discussed past and present human–environmental interactions in the rainforest of Sierra Nevada de Santa Marta in Colombia to explain how these processes shaped the development of this ecosystem. The relationship between humans and the environment was also the focus of a talk by Eric Rodriguez from the University of California–San Diego. Rodriguez highlighted the need to combine Indigenous ecological philosophies with paleogeographic modeling in the reconstruction of Indigenous wetscapes. He argued that this methodology allows for paleogeographic reconstructions in which the environment is not only perceived as a resource to be exploited but also foregrounds the peoples who crafted these spaces.

After a much-needed coffee break (Figure 3), Alexandra Peck from Brown University began the third and last panel of the conference. Peck presented her doctoral



Figure 2. An audience listens intently to student presentations. (Photograph by Baisakhi Sengupta.)



Figure 3. Student presenter Daniel Rodríguez Osorio (University of Minnesota, Twin Cities) converses with John Papadopoulos (Department of Classics) and Stephen Acabado (Department of Anthropology) during a coffee break. (Photograph by Baisakhi Sengupta.)

research, analyzing the fight of the Jamestown S’Klallam Tribe against ethnic erasure, a persistent threat since the displacement of the tribe in the nineteenth century. Heritage regeneration and preservation at the hands of the Jamestown S’Klallam Tribe have taken the form of restoration of archaeological sites, development of interpretative trails that emphasize the history of the tribe, challenging colonial erasure, and the construction of counter-monuments significant for the present-day

Eighth Graduate Archaeology Research Conference

(continued)



Figure 4. Martina Di Giannantonio (University of Bristol) presents on sustainable heritage management. (Photograph by Baisakhi Sengupta.)



Figure 5. The organizing committee, presenters, and keynote speaker of the Eighth Graduate Archaeology Research Conference (February 2020). Front row, left to right: Daniel Rodríguez Osorio, Baisakhi Sengupta, Alba Menéndez Pereda, Nora Weller, Liza Davis, Patricia Rubertone, Alexandra Peck, and Bianca Bertini. Back row, left to right: Marina Di Giannantonio, Maryan Ragheb, Eden Franz, Mara McNiff, Eric Rodriguez, Zichan Wang, Irene Martí Gil, Shobhna Iyer, and Rachel Wood.

community. Nora Weller, from the University of Cambridge, also discussed the topic of ethnic erasure, shifting the geographic focus to Kosovo. Weller discussed cultural heritage management and regeneration along with the role of international agencies in the context of postwar territories where social divisions remain. Irene Martí Gil, from Louisiana State University, encouraged the study of looting as a worthy topic of research to challenge outdated scholarly paradigms on sacking and art trafficking. The student presentations culminated with a talk by Martina Di Giannantonio, graduate student at the

University of Bristol (Figure 4). She discussed community-driven, sustainable heritage management initiatives, focusing on the case of Gangi in Sicily. Such initiatives have led to a renewed touristic interest in this rural area and, subsequently, economic regeneration for the community.

The conference was generously funded by the Cotsen Institute of Archaeology; the Graduate Student Association; the dean of humanities; the dean of social sciences; the Office of Equity, Diversity and Inclusion; and the Campus Programs Committee Board. Little did we know back in February—when dozens of us gathered for in-person presentations and shared food and drink in good company

(Figure 5)—that a month later, UCLA would be shutting down indefinitely due to a pandemic and that our lives would be moved into a virtual world. From home, we now cherish those two intense days and look forward to the next conference, which will hopefully take place in 2022.

—Alba Menéndez Pereda,² Eden Franz,² Zichan Wang²

2. Graduate student in archaeology, Department of Anthropology.

Elizabeth Carter Honored with a Two-Day Symposium

With much warmth and great respect, former students and colleagues paid tribute to professor emerita Elizabeth Carter during a two-day remote symposium, September 25–26, 2020. International attendees celebrated four decades of scholarship and mentorship surrounding the four corners of greater Mesopotamia, where Carter and her students worked on a myriad of subjects. In fact, the wide range of her studies and the extent of her knowledge about diverse regions were a focus of a number of the tributes.

The event was spearheaded by Willeke Wendrich, director of the Cotsen Institute, who welcomed everyone “to honor Liz, her scholarly work, and her contributions as a colleague and a mentor.” Wendrich pointed out that participants represented multiple generations, speaking to Carter’s long-standing power as an educator and their desire to honor her work. Carter always showed enormous flexibility in an ever-changing work environment, Wendrich noted, because there was often strife in the Near East. “This flexibility was also evident in the students she accepted and the freedom she gave them to follow their passions and interests. Among our speakers, you see people who have found their own way, but with Liz’s hand in there to stimulate and to help,” explained Wendrich, who has been Carter’s colleague for twenty years.



Figure 1. Elizabeth Carter teaches Archaeology Core Class II during the winter quarter of 2008. From left to right: Anke Hein, Holly Warner, Esmeralda Agolli, Seppi Lehner, Sonali Gupta-Agarwal, Anne Austin, and Liz Carter.

The sessions were moderated by Lynn Swartz Dodd, who studied with Carter as a graduate student in the Department of Near Eastern Languages and Cultures at UCLA and who was credited by Wendrich as being “the person who wrangled everybody.” Even though everyone was willing, Wendrich added, “wrangling is something that is always necessary because we are all busy people.” Dodd noted that the diversity of presentations “brings to mind the range of Professor Carter’s archaeological work and career, which includes surveys in Iraq and Turkey [and being] the only female archaeological assistant to be sent from the United States to work at Susa, in the Zagros Mountains of Iran, in her first year there and excavate funerary and domestic contexts from the Neolithic, Early Bronze Age, and beyond.”

After the event, Carter said, “It was fun for me to be able to get back in touch with some people I had not seen for a long

time.” Even though she had an idea of who would be speaking, she did not know the specifics of what everybody would be talking about. During the question-and-answer session after each presentation, Carter was the first one to ask questions about the projects discussed. “It was great to see new finds; that they are out digging, working, and doing research,” she added.

When planning for the program began about two years ago, Carter was in Japan. So it was postponed until this year, when Covid-19 intervened. “We originally thought it would be a usual kind of thing, with some lectures in the auditorium and a reception,” Carter explained. “But it turned out that the online format was great because by having the presentations remotely, we could hear people from all over the world who might otherwise not have been able to participate in person.”

COTSEN COMMUNITY EVENTS

Elizabeth Carter Symposium (continued)

The first speaker was Cigdem Atakuman, associate professor at the Middle East Technical University in Ankara, Turkey, whose presentation dealt with recent findings that are similar to those from the Late Neolithic site of Domuztepe in Southeast Turkey, where she worked with Carter in the 1990s. She stressed that all the speakers had the same connection: Liz. She said, “Dear Liz. You changed my life, and I cannot thank you enough.” Atakuman graduated from the archaeology program at UCLA in 2004.

Yoshi Nishimura, assistant professor at Gettysburg College, was the second speaker, addressing evidence of material wealth disparities in two neighborhoods in a third millennium settlement in southeastern Turkey. Nishimura’s research and teaching topics range from ancient Japan to Turkey. She pointed out that she and Carter are similar in that they both specialize in several regions.

Stuart Tyson Smith, the third speaker, is a professor of anthropology and director of the Institute for Social, Behavioral, and Economic Research at UC Santa Barbara. His presentation was on “Racism, Egyptological Stereotypes, and the Intersection of Local and International Style at Kushite Tombs.” Smith has also been a consultant on several movies, helping to re-create spoken Egyptian.

Following was Michael Moore, whose research focuses on identity, power, and agency in the royal courts of the Late Bronze Age. He discussed “Body and Spectacle in

Ancient Egypt: Egyptian Courtiers in Cross-Cultural Perspective.” Moore received his PhD in ancient Near Eastern studies from UCLA.

The first day closed with a presentation by Mitchell Allen, research associate at both the Archaeological Research Facility at UC Berkeley and the Department of Anthropology at the Smithsonian Institution. Additionally, in his 40-year career in scholarly publishing, he was responsible for the publication of more than 1,500 books and starting 25 journals. His topic was “Ajar in Sar-O-Tar: Parthian Storage Facilities in Ancient Sistan.” He described his presentation as attempting to address questions regarding groups of large storage jars embedded in the landscape, “following Dr. Carter’s innovative ideas concerning ancient storage.”

The second day of the celebration started with a brief introduction by Wendrich, who noted, “It is very clear that the depth and breadth of Professor Carter’s way of studying the Near East and Mesopotamia is reflected in the diversity of the positions held by some of our very distinguished speakers, as well as in the contributions they are making to the field of archaeology. It is a very distinctive inheritance.” She also announced the formation of a fund in honor of Carter, started by Dodd, which will be used for grants for students for travel and possibly more. “We will talk to Professor Carter about ways to use these funds to support archaeology in the fields that are closest to her heart,” said Wendrich. The goal is to raise \$25,000 to create an endowment that will bear Carter’s name and support

students in perpetuity. Dodd recounted that, while a student at UCLA, she had received funding from the Friends of Archaeology and that “it made all the difference, allowing me to participate in research that became the start of my life in archaeology.”

Dodd thanked Wendrich for leading the charge in making arrangements and contributing to the formative experience of those who have passed through the Cotsen Institute. She also acknowledged the exceptional contributions of Michelle Jacobson, director of development for the Cotsen Institute, and Deidre Brin, director of the Digital Archaeology Laboratory. To Carter, she said, “We honor everything that you have contributed to us as scholars and colleagues. Many of us have enjoyed meals with you and visiting scholars of equal renown . . . and recall the conversations about the backroads of Turkey, Persian proverbs, and the happenings of the families in the villages where you worked for so long. You share with us your appreciation for and sensitivity to people, lifeways, and material culture, then and now.”

Beginning the session was Sarah Witcher Kansa, executive director of the Alexandria Archive Institute, and her husband, Eric Kansa, program director of the Open Context project developed by that institute. They discussed “Open Context Project #3: Lessons in Building Open Data from a Multi-Year Excavation Project.” Open Context is an archaeological data publishing platform containing nearly 1.7 million records of artifacts, ecofacts, maps, and field

notes from 150 different research projects worldwide. Carter refers to these two presenters as indirect students. She worked with them in Turkey when they were both post-doctoral scholars and supported them in their efforts to found Open Context. “In fact, they got engaged on my excavation,” Carter noted. Sarah Kansa added, “We would like to highlight ways in which Liz has mentored people who were not her students. We were young graduate students when we first met her. She has been on the board of Open Context since its inception and helped keep us going. Without her, we would not have even gotten started. Her role has been absolutely essential.”

The second presentation on Saturday was made by Hannah Lau, lecturer of university studies at Colgate University, and Sarah Whitcher Kansa. They discussed “Animal Management Practices in Sixth Millennium Anatolia: Evidence from Tell Kurdu and Domuztepe.” Lau received her PhD in archaeology from UCLA in 2016.

Continuing the program was John “Mac” Marston, associate professor of anthropology and archaeology and director of the archaeology program at Boston University. He presented “Towards Reconstructing an Achaemenid Agricultural Policy in Central Anatolia.” He specifically commended “Liz’s guidance and feedback when working on my dissertation at UCLA.” He received his PhD in archaeology in 2010.

Following this was a presentation by Joseph “Seppi” Lehner, an Australian Research Council Discovery Early Career Fellow at



Figure 2. Elizabeth Carter shows visitors her laboratory in the Cotsen Institute during the open house of 2019.

the Department of Archaeology of the University of Sydney. His topic was “Resiliency or Fragility: How Industry Drove Social and Environmental Change in Ancient Arabia.” He added, “Many thanks to Liz, without whom I could not have been able to set off on my dreams and aspirations as an archaeologist and a better person. She will always be an inspiration to all of us who form a large, extended family.” He received his PhD in archaeology in 2015 under the supervision of Carter.

The next speaker was Brendan Burke, associate professor at the University of Victoria in British Columbia. He addressed the question “An Anatolian at Late Bronze Age Eleon in Central Greece?” Burke received his PhD in archaeology from UCLA in 1998. He notes that through Liz Carter, he developed a great interest in the archaeology of Turkey, which he brings to his teaching and research.

Closing remarks were made by Dodd, who is an associate professor of the practice of religion and spatial sciences at the USC Dornsife College of Letters, Arts and Sciences. Dodd studied with Carter as a graduate student in the Department of Near East-

ern Languages and Cultures and received her PhD in 2002. She thanked all the speakers for their exceptional presentations, with “wonderful diversity of information, approaches, and data, reflecting well on all and on the influence and impact of their work with Liz, who has been a steadfast supporter of a diverse group of scholars and this program from which we all emerged.”

At the conclusion of the two-day event, Carter told the participants that she was “overwhelmed and fascinated. I look forward to seeing more of your work and am delighted that you are still having great ideas. This has really been fun for me.”

To make a gift to the Elizabeth F. Carter Fund in Archaeology, please visit <https://ioa.ucla.edu/giving>. Be sure to include “In honor of Dr. Elizabeth Carter” when prompted.

— Roz Salzman¹ and Michelle Jacobson²

1. Director of the Cotsen Communications Group.

2. Director of development of the Cotsen Institute.

An Interview with Donor Phillip Tamoush

Isabel Schneider¹

PHILLIP TAMOUSH AND his wife, Artemis, are generous supporters of the Cotsen Institute. Although they insist that “we did not donate funds to get our names in the annual report,” Phillip kindly agreed to a remote (digital) meeting to share what motivates him to support UCLA and the Cotsen Institute.

Isabel Schneider: Thank you for your patience as we navigate these technical difficulties. [What Zoom interview would be complete without unexpected technical problems?] It is lovely to finally connect. How are you faring during the lockdown?

Phillip Tamoush: Well, my caseload as a labor relations arbitrator is down considerably the last couple of months, and all my work is remote now. My wife has retired from teaching, and we are spending most of our time these days near Big Bear Lake, reading, relaxing, and just enjoying life, so it is about as good as it gets.

IS: That sounds lovely.

PT: It is! Before we start, did you see the letter I sent Michelle [Jacobson, development officer of the Cotsen Institute]?

IS: No. Can you tell me a bit about it?

PT: Well, my wife and I wrote a letter earlier this summer explaining a bit about why we decided to become supporters of the Cotsen Institute and UCLA. We have always known that we wanted to support certain organizations and initially thought we would leave gifts in our wills. But, maybe for slightly egotistical reasons, we decided it would be better to donate

these funds while we are still alive, so we could get a better sense of our what donations actually do.

IS: I appreciate that; it is gratifying to be able to understand your impact. How did UCLA make it to the top of your support list?

PT: In 1955, when I was 17, I lost my leg in an automobile accident. Before the accident, I had been preparing to go to a community college, as I knew I could not afford a university education. When I was in the hospital, a teacher from Widney High, which serviced students in hospitals, visited me regularly to keep me up to date on my classes. She encouraged me to call some universities and see if there were any scholarships available for disabled students, something I had never even considered before. As a result of that conversation, I got on the telephone with a UCLA scholarship coordinator working in Murphy Hall, who helped me find full funding for six years of study: an undergraduate degree in letters and science, and a master's in business administration, majoring in industrial relations. Since then, I have always felt an obligation to pay that opportunity forward. My wife and I support 15 different charities, but with UCLA especially it is a matter of giving back. We have donated heavily to the UCLA Center for Accessible Education (CAE) to help other handicapped students make the most of their time at UCLA, and some funds to the Cotsen Institute.

IS: That is wonderful! With your degree in business administration and a 45-year career as an arbitrator, how did you come to focus your giving on our institute?

PT: Well, giving to CAE has always been more a matter of giving back, but supporting the Cotsen Institute is kind of how I live out my “what might have been” dream. I love my career as an arbitrator, where I am essentially a private judge. I have arbitrated or mediated hundreds of cases, and each one was different and had its own challenges. I am overjoyed I got into this field, not only for the financial benefits of my

1. Student in the UCLA/Getty Program in the Conservation of Cultural Heritage and assistant editor of this issue of *Backdirt*.

work but also because I really do get to help people as they find closure with their disputes. There are only a few hundred arbitrators in the country, and it is an honor to know that people know and trust me to resolve their disputes.

But I have always loved archaeology and the study of the past. As a teenager, I was fascinated with the stories of lost civilizations and worlds unknown. My wife's family is Greek, but they lived for generations in Turkey before fleeing the violence of the Armenian genocide, and my family traces its roots back to the earliest established Christian communities in Damascus, Syria. Our family history and heritage is important to us and has been a continuous source of inspiration to learn more about Middle Eastern history and biblical archaeology. We have traveled to Greece and the Holy Land, and our experiences were particularly meaningful as we have learned so much from programs at the Cotsen Institute and reading about history and archaeology.

IS: Do you have a favorite memory of your involvement with our institute?

PT: Not any in particular, but I have really enjoyed coming to Pizza Talks and other public programs through the years, especially those focused on Middle Eastern archaeology.

IS: I quite enjoy those as well! [At this point, we diverted from the primary topic of discussion, bonding over our shared interests in the Dead Sea scrolls and visiting archaeological sites in the Middle East. These elements of the conversation have been omitted for the sake of brevity.]

IS: As we begin to wrap up, do you have any advice for readers looking to be more involved with the Cotsen Institute in the future?

PT: It is funny, but I would actually advise doing something which I myself have not done a lot, which is find more ways to participate as a volunteer so that you can really understand the impact of the Cotsen Institute. Investigate the needs of the institute, find out what programs the Cotsen Institute offers, and earmark funds for programs and research initiatives that inspire and interest you. One of these days I may actually retire [from work], but of course not from life, so I hope to find ways to be more active in the community myself. Please let me know if you think of any good opportunities.

IS: That is excellent advice. I will connect you with Michelle so you can learn more about volunteer opportunities. [Due to the Covid-19 pandemic, access to campus is restricted and volunteer opportunities



Figure 1. Artemis and Phillip Tamoush visit the Acropolis in Athens, Greece.

are currently limited to remote, digital work. However, those interested in future opportunities should reach out to the Cotsen Institute.]

IS: Is there anything else you wish to share with readers?

PT: I already feel pretty egotistical talking about myself for so long, but I hope it is helpful for you and your readers. What my wife and I have done for UCLA and the Cotsen Institute we have done for love; love for UCLA and archaeology, not for having our names in print.

IS: Thank you. It has been a pleasure getting to know your story. I look forward to seeing you, both virtually and eventually in person, in the near future. Thank you for all you are doing for our institute and the opportunities you are providing to this generation of students.

An Interview with Bronson Tran

Isabel Schneider¹

IN MARCH 2020, Bronson Tran joined the Cotsen Institute as its new manager and chief administrative officer. Below he shares his experiences from his first six months in the position.

Isabel Schneider: Thank you for meeting with me remotely today. It is nice to put a face to your name.

Bronson Tran: Yes, I have not met many of the students at the Cotsen Institute yet and when I have they were wearing masks, so I still do not have many faces to associate with names.

IS: Let's start off by exploring what you do at the Cotsen Institute? What is the day-to-day like in your role as the manager and chief administrative officer? What are your responsibilities?

BT: Oof! We could be here all day. But essentially I am responsible for making sure the two interdepartmental programs, of archaeology and conservation, as well as the institute, run smoothly. This involves managing staff, overseeing finances, implementing university policies, aiding in strategic planning, preparing budgets, purchasing equipment, and ensuring the physical buildings are in order. I am also available for faculty, staff, and students to talk if they have questions or comments about funding, employment, academic policies, or the nuances of UCLA administration. My door is always open (metaphorically, anyway) for graduate students to talk to me, and I can serve as a neutral party for those looking for guidance. Even if I cannot answer a specific question, I can help identify the right resources or contacts to make sure your issues are addressed.

1. Student in the UCLA/Getty Program in the Conservation of Cultural Heritage and assistant editor of this issue of *Backdirt*.



Figure 1.
Bronson's Zoom avatar.

IS: What are your favorite elements of this position?

BT: In general, I really enjoy seeing things come together and seeing an institution succeed in its objectives and function smoothly.

IS: You started this position just a couple of days after UCLA was rather abruptly forced to transition to remote learning in March in response to the Covid-19 pandemic. What was your experience like beginning a new job while working from home?

BT: There was no other option except to jump in quickly and make the best of it. It felt terrible to be so new to everything while at the same time having to adjust to working from home as well as managing the inconvenience of it all. I was stressed in the beginning, taking on these responsibilities without the luxury of being able to ask questions in person. The phrase "Oh, I wish I could just come over and do this real quick" was heard often. But, over time, everyone kind of embraced the new working style; we found creative solutions and utilized new technologies. It took some fine-tuning to really make our technology efficient, and we often had to step back and reorganize, but we have found new and effective ways to collaborate. Fortunately, many of the necessary digital tools already existed, so it has just been a matter of learning how to better manipulate them for our needs. Thankfully, the information technology experts at UCLA have been really supportive and responsive to our needs. But, honestly, everyone has just been great across the board; staff, faculty, and students have been so sup-



Figure 2. Even though Bronson has not been able to work in his office yet at the Cotsen on a regular basis, a socially-distanced break outdoors is a welcome change from being stuck at home.

portive and understanding. We share common goals and we are all struggling with this together, making us really empathetic to each other's needs.

IS: You have a background that makes you particularly well suited for helping the transition of the Cotsen Institute to remote learning. Can you share a bit of your history with UCLA?

BT: I completed my undergraduate degree at UCLA in 2007, having majored in English literature. As a student, I had work-study jobs within the field of information technology. When I graduated, my family was encouraging me to return to northern California, where I am originally from, but I had formed a strong attachment to Los Angeles. I gave myself a few months to find a position that would justify staying here, and just before my deadline was up I found a full-time position at the Center for Digital Humanities at UCLA. Over the next 12 years, my responsibilities grew and my roles changed, eventually leading me into management.

I could never have anticipated the kind of challenges we would be facing this year, but my background has definitely made it easy to adjust, as I am already familiar with the technology. I spent much of my first day talking to the information technology department of the Social Sciences Division, trying to understand what was happening and creating better remote access options for the staff of the Cotsen Institute. My personal experience helped tremendously and really prepared me for the skills needed at this moment.

IS: What drew you to your current position at the Cotsen Institute?

BT: I wanted to move outside my comfort zone and take on larger management roles. While I did not study archaeology academically, it is a field that has fascinated me, as it brings the past to life.

IS: Do you have a favorite memory from your time at the Cotsen Institute so far?

BT: Not necessarily a favorite, but the first time I went back to the campus in person after the access restrictions started was certainly memorable. The campus is normally buzzing with people and energy, but the hallways were strangely empty and eerily deserted. It felt like a scene from a horror movie, and I almost expected something from the Zooarchaeology Laboratory to come to life and join me.

IS: What are you most excited about for the future of the Cotsen Institute?

BT: I am excited for everyone to come back so I can tour the laboratories and experience more of the research happening in person. I worked and studied at UCLA for years and visited the Fowler Museum often but am only now discovering that the coolest research is happening in its basement [where the Cotsen Institute is located].

OBITUARY

Remembering Dr. Marilyn Beaudry-Corbett

Willeke Wendrich¹

ON JULY 14, 2020, the Cotsen Institute lost one of its most dedicated and beloved alumni, Marilyn Beaudry-Corbett. Since 1977 she had been part of the Cotsen Institute community in different roles, as a graduate student, visiting assistant professor, and director of publications.

Marilyn Beaudry was a true Angeleno, born and raised in Los Angeles. In 1953 she earned a bachelor's degree in marketing from the University of Southern California. She completed a one-year graduate program in management at Radcliffe College before returning to USC to obtain a master's degree in industrial sociology in 1961. This was the mid-1960s, a time when women found their voices and pushed up on the glass ceiling a bit at a time. Beaudry joined Audience Studies Inc., a marketing and advertising research firm, and was eventually promoted to chief operating officer. This job took her all over the world and ignited her passion for travel. As a single professional woman in the early 1970s, she was an inspiration for women's liberation: She conquered the corporate world.

In the middle of this success story, she asked herself, "Do I want to keep doing this for the next 15 to 20 years?" Her answer was unequivocally no. She sought and found her real passion: archaeology.

In 1977 Beaudry was one of the first students to earn a master's degree in the newly established Interdepartmental Program in Archaeology at UCLA,

followed by a doctorate in 1983. She was awarded a postdoctoral fellowship at the Smithsonian Institution and spent a year as a Fulbright Scholar in La Lima, Honduras. The same power that brought her to the top of her game in advertising allowed her to get her doctorate and helped her embark with a vengeance on the tiring, dusty, yet invigorating tasks of archaeology. Her specialization was the production and distribution of archaeological ceramics, and with that expertise she directed the Ceramics Research Group at the Cotsen Institute. Perhaps the greatest achievement in her scholarly career was the coauthorship, with archaeologist John S. Henderson, of the first-ever compendium of Honduran pottery, *Pottery of Prehistoric Honduras*, published by the Cotsen Institute in 1993.

Many students and faculty members participated in the pottery-firing extravaganzas she organized on Dockweiler Beach, one of the few places in California where open fires are allowed. She did much of this together with Don Corbett, whom she met in 1987 while teaching a class in ceramics analysis at UCLA. Corbett, a dentist by profession who had become hooked on archaeology a few years earlier, took to pottery and to the visiting professor who taught him the basics. Together they formed the core of the Friends of Archaeology. Merrick Posnansky, a former director of the Cotsen Institute (1984–1987), wrote in reaction to her passing, "She was the embodiment of the strength of volunteerism. I remember the fantastic work she did as our director of publications, after Ernestine Elster stepped down. She was tireless, came in and did work to help others so many times, often with little fanfare except one noticed her car in the parking lot. She and her husband Don were the backbone of our volunteers and of the Friends of Archaeology. We shall all miss her insights, quiet dignity, and love of archaeology."

Elster, the inaugural director of the Cotsen Institute of Archaeology Press, wrote about Beaudry-Corbett, "I remember Marilyn when she walked into our offices in the basement of the then-named Physics Building to introduce herself as a volunteer with the Friends of Archaeology. She was at the top of her field, advertising, but had fallen in love with Mayan archaeology. And so Marilyn began. I think H. B. Nicholson was her chair, but she participated in a Malibu field class under Clement Meighan, and then she and I worked together as members of the team led by Billy Clewlow in Guatemala." Elster added, "And she was a fabulous cook!" This remark speaks

1. Director of the Cotsen Institute.



Figure 1. Marilyn Beaudry excavates pottery in Honduras.

to Beaudry-Corbett's greatest hobby, which she and her husband shared: studying the history of food and enjoying it in the present. Traveling and tasting were two of the joys of their lives.

In 2014 she donated a transformative gift of \$5 million to the Cotsen Institute, which established two named endowments. The Marilyn Beaudry-Corbett Endowed Graduate Fellowship in Archaeology, a \$4 million bequest, provides vital support in perpetuity for graduate students at the Cotsen Institute, with preference given to women aged 30 and older. The remaining portion of the gift—\$1 million—established the Marilyn Beaudry-Corbett Endowed Chair in Mesoamerican Archaeology. The first chair in this field at UCLA, it ensures that the Cotsen Institute has a robust presence in Mesoamerican archaeology. The chair is currently held by Richard Lesure. Of her philanthropy, Beaudry-Corbett said in 2014, "I am thrilled that my gift will support future archaeologists and the field of Mesoamerican archaeology at the Cotsen Institute, which has given me so much pleasure and professional fulfillment."

Thanks to Beaudry-Corbett's vision and her dedication to archaeology, her legacy at the Cotsen Institute will extend far into the future. She was a gifted professional and archaeologist, an accomplished scholar, and someone intimately familiar with the needs of students. Whether she discussed pots or their culinary contents, she was well aware that students needed food on the table.



Figure 2. Marilyn Beaudry-Corbett next to her husband, Don Corbett.

OBITUARY

Remembering Gregory E. Areshian (1949–2020)

Kristine Martirosyan-Olshansky¹

ON AUGUST 2, 2020, the field of Armenian archaeology lost one of its most distinguished scholars, Gregory E. Areshian, a professor of history and archaeology at the American University of Armenia. I had the privilege of learning from him and calling him a friend, and I feel a deep sense of loss and sorrow upon his passing. Areshian had been an active member of the UCLA community since 2001, serving as inaugural director of the Research Program in Armenian Archaeology and Ethnography at UCLA, assistant director of the Cotsen Institute, editor of *Backdirt*, and visiting scholar and adjunct associate professor in the Department of Near Eastern Languages and Cultures.

I first learned of Areshian when I contacted another giant in the field, David Stronach, regarding his work at the site of Erebuni, an Urartian-period capital located in the heart of Yerevan in Armenia. During our conversation, Stronach spoke of Areshian with high regard, noting that if I wanted to learn about Armenian archaeology, I would not find a better mentor in the United States. I will forever be indebted to the late Professor Stronach for this referral.

My first encounter with Areshian was in the fall of 2007. I remember walking out of his office in awe of the breadth of his knowledge and the ease with which he remembered specific details from excavations that had happened decades before. After our initial meet-

1. Postdoctoral scholar and director of the H. O. Z. Chitjian Armenian Laboratory at the Cotsen Institute.



Figure 1. Gregory Areshian at the Getty Center in 2019.

ing, Areshian invited me to join him at excavations of the now world-renowned Areni-1 cave site and later in the same season at excavations of Dvin, a capital and large commercial city of early medieval Armenia. Over the following years, we spent countless hours talking about archaeological theory and the history of Armenia and the Near East. We spent many months traversing plains and hills of Armenia as he showed me—and anyone who would join us—the poorly known and understudied archaeological sites of Armenia. He had spent his youth among those sites and guided from memory. Our last trip together, in 2016, was to Haričavank,² a thirteenth-century monastic complex in northern Armenia. For one of his lectures, he wanted to take a picture of the eastern facade of the cathedral, which depicts the Zakarian brothers holding a model of the cathedral in their hands. We arrived before dawn because the best view of the facade was right at sunrise. In his last correspondence from the hospital bed,³ dated just days before his untimely passing, he wrote to me that he was finishing up the chapter on the figurines found at Terqa, Syria, and that he would write again soon. These last memories and moments with him, and so many more, are perfect examples of his dedication to scholarship and teaching.

2. See also the contribution by Giorgio Buccellati and Marilyn Kelly-Buccellati elsewhere in this issue.



Figure 2. Gregory Areshian with members of the Masis Blur Archaeological Project on the first day of excavations in 2012.

Areshian's archaeological career started at an extraordinarily early age, with his first archaeological site visit to Teishebiani (Karmir Blur) when he was five years old. Due to his close familial connection with archaeologist Boris Piotrovsky, Areshian participated in archaeological excavations every summer starting at age 11, and he directed excavations in his own trench at the age of 14. The enthusiasm of his youth carried into his studies. In 1975, at the age of 26, he became the youngest person to graduate with a PhD from the Institute of Archaeology of the National Academy of Sciences of the Soviet Union in Leningrad (now Saint Petersburg).

During his long and distinguished career, Areshian published more than 150 scholarly works in five different languages, with his first peer-reviewed article published at the age of 20. His work, spanning the Neolithic to the High Middle Ages, was mostly devoted to topics in the social sciences and the humanities, including the archaeology of the Near East, the eastern Mediterranean littoral, southeastern Europe, and Central Asia. Other publications focused on interdisciplinary linguistic-archaeological-folkloric and art historical reconstructions of ancient Near Eastern and Indo-European mythologies, interdisciplinary studies of social contexts of the development of ancient technologies, applications of natural sciences in archaeology, and theory and methodology in archaeology and human adaptive responses to changes in the natural environment. Areshian also wrote on interactions between nomads and sedentary civilizations of Eurasia, long-term trends in the history and trajectories of social complexity, visual arts and architecture of the ancient Near East, Armenian history, and the ancient and medieval empires of the Near East and Eurasia. His last edited volume, *Empires and Diver-*



Figure 3. Sara Chitjian, Gregory Areshian, Pavel Avetisyan, and the author visit the Ararat-Eskijian Museum in Los Angeles in 2019.



Figure 4. Gregory Areshian and students of a UCLA field school in front of the the Areni-1 cave in 2010.



Figure 5. Gregory Areshian and his driver, Arshak, take a rest at Lake Sevan, the largest lake in Armenia, in 2010.

sity: On the Crossroads of Archaeology, Anthropology, and History, focusing on the multidisciplinary study of empires, was published by the Cotsen Institute of Archaeology Press in 2013.

Areshian directed or participated in archaeological field projects in Armenia, Georgia, Syria, Egypt, and Central Asia. The excavation of the Neolithic settlement of Masis Blur was his most recent undertaking, in cooperation with the Institute for Archaeology and Ethnography in Yerevan and the Cotsen Institute. But he is best known for his work in the world-renowned Areni-1 cave complex, which produced the oldest known examples of wine-making (6100 BCE) and the oldest preserved leather shoe (3600 BCE).

Areshian distinguished himself as a successful institution-builder and administrator at different levels, establishing and directing the Center for Archaeological Research at Yerevan State University, where he worked for 25 years. He also served as deputy director of the Institute of Archaeology and Ethnography of the Armenian National Academy of Sciences, vice director general of the Directorate of Antiquities of the Republic of Armenia, and minister of state and deputy prime minister in the government of the independent Republic of Armenia. It was his

passion for Armenian archaeology, his dedication to educating future generations of scholars, and his ability to engage with people outside of academia that resulted in the establishment of the Research Program for Armenian Archaeology and Ethnography at UCLA.

A small portion (around 1,500 books) of his vast personal library (he owned more than 11,000 books before his move to the United States) has become the Gregory E. Areshian Reading Room at the Oriental Institute at the University of Chicago. He was a cofounder of *ARAMAZD: Armenian Journal of Near Eastern Studies* and taught a large variety of undergraduate and graduate courses in history, archaeology, and anthropology at the University of Chicago, University of Wisconsin, UCLA, UC Irvine, and Yerevan State University.

After his 2016 return to living full-time in Yerevan, Armenia, Areshian became a member of the National Academy of Sciences of the Republic of Armenia and regularly taught and held salons with students at the American University of Armenia. His summer session classes on Armenian archaeology, which he taught by taking the students to various sites, were one of the most popular courses at the American University of Armenia. His lectures under the open sky among ruins that were thousands of years old left a lasting impact on his students.

In recognition of his contribution to Armenian archaeology, by the order of the prime minister of Armenia, Nikol Pashinyan, Areshian was laid to rest at the National Pantheon, though I think his spirit continues to wander the vast expanse of the Near East and Southeast Asia: visiting sites, taking pictures, always exploring, forever learning. The Erebuni Historical and Archaeological Museum-Reserve in Yerevan honored his contribution to the field of Armenian archaeology by hanging his picture among those of the great archaeologists and benefactors of the museum.

Gregory will be sorely missed by his friends, colleagues, and students, and of course most of all by his family. He is survived by his sons, Alex and Tigran.

OBITUARY

Ofer Bar-Yosef (1937–2020): Celebration of Life

Willeke Wendrich¹

IT WAS WITH GREAT SADNESS that we received the news that Ofer Bar-Yosef had passed away. Bar-Yosef was professor emeritus at Harvard and a celebrated archaeologist and mentor. He was the first recipient of the Lloyd Cotsen Prize for Lifetime Achievement in World Archaeology, which he received in 2013, together with his mentee Carolina Mallol of the University of La Laguna in Spain.

In 1967, he became a professor of prehistoric archaeology at Hebrew University in Jerusalem, the institution where he originally studied archaeology, from the undergraduate through postgraduate levels, in the 1960s. From 1965 onward, his archaeological research took him around the world for lectures, collaboration, and fieldwork. In 1988 he moved to the United States, where he became a professor of prehistoric archaeology at Harvard University, as well as curator of paleolithic archaeology at the Peabody Museum of Archaeology and Ethnology.

Bar-Yosef was a member of the National Academy of Sciences, the British Academy, and the Academy of Science of the Republic of Georgia, which all recognized his important influence in archaeological theory and practice, with a focus on major transitions in the development of *Homo sapiens*. He was widely renowned and the foremost expert on the transition from the Paleolithic to the early Neolithic period. He studied Upper Paleolithic assemblages from the Sinai (Egypt), Israel, the Czech Republic, the Republic of Georgia, and most recently the People's Republic of China. Through this work, he provided important contributions to the debates on human dispersals out of Africa, lithic analysis, human–Neanderthal interactions, the relationship between environmental and



behavioral change, early pottery production, and the development of agriculture, among other topics.

His work provided evidence for early human dispersals from Africa to Eurasia from the site of 'Ubeidiya (1.5 Ma) in the Jordan Valley. More recently, as codirector of a large Israeli–French–American research program, he spent two decades of field and laboratory research in Kebara, Qafzeh, and Hayonim Caves in Israel (with Bernard Vandermeersch, Liliane Meignen, Paul Goldberg, Anna Belfer-Cohen, and others) demonstrating the early arrival of modern humans in the Levant and the late appearance of Neanderthals in the Near East. He codirected excavations at Netiv Hagdud, an early Neolithic settlement in the Jordan Valley with Abraham Gopher. In 2004 and 2005 he codirected excavations at Yuchanyan Cave (Hunan Province, China) with Jiarong Yuan. He wrote and coedited 22 volumes and authored or coauthored more than 400 articles and book chapters.

Most of all, he was a warmhearted person who cared deeply about the discipline and especially about his students. With a great sense of humor and a mischievous smile, he would bring his theories about dispersal of knowledge to the fore, always based on a deep knowledge of the subject at hand but never in a tone that would discourage alternate opinions. As a mentor, his role was to stimulate independent thought rather than create copies of his own work and approach. He will be remembered and sorely missed, and we are privileged to have known him.

1. Director of the Cotsen Institute.

IN MEMORIAM

Norma Kershaw (December 31, 1924– September 14, 2020)

Aaron A. Burke¹

ON SEPTEMBER 14, 2020, Norma Kershaw, long-time benefactor of archaeological institutes and patron of archaeology professorships at UCLA and UC San Diego, passed away at the age of 95. She is survived by her daughters, Barbara Tieferet Rosenthal and Janet Kershaw McClellan, four grandchildren, and two great-grandchildren.

Norma was an avid supporter and promoter of classical and Near Eastern archaeology and is particularly well remembered in archaeological circles in the greater New York City region and Southern California. She was a graduate of Queens College, where she earned her BA, followed by an MA in 1972 from Columbia University, where she studied with famed art historian of the ancient Near East Edith Porada. Although she did not pursue a PhD, during her education she participated in various archaeological excavations in Israel and Cyprus, regions for which she would serve as a lifelong and enthusiastic

1. Professor of the archaeology of ancient Israel and the Levant, Department of Near Eastern Languages and Cultures; core faculty member of the Cotsen Institute; and holder of the Kershaw Chair of Ancient Eastern Mediterranean Studies.

advocate and patron. For nearly 20 years, this interest was expressed in her teaching of history and archaeology courses with the Continuing Education Program at Hofstra University and as a lecturer for the United Nations Cultural Affairs Committee (1976–1989).

Norma established the Long Island Society of the Archaeological Institute of America (AIA) in 1968 and the Orange County Society of the same institute in 1991. She joined the governing board of AIA in 1992. She was a founding member of the Orange County chapter of the American Research Center in Egypt (ARCE) and served on the board of directors of the Bowers Museum in Santa Ana, where the auditorium is named in her honor. This auditorium has hosted many AIA and ARCE lectures in recent years. Norma was especially fond of the work of the American Schools of Oriental Research (ASOR), of which she was a member for more than 50 years. She served as a trustee for the organization as early as 1979 and as an honorary trustee from 1988 on. As part of her service for ASOR, she was the founding president of the Cyprus American Archaeological Research Institute in Nicosia, Cyprus, and served steadily on the board of directors of the W. F. Albright Institute in Jerusalem, where she endowed the garden in its center, a respite for all who seek its sanctuary.

Between 2005 and 2006, she endowed two chairs in Near Eastern studies. The first, the Norma Kershaw Chair in the Archaeology of Ancient Israel and Neighboring Lands at UC San Diego, is currently held by Thomas Levy, professor in the Department of Anthropology. The second, the Kershaw Chair of Ancient Eastern Mediterranean Studies in the Department of Near Eastern Languages and Cultures at UCLA, is currently held by the author, following its inaugural holder, William Schniedewind.

Norma believed strongly in the mission of the public university and supported the efforts of faculty engaging graduate and undergraduate students in fieldwork, the principal aim of her support for archaeology and education. She was proud of the presence of UCLA in archaeological fieldwork in Israel, and in 2007 her support made possible the establishment of the Jaffa Cultural Heritage Project. This support

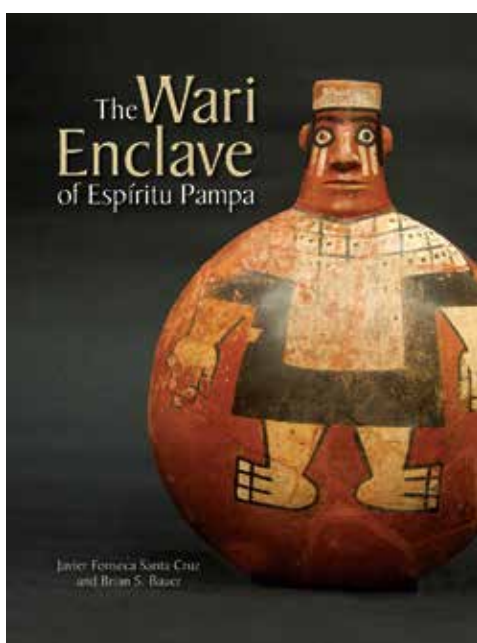
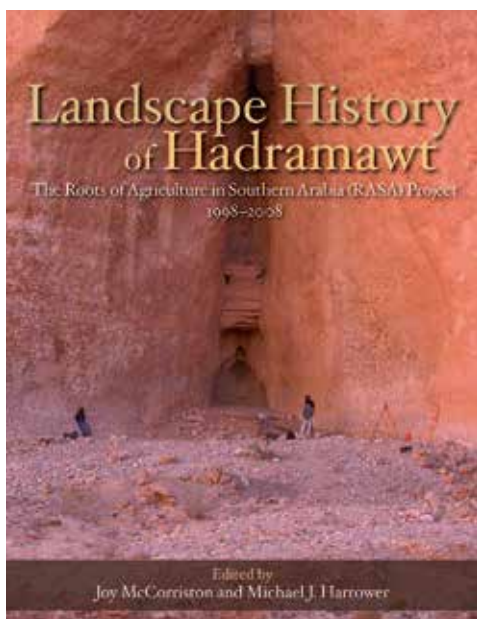


Figure 1. Norma Kershaw and William Schniedewind, inaugural holder of the Kershaw Chair of Ancient Eastern Mediterranean Studies, Department of Near Eastern Languages and Cultures.



Figure 2. Norma and Reuben Kershaw.

was celebrated in the first volume of *The History and Archaeology of Jaffa* (Cotsen Institute of Archaeology Press 2011), which was dedicated to her. Norma was a regular donor to the Cotsen Institute. Her memory will be carried on in the work of members of the Department of Near Eastern Languages and Cultures who hold the Kershaw Chair.



FROM THE PUBLISHER'S DESK

Randi Danforth¹

THIS YEAR WE HAVE been copyediting and designing from home; publishing, teaching, and researching from home. Videoconferencing and emailing are our main means of communication with the outside world. It has worked fairly well for us in publishing, but we miss the in-person collaborations and interactions at conferences, and we look forward to returning to our offices at the Cotsen Institute and to seeing friends and colleagues. Our books and our work at the Cotsen Institute of Archaeology Press are all about communication, so that has not changed at all. To help researchers all over the world who cannot visit libraries and institutions during the pandemic closures, we have made all our books, including the newest titles, available on eScholarship.org as either free pdfs or read-only files.

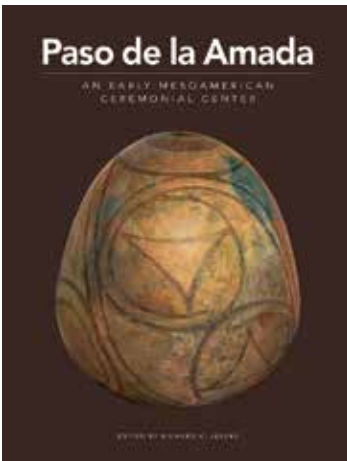
A few months ago we published *Landscape History of Hadramawt*, about the Roots of Agriculture in Southern Arabia project, which studied settlements in Yemen that exhibit the earliest dated remains of domesticated animals and water management technologies in Arabia.

December brought forth *The Wari Enclave of Espiritu Pampa*, about the first three years of excavation at this important site in the Andean highlands, with elite burials containing fine silver, gold, bronze, and ceramic objects and revealing new data about this pre-Incan empire.

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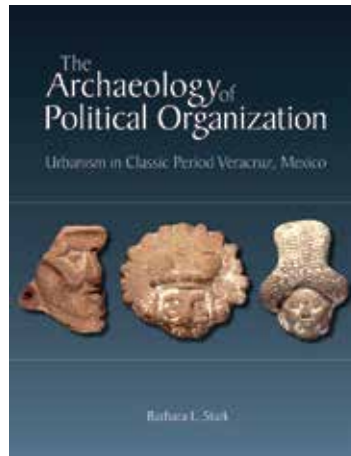
1. Publications director, Cotsen Institute of Archaeology Press.



Paso de la Amada

An Early Mesoamerican Ceremonial Center

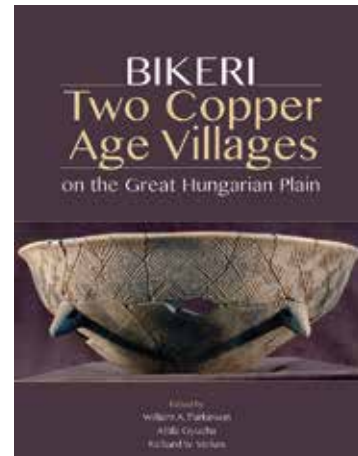
is a study of one of the earliest sedentary, ceramics-using settlements in Mesoamerica, with the earliest known Mesoamerican ballcourt.



The Archaeology of Political Organization

Urbanism in Classic Period Veracruz, Mexico

examines settlement in the coastal plain of lowland Mesoamerica, which was rich with fertile soil and tropical commodities such as jaguars, cacao, vibrantly plumaged avian species, and cotton.



Bikeri

Two Copper-Age Villages on the Great Hungarian Plain

is about fifth-millennium BCE settlements that reveal the transition from the Late Neolithic to the Early Copper Age, when these prehistoric societies developed new agropastoral subsistence practices, burial practices, and habitation patterns.



Talepakemalai

Lapita and Its Transformations in the Mussau Islands of Near Oceania

is the definitive final report on the Lapita and post-Lapita sites investigated during the Mussau Project, fundamental to an understanding of Oceanic prehistory.



First Kings of Europe

From Farmers to Rulers in Prehistoric Southeastern Europe

In this copublication with the Field Museum in Chicago, scholars analyze and interpret data and artifacts from important museum collections in central Europe and the Balkans that illustrate the evolution of political hierarchy in this region beginning in the Neolithic Age. Over a span of several millennia, early agricultural villages gave rise to the first kingdoms and monarchies in Europe, the first complex state organizations.



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