

## Interview with Dr. Emily Holt, 2014-2015 IEMA Postdoctoral Fellow

Ryan E. Hughes

*Dr. Emily Holt is currently the Postdoctoral Fellow at the Institute for European and Mediterranean Archaeology at the University at Buffalo, SUNY. She received a Master of Arts in Classical Art and Archaeology in 2006 and a Master of Arts in Anthropology in 2008 from the University of Michigan. She continued at the University of Michigan to work on her thesis on the relationship of the environment and the economy in Bronze Age Sardinia, earning her Ph.D. in Anthropology & Classical Art and Archaeology in 2013. Dr. Holt continues to conduct research on Sardinia as director of the the Pran'e Siddi Landscape Project.*

*Dr. Holt, what are your current research interests and projects in which you are involved?*

My primary research interests right now are in cultural interpretations of climate change and natural resources in the past. This is interesting to me because I think we often feel intuitively like we understand natural resources. Everyone has a visceral experience of resources like water, soil, stone, and metal. I think it's easy for us to assume that those experiences are shared cross culturally or that we automatically know how people understand and respond to such "basic" materials. However, understandings of natural resources – their meanings, appropriate uses, and the amounts considered necessary for a comfortable life – are culturally constructed. We can't understand people's responses to changing natural resources in the past without trying to understand what those resources meant to the people using them.

I'm particularly interested in the cultural experience of water insecurity. Sardinia, where I work, isn't an area people would think of as water insecure. Although droughts do occur on Sardinia, the island regularly gets enough precipitation to support rainfed agriculture. Irrigation wasn't necessary in the past, and what we would think of as catastrophic lack of water probably rarely occurred. Still, climate change can alter precipitation patterns, and altered precipitation can affect things like aquifer recharge, which in turn affects the locations and flow strengths of springs and watercourses. The Nuragic culture of Bronze Age Sardinia relied heavily on springs as sources of water, so if the climate change that took place during the Bronze Age affected rainfall and therefore spring behavior, it could have been an uncomfortable and uncertain experience for the Nuragic people, even if water never really became scarce by our definition.

Currently, I'm co-directing the Pran'e Siddi Landscape Project, an archaeological and

geoarchaeological survey centered on the Siddi Plateau in south-central Sardinia. This project is designed to answer some of my questions about climate and environmental change, changing Bronze Age water sources, and the social and cultural reactions of both elite and non-elite members of Nuragic society. The project is planned in three stages. First, we'll carry out a survey of stream channels in the Siddi region. There's topographic evidence for about 50 major and 40 minor stream channels originating on the Siddi Plateau. The goal of our stream channel survey is to trace these channels on the ground and document and map any human interactions with them. Our preliminary fieldwork has already discovered architecturally elaborated springs, agricultural terraces, villages, and towers built in relationship to the channels.

The second stage of our project is to excavate geoarchaeological trenches that will allow us to reconstruct the local palaeoenvironment in detail using soil micromorphology and microfossil analysis. There has been very little research on the Sardinian environment during the Bronze Age, and we need a detailed reconstruction in order to link changing precipitation patterns to changing waterscapes. The third stage of the project is to conduct a survey of a stratified random sample of territory types in the Siddi region. This will allow us to document broader settlement and land use patterns that we'll be able to relate to the changing local environment.

*Your work as the IEMA Post-doc centers on water and power in the ancient world, what led you to this interesting field of study and your focus on Bronze Age Sardinia in particular?*

My focus on Bronze Age Sardinia came first. I've had a longstanding theoretical interest in the origins of complex societies, an interest I could have pursued almost anywhere in the world. However, my undergraduate background is in classical languages and my early excavation

experiences were on the Athienou Archaeological Project in south-central Cyprus and the American School's excavations of the Athenian agora, all of which led me to focus on a Mediterranean example. The development of the Nuragic culture on Bronze Age Sardinia offered an excellent case study, and one that hasn't been the focus of a lot of scholarly attention outside of Europe, which made it especially exciting since I thought I would be able to add scholarship with a new perspective to the discussion. The Nuragic culture first appeared on Sardinia in the beginning of the Middle Bronze Age (c. 1750-1365 BCE), when residential segregation and unequal access to labor appear in the archaeological record. As the Bronze Age progressed, the disparities between the powerful Nuragic leaders and the rest of society increased. Both my earlier work and my current work have been aimed at understanding the social, cultural, and economic relationships that allowed these increasing disparities to happen.

The environmental embeddedness of human economies has also been one of my longstanding research interests, and the Nuragic case study was particularly interesting to me because the Mediterranean environment has sometimes been found to be fragile and prone to environmental damage. Developing complex societies can put a lot of strain on the environments where they're located. The kind of overproduction that would-be elites engage in when they compete to establish and maintain their power may result in excessive land clearance, unsustainable soil use, soil erosion, nitrogen depletion, and other negative environmental effects. The fact that the developing complex societies of the Nuragic culture were located in a potentially fragile Mediterranean environment made Bronze Age Sardinia a fascinating place to explore all the concepts that interest me.

My current interest in water is a direct outcome of my earlier work on the early Nuragic environment and economy, though not in the way you might think. A major settlement shift took place in the Nuragic culture at the end of the Middle Bronze Age. The towers or nuraghi, for which the Nuragic culture is named, stopped being built on high plateaus and were instead built in the lowlands. My original hypothesis was that this was a result of overusing the thin soils of the plateaus, with the result that environmental degradation forced the Nuragic people to move to more productive areas. However, my research didn't identify any evidence of soil depletion or erosion. I went back into the field and made a new discovery: the early towers in my research area were built next to springs, none of which were still flowing anymore. This discovery prompted the hypothesis that my current project is investigating - that climate change altered the locations of springs, and that the powerful leaders of the Nuragic culture had a ceremonial relationship with water that they sought to maintain and strengthen in the face of unexpected changes in their water sources.

*Much of your work deals with faunal remains. What role do you feel archaeo-zoological remains play in the development of our understanding of past environmental conditions?*

I am going to take the liberty of putting In my experience, faunal remains are often underutilized in understanding past environments. The focus is more on food species, and though food species certainly have a relationship to the environmental conditions around them, people will also go a long way – sometimes literally – to obtain preferred food species or to create local habitats that will support them, despite adverse environmental conditions: think of going on extended hunting trips, growing fodder, and building artificial fish ponds. I would advocate for the collection and study of non-food species as a second

line of evidence, particularly microfauna. People often don't try to control very small animals like rodents, lizards, and amphibians to the same extent that they control and manipulate the domesticated and hunted species they use for food. As a consequence, the species of microfauna present on a site can be a more direct indicator of environmental conditions. Of course, these species come with their own interpretive problems. For example, many rodent species burrow, so it can be difficult to be certain that the stratigraphic layer you find rodent bones in represents the time when the rodents were alive. Still, the potential for using microfauna for environmental reconstruction is not usually fully exploited. Microfauna are not recovered on all excavations, and even when they are recovered, they may not be subject to the same level of detailed analysis that food remains receive. I both hope and expect this trend will change in the future.

*Whose work has proven to be the most inspiring to you in your own research?*

I've found many scholars' work to be inspiring, especially given the recursive relationships between political development, economic structures, and environmental change that my work strives to understand. It would be an impossible task to list everyone whose work has influenced mine, but here are a few of my major inspirations.

My thinking about the intersection of social and economic structures has been influenced a lot by Kent Flannery's work, especially on storage and the breakdown of sharing behaviors, as well as John O'Shea's work on storage and Timothy Earle's work on political economies. Mary Helm's work has been instrumental in shaping my thinking about the cultural construction of economic goods. My understanding of how political and social inequality are negotiated has been especially influenced by Robin Beck, Gerald Mars, and Brian Hayden.

Many great scholars have also influenced my thinking on human relationships with environments. Joseph Tainter's work on collapse has helped me develop a framework for thinking about environments, economies, and social structures. Karl Butzer and Paul Halstead have been major inspirations in my thinking on specifically Mediterranean environments and their sustainability issues. Richard Redding and John Speth have both influenced my understanding of how zooarchaeological data can be linked to human behaviors and ancient environments.

Reading ethnographic studies has also proved inspiring as I try to understand how people conceptualize natural resources, and some have provided vivid examples of the processes I identify as underlying resource manipulation in societies at various levels of complexity. One that I found especially useful is Janet Hoskins' *The Play of Time*. Recently, Amber Wutich's work on cross-cultural experiences of water insecurity has also influenced my thinking about cultural understandings of natural resources.

I want to conclude by saying that being in good scholarly environments has been as important as reading the work of particular scholars in challenging me to become a stronger analytical and creative thinker. I've been lucky enough to be surrounded by stimulating scholarly environments throughout my career. Early on, my undergraduate professors were incredibly supportive of my interests and pushed me to work hard and expand my thinking. Spending ten years with the graduate student community at the University of Michigan was undoubtedly one of the biggest challenges and influences on my thinking, and I owe a lot to my friends and colleagues in that setting. When I had my first postdoc at Oberlin College, I was part of two faculty reading groups that really expanded my understanding of archaeological and anthropological theory. And now, as the IEMA postdoc,

I'm challenged by colleagues and students in both anthropology and classics, which has been an amazing interdisciplinary experience.

*What have been the most rewarding, and the most challenging, aspects of your time as the IEMA post-doc?*

The IEMA postdoc has been a very rewarding experience all around, so it's tough to say what's the most rewarding aspect. One part of the postdoc I've especially enjoyed is making contact with so many exciting scholars as I've been organizing the conference. This year's speakers are a talented and influential group of researchers who have contributed to our understanding of water and its many relationships with unequal social structures in very different theoretical and methodological ways. I've learned a lot from reading their work and corresponding with them, and the opportunity to engage all of them in discussion at the 8th IEMA Invited Scholars Conference is truly a highlight of this experience.

Another aspect that has been very rewarding has been teaching my own graduate seminar on Water and Power In Human Societies. This is my first graduate seminar, and it has been some of the most exciting and challenging teaching I've done in my career. I try to build a mentoring relationship into my seminar. I have very recent experience of the kinds of things my students will need to accomplish to succeed, including applying for grants and strategizing about the job market. I incorporate these necessary professional skills into the seminar as assignments. For example, my students are interpreting water and power in their areas of interest by designing and presenting field research projects in the format of a National Science Foundation grant proposal. I hope my students can learn from my experiences. At the same time, my graduate students are talented junior colleagues, and I find my

own ideas about water and power changing in response to their observations and comments during class discussions.

It's also difficult to identify the most challenging part of the postdoc, since all of it has been pushing me to grow as a scholar and a professional, but one challenging aspect that I care deeply about is building bridges between archaeologists working from an anthropological perspective and those working from a classical perspective. I earned a joint PhD in anthropology and classical art and archaeology from the University of Michigan in 2013. I was the first Michigan graduate student to pioneer this joint degree, so communicating between the disciplines is a challenge I've been engaging with for a long time. This interdisciplinary challenge is part of what attracted me to the IEMA postdoc. The disciplinary histories of anthropology and classics are quite different, as are the goals and assumptions of both fields. At the same time, both disciplines are trying to understand important information about the human past, so being able to communicate has great potential for enriching both studies.

*Having recently completed your doctorate, what advice would you give to current graduate students?*

The market is really tough right now, and graduate students need to do more than write a dissertation to be successful when they graduate. It's important to leave graduate school with at least one peer reviewed publication. This is a major challenge, especially while you're also writing a dissertation, but it's become an essential of today's job market. Find a mentor you work well with and develop your senior honors thesis or master's thesis into a publishable article. Or take advantage of resources in your department or university. Many institutions have museums or small collections of artifacts that can be subjects for early publications.

Additionally, the level of professionalization required of recent graduates is very high, so take advantage of any trainings and opportunities your university provides. Don't forget to look outside the university as well. Professional organizations like the Society for American Archaeology and the American Anthropological Association provide online seminars and workshops at conferences; be sure to attend them. There's also a lot of good advice online. I highly recommend reading the Chronicle of Higher Education at least occasionally. There's also a blog called The Professor Is In that offers excellent advice on all kinds of professional situations and skills.