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Presentation of the fourth issue of IJSRA

Gonzalo Linares Matás*

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Good things are worth waiting for. I am thrilled to be presenting the fourth issue of the International Journal of Student Research in Archaeology, the global, free and independent student publication in our field. This new issue embodies our culture and our ethos: full of interesting features and innovative research articles by authors from four continents, from the buried to the gravitating, from the perishable to the monumental, and from the prehistoric to the contemporary.

The potential to transcend the powerful forces ruling our physical world, such as gravity, have long prevented access to outer space, becoming a frontier for any hominin species, including our own. However, outer space is now a daily sphere of human interaction littered with the traces of our activities. Through an encompassing view of archaeology, combining perspectives from the archaeology of the present and the future, astrophysics, as well as some insights that evoke Material Engagement Theory, outer space is now firmly grounded within the realm of the discipline, even if it is still somewhat peripheral in practice. **John Vandergugten** moderates a fascinating thematic interview forum with leading practitioners of the subdiscipline, exploring the potentials and limitations of archaeological research in a new domain of physical experience, and engaging with the astrosocial.

Surveying is an important dimension of archaeological discovery. It enables us to identify new sites and to characterise the type and density of archaeological features within a landscape. Surveys generate large quantities of data that often may go unpublished,

* Gonzalo Linares Matás is reading for an MSt in Landscape Archaeology and Molecular Bioarchaeology at St Hugh's College, University of Oxford (UK). His research focuses on vertebrate taphonomy, with a special emphasis on canids, and Pleistocene zooarchaeology. He was the former President of the Oxford University Archaeology Society (Michaelmas 2015) and was invited to join the WAC (World Archaeology Congress) Student Committee (2017).

He is also particularly interested in the socio-political contexts of heritage management and ownership, contemporary archaeological theory, and the histories of the academic disciplines of archaeology and anthropology as practical modes of inquiry. Gonzalo is convinced that more efforts are needed to transform the academic publishing landscape.

thus depriving the wider community of invaluable information at different scales of resolution. Therefore, we are delighted to publish a multi-period survey report by **Bradley Husemann** for the Schaub Family Farm (Illinois, USA). Test pits provide information about stratigraphies and site integrity, and the study area is nicely illustrated using both historic maps and GIS. This work is a relevant contribution to the local history of Peoria County and the regional archaeology of the Eastern Woodlands.

For the purposes of discussing the remaining articles in the issue, I have grouped them in two broad themes: representation and exchange, which merge the cultural and the social aspects of past and present human experiences. **Ephraim Mwaita** brings to the fore the role of heritage in preserving traumatic memories of our recent past, embodied in material culture displayed in institutional settings. Robben Island (South Africa) hosts the prison where Mandela was kept captive, but the museum also documents the untold histories of cruel suffering that many other people experienced. Mwaita argues that there is still room for more explicit and personalised accounts beyond a 'triumphalist' narrative of overcoming general hardship.

The veneration of family ancestors is one of the fundamental dimensions of many societies, and it is the topic of two great papers, one on Greek funerary art and another on ship burials in Scandinavia. **Joseph Robson** discusses 14 plaster casts of Attic funerary stelai held at the Ashmolean Museum in Oxford, exploring the dialectics of the oikos and the polis, between life and death, through public presentation and representation of the nuclear family, the quintessential element of the private sphere in the Classical world. Thus, death becomes an opportunity for the living to imagine and reconfigure their past and their future. However, in certain circumstances, the passage is not always conceptually one-way, and the dead can use the same symbolic and material channels to re-engage with the living. **Cassandra Clark** discusses how ship-themed burials in Scandinavia, documented from the Mesolithic to the late Viking Age, are not merely symbolic vessels that transport the dead from one world to the next; instead, they may be seen as mechanisms that allow them to depart from and return to the realm of the living. In the context of this ritual ideology, fostered through feasting, the death would not be confined within the limits of a mound, as the burial ground granted them the possibility to travel through the cosmic sea.

Exchange is a paramount socio-economic mechanism, connecting the local and the global, and acting as agent of change while at the same time maintaining and renovating social ties. In the present article, we have two papers that explore the role of trade in territories located on the shores of the Indian Ocean, a dynamic arena of intercultural interaction. **Ashwini Lakshminarayanan** looks at the material evidence of Indo-Roman trade from the Arikamedu assemblage, the renowned port site studied by the UCL archaeologist Sir Mortimer Wheeler. Amphorae and beads evoke the long peripli of courageous sailors that navigated back and forth with the monsoonal tides, nodes of an extensive network that connected the Mediterranean world, the East African coast, the Arabian Peninsula, South Asia and beyond. In the context of this influx, rich polities developed in the Shashe-Limpopo basin and the Zimbabwe Plateau through the trade of gold, ivory, slaves, glass beads, and textiles, as well as other perishable materials. **Humphrey Nyambiya** explores how these centres were involved in several

spheres of interaction, from local exchanges with hunter-gatherer communities to long-distance trade; these redistributions of wealth fostered lavish burials and monumental stone structures way before the early colonial encounters from the sixteenth century. Nevertheless, the consequences of booming trade in urban centres are not universally welcomed. They are also associated with processes of gentrification and displacement of local communities, which in turn affects the goods on demand and the products on offer. The anthropological significance of the heritage associated with these processes is discussed by **Zach Lindsey** in relation to the transformation that a traditional grocery store experienced in Austin, Texas, during the twentieth century. He also emphasises the role of oral and written sources for a multi-layered archaeology of the contemporary world, where multiple living actors can provide significant inputs in relation to the conceptualisation and interpretation of material culture.

This fourth issue also includes two conference reviews that took place during 2017: the ICOMOS International Committee on Archaeological Heritage Management (ICAHM) 2017 Annual Meeting and the 7th Annual Meeting of the European Society for the Study of Human Evolution, which took place in Leiden. The dates of these conferences highlight some of the delays associated with this particular issue, which was expected to appear before the summer of 2018. I would like to thank the unwavering support and commitment demonstrated by the formatting team, which day by day make this dream possible. The quality of the articles received continues to increase as the Journal establishes as one of the landmarks of student research in the field. Ahead of the next issue, and in order to better contribute to the growth and global expansion of this endeavour, we are redeveloping our reviewing system to improve submission to acceptance timeframes, by streamlining the submission system and the organisational logistics. Some of our reviewers are getting their doctorates, so there are going to be several openings in our reviewing team. A new publishing landscape, where neither authors nor readers have to pay to access scholarly research in archaeology, is possible if we take the right steps. The International Journal of Student Research in Archaeology is among the efforts pushing for greater accessibility of archaeological research. If you are interested in helping with the reviewing process of the journal or with managerial duties, please do not hesitate to contact us.

Part I

Interview

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Thematic feature interview forum: Space and the outer limits of archaeology

John M. Vandergugten*,
with Alice Gorman, Cameron M. Smith, Jim Pass, Keirsten Snover, and Michael P. Oman-Reagan†

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Archaeology might be defined simply as the study of 'the human altered world'.[1] Until recently, traces of humanity's past could have only been found on Earth. But, as our influence continues to expand beyond, we must consider human activities and human-made objects in space and how they—as extensions of ourselves—impact other worlds and the spaces between. This is 'space archaeology'.

On September 15, 2017, Saturn became the most recent planet to have an archaeological record, with the disposal of the Cassini space probe.[2] This follows Mercury, also with the intentional disposal of a space probe in 2015,[3] Venus and Mars each with over a dozen craft impacts,[4] Jupiter with two,[5] The Moon with almost four dozen,[6] and seven

* John Vandergugten is an MSc student in Archaeology at the Deparment of Anthropology, University of Toronto. John is a bioarchaeologist focused on human origins and the survival of our species, and interested in clarifying our past relationships with animals and environments. For as long as he can remember, he has had an interest in space. Since 2016, John is an editorial board member for IJSRA.

† Bios follow.

1 With apologies to Carl Sagan.

2 NASA Missions. "Cassini at Saturn". https://www.nasa.gov/mission_pages/cassini/main/index.html.

3 NASA. "NASA Completes MESSENGER Mission with Expected Impact on Mercury's Surface". April 30, 2015: https://www.nasa.gov/press-release/nasa-completes-messenger-mission-with-expected-impact-on-mercurys-surface.

4 NASA Jet Propulsion Laboratory, California Institute of Technology. "Venus Flagship Mission Study: Venera & VEGA – Russia": https://vfm.jpl.nasa.gov/othervenusmissions/veneravegarussia/; NASA Jet Propulsion Laboratory, California Institute of Technology. "Venus Flagship Mission Study: Pioneer-Venus – USA": https://vfm.jpl.nasa.gov/othervenusmissions/pioneervenususa2/; NASA Mars Exploration. "Program & Missions: Summary": https://mars.nasa.gov/programmissions/missions/.

5 National Aeronautics and Space Administration. "Mission Archives: Galileo to Jupiter (included NASA Ames partnership)". https://www.nasa.gov/centers/ames/missions/archive/galileo-jupiter.html.

6 NASA. "The Moon": https://www.nasa.gov/moon.

among other moons,[7] asteroids[8] and comets.[9] Space probes Voyager 1 and Voyager 2 sent out in 1977 are continuing to carry ever deeper in space the Golden Records, literal records of past voices, sounds, and activities, human, animal and environmental.[10] As the domain of space archaeology expands ever further, it is necessary to critically reflect on the past and the present so that we can work towards a desirable future.

Dr. Alice Gorman, Dr. Cameron M. Smith, Dr. Jim Pass, Keirsten Snover, and Michael P. Oman-Reagan all kindly responded to an interview request on the theme of space archaeology. Each have a public presence, are involved in space research and education, and are activists and innovators. None of them ever initially intended to be involved in space research despite being interested in space as a child. However, their indirect entries to space archaeology gives them backgrounds and experiences unique to this rapidly developing area of research. Dr. Gorman focuses on heritage in space, Dr. Smith on exploration, settlement and technological development, Dr. Pass on *astrosociology*, Ms. Snover on space science education, and Mr. Oman-Reagan on the anthropology of space scientists themselves. The individuals interviewed here combine to create a diverse and inclusive group of perspectives on space archaeology, exemplifying the cosmopolitan nature of the field itself.

Alice Gorman, PhD

Dr. Alice Gorman is a Senior Lecturer in the College of the Humanities, Arts and Social Sciences at Flinders University in Australia. She co-directs the ISS Archaeology Project, "the first archaeological study of a space habitat… the International Space Station". Her blog "Space Age Archaeology" has been around for over a decade. Dr. Gorman is very active in the field, having given many interviews and written popular articles, with a presentation at TEDxSydney. Many of her publications can be found on her academic profiles: https://www.researchgate.net/profile/Alice_Gorman and https://flinders.academia.edu/AliceGorman. Alice tweets at @drspacejunk.

IJSRA (International Journal of Student Research in Archaeology) *How did you get drawn to space heritage?*

Alice Gorman (AG) The beauty of archaeology is that it can be applied to any human endeavor, any form of material culture. Space heritage seemed like a natural fit for me, as I'd harboured ambitions to be an astrophysicist when a child. I began researching space archaeology after a revelation while I was working as a professional heritage consultant in 2002. It was absolutely not a pie-in-the-sky

7 NASA. Cassini Legacy 1997-2017. "Spacecraft: Huygen's Probe": https://saturn.jpl.nasa.gov/mission/spacecraft/huygens-probe/.

8 NASA Astronomy Picture of the Day. February 13, 2001. "NEAR Spacecraft Survives Landing on Asteroid Eros": https://apod.nasa.gov/apod/ap010213.html; Japan Aerospace Exploration Agency (JAXA). Institute of Space and Aeronautical Science. "HAYABUSA". http://www.isas.jaxa.jp/en/missions/spacecraft/past/hayabusa.html.

9 NASA. February 18, 2011. "Tempel 1 Impact Site": https://www.nasa.gov/mission_pages/stardust/multimedia/Schultz4.html; Space.com. September 30, 2016. "Goodbye, Rosetta! Spacecraft Crash-Lands on Comet in Epic Mission Finale": https://www.space.com/34254-rosetta-crash-lands-on-comet-mission-ends.html.

10 NASA Jet Propulsion Laboratory, California Institute of Technology. "Voyager: The Golden Record": https://voyager.jpl.nasa.gov/golden-record/.

Figure 1: *Alice Gorman with model of Sputnik-1*

prospect; I was immediately intrigued by the practical aspects of space heritage management, particularly problem-solving in such a unique environment where the surface gravity of Earth and the protection of the atmosphere are absent. A big appeal was definitely returning to the kind of science I loved: orbital dynamics, topology and planetary environments.

My initial focus was orbital debris. Among the millions of bits of space junk in Earth orbit are some whole satellites with very high cultural significance—but every piece has a story to tell.

IJSRA *What, in your view, are some of the threats facing space heritage, and how can these be overcome?*

AG As on Earth, you could divide the threats into natural and cultural. The space environment in Earth orbit is pretty savage, with temperature extremes, corrosive atomic elements, electromagnetic storms and much more. Spacecraft are designed to withstand these conditions, but we don't know how long it takes for their materials to break down. We do know that some satellites which have been in orbit for decades have developed rough surfaces, so they are slowly bleeding molecules into the vacuum. The science of space taphonomy is barely developed; in general, mission engineers have not attempted to model how the materials will fare over the long term, in hundreds or thousands of years. This is changing, though, as people are realizing that we won't be able to adequately manage the problem of space junk without more data.

At present, I'm not so concerned about losing historic spacecraft to natural environmental factors such as corrosion, collision and atmospheric drag. Perhaps in fifty years we might assess the natural risks to culturally significant spacecraft and have the technology to curate or conserve them some way. The greater risk at this point in time is a cultural threat—orbital debris clean-up.

This has to happen, of course, but we still don't have any effective technology to achieve it. This is why I'm working towards having a robust environmental impact system, including heritage, now. My argument is a very simple one. If a culturally significant spacecraft does not provide a high collision risk for functioning spacecraft, then we should apply the *Burra Charter* principle to do "as much as necessary but as little as possible". We can leave it *in situ*. Any technology aimed at removing orbital debris has to be capable of discriminating between functioning and non-functioning satellites anyway—so this shouldn't be difficult.

The Moon is another problem again. There are four sources of threat: private missions like the *Google Lunar X Prize*, in which teams were competing to land an uncrewed craft on the moon and photograph a heritage site; state-sponsored scientific missions; space tourism; and industrial activity such as lunar mining. A challenge is getting the space and aerospace engineering community to recognize that heritage is a discipline which already exists and they don't have to re-invent the wheel. Archaeologists like Beth Laura O'Leary have been working on this for years (see her recently released book *The Final Mission: Preserving NASA's Apollo Sites* with Lisa Westwood and Milford Wayne Donaldson).

People sometimes assume that I want to stop all space activities in order to preserve the heritage. In fact some of the problem is around the idea that heritage is only about 'preservation'. I'm more concerned with management, which is about a dynamic past in engagement with the present. Managing heritage values in the context of development, whether that's mining on Earth or on the Moon, or using space junk as rocket fuel for on-orbit manufacturing industries, is about balancing competing needs so that everyone gets a satisfactory outcome. Of

course that is not always possible and sometimes you have to make a stand. In general, though, there's no need to preserve everything. You just need a good evidence-based process to follow.

I think it's inevitable that space industries will develop in Earth orbit and on other planets in the next few decades. I'm excited about the possibilities, but I also think that people need to take a more active role in shaping the future of space. A common way archaeology is justified when people question why we even need it, is to say that we can only imagine different futures when we understand how different the past was. The present as we experience it now is not the inevitable outcome of a certain past. This holds for space too—so it's important to highlight the diversity of early space age cultures so that we don't get trapped in a single vision of space.

IJSRA *Please tell us more about your work.*

AG My first interest was orbital debris, and I've tried to do a few things with that. One is the practical part of heritage assessment. The other is theorizing space junk as part of a new kind of environment.

My first question, when I started this research, was whether terrestrial heritage principles would apply in orbit, where nothing is still, and you can't even say that 'places' exist in the same way as on Earth. I started by testing the principles of the *Burra Charter*, Australia's guidelines for cultural heritage places. And the basic answer is yes, it's the same. You can do significance assessments of spacecraft. You can work out mitigation strategies. The radically different environment doesn't change that. The legal situation is very different, however. National heritage legislation cannot be applied in space as it contravenes the *Outer Space Treaty*. The *World Heritage Convention* is theoretically adaptable to space sites but there are a number of issues, such as the definitions of movable heritage and the embedding of 'world' heritage in nation-states.

On the more theoretical side, I've been working to move beyond individual pieces of space junk towards understanding what the entire assemblage means as a single entity. One way to do this is to characterize the orbital environment as a cultural landscape. This is a useful heuristic on Earth, but in space I realized that concepts of environment are not sufficiently developed to accommodate this easily. So, my innovation here is to consider (1) the relationships between pieces of space junk from a cultural perspective and (2) the contribution of human-made space materials and operations to the chemical and electromagnetic environment of near Earth, leading to (3) defining the Anthropocene in space and (4) conceiving of space as a (mostly) non-biological ecology.

IJSRA *What role(s) do you think archaeologists may play in the distant future, in the sea of space and perhaps on other planets?*

AG As more and more countries enter space—for example, Ghana has recently orbited their first satellite—I anticipate that nations will start to develop a greater interest in their space heritage. Heritage, of course, is inherently political; and

so is access to space. Just as we've seen heritage mobilized on Earth to support nationalist and other agendas, heritage may play a role in justifying who has access to space if the existing treaties break down in the future. It may be important for new spacefaring nations to point to the material record as evidence of their right to use particular parts of space.

I think, as space industries develop off-earth, increased regulation will mean that environmental impact processes incorporating heritage will be introduced for space. This is a bit counter-intuitive to space people, as the space environment is usually considered to be hostile to human activities and without intrinsic values because of the lack of life. We'll have to change some attitudes around that first. Ideally, there'll be a role for space archaeologists in heritage management.

Perhaps eventually we'll have planetary archaeologists, who specialize in the heritage of a particular planet within its unique environmental setting. I fancy being the planetary archaeologist for Venus myself.

IJSRA *You were involved in organizing the International Astronautical Congress in 2017, and you are a member of the Space Industry Association of Australia (SIAA). Could you explain a little about the space community, and whether there is a need for more investment in research and education?*

AG I love being part of the Australian and international space community. I think everyone shares a common vision: a thirst to know more about the universe—and a secret desire to be an astronaut. Well, maybe not so secret. Having said that, it's a distinctive community. It's dominated by aerospace engineers and is very male. Being a female social scientist can be slightly awkward. Sometimes I have to actively demonstrate that I know the science in order to be taken seriously, and I hate having to always be the one who brings up diversity and inclusion issues. It has to be done, but you get pigeonholed and people forget that you can do other things. On the whole, though, I find that my colleagues appreciate being exposed to different perspectives.

As a result of the International Astronautical Congress being held in Adelaide, hosted by the SIAA, the Australian Government formed our first Space Agency this year. I've been part of that process and I hope to contribute to the direction Australia takes in space.

So I would say that one priority for research and education is moving from STEM (Science, Technology, Engineering and Maths) to STEAM (where A stands for Arts, i.e., humanities disciplines). Jan Wörner, Director General of the European Space Agency, is championing the idea of Space 4.0 where space enterprise moves beyond aerospace engineers to include people of all backgrounds and experiences – to see what they can bring to the table. This appeals to me very much.

IJSRA *Do you have any other stories to share about your experience as a space archaeologist?*

AG One of the nice aspects of working in this 'space' is that I've had the opportunity to collaborate with artists—something that never used to happen when I was a regular archaeologist! A couple of years ago I was invited to contribute to an exhibition called *Menus for Mars*, by Heidi Neilson and Douglas Paulson, in New York. I created a space cocktail for them called the Spider from Mars (in Australia, ice-cream soda drinks are called spiders). Here's the recipe:

In a cocktail glass, pour a little of a red liqueur of your choice—Crème de Cassis works well. Add a few crumbled chunks of freeze-dried astronaut ice-cream, available from your local science museum. Top with an Australian dry white sparkling wine (we're not allowed to call it champagne anymore) and add a green jelly baby to represent the red planet's supposed denizens.

(This cocktail, and a few more spacey drinks, will be in my forthcoming book, as yet untitled).

Another satisfying project is called the Cosmic Welcome Mat. This was a collaboration with the US conceptual philosopher Jonathon Keats. We created an actual physical welcome mat, designed for use by all living beings whether from Earth or elsewhere. The reasoning was that projects like SETI have been trying to make contact with aliens for decades, but drawn a big fat zero. We reasoned that this may be because no-one ever tried to make aliens feel welcome, so we made an artefact to convey this message. While tongue-in-cheek, the mat was also an exercise in thinking through some of the issues of how materials and symbols structure communication. We deployed four mats around the Flinders University campus and graduate archaeology students collected samples of the dust which accumulated on the mats each day. The next stage is to analyse the dust to work how much of it is interstellar in origin. It's likely to be some, as cosmic dust falls to Earth every day.

Space archaeology can be considered part of the archaeology of the contemporary past, which often uses non-traditional methods to try and convey the sense of a modern (or post-modern) place. Playing with ideas in the creative space opened by these two projects has allowed me to think about materiality in new ways. There's no point being a space archaeologist if it doesn't expand the mind, I reckon!

IJSRA *Are there are resources you would recommend to those who would like to get involved in the field?*

AG A great resource is the *Handbook of Space Engineering, Archaeology and Heritage*, edited by Ann Garrison Darrin and Beth Laura O'Leary. This gives a comprehensive overview of the field. I could also suggest my blog, Space Age Archaeology, which includes a bibliography of space archaeology.

* * *

Figure 2: *Cameron M. Smith in self-made pressure suit*

Cameron M. Smith, PhD

Dr. Cameron M. Smith is an adjunct assistant professor at Portland State University, USA. He is cofounder of Pacific Spaceflight, a team that is developing technology for space exploration, with one of their current projects focused on making "lighter, cheaper, and simpler space suits and lowering the cost of space access".[11] He has presented on this work at TEDxPortland and TEDxBrussels, and has been interviewed by WIRED magazine, among other publications. He has published several books, many technical reports and journal articles, and popular science pieces. Much of his work can be found at http://cameronmsmith.com or his academic profiles: https://works.bepress.com/cameron-smith/ and http://pdx.academia.edu/CameronMSmith. Cameron tweets @Pacific_Space.

IJSRA (International Journal of Student Research in Archaeology) *How did you get drawn to space sciences?*

Cameron M. Smith (CMS) I was a child of the Apollo generation, when people first walked on the Moon. Living in Texas, my Dad took me to the Houston Space

11 pacificspaceflight.com/about-us/.

Center. This was pre-terrorism and Dad was wearing a suit and looked like an engineer and we just walked the site freely, away from the tour. We met engineers in their offices. I was hooked when one showed me some of his math on a chalkboard. When we got home, Dad would check NASA films out via his university (he was a professor) and bring them home. He'd set up a projector in my room and I'd watch them over and over, 8mm film of the moon landings. Completely absorbing and engaging, I wanted to be there, to explore a whole world. From 10 - 14 years of age, then, I wrote to all NASA astronauts and some cosmonauts, and most replied, telling me how to get to space; stay in school; learn to fly; study hard. But by my mid-teens my eyes were losing perfect vision and I needed glasses; that nixed high-performance aviation, and subsequently I went into the human past, via archaeology, rather than the human future. That is, until the last decade, where a lot of renewed activity in space exploration has made room for me again, this time applying what we know of human evolution in the past to what will occur in the future as we begin to settle space, environments beyond Earth.

IJSRA *What, in your view, are some of the great challenges to future human space settlement, and how might these be overcome?*

CMS This is exactly the sort of question I'm tackling in my forthcoming book, "Principles of Space Anthropology: Establishing a Science of Human Space Settlement" (Springer 2018).[12] I am looking at human genetic and cultural adaptation, evaluating how ready we are, with these various adaptive tools, to take on space settlement. As a preview, you can see the précis of a paper I delivered at the Tennessee Valley Interstellar Workshop.[13]

IJSRA *Please tell us more about your work.*

CMS The essential issue is, how can we use what we have learned about human adaptation in the past to make more likely a success of the project of human space settlement. I think this project is of great significance in the history of Earth life; being able to live beyond Earth would constitute an important evolutionary transition and might well ensure that our species does not in the shorter term become extinct, a common fate in the history of species and of course the history of civilizations. These are the reasons that I think of space settlement not in terms of rockets and robots and gee-whiz technology, but a very human thing and even more importantly an extension of Earth life beyond the single planet. I have explored these issues in a semi-technical book, "Emigrating Beyond Earth" (Springer 2012); the preface is available online.[14]

IJSRA *How might humanity evolve as a space-faring species?*

12 https://www.academia.edu/16883002/Principles_of_Space_Anthropology_Biological_and_Cultural_Evolution_Beyond_Earth.

13 https://www.academia.edu/33557172/The_Door_Stands_Open_Human_Biocultural_Adaptive_Strategies_are_Sufficient_for_Permanent_Human_Space_Settlement_and_Interstellar_Voyaging.

14 https://www.academia.edu/2081591/Emigrating_Beyond_Earth_Human_Adaptation_and_Space_Colonization.

CMS That is what I am investigating now. But generally it will be adaptation, both cultural and biological. We have a lot of experience with this in the history of our genus and species. The point is to build a science of human adaptation for space settlement. I am attempting to lay in this foundation.

Humanity is right now exploring the idea of space settlement. This was the original goal of space pioneers such as Tsiolkovski—by the way, he drew pictures of families and communities in space long before space access became a supreme concern of federal governments and militaries. In the last two decades, though, private approaches to space access have rekindled the original concepts. Nothing we create begins without thought, so I am only being a little hyperbolic, I think, when I say that space settlement is beginning now. The question is, will this succeed? Because I think it is important—not just for humanity or civilization, but for the larger phenomenon of the evolution of Earth life—I am contributing what I can to make it more likely to succeed. Here's a bit of the preface to my forthcoming book 'Principles of Space Anthropology' (Springer 2018 or 2019) to explain exactly how:

"In 1963, Siegfried J. Gerathewohl, NASA's biotechnology chief, wrote… *Principles of Bioastronautics*, outlining the need for this new field of study… At [that time] bioastronautics was established as a field with tight focus on individual human explorers, which was appropriate for its time. But today, plans include space settlement by populations, which raises many new issues; individual physiology is of course a different phenomenon than, say, population genetics, and individual psychology as short-term adaptation is different from cultural adaptation by reshaping behavioral norms in accordance with new circumstances. For these reasons, a new field of study—to advance and make more likely the success of human space settlement—is required. In this book I propose, describe, and outline the fields of space anthropology or exoanthropology… below I formally outline the need for space anthropology:

Human space settlement will require novel biological and cultural arrangements unknown to current space exploration. These arrangements, guided as adaptations, will sustain human populations in environments—gravitational, radiation and chemical, for example—unfamiliar to the human adaptive suite after 100,000 years of modern human culture and biology on Earth. The new field of anthropology that studies such adaptive efforts is space anthropology or *exo-anthropology*, exo- referring to beyond Earth, in the same way it is used in the term *exobiology*.

Specifically, I propose space anthropology to have three main functions:

1. To help specify the engineering problems to be faced by space planners concerned with space settlement by populations of humans and their domesticates, rather than space exploration by small crews and individuals.
2. To evaluate the capacities of humanity's various adaptive tools—cultural, biological and technological—to adapt to reasonably foreseeable space settlement plans, for example in Earth-orbital or Mars communities.

3. To make recommendations that would assist in human adaptation to environments beyond Earth, particularly based on evaluations of human adaptive capacities identified in function 2.

Space anthropology may be considered an anthropology applied to the specific goal of assisting in safeguarding the human hologenome, some of humanity's most important domesticates and symbionts, and the totality of human knowledge, by the permanent settlement of human populations biologically and culturally independent of Earth."

IJSRA *You're involved in developing better space suits. Can you tell us a little about what drives this innovation?*

CMS Regarding the space suits, it is a way for me to materially participate in the human adaptation to space. The exploration and settlement of the Pacific by Lapita peoples three millennia ago was not done by sitting around and thinking about it, it was done by building and trying out physical objects, including sailing craft. I wanted that same material engagement. It's hard for me to describe my visceral frustration with the fact that just some tens of miles above our heads the atmosphere thins out and you have—the expanse of the universe to explore. I can't get there with my technology, and rockets remain too expensive, but with a high-altitude balloon and my suits I can get close, I can get a glimpse. And building the suits by hand is a fantastically rewarding challenge. There is a lot of frustration and a few very delicious and thrilling successes. Finally, the suit project has attracted interesting people who have become my friends. They have come to me asking about it, and then joined our effort. A lot of the work used to be solitary, but now I have friends who can help me with this dream, and I'm thankful for that. I've written about 10 books and that is a solitary profession in my experience, but also rewarding. So, having friends who share my dreams has been a very personal reason for the project as well.

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Figure 3: *Jim Pass at the Mars Society 20th Annual Convention, cropped from original at https://www.flickr.com/photos/mdrsphotos/37063952416/in/album-72157686333643733/*

Jim Pass, PhD

Dr. Jim Pass is founder, CEO, and board member of the non-profit Astrosociology Research Institute (ARI), which finds its homepage at www.astrosociology.org. He is Executive Editor of ARI's *Journal of Astrosociology*, and Associate Editor of the *Astrosociological Insights* newsletter. Jim tweets at @astrosociology.

IJSRA (International Journal of Student Research in Archaeology) *First of all, what is* astrosociology*?*

Jim Pass (JP) Simply put, the study of *astrosocial phenomena* (i.e., the social, cultural, and behavioral patterns related to outer space). As I will explain, I did not coin this term, but I had to put a definition to it. This proved to be a more difficult task than I first anticipated. In the course of a few months, this definition evolved into what I just stated. The difficulty of developing the actual definition of astrosocial phenomena was not the big problem. Rather, it was coming up with the concept of astrosocial phenomena itself, which was a strange process to me. This term is important because it is shorthand for the longer definition. It also serves to narrow the focus from all other social, cultural, and behavioral patterns that are not related to space, which also allows for contrasts and interactions between

astrosocial and non-astrosocial sectors in society as well as between phenomena, forces, and so forth.

IJSRA *How did you get drawn to space scholarship?*

JP Space has always interested me since I was younger than ten years old. I had a book on the solar system that my parents gave me, which by the way, certainly contained a great many inaccuracies—but it fascinated me. I kept abreast of the Mercury, Gemini, and Apollo programs through the news, books, newspapers, and periodicals the best I could. I was 13 years old in 1969 when Neil Armstrong first set foot on the Moon and I watched it on TV with fascination like almost everyone else around the world. Science fiction always played a large role, especially the various incarnations of Star Trek. All of these early influences placed a love for outer space in the back of my mind. I moved on to other things, but I ultimately came back to it with the founding of astrosociology as the final area of my career. I majored in criminal justice and sociology as an undergraduate. I went on to earn my Ph.D. in sociology at the University of Southern California with concentrations in criminology and political economy. When I graduated from USC in 1991, I had no idea that this return to outer space issues would occur even though apparently it had been incubating for decades. Over time, then, the space bug started to come to the surface, though the fact that I wanted to apply my sociology education to the study of space issues was a gradual realization that smacked me over the head one fateful day, which is described below. Prior to that momentous occasion, part of it was the fact that so many others were pursuing sociology subfields such as criminology, social inequality, family, and political economy—though these and all other important social-scientific topics relate to astrosocial phenomena. I guess I wanted to pursue something different, and hardly anyone was focusing on outer space within the sociology discipline. By the way, although astrosociology started out as what I thought of as a sociological subfield, it rather quickly became a multidisciplinary field based on inquiries from individuals in a number of different social and behavioral sciences, humanities, and even the arts. Therefore, the field expanded to include all three components of what I call the "other" branch of science, which exists in contrast to the natural and physical sciences including the STEM disciplines.

IJSRA *What does the Astrosociology Research Institute (ARI) do, and what prompted you to found the ARI?*

JP Please allow me to answer the two parts of this question in reverse order. The fateful day occurred in late December of 2003: I came across an article on the Internet by Allen Tough who was also frustrated by the low number of social scientists focusing on outer space generally, and SETI (the Search for Extraterrestrial Intelligence) specifically. He suggested founding a new field and recommended "socio-astronomy" or "astrosociology." When I read the latter term, it was like I was hit by lightning! The first thing I did was purchase the Astrosociology.com, Astrosociology.net, and Astrosociology.org domain names.

From 2004-April 2008, I ran a small proprietorship called "Astrosociology.com" that introduced the proposed field of astrosociology to the world. In May 2008, once enough supporters of the field of astrosociology existed, I founded the non-profit organization ARI in conjunction with actually working on the Astrosociology.org website that I programmed myself without any training, which I admit is pretty evident. Thankfully, our website is finally in the midst of a professional upgrade. Thus, the founding of the ARI was actually just a continuation of the development of the field that expanded from me taking the lead to a non-profit organization with officers, board members, and advisors. I knew that we had to formalize the movement for it to gain additional legitimacy. A single-person front for a movement that I hoped would advance was not the best vehicle for development of a new academic field that I knew would face challenges. The establishment of ARI was a crucial step in astrosociology's development. ARI's existence is a testament to the fact that astrosociology is developing; that this field is moving in the right direction.

ARI exists to facilitate the development of astrosociology as an academic field, which, again, is the study of *astrosocial phenomena.* It is a non-profit organization that promotes and engages in astrosociological education and research. One of our major programs is called "Astrosociology in the Classroom," which exists to place astrosociological content into schools, colleges, and universities. Although this has proven to be a bit difficult, recent progress in the form of greater recognition is quite frankly encouraging.

ARI also puts out two major products that provide avenues for promoting astrosociological education and research, which is helpful to any academic field. The first is our newsletter *Astrosociological Insights* which is an unrefereed publication (currently online-only). Articles are accepted or rejected, and edited, by our newsletter editors directly. It provides more of an informal place for individuals to report their work and ideas about astrosociological topics. Secondly, *Journal of Astrosociology* (JOA) is a blind refereed online publication that involves higher standards of acceptance and content. We have a quite prestigious group of editors on our panel, which is quite satisfying. Both publications have resulted in a new period of growth and recognition while providing a way to increase membership in the community. All issues/volumes of each publication are available at this time at no charge at the astrosociology.org website.

By the way, 2018 marks the tenth anniversary of ARI and we are planning events to coincide with this momentous occasion.

IJSRA *Please tell us more about your work.*

JP Because ARI's central mission is to develop astrosociology as an academic field, the focus on education and research describes my work in a general sense. My work basically consists of trying to find new ways to promote the development of astrosociology as a multidisciplinary academic field and getting new people involved. I write about different astrosociological issues in order to demonstrate the diversity of topics involved with the various astrosociological subfields.

Examples include medical astrosociology, planetary defense, SETI, astrobiology, space law, space policy, science fiction, space art, and astrosociology research and education. A main message that I provide to people is that you do not need to be a rocket scientist to study space issues. The human dimension is just as important as the STEM-based issues and, in fact, they are two sides of the same coin characterized as space exploration and settlement. The increasing influences of astrosocial phenomena occur most obviously in space, of course, but also in terrestrial societies. Thus, they affect the daily social lives of Earthlings, which provides adequate reason in my mind to accelerate the inclusion of more social scientists, humanists, and artists in the study of space issues. Much greater collaboration is needed within each branch of science and between the two branches. I push for the convergence of the social sciences, humanities, and arts among those interested in space issues so that we can build the astrosociology community and an organized literature, and get astrosociology into the classroom (the latter of which is one of our flagship programs). Recruitment of new supporters and astrosociologists is also a key part of my work.

I try to publish as much as I can and attend conferences. The Mars Society Convention is one example. Our Virtual Library page at *Astrosociology.org* hosts a number of papers on various subfields to illustrate what astrosociology covers and why it is important. Most of the resources are available for free while some are publications in the form of chapters in books. Some of these I have written. On Twitter and Facebook and sometimes other social media, I write about astrosociological topics daily. I finally just surpassed 2,000 followers on Twitter, so there seems to be a general increase in the level of support for astrosociology. My followers are from diverse backgrounds, which I like because it reflects the field's multidisciplinary aspect.

As the CEO of ARI, I am constantly looking for collaborations with other individuals and entities that focus on space and see the value of the human dimension of space exploration and settlement. This is important for a couple of reasons that come to mind. First, many individuals conduct what one may term "astrosociological research" though they often do so in isolation or without a larger community in which to interact with others doing similar things. Secondly, organizations can work together pooling their resources and thus accomplish things that would be impossible on their own. The same is true of individuals who join the astrosociology community.

IJSRA *What, in your view, are some of the challenges currently facing astrosociology?*

JP Probably the main challenge comes from the social science and humanities disciplines and fields. It is impossible to develop astrosociology to its full potential when there are no courses or programs for students. Ironically, those in the space-related STEM disciplines and fields are generally more receptive to astrosociology and collaborating than social scientists and humanists. Mainstream social scientists and humanists have historically ignored outer space and, in my experience, viewed related topics as fringe science because they often

Figure 4: *Astrosociology Research Institute logo*

place astrosociological issues in the same camp as actual fringe sciences such as UFO abductions and astrology. Recruitment has become somewhat easier over the years, but the status quo still exists. In fact, I have received greater support overall from STEM disciplines than from social science and humanities disciplines. Luckily, social change is inevitable and so we are making strides in reaching out to the latter disciplines. I am convinced that students are our best hope.

Like with all non-profit organizations that exist, fund raising is a difficult proposition. Asking for money for causes such as fighting diseases, disaster relief, and calls for religious support, while not a simple process, are generally less difficult than trying to promote a developing new academic field. On top of that, which cannot be overstated or mentioned too often, astrosociology is developing in a climate in which social scientists and humanists have largely ignored space issues for the bulk of the traditional space age, although great headway has occurred since we established the ARI in 2008. Then in 2011, we put together a special issue in the journal *Astropolitics*. The result was increased recognition that astrosociology exists and more people expressed to us that such an academic field filled a void; that is, the human dimension of space exploration requires greater attention as the impact of astrosocial phenomena continues to increase. It was not like astrobiology's much more rapid growth as an academic field, though it still serves as an important model demonstrating how a multidisciplinary field can develop. Moreover, the two fields interrelate in a number of different ways. For example, finding life elsewhere in the Milky Way solar system or beyond will have profound social, cultural, and behavioral implications.

IJSRA *Do you have any other stories to share about your experience in the field of space science?*

JP In 2004, when I went to my first sociology conference to promote astrosociology, I was speaking with one of the organizers of the American Sociological Association (ASA) conference. When I mentioned astrosociology and its definition, her response was to roll her eyes and walk away. This reaction presented me with a personal version for some of the resistance I would soon encounter via email and on social media. The ASA has never accepted my proposals for an astrosociology session, though a couple of regional sociology associations in California did so early on. Interestingly, however, the ASA-SKAT (Science, Knowledge, and Technology) section published my submission entitled "Perspective: The Need and Relevance of Astrosociology as a Subdiscipline" in their newsletter. Additionally, Thomas Gangale and Marilyn Dudley-Flores supported me between 2004 and 2008, including writing conference papers about astrosociology. I met them at that ASA meeting in 2004 and they were the two other officers that signed on with me to create the ARI. They moved on soon after that, relinquishing their positions, but they were important contributors in the early days along with Dr. Albert A. Harrison. As mentioned, the space community has been more welcoming than the social science community, especially in the beginning. In particular, the American Institute of Aeronautics and Astronautics (AIAA) accommodated the idea of astrosociology since 2006 or so. In fact, most of my publications come from presentations at AIAA conferences. While this collaboration is vital, we at ARI are making concerted efforts to also collaborate more with the social sciences and humanities. There are many individuals and even some programs and departments dealing with astrosociological-like topics, but mainstream social scientists and humanists tend to view space as less than interesting or irrelevant to everyday social life. We need to change such attitudes, and we are trying.

In the early days of astrosociology's development, an extraordinary thing occurred along with the backing of Thomas Gangale and Marilyn Dudley-Flores amidst a somewhat troubling negative atmosphere. Dr. Albert A. Harrison came along and strongly supported me in my effort to develop astrosociology starting in 2005. He provided legitimacy to a nascent academic field that enjoyed very little support at the time. Of importance, Dr. Harrison was a social scientist who studied planetary defense, SETI and astrobiology, among other topics. ARI was not founded until 2008, so his support of the field was based mostly on my professional relationship with him. And, in fact, he was the first to join our Board of Advisors in 2008. Unfortunately, Dr. Harrison passed away much too soon in 2015. For anyone interested in astrosociology, his works are a fantastic wealth of information. I used to joke with him that he was doing astrosociology before I founded the field in 2004.[15]

I must also mention Christopher Hearsey, who initially served as an officer for ARI and later became Editor-in-Chief of the *Journal of Astrosociology*. He

15 A listing of his publications is available at www.astrosociology.org/AAH-InMemoriam.html, some of which are available at ARI's Virtual Library. One of the publications, by Dr. Pass is a tribute to Dr. Harrison: www.astrosociology.org/Library/PDF/Space2016-JPass-AlbertAHarrison.pdf.

also served as our Chairman of the Board. He resigned in December of 2017 to run for Congress. His work with ARI provided a stability and direction since 2009 or so that helped me in collaboration with him to move forward more forcefully in the development of astrosociology as an academic field. He served as the editor on the special issue of *Astropolitics* mentioned earlier that is dedicated to astrosociology. That gave ARI added recognition and legitimacy. His counsel and hard work has put our non-profit organization in a great position moving forward. Kathleen Toerpe, Renato Rivera Rusca, Simone Caroti, Geoffrey Notkin, and the members of our Advisory Board and editors of *The Journal of Astrosociology* all contribute to the ongoing development of astrosociology. Dr. Toerpe, the original editor, made our newsletter a great success. Finally, Dr. Michael Dodge, Assistant Professor and Director of Space Studies at the University of North Dakota, has taken over Christopher Hearsey's duties as Board Chairperson, ARI Officer, and editor of our newsletter and journal. He is doing a great job assuming such a heavy load.

Between 2009 and 2011, ARI hosted the Astrosociology Symposium, which was part of the larger Space Propulsion and Energy Sciences International Forum (SPESIF). Each of the three symposiums focused on astrosociological issues and some of the papers presented were published. While the SPESIF conference folded after 2011, it provided ARI with an additional opportunity to get more people involved and grow the community. It also provided greater publicity for the very existence of astrosociology and the developmental work ARI was conducting. This provided additional legitimacy to the both our organization and the academic field.

Additionally, and quite relevant to this interview, Alice Gorman, "Dr. Space Junk," recently joined ARI's Board of Advisors. She is leading the way in the field of space archaeology! As a multidisciplinary endeavour, ARI continues to welcome diverse individuals to contribute to the development of astrosociology.

Volume two of the *Journal of Astrosociology* was published in 2017, which brings social-scientific analysis to space topics traditionally covered by physical and natural scientists and STEM individuals, and the Call for Articles for volume three is currently available on our Journal page at *Astrosociology.org*. Additionally, the latest issue of our newsletter that focuses on space law and policy is now available at our website.[16] The next issue's Call for Articles is also available. The topic is "the impact of the space arts on societies."

We are working daily to advance the development of astrosociology.

* * *

Keirsten Snover, MA

Keirsten Snover is the founder of Space Anthropology Services, with its homepage at www.spaceanthropologyservices.org. *Please note: As of March 2018, Keirsten Snover is*

16 http://astrosociology.org/Library/PDF/Newsletters/ARI-Newsletter_Vol-6_Iss-1-2017.pdf

Figure 5: *Keirsten Snover*

no longer active as an anthropologist due to the progression of a neuromuscular disease to advanced stages. The Space Anthropology Services website, blog, and all associated social media accounts are no longer active.

IJSRA (International Journal of Student Research in Archaeology) *How did you get drawn to space scholarship and education?*

Keirsten Snover (KS) The study of space is a fairly recent endeavor for me. I started studying anthropology, mainly medical anthropology, focusing on how people in different cultures respond to different diseases and their related health knowledge, attitudes, and practices. I was very interested in how people perceive disease, and how that perception then affects health-seeking behaviors. This focus eventually led to a research position at the Cleveland Clinic in Cleveland, Ohio, where I was involved with a project looking at perceptions relating to

genetic diseases. My change to space scholarship started when I discovered (while doing medical research in the hospital's library) that the Cleveland Clinic had a Center for Space Medicine. I had never heard of the field of space medicine, but as a medical anthropologist I was intrigued! As I investigated further, I found that the Cleveland Clinic Center for Space Medicine had been created to work with the nearby NASA Glenn Research Center on research related to health problems encountered in space. It didn't take too much additional research before I realized that space medicine was a potential field for a medical anthropologist like me to pursue, and so after my position at the Cleveland Clinic was over, I signed up for graduate-level coursework in space science. It was during this coursework that I realized there was more connecting space and anthropology than just the area of space medicine. The more areas of space science I learned about, the more ways I saw that anthropology could contribute. I brought up this topic with several space scientists at a NASA conference that I attended, and the scientists agreed, and so my decision to study space was solidified.

Growing up, I was one of those kids who made spaceships out of empty boxes, wondered about life on other planets as I looked at the stars at night, and obsessively watched Star Trek. But I never really saw space as a field to study. When I was considering college majors in high school, I knew I had a long-standing interest in all sciences, but I had no idea that you could study topics related to space beyond the field of astronomy. I wasn't really interested in making a career out of using telescopes, or studying the rings of Saturn. I was more interested in human space exploration, and if we would ever visit or live on other planets, but this was only science fiction back then. Unfortunately, when I was growing up I wasn't really exposed to female role models in science, let alone in the space sciences. Even though I was in elementary school when Sally Ride was flying to space with NASA, I didn't view involvement in space as something that women did, or that I could do someday myself. For years, I faced a lot of pressure when I told people that I wanted to be a research scientist—I was constantly encouraged to become a school teacher or nurse instead, and to follow a more traditional female career path. For kids growing up today, things are very different. There is much more exposure to female role models in the different disciplines of science, and girls are actively encouraged to pursue STEM fields. This movement is something I strongly support, and my childhood experiences have significantly influenced my desire to be involved in STEM education. In addition, my childhood dream of becoming a research scientist was initially nurtured by a middle school science teacher who helped me design research projects and compete in local science fairs. I hope that by becoming involved in educational outreach, I can "pay it forward," and encourage other young students interested in science to pursue their dreams, too.

IJSRA *What can anthropologists uniquely contribute to space ventures?*

KS It seems every time I tell people that I am an anthropologist who studies space, people become rather confused (even other anthropologists). When I then

provide a short example or two about how anthropology can contribute to the study of space, I tend to get the same reaction over and over, "Ohhhh. I guess all you need now is a space program!" There are two important things to take away from this type of response. First, that it may not be obvious, even to other anthropologists, what our discipline can contribute to the space sciences. Second, not everyone is aware there is a current space program, or that numerous countries around the globe have their own space programs. More awareness is needed, for anthropologists and the public, regarding space in general and the role all social scientists can have in the space sphere. In addition, more awareness is needed among members of the "hard science" space community that collaboration with social scientists can be beneficial.

So, what can an anthropologist contribute? For me, asking for a list of ways that anthropology can contribute to space is similar to asking what you can do with a degree in anthropology. What can't you do with a degree in anthropology? There are numerous topics in the space realm that an anthropologist can study. It seems the more one becomes immersed in the study of space, the more potential research areas become evident. So, I feel a better question is, "What topics in space science can't anthropology contribute to?" Space topics of potential interest to anthropologists include everything from how the human body reacts in low gravity conditions, to the practice of flying artifacts (like a Clovis point) into space, to the controversial building of huge telescopes on land sacred to Native populations. I highly recommend reading the ARI's "List of Suggested Topics" for their journal.

There are many research ideas anthropologists could examine within the topic of space settlements. Currently, multiple space companies in various countries are planning lunar bases and/or settlements on Mars. This process involves the creation of small societies, often comprised of culturally diverse international teams. Anthropologists are experts in small societies as well as cultural diversity, so this is an important research area. All the aspects of Earth-based societies that anthropologists have historically studied will likely surface in space societies—for example, issues of language, food, culture, division of labor, politics, death, social constructions of law, health and illness, and cross-cultural communication. Anthropologists could consider whether the significant anthropological literature on these topics can be useful in the creation and maintenance of small societies in space.

Besides the basic operations of space societies, there are potential research questions relating to the effects of living in a space settlement. For example, how will people adapt culturally and physically to living in a space habitat? Can we learn anything from anthropological literature regarding humans living in extreme environments here on Earth? Studying the life of astronauts aboard the International Space Station and in terrestrial analogue communities (simulated space settlements in isolated places on Earth) may also be helpful (and also are interesting topics of study themselves as they, too, are small societies). In addition, there are questions at the intersection of human identity and living in

space, involving symbolism, meaning, cognitive maps, and more. For example, what does it mean to be a human who does not live on our planet? What will Earth mean to humans born on the Moon, Mars, or elsewhere? The rise of the "Mars Generation,"—young people around the world publicly dedicating their lives to pursing their future on another planet—is also a fascinating phenomenon relating to human identity and space worthy of anthropological study.

Another area of research potential surrounds who can travel to space, whether as a space tourist or new member of a space community. Astronaut selection has been critiqued in the past for its lack of gender and cultural diversity. Will future members of space societies reflect the diversity of humans on our home planet? Concerns also exist about the relationship between economics and access to space. Will most space tourists only be composed of wealthy individuals who can afford to pay for a ticket to the Moon or Mars? Will attainment of a certain educational level be a prerequisite to acceptance as a member of a new space society? What implications will result from restrictions on who can go to space or live in space? These specific questions of human access to living in and visiting outer space may be relatively new, but the basic underpinnings are similar to research questions anthropologists have asked on Earth many times before in other situations.

IJSRA *Why is education about space important, and what are some ways you have engaged in science communication?*

KS A couple of years ago, I was attending a special event sponsored by the NASA Glenn Research Center for the 25th Anniversary of the Hubble Space Telescope in Cleveland, Ohio. During one portion of the event, an auditorium was filled with members of the local public and school children from multiple schools. After an inspiring presentation about the Hubble Space Telescope, a question and answer session was offered. While I did not formally record and analyze the questions, it seemed the biggest question on many attendees' minds consisted of different variations of "When is NASA starting up a space program again?" The NASA representatives seemed a little surprised by these questions, and in turn many members of the audience seemed surprised to hear that NASA had a current operating space program and always had one. What I found most interesting was that this was happening in a city with a NASA research center that frequently engages in community outreach. This made me wonder what the level of space science-related knowledge was in cities that did not have the benefit of a NASA center or other major space-related resource nearby.

Over the past few years, I have consistently encountered people from all walks of life who are not aware of the tremendous developments occurring in the space sciences. There also seems to be little awareness among the people I spoke with about significant human achievements relating to space, such as landing on a comet, the mission in progress to land on an asteroid, finding liquid water on Mars, and new images of Pluto. As an anthropologist, I realize this is likely the result of the interaction of multiple complex social, cultural, educational,

economic, and political factors. However, this experience (and other similar experiences) prompted me to consider the larger question of the general public's access to resources, specifically information about space and space exploration. It was then that I realized that perhaps I should be involved in educational programs about space. I think that education about space is important because being involved in outer space provides access to resources, like technology spin-offs, economic development, scientific advancement, international cooperation, and more. Currently, this access is not distributed equally throughout our world—developing nations do not have the same amount of access to space as developed nations, and even within developed nations access to space is uneven among citizens. Many space-related organizations have stated that outer space is for everyone, and I strongly support this view. For me, the most important reason for space education is not necessarily the specific space-related knowledge imparted, but helping provide more equal access to that knowledge, which can then help provide more equal access to the resources of space.

As part of this, I have been engaging in science communication efforts, mainly through online interaction. A few years ago, as a part-time project I started an organization called *Space Anthropology Services*. While my original vision was much broader, right now it is focused on promoting the intersection of space and anthropology through a website, blog, Facebook page, and Twitter. Besides providing related content, I also interact one-on-one with people from around the world, and answer various questions about space and anthropology that are sent to me through these online channels. In addition, I have created educational infographic posters for past World Anthropology Days, which help illustrate some of the ways that anthropology can contribute to the space sciences. I have also recently started engaging in more face-to-face science communication as well, through space-related presentations and workshops. In the past, I have provided several different anthropology workshops, including simulated archaeology dig workshops and forensic anthropology workshops. I found these to be very rewarding and well-received by attendees, and so I want to do something similar by providing workshops in the area of anthropology and space. As one example, I gave educational workshops about the recent solar eclipse, and passed out solar eclipse glasses provided by The Planetary Society. Some science communication projects currently in progress include the creation of online courses and involvement with other outreach organizations (such as NASA's various Ambassador programs).

IJSRA *Please tell us more about your work.*

KS My work in the field of space and anthropology is comprised of three major parts: research in the field of space anthropology, collaborative work with other scientists and organizations, and science communication. Previously, my research was focused mainly on anthropological contributions to space settlements. While this topic is still of great interest to me, I have decided to start focusing on the phenomenon of private citizens working on going to space with the hopes of living somewhere besides planet Earth. A few examples of

this phenomenon can be seen with the space nation of Asgardia, Space Citizens, Space Nation, and The Mars Generation.

Asgardia is an international project with the goal of creating a new nation in space. Hundreds of thousands of people across the world have submitted applications for citizenship, and are now working together to figure out the details of their new society, including everything from drafting a constitution to deciding on national holidays. Space Citizens is open to international membership, and the plans include building habitats in space and mining space resources. This project emphasizes that everyone in the world should have the chance to help create space settlements, regardless of income, religion, or disabilities. Space Citizens encourages the participation of those who don't have formal training or degrees in the space sciences, and recognizes that everyone has a part to play. Space Nation has developed an Astronaut Experience Program and will soon be launching the first free global astronaut training program via a smartphone app. Each year, some of those who participate in the app-based training program will be selected to attend a filmed bootcamp, and the winner will be sent to space. Space Nation aims to bring space into our everyday lives, while promoting space education and wellness. The Mars Generation is both an organization founded by a young aspiring astronaut, and an identity used by young people who want to go to space (even if they are not formally affiliated with the organization). It is the children of today who will likely become the ones able to live on Mars, hence the name "The Mars Generation." The children and teens who identify with this are actively preparing themselves to be the best candidates to travel to Mars, through various activities such as earning SCUBA and pilot license certification, attending space camps and other training programs, and learning other languages. In addition to the four described, there are other citizen-based space endeavors, and I look forward to further research on this topic, including participant observation with some of these programs.

In addition to research, I am collaborating with other scientists and organizations. For example, I am working with NanoApps Medical, Inc., on projects involving nanotechnology. This company is working on developing terrestrial nanomedicine to the point where a Global Health Care Equivalency is reached, meaning that every person around the world has access to the same nanomedical diagnostic and therapeutic technologies. In addition, NanoApps Medical is working on the applications of nanotechnology to space, especially in the field of nanomedicine. As a medical anthropologist who is also interested in space, these topics of nanomedicine, access to healthcare around the world, and applications of nanotechnology to space are of great interest.

As previously mentioned, I am involved in science communication, and I'm currently working on several projects in this area. I am continuing to create space-related workshops for the general public, as well as online courses in the area of space anthropology. My biggest science communication project, still in the initial planning stages, is an educational space-themed event designed for people with disabilities. Sometimes people with disabilities can feel left

out because they are unable to participate fully in some public events, so this event will have activities adapted for different kinds of disabilities. Also, many companies are finally realizing that hiring employees with disabilities is a good strategy for their business, and this includes companies in the space sector. At this event, I am envisioning a huge room like a gymnasium or conference center filled with different interactive activity stations. Each station will have a space-themed activity that can accommodate different disabilities. I'm thinking things like 3D-printed Moons so that attendees with visual disabilities can feel the craters. A station where you can listen to recordings of the sounds of space. An area with a simulated Martian landscape where people can drive power wheelchair "Martian rovers" over the surface. There will also be exhibits highlighting people with disabilities who work in space-related jobs. It is a big project, of course, but I'm very excited about it!

IJSRA *Do you have any other stories to share about your experiences in the field?*

KS One of the field experiences that made a significant impact on me was when I went with a group of archaeologists to examine a rockshelter in the Channeled Scablands of Washington state. I vividly remember climbing up the hillside to the rockshelter, and standing inside the entrance. I looked out onto the shrub-steppe landscape, dotted with fragrant sagebrush, lavender-colored bitterroot flowers, and rock outcroppings. This view was picturesquely framed on three sides by the jagged basalt rocks forming the mouth of the rockshelter. It was a moving experience, not just because it was strikingly beautiful, but to stand there and realize that other humans may have taken shelter in the same spot as long as 10,000 years ago. I stood inside the rockshelter imagining what it must have been like for those humans, and felt a sense of awe that I can clearly remember today, many years later. I'm not completely sure what caused my reaction. This wasn't my first archaeological experience—I had excavated archaeological sites before, and handled artifacts that were thousands of years old in the lab of an archaeology company that I worked for during graduate school. However, something about being in this rockshelter moved me in a way that hadn't happened during my other archaeological fieldwork experiences. Perhaps it had something to do with the immersive nature of the experience, since I could see and feel the rockshelter above me, below me, and on all sides. Even now, I can distinctly recall the feeling of immense awe, and the same feeling can be re-created in certain circumstances. Have you ever seen space-related artwork that shows a person standing inside a structure on another planet, and gazing out across the barren landscape of the Moon or Mars? This seems to be a rather common theme in artwork related to space exploration. I enjoy looking at these images and imagining what it would be like to actually be in a space habitat, viewing the landscape of another planet in person. The feeling I get from this is very similar to the feeling of awe I had viewing the Channeled Scabland landscape from the rockshelter. Maybe one day, humans will live on Mars, and look out across the Martian landscape from a window on their home, all the

Figure 6: *Michael P. Oman-Reagan*

while wondering what it was like to look out a window and see the landscape of planet Earth.

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Michael P. Oman-Reagan, PhD candidate

Michael P. Oman-Reagan is a PhD candidate and Vanier Scholar at Memorial University of Newfoundland. In addition to journal articles, he writes for a variety of online publications including *The Conversation* and *SAPIENS*. His most recent paper is "Visions of Human Futures in Space and SETI" with astrophysicist Dr. Jason T. Wright published in the *International Journal of Astrobiology* and posted as a preprint to the arXiv. His work can be found at http://michaelomanreagan.net. Michael tweets at @OmanReagan.

IJSRA (International Journal of Student Research in Archaeology) *How did you get drawn to space science?*

Michael P. Oman-Reagan (MO-R) Space has been on my mind since I was a child growing up in the rural west. The sky there was clear, with very little light pollution (or "skyglow"). Now, though, the Milky Way is hidden from one-third of humanity because of light pollution. I spent many nights on the roof looking up into the stars and into our galaxy during the summer—wondering what was out there, thinking about how looking into the deep universe speaks to what it is to be human here on Earth. I was a fan of science fiction as well, reading Heinlein, Asimov, Bradbury, Herbert, and all the classics, as well as science fiction media like Star Trek and Doctor Who. To me, these visions of other

worlds and ideas demonstrated possibility, and reminded me that *how things are* is not *how they have to be*.

I started out my academic career, however, as a biology major. I intended to study marine mammal socialization and intelligence, but I soon realized that my interests were broader than the scope of biology at the time, so I moved to philosophy where I could ask bigger questions about what these ideas of socialization and intelligence mean to us. From philosophy I moved to the secular, academic study of religion for more insight into the stories that humanity tells about the big questions: where do we come from? why are we here? So my first undergraduate degree was in religion, then I added anthropology because I wanted new methods to move outside of the text and into the world, using ethnography, participant observation and other techniques. Anthropology, as it was taught at CUNY, was a good fit because it allowed me to ask all of the questions I could ask in biology, philosophy, and religious studies, and add new areas as well. The anthropology I've been trained in has continued to be very interdisciplinary, easily citing other fields, writing experimentally, creatively, challenging the history of our discipline as well as disciplinary boundaries.

My Masters work in anthropology was at Hunter College where I studied the intersections of activism and technology, looking specifically at transnational social movements. At the core, this research was about how we imagine better possible futures, and work to get there. My work on space science is motivated by the same questions about the future—about how we think about possibility, other worlds, the forms that life, culture, and society might take in space. Whether that's humanity moving into space, or life that may already be out there.

IJSRA *What might human experience on Earth hint about future human life in space or on other planets?*

MO-R Long before colonialism, humanity moved across our planet, adapting to new environments and challenges. Our species has developed a diversity of incredible tools: culture, language, religion, practice, stories, and all kinds of material and social technologies. All this diversity is precisely what could make us well-suited to moving into space, if we can do the work required here on Earth first.

We have the tools we need to survive in space, but so far we're not using them. I've been talking about these tools as the "cultural infrastructure" we need to move into space—this includes treating our environment as precious, because habitability has to be a priority in space. Cultural infrastructure also includes different languages, traditions, religions, philosophies. It's all the diverse perspectives and approaches that have allowed us to survive on Earth. It includes ancestral and traditional knowledge, science, arts, humanities education—it includes healthcare as a right—and it includes mutual aid. We need to become a society that will always help anyone who needs our help. If we don't adopt these as fundamental values and principles of a planetary society, we won't survive in space, on the moon, or on Mars.

So, to ensure a good future in space, we have to start here by looking at human history—we have to build on the success of that diversity here and do it collaboratively on a global scale. Then we will have the preconditions necessary for inclusive and equitable futures in space.

IJSRA *What are some of the challenges in doing space science research, and how can these be overcome?*

MO-R One approach to studying space science might be studying scientists as "research subjects"—but as I've been doing my fieldwork over the last year I've found that it's more productive and interesting for me to approach space scientists as colleagues. When I studied the Occupy movement in New York City, and activism in Indonesia, I joined those communities as a fellow activist, in solidarity. So I'm working to do something very similar with space scientists. As a result, I'm submitting white papers proposing ways that anthropology can contribute to interdisciplinary space science, and I'm co-authoring with astronomers. Joining the interdisciplinary space science world as an anthropologist is challenging because it it's not immediately obvious to many what anthropology can contribute—but I've found the community to be extremely welcoming. Another challenge is how you do fieldwork with communities that only come together during conferences. This kind of science-focused multi-sited work doesn't offer what we traditionally think of as a field site, or even a laboratory like other sciences might. As a result, it takes much longer to join the community, to build rapport, and to collect data than if there was one location to visit and spend time in. These challenges demonstrate how important it is for departments and federal agencies to provide long-term funding and flexibility to researchers who take on these sorts of projects. It would be impossible for me to do the fieldwork I'm doing without the support of my department at Memorial University, the Vanier Canada Graduate Scholarship, and the Social Sciences and Humanities Research Council of Canada.

IJSRA *Please tell us more about your work.*

MO-R My current research project is about engaging as an anthropologist with communities and groups who work on exploration beyond our solar system. I tend to call it "interstellar exploration" as a shorthand but it also includes exploration beyond the interstellar, to the intergalactic, and further.

For my fieldwork I'm working with space scientists in Canada and the United States who explore beyond our solar system. I'm interested in three primary modes of exploration: observation, communication, and travel. Observation includes astronomers here in British Columbia who use instruments to look out into the universe to collect data. Communication involves researchers in the field of SETI (the Search for Extraterrestrial Intelligence) who listen for signals and consider sending them, mostly around the San Francisco Bay Area. Travel is about actually going there, whether through un-crewed spacecraft and probes like Voyager or through imagining and planning for a generation ship with a human crew to travel to another star.

By looking at these interstellar exploration efforts as well as science-fiction and the history of space science, I'm trying to understand how we imagine the space beyond our solar system, what role it plays in imagining and creating possibilities for life, culture, society, politics, and more here on Earth and in the future in space.

IJSRA *Do you have any other stories to share about your experience in the space sciences?*

MO-R Unlike us stuffier socio-cultural anthropologists it turns out that astrobiologists—much like archaeologists—throw great parties. And they really know how to have fun at conferences. The highlight of my fieldwork at AbSciCon (Astrobiology Science Conference) in Arizona this year was the open-mic night where astrobiologists sang songs about alien life, read science fiction stories, and more.

IJSRA *You are engaged in activism related to anthropology on social media, particularly Twitter. What prompted you to get involved? Should academia encourage, support, and/or reward activism?*

MO-R I've been an activist since I was a teenager, and it's something that comes out of necessity. In high school I watched as the news reported on murders of LGBTQIA people, and saw my classmates celebrated for publicly expressing that I shouldn't have basic human rights. I wondered every day if someone would come for me next because of who I am. So for me it's about survival, not only for me but for anyone who lives with this kind of bigotry and oppression anywhere in the world.

Even if someone doesn't have a personal experience of oppression, academics especially have an obligation to be activists. We live on a planet where a few people in power use violence to take resources from the rest, where we could feed, clothe, and house every human but we don't. I think when it comes to academia the question should be: How can anyone look at the world we live in and not be an activist for social justice? We should really be asking about those with power, working in the management and administration of academic institutions, who ostensibly know so much about the origins and causes of inequality, structural racism, and bigotry and yet remain silent. In anthropology, I believe we have a special responsibility to speak out because our discipline has been complicit in colonialism, in writing racist narratives about civilization and cultural change, and in much of the pseudo-science around race that continues to be used in the public sphere. Although we often address that in our courses and teach our students about it, these ideas remain powerful outside of academia, often adopted as "common sense" notions about race and cultural differences. It's our obligation as anthropologists to constantly work against the validation of those ideas and point out that the very discipline that created them has (mostly) long since abandoned them.

Universities do have an obligation to support faculty, students, and staff in their activism for justice. At the very least by defending their academic freedom, and

broader freedom and rights as human beings, and further by understanding that activism and public scholarship is a form of necessary labour. When we bring anthropological perspectives into the public sphere to address important issues of the day, we are also doing the work of demonstrating why our discipline is relevant. The work we do in writing for general audiences, conducting outreach, and public scholarship should be taken into account for students working toward degrees and for faculty working toward tenure. That isn't to say it should be required of everyone because it does have a cost, but simply acknowledged as one of many possible legitimate paths and methods of engaging in scholarship and research, and of having "impact."

Neutrality is an interesting claim, but it's also a political claim which I'd argue isn't itself neutral. I hope all the sub-disciplines of anthropology agree by now that there is no "view from nowhere." I believe we must have the courage to take a side. Each time we demonstrate that courage, we show everyone around us that it's possible. Speaking out for justice isn't easy, it often has a cost—but the best way to address that cost is not to back down but to stand in solidarity with others who are also standing for justice. This is where many US universities have recently failed by not standing with their faculty and instead falling for the tactic of right-wing extremists who manufacture insincere outrage with the goal of punishing faculty who speak out for justice.

IJSRA *When inhabitation of space and other worlds becomes a reality, what roles do you envision of anthropologists and archaeologists? What lessons from life on Earth cannot be ignored?*

MO-R Just as we've adapted our discipline to studying life in online and virtual worlds, and society and culture of other new digital technologies, anthropology and archaeology are already adapting to study human interactions with space. This will continue, with some interesting consequences. One day we might have anthropologists trained on the Moon, Mars, or a space habitat who come to Earth to do fieldwork. I suspect it won't take long for human societies on other worlds, the cultures, practices, stories, habits, languages, and more to become quite different in ways that we're very unlikely to be able to predict. In ways that may or may not be similar to the kinds of differences that emerged as humans have moved around the Earth.

Looking far into the future, I also believe that anthropology is especially well suited to become the discipline that studies the non-human cultures of other worlds. Part of what I'm doing now is working on ways that anthropology can participate in the search for extraterrestrial life and intelligence. This is something that Kathryn Denning (York University) has been working on for some time as well, and her work on this inspired me to see it as possible.

The lesson from life on Earth that we need to keep in mind as we move into space is this: When we go to any new place we bring history and culture with us—the inheritances that aren't addressed will inevitably return to shape whatever "new world" we are trying to build. Before we're ready to go, and as we do move into

Figure 7: *Michael P. Oman-Reagan in a cave looking at golden microbial life (Lava Beds National Monument) which has been studied by astrobiologists as an analogue for life on other worlds.*

space, we need to confront inequality, colonialism, racism, sexism, and other forms of ongoing and historical bigotry and structural violence—otherwise we run the risk of reproducing injustice wherever we go. There really is no escaping history, or culture—we can only engage it head on and try to build a more just future while we reach for the stars.

* * *

Concluding thoughts

It is inevitable that the human species will continue to expand its influence beyond planet Earth. An exciting reality, but one which should also prompt us to reflect on the present and possible futures of our relationship with space. This has, of course, long been the province of science fiction. But the importance for critical consideration right now cannot be overstated. This forum clearly indicates a variety of challenges that need be contended with, but which are not insurmountable: access to opportunity and education, uncertainty and risk and biological constraints in space exploration and potential settlements, threats to heritage, private versus public interest, support for science.

Continuing research and dialogue on these issues is essential in informing and guiding the next steps. Archaeologists, anthropologists, sociologists and other human scientists have a great role in developing understandings. Archaeology, especially, is as much about present and future concerns as it is about those past. We should be ever aware that time will not stop with us, that our actions and inactions have very real consequences, and that we have the ethical responsibility to be stewards for those lives yet to be lived.

Space anthropology and space archaeology are already productive areas of research, relevant to our presents and futures, drawing on our pasts and presents. The greatest contribution that the field can make right now is informing on policies and projects that aim to expand human activity in space. While the prospects of space exploration are beyond exciting, we need to think critically about how to make space accessible to all by asking difficult questions and learning from our collective history and heritage.

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Part II

Articles

For *Oikos* and *Polis*: Classical Attic Grave Reliefs as Family Monuments *A Prosopographic Study of 14 Plaster Casts of Grave Reliefs from The Cast Gallery of the Ashmolean Museum, Oxford*

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Keywords: Classical, Attica, Funerary Monuments, Public/Private Commemoration

Attic funerary stelai are a key source of material evidence for mapping changes within Attic self-perception and representation during the Classical period. A diverse range of family figures and social functions are depicted on stelai between their resurgence in c.430 B.C. and the reforms of Demetrios of Phaleron in c.317 B.C. This article evaluates 14 plaster casts from the Cast gallery of the Ashmolean Museum in Oxford. The present corpus will be considered in an effort to evaluate the function of the monuments as commemorative markers, and how class and gender roles related to domestic and wider civil contexts. This article will evaluate any stylistic changes as they relate to potential changes within the conceptual family unit during this period, alongside the paradox of a private dedication erected in a public space. The purpose of this paper is to compile and scrutinise the many 20th and 21st century interpretations of Attic grave reliefs, in order to provide one's own assessment on the intersectionality of stelai, the polis and the oikos. The paper serves as a contribution to recent scholarly attention on how the stele itself was an opportunity for familial promotion.

Funerary *stelai* of the Classical period are valuable material evidence for Athenian and Attic self-representation from c.430 B.C. until the practice was banned by the tyrant Demterios in the reforms of c.317 B.C. (Pomeroy, 1997:100). The grave *stele* was arguably a politicised medium for the depiction of the dead; its popularity correlates

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with the rise of less audacious grave goods, indicating a more modest alternative to the free-standing *kouroi* and *korai* of the 6th century B.C. (Neer, 2010:188). A close analysis of the iconography of funerary stelai and accompanying inscriptions can often contribute to the identification of the deceased, relatives, attendants, careers and social standing of the subjects (Burton, 2003:20). Greek grave reliefs have been extensively documented and researched since the late 19th century. However, the breadth of research on Classical *stelai* is not indicative of scholarly consensus. The diversity of the funerary iconographic palette has made identifying the subject of a grave relief a long-debated topic. The broad chronology of Classical *stelai* is now widely considered to be orthodox, but the specific dating of an individual stele is rightly met by many with caution (Clairmont, 1995:16). Stylistic assumptions can associate a *stele* with a particular decade (Adam, 1966:113), but without accompanying inscriptions an exact date is not possible (Grossman, 2001:5).

Recently, Classical funerary sculpture has undergone a shift in scholarly focus. The last 15 years has seen greater interest in the evaluation of social history, especially the relationship between the domestic family unit (*oikos*) and the wider political platform of the *polis*. The purpose of this paper is to compile and scrutinise published works 20th and 21st century concerning Attic grave reliefs. There will be a particular focus on the relationship between the commissioning family's intention for a *stele*, and proceeding public reception. The intersectionality of stelai will be assessed, their iconography and context inexorably linked both to the *polis* and the *oikos*.

'Who is actually dead here?' An Immediate Complication

Friis Johansen's landmark text on classical grave reliefs sought to resolve an ongoing problem in interpretation (Friis Johansen, 1951:53). Namely, the issue of identifying which figure or figures were the deceased on a pair or group scene. A controversial study by Holwerda in 1899 argued that grave reliefs did not depict the deceased, and has since been dismissed (Holwerda, 1899). Mynno's stele (1) bears only an inscribed name and a solitary, seated young woman. There is no evidence to suggest the figure was a relative or grave attendant and not Mynno herself. The research consensus agrees instead that solo mortal figures must be the deceased (Stears, 1995:119). Attic reliefs of pairs are similarly straightforward. Hegeso (3) and Dexileos (12) are named and feature in pairs. The standing figure on stele 3 wears a hair-net and double-chiton, holding a pyxis for the seated woman to inspect (Barker, 1924:292). The former is subservient, an ancillary figure whose presence visualises the aristocratic status of Hegeso (Leader, 1997:689). The nude male on stele 12 is pierced by a spear but few Attic grave reliefs depict the moment of a subject's death; the figure is Dexileos' defeated foe (Hurwit, 2007:57). Both examples illustrate how secondary characters are easily identifiable by their costume and relation to the central figure (Friis Johansen, 1951:53). Although Fullerton suggests that the Dexileos stele would have been a 'stock composition', the visual and emotional impact of a heroic death in combat is not diminished (Fullerton, 2016:549).

Identifying the deceased within a family group is a more complex task. Friis Johansen maintains that the homogeneity of the genre's iconography is the cause of confusion (Friis Johansen, 1951:55). For example, grave reliefs did not depict portraiture, unlike some free-standing statues in the mid-4th century. The subjects of funerary reliefs are idealised versions, crafted to be symbolic and not precise representations of figures

(Grossman, 2007:313). Furthermore, the approaches utilised on solo or pair scenes are not necessarily applicable to group scenes (Von Rodenwaldt, 1923:62). For example, *stele* 6 shows an elderly bearded man on a chair, demonstrating that the funerary image of the seated figure was not exclusive to women. On *stele* 9 the seated woman is on the far right of the relief, secondary to the elevated reclining male. The image of a seated woman is repeated alongside other visual cues that would have otherwise identified them as the deceased.

Despite ongoing and detailed scholarly research, identifying the exact context of a scene presents a challenge that has not yet been resolved. Defining the scene beyond an interior or exterior setting often risks being contradictory or impenetrable at worst (Friis Johansen, 1951:53). One controversial aspect of this debate comes with attempting to explain the significance of family scenes (Stears, 2000a:26). The previous section outlines how the deceased is not only represented on grave *stelai*, but is the main subject of the scene. In single figure scenes like *stele* 1 or 13 identification is highly convincing. Apart from monuments like 8 and 14 which contain 'competing' iconography, it is usually possible to ascertain who the deceased is and who is a relative/child/slave in the scene (Frel, 1973:175).

Since the late 19th century three major theories approach the confusion of scenes with multiple family members. Firstly, the deceased is intended to occupy the realm of the dead, with the surrounding family as survivors brought together by grief (Boardman, 1995:116), or perhaps the deceased is bidding farewell to the living before starting his or her spiritual journey into the afterlife (Boardman, 1995:116). Secondly, the scene takes place entirely in the afterlife with a grand reunion (Mee, 2011:247). Third, the *stele* acts as a bridge between the realms of the living and the dead (Wasserman, 1969:198). One social theme transcends the different hypotheses and is found in all four: the oikos was the essential concept for understanding the Attic family unit, and had to be nurtured and accepted by the polis.

The idea of a dead figure surrounded by surviving family members has been championed by Kurtz and Boardman (Kurtz and Boardman, 1971:140), and is consistent with this report's view that family members funded the production of the actual relief (Wrenhaven, 2012:96). The most compelling evidence for this theory comes from stele 11, Excavated from the Ilissos River. The nude subject of the scene leans against the anta, as an elderly male figure stands passively to his right. His gaze is locked on the face of the deceased, leaning gently against his staff and raising his right hand to his chin in contemplation (Kurtz and Boardman, 1971:141). The old man's quiet intensity seeks to connect to the heroic male, who is oblivious to his presence as he stares out into the world of the viewer. Nevertheless, the elder remains an important ancillary figure in the intergenerational scene ' He is draped in a thick himation, a civic garment that alludes to active participation in the public affairs of the polis (Hallett, 2005:20). The dichotomy between the pair ultimately defines the elder as a bystander to the youth, who exudes a passive, detached presence (Palagia, 2006:145).

A similar distinction appears in *stele* 10, where Telesias observes a hare without returning the gaze of the child beside him. Kurtz and Boardman consider this separation to visually

divide life and death in Attic funerary iconography. Family or servants on monuments like *stele* 3 are spectators to the deceased subject, just like the actual visitor to the grave (Wrenhaven, 2012:101). The clasping of hands (dexiosis) appears in *stelai* 4, 68, 14, and possibly denotes the 'final farewell' and retirement of the subject from the realm of the living (Mee, 2011:247).

By combining dexiosis and the physical disconnect between figures, *stelai* reflect the perpetuity of the oikos in Athenian and Attic society (Pomeroy, 1997:23), death was inherently disruptive to the operation of the oikos (Stears, 1995:128). Indeed, the majority of the report's *stelai* depict those who died 'prematurely': mothers with infants, hoplites, cavalrymen and unmarried girls (Stears, 1995:119). A survey of Attic gravestones reveals 34 cases of a father who left behind a child or children (Humphreys, 1993:111). By commissioning a *stele* depicting the dead alongside living family members, the dedicator conveys two important messages. They recognise that the oikos had been threatened by an untimely death, but it is strong enough to survive the family tragedy. The oikos was a major expression of Attic identity in the Classical period (Grossman, 2001:3). As a result, the death of a young citizen like Dexileos in *stele* 12 would have threatened the family unit's property inheritance and family legacy (Gray, 2011:62).

On balance, the theory of surviving family observing the deceased is a possible explanation for family scenes on grave reliefs. The absence of an important figure in the oikos could be publicly recognised through signs of either tenderness or a lack thereof. Furthermore, the presence of relatives in funerary scenes represents the survival of the family unit despite the death. In death an individual departed from the household and the oikos, but the oikos as an Attic ideology lived on (Pomeroy, 1997:23).

Conversely, Pemberton argues that the farewell theory is incidental, and applied retroactively by modern scholarship (Pemberton, 1989:50). Indeed, the imagery of deceased/-survivor scenes is not seen in all grave reliefs. *Stelai* 1 and 13 are solitary scenes so there is no interaction with other figures. In addition, *stelai* 2 and 9 are damaged, missing heads or basic facial details. Therefore signs of familial fondness are hard to identify. The indifference of the Ilissos stele youth was unlikely to have been a motive of the sculptor (Clairmont, 1995:14). 4th century B.C. funerary sculpture broadly followed to the sculptural style first seen on the Parthenon frieze (Osborne, 1998:197). As such Classical grave reliefs followed the trend of more serene compositions (Wasserman, 1969:195). However, these traits do not explain the expressions of the 'surviving' figures. Some basic level *stelai* were not personalised except for an inscription, which further challenges the farewell theory (Oliver, 2000:66).

Humphreys suggests an alternative: that group scenes on Attic gravestones show a complete family reunion in the afterlife (Humphreys, 1993:106). *Stele* 7 is this catalogue's sole example which explicitly corroborates this view. Depicting two women inscribed as Demetria and Pamphile, *stele* 7 was excavated from the burial plot of the same two women from the Kerameikos (Richter, 1954:256). Recent scholarship largely agrees that *stele* 7 was the second monument erected on the plot and was constructed after the death of Pamphile (Closterman, 2007:636). The original stele commemorating Demetria remained on the same burial plot as the amended *stele*, so didn't serve a purely pragmatic

purpose. Humphreys proposes that scenes of family reunion are a visual illustration of family-owned burial plots (Humphreys, 1993:2). Burying family members alongside one another in plots that were terraced and walled from the rest of the Kerameikos emphasised familial affection (Boardman, 1995:114). The case of Demetria and Pamphile is evidence for the elite of Athens, but is not directly representative of aristocratic ideals in the wider Attic region. A scene cut as deep as the relief of *stele* 7 in a family plot was a luxury only attainable by the wealthiest families (Sourvinou-Inwood, 1995a:124). The depth of many 4th century B.C. *stelai* also allows for more artistic compositions and greater variety in busier group scenes (Neer, 2010:185). Many peribolos and family tombs at Athenian and Attic cemeteries do not follow suit, implying that similar scenes were not a reunion in the afterlife but an ageless and idealised depiction of the deceased as in life (Wasserman, 1969:194). The reunion theory is less compelling than the 'farewell' theory, because the supporting evidence is extremely rare.

The Significance of Dexiosis

The third theory about Attic perceptions of the afterlife forges a middle ground between the theories of farewells or reunions. The handshake (*dexiosis*) often appears in funerary iconography, and boasts a rich Greek cultural history (Stupperich, 1994:96). *Dexiosis* appears on Attic grave monuments from the 5th century B.C. resurgence onwards, the clasping of hands symbolising accord between two parties of equal standing, publicly reaching a position of mutual agreement over a decision (Pemberton, 1989:49).

The handshake holds a spiritual significance in burial rites, as a symbol linking the living and the deceased in Attic society (Boardman, 1995:115). From a stylistic perspective *dexiosis* demonstrates how the surviving family recognised the private and public roles of deceased during their life, and wished to publicly display their achievements (Grossman, 2007:321). Curiously the gesture is largely absent from the archaeological pottery record (Kurtz and Boardman, 1971:138), except for white-ground lekythoi from the late 5th century B.C. that could be mistaken for passing a physical object to another. The modern historian can retroactively apply a range of social/gender-based connotations to the *dexiosis* image.

Overall, the iconography of Attic grave monuments is difficult to decipher without reference to contemporary and earlier Greek art. The idea of a reunion scene is only relevant to a minority of grave reliefs, and the evidence is circumstantial. Boardman's theory of survivors (simultaneously complementing the deceased's position within the polis while alive and their journey into the afterlife) is also problematic (Boardman, 1995:116). It is an effective illustration of an honourable burial being the reward for being an active member of one's oikos (Wasserman, 1969:193). Grave reliefs were the perfect means of communicating such sentiments to the wider polis, with wealthy families competing to erect the grandest monument.

Happy Home, Happy Polis

Funerary monuments in Attic grave precincts celebrate the contribution of a man or woman to the *oikos*. Presenting their domestic role in a funerary space within a *polis* was an opportunity to convey private achievements to a wider audience (Grossman, 2001:3). However, considering the public sphere as a vehicle for solely private commemoration fails to accept that the oikos and polis as social institutions were inextricably linked (Pomeroy, 1997:17). In the early 21st century prosopography has seen a much needed rise

in scholarly interest (Stamatopoulou, 1999:172), wherein grave *stelai* are re-evaluated as evidence for socio-political processes of Attic poleis, and a common burial custom (Stears, 2000b:25). Notably, of this article's reliefs that depict exclusive family scenes only four show a harmonious family unit through the previously discussed *dexiosis* motif. The image of an idealised oikos is deliberately used to mirror the prosperity of the polis (Leader, 1997:699). Grave reliefs of mothers hold a particular social significance, potentially as a response to the Periklean citizenship legislation of 451/0 B.C. (Closterman, 2007:648). The explicit depiction of one's lineage added a legal dimension to grave *stelai*, subtly promoting the theme of *anchisteia* in a public space (Stears, 1995:114).

In the case of *stele* 6, dated tentatively to c.360 B.C. , an elderly man rests on a chair, clasping hands with a young woman while a youth watches. The gesture displays multiple generations of the same family, publicly depicted as virtuous sharing the same family ideology (Closterman, 2007:651). Close contact is also shown by the youth who rests his right palm gently upon the elder's right shoulder, so all three characters are physically connected. Both standing figures are visibly younger than *Arkesilas*, but because Attic women were married in their teenage years mere observation is insufficient in distinguishing whether the woman in *stele* 6 (7) was his wife or daughter (Clairmont, 1995:26). Despite this drawback, *stele* 6 remains an effective example of how the ideology of the family was a factor in the decoration of a funerary monument, arguably more so than proclaiming one's property (Osborne, 1998:193). Even though *stele* 6 lacks an explicit reference to using lineage as a means of securing citizenship, it hints at how the medium could be utilised in such a way (Closterman, 2007:648).

Grave monuments did not explicitly document the legal status of their subjects (Closterman, 2007:651). Rather, the higher number of mortal women depicted in relief than in other monumental art forms is an intriguing comparison. It implies that grave reliefs were an ideological proclamation of citizenship to the polis of the deceased. One explanation is the Periklean citizenship law of c.450 B.C. The legislation decreed that a mother had to be the daughter of an Athenian citizen for her son to be a legal Athenian citizen, in an attempt to reduce the size of the citizen body (Plutarch Perikles 37.3). As a result, proving one's birth to an Athenian mother was necessary to secure citizenship (Isaeus On the Estate of Philoctemon 6.64), and the lineage had to be confirmed across at least two generations (Burton, 2003:24). Citizenship laws also correlate to the commission of family scenes that depict children or grandchildren of the deceased (Burton, 2003:25).

The iconography of *stele* 8 encapsulates a stele's aspirational function of closely associating with the polis (Pomeroy, 1997:126). In particular, a nude infant reaches for his mother, who is shaking hands with a bearded man clad in full military regalia. The servant girl, carrying a *pyxis* akin to *stelai* 2 and 3, exists as a symbol of the family's aristocratic status. The foot soldier's helmet and cuirass were only worn by the hoplite class, closely associating the male figure with the state. Finally, the woman and baby explicitly express the child's participation in both a private and public setting, a suitable candidate for citizenship by Perikles' regulations established in the previous century (Grossman, 2007:312). Overall, the rise of grave monuments portraying family groups inherently forms a stylistic change which features a greater prominence of women. The imagery of multiple generations alongside a seated or standing mother presents the

family unit as a social institution with legal importance. If the mother is the subject the immediate family is implicitly portrayed as seeking legal security, more so than a social statement on women in society (Boegehold, 1994:60).

Following the re-emergence of decorated gravestones from the 430's B.C. , there was a different approach to their spatial organisation in the funerary space. Namely, the rising popularity of family plots by the end of the 5th century could be a direct response to the social legislature of the Athenian *polis*. Whether the response was positive or negative has been the subject of strong scholarly debate. By c.425 B.C. approximately 10% of all Athenian families owned a family plot, including *stelai* 3, 7, and 12 (Stears, 2000b:41). Crucially this doesn't mean that family members were buried together; only three out of 598 published graves between the 6th and 4th centuries B.C. contained relatives buried next to each other (Pomeroy, 1997:124). The Hegeso and Dexileos reliefs still suggest that the trend persisted for decades after it first appeared, because both were erected in the 390's B.C. (IG ii 6226-30). The relief of Demetria and Pamphile is from c.320 B.C. and shares a similar context. However, using a single, later relief is too selective an approach to confirm the widespread trend of family grave plots throughout the 4th century B.C.

The imagery of family scenes and inscriptions exudes *aréte* A state of moral virtue and fulfilment, either as an individual or an entire family (Sourvinou-Inwood, 1995a:117). Plato lauds this virtue, stating that a successful Greek longed for wealth and honour among peers. A citizen should 'bury one's parents well' and receive the same treatment from their own children (Plato Hippias Major 291). Plato confirms the centrality of commemorative burial rites in Attic society (Garland, 2001:22), and implies that agathe among Attic men was a universal virtue, expected in both the polis and the oikos settings. Grave reliefs were therefore microcosms for the complementary nature of the public and private spheres. A citizen's duty varied, but the principles of modesty and honour were essential (Burton, 2003:32). Such virtues were created and exchanged by both spheres. For this reason the decoration of a grave relief sought to praise the deceased and their family as members of their oikos, because it promulgated their virtue as citizens of their polis (Strauss, 1993:41).

The reliefs of Hegeso, Dexileos, and Demetria and Pamphile are exceptionally decorated reliefs, and among the largest in size of the report catalogue. The higher cost of deeper and more elaborate reliefs indicates that the trend may have seen greater prominence among elite Athenian families (Sourvinou-Inwood, 1995a:54). Nearby Attic sites like Menidi and Chalandri are less comprehensively published, making it difficult to compare the cases from Athens to their Attic contemporaries. Individual finds like *stele* 11 (Found in the Ilissos river in 1874) are less compatible with a broader line of investigation (Frederiksen and Smith, 2011:218). Sourvinou-Inwood reinforces the idea of subtle aristocratic changes occurring gradually in Classical grave reliefs, but this is not necessarily representative of other Attic cities or poleis (Sourvinou-Inwood, 1995b:416).

On the contrary, *stelai* 9 and 10 from the early-to-mid 4th century B.C. Piraeus "displaying a banquet scene and a possible hunt scene respectively" account for the range and complexity of funerary iconography. Both scenes may record the deceased's preference for feasts or hunting while he was still alive, or contain subtle religious connotations

(Stamatopoulou, 1999:187). In the case of *stele* 9, the reclining man immediately draws a parallel to the symposium (Stamatopoulou, 1999:186). His languid posture and attendant to the left of the scene reveal a higher social status, achievable by his nobility and personal wealth. Such examples remind the historian that grave monuments formed part of a commercial market with differing social and religious significance for each client (Stewart, 1990:175). There are broad stylistic or ritual trends like the rise in family burial plots (Camp, 2001:164). Sculptors and buyers did not have to conform to contemporary trends, and as such earlier motifs continued alongside innovative designs.

Career as the Height of Life. Military and Athletic Depictions of Men

The deceased are depicted on gravestones either in the afterlife or as if they were still alive (Boardman, 1995:115). Women are usually shown performing household tasks or inspecting personal jewellery on grave reliefs (1, 2, 3, 5 and 8); their role within the oikos (Burton, 2003:20). The reliefs show them at their most beautiful, wealthy or dutiful to their family (Sourvinou-Inwood, 1995a:117). On the other hand male figures were depicted at the peak of their civic careers for Athens or the wider Attic region. Men are shown participating in athletics, warfare, trade or politics all taking place in the public eye (Burton, 2003:21). Such roles allowed the state to function, and helped to achieve and consolidate the security and prosperity of the state (Burton, 2003:27). Fullerton maintains that the grave stele was a primarily personal rather than political monument (Fullerton, 2016:542). However, the overt imagery of costumes or nudity shows that political or public motivations are also a significant factor.

In 404/3 B.C. Athens lost the Peloponnesian War against the Lacedaemonians. An almost 30 year old conflict ended with a year of Athens being ruled by the 30 tyrants, before restoring the democratic system of government (Xenophon Hellenica 2.4.1). The final quarter of the 5th century B.C. had seen the destruction of Attic farmland by Spartan troops in the 420's B.C. (Thucydides 2.18-23), the failure of the Piraeus as a supreme naval hub for the Athenian empire, and conflicts against Corinth in 394/3 B.C. which are noted on *stele* 12. Grave reliefs "unlike state burials" were an opportunity to recognise the contribution of an individual to his city. Funerary stelai could show that Attic society perceived the idealised citizen to be a man willing to die for the protection of his *polis*.

One explanation for nude male figures on grave reliefs is that they were athletes, or hunters in some scenes. *Stele* 10 is an example of the latter, and displays Telesias in the nude resting his weight onto one hip. Nudity in sculpture was not an invention of the Classical period, the majority of Greek archaic *kouroi* were naked, drawing the viewer's eye to the subject's defined musculature as the ideal image for an athletic youth (Boardman, 1995:115). Hallett posits that nudity would have been the 'uniform' of the gymnasium, the term itself deriving from gymnos (naked) (Hallett, 2005:22). The suggested formal approach renders the image of the nude beardless youth both idealised and widely recognisable to the contemporary Attic viewer. The same can be said for *stele* 11, where the deceased is imagined in peak physical fitness and an idealised representation that was attainable by male athletes and soldiers (Stupperich, 1994:94). The fine details of the naked body on *stele* 11 allowed for a more nuanced pose: frozen on the cusp of movement, twisting his torso to his right (Osborne, 1998:200).

The style is reminiscent of variations of the Polykleitan walking motif, creating the impression of vitality that has been captured or cut short before reaching their maximum potential (Childs, 1998:163). Such a trait has featured on earlier stelai including the marker of Chairodemos and Lykeas (Childs, 1998:162). Youthful energy and a strong physique exaggerate the subject's physical prowess, but can also highlight the tragic circumstances of the subject's departure. Grave monuments dedicated to youths were paid for by their father or wider family, and publicly express sorrow at this subversion of the natural order, as described by Plato (Wasserman, 1969:195). *Stele* 11 evokes grief through its explicit dichotomy between figures; the heavily-draped elder contrasts the youth's nude image (Boardman, 1995:116). The relief on 12 is an exception because Dexileos is fully armoured while his victim in naked. For the most part the sculpting of naked men had the effect of heroising their mortal involvement in the polis.

The stele of Demokleides (13) from the Piraeus deserves further evaluation as a depiction of military service, due to its naval iconography. A rower sits beside his armour on the prow of his ship, the details of which are tantalisingly fragmentary. Crucially, the Demokleides stele is the only known Attic grave monument from the Classical period to feature a rower or a naval vessel. Out of the hundreds of excavated grave monuments, images of the hoplites and cavalrymen were far more common (Stupperich, 1994:97). This comparison is evident in both state burials and private dedications (Stupperich, 1994:97). Thucydides maintains that rowers were historically the driving force behind the Athenian empire in the early 5th century B.C. , implying a shift during the classical period. Indeed, the scarcity of grave reliefs depicting rowers may be a sign of a declining reliance on the navy, in the eyes of the polis (Thucydides 1.93).

In funerary sculpture, the rarity of naval imagery could hold a social significance in addition to its explicitly martial message. Dexileos's inscription (12) commemorates the valour of the shock cavalry at Athens. Dexileos's elite role against Corinth was worthy of special mention, among the 'five riders' on the frontline. On the other hand, Demokleides's inscription states that he was lost at sea in c.394 B.C. (Wasserman, 1969:197). It mourns his tragic loss instead of singling out his actions as a heroic Athenian warrior. When considered in conjunction with the iconography and subjects of state burials in Athens and Attica, the conclusion is twofold. Firstly, hoplites seem to be prioritised by the Attic polis through state commissioned grave monuments. Secondly, the families of hoplites and cavalrymen were of a higher class than the families of rowers, hence the more elaborate and plentiful reliefs on record (Stupperich, 1994:97). Despite some minor iconographic differences, it is clear that military and athletic participation was idealised in funerary relief sculpture. For Athenian and Attic men, their public careers were the most important contribution to the *polis*, and was capitalised upon in death.

Concluding Remarks

Attic grave reliefs of the Classical period are valuable social documents, but are not without significant drawbacks. They contribute to our comprehension of the role of the individual and the family, acting paradoxically as private memorials on public display. Unfortunately, it is often a complicated and problematic process to identify the deceased in each scene. This greatly limits our understanding of the intentions and beliefs of the individuals who commissioned a funerary monument. Contemporary and later

literature from Thucydides, Diodorus Siculus and Plutarch help to contextualise some of the social themes conveyed on grave reliefs, such as the desire to enforce male hegemony and the spiritual importance of family unity and *dexiosis*. The grave monument heroised the dead as a praiseworthy citizen who ranked his duty to the polis above all else. The rarity of naval scenes could also highlight a shift from Athens as a naval power (since its defeat in 404 B.C.) to a greater focus on its land armies.

There are inherent problems when dating individual grave reliefs, because any attempts are set against a chronology which is based almost entirely on relative dates. With the exception of inscriptions recording the archon years of the subject's death (namely *stele* 12), a stylistic interpretation can only pinpoint broad trends in the classical style. As a result it would be ill-advised to assign a particular relief to a specific event, unless it was known to have had a lasting effect on the Attic region. For example, the citizenship laws of 451/0 B.C. arguably inspired the newfound prominence of Athenian women and the position of the mother in the family after the re-emergence of grave reliefs, in an attempt to secure the family estate. The 317 B.C. funerary legislation of Demetrios abruptly ended the decorative bombast of later grave monuments. The law acknowledged how competition among the social elite was originally curbed in the late 6th or early 5th century B.C. , but had returned to Attic funerary practices in the 430's B.C. The concept had firmly ingrained itself in later grave reliefs, which partly explains the popularity of funerary monuments as a medium for self-promotion. Dedicators accentuated the deceased's career in the polis, either publicly or implicitly through the running of the oikos. When considered in tandem with the sometimes blatant attempts to maximise visibility in grave precincts, the public praise they sought to generate would contribute to the family manifesto.

The oikos cannot be ignored on funerary scenes, because prosperity in the individual household was considered a crucial underlying factor in the long-term success of the polis. Indeed, the ultimate focus of attic grave reliefs was directed firmly towards the polis. The legacy of the deceased individual, the benefits of a family dedicated relief, and the consolidation of social status are all achieved through Attic grave monuments.

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References follow figures.

Figure 1: *Grave stele of Mynno. Oxford, Ashmolean Cast Gallery Inv. D039; Berlin, Antikensammlung, Staatliche Museen zu Berlin Inv. 737; Late 5 century* B.C. *, Pentelic Marble; Attica, between Athens and the Piraeus; Height: 60cm, Width: 28cm; Bibliography: TCG, 207, D039; CAT 2, 1.176; DAG 1, 38.17. Comparanda: D037*

Figure 2: *Grave stele of seated woman. Oxford, Ashmolean Cast Gallery Inv. D038; Athens, National Archaeological Museum Inv. 1822; Late 5th century* B.C. *, Marble; Athens, between Athinas Street & Lykourgou Street (lower part found in 1898, upper part found in 1964) Height: 1.18m, Width: 70cm; Bibliography: TCG, 207, D038; CAT 2, 98, 2.151. Comparanda: D037; NAM, inv. 820; inv. 831.*

Figure 3: *Grave stele of Hegeso. Oxford, Ashmolean Cast Gallery Inv. D037. Athens, National Archaeological Museum Inv. 3624; c.400 B.C. , Pentelic Marble; Athenian Kerameikos (Discovered in 1870); Height: 1.5m, Width: 97cm; Bibliography: TCG, 207, D037; CAT 2, 95-9, 2.150; DAG 1, 21, 68. Comparanda: D038; D039; NAM, inv. 1178a; inv. 726.*

Figure 4: *Grave stele of Sostrate and Euxenides. Oxford, Ashmolean Cast Gallery Inv. D072; Copenhagen, Ny Carlsberg Glyptothek Inv. 1695; Early 4th century* B.C. *, possibly Pentelic Marble; Menidi, Attica; Height: 1.03m, Width: 60 cm; Bibliography: TCG, 217, D072; CAT 2, 206, 2.227b. Comparanda: NAM, inv. 765.*

Figure 5: *Grave stele of a mother. Oxford, Ashmolean Cast Gallery Inv. D073; London, British Museum Cat. 2232; Early 4th century* B.C. *, Pentelic Marble Attica; Height: 80cm, Width: 46cm; Bibliography: TCG, 217, D073; CAT 2, 691, 2.786. Comparanda: NAM, inv. 722; inv. 3790.*

Figure 6: *Grave stele of Arkesilas. Oxford, Ashmolean Cast Gallery Inv. D075; Dresden, Albertinum Inv. ZV 2440 (Hm 144); c. 360 B.C. , Pentelic Marble; Athens; Height: 89cm, Width: 49cm; Bibliography: TCG, 218, D075; CAT 3, 242-4, 3.374c. Comparanda: NAM, inv. 902.*

Figure 7: *Grave stele of Pamphile; Oxford, Ashmolean Cast Gallery Inv. D077; Athens, Kerameikos Museum; C. 320 B.C. , Pentelic Marble; Athenian Kerameikos (Found in 1870); Height: 1.98m, Width: 1.25m; Bibliography: TCG, 218, D077; CAT 2, 593-5, 2.464; DAG 1, 30-1, 109.40. Comparanda: NAM, inv. 724; inv. 819; inv. 743; inv. 820. c*

Figure 8: *Grave stele of hoplite and family. Oxford, Ashmolean Cast Gallery Inv. D069; Berlin, Antikensammlung Staatliche Museen zu Berlin Inv. 1473. Attica; C. 350 B.C. , Pentelic Marble; Height: 1.76m, Width: 1.1m. Bibliography: TCG, 216, D069; DAG 1, 107, 463. Comparanda: D065; NAM, inv. 834*

Figure 9: *Grave stele of a reclining male. Oxford, Ashmolean Cast Gallery Inv. D082; Piraeus, Archaeological Museum Inv. 208; c. 380 B.C. , Marble; Piraeus, Athens; Height: 57 cm, Width: 64 cm; Bibliography: TCG, 220, D082.*

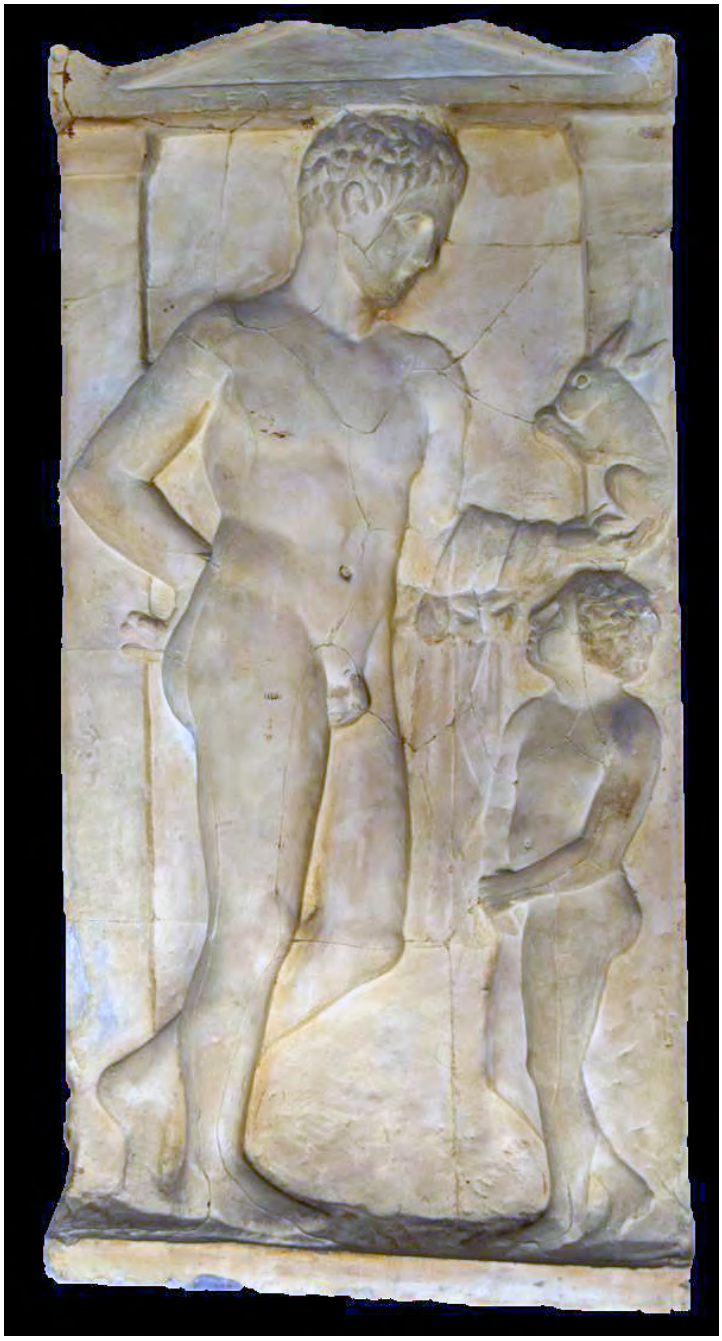

Figure 10: *Grave stele of Telesias. Oxford, Ashmolean Cast Gallery Inv. D071; Athens, National Archaeological Museum Inv. 898. 370-360* B.C. *, Marble. Piraeus (Found in 1871); Height: 77cm, Width: 40cm; Bibliography: TCG, 217, D071; CAT 1, 448-9, 1.810; DAG 2, 221-2, 1036.208. Comparanda: NAM, inv. 715; inv. 914; inv. 794.*

Figure 11: *Ilissos relief. Oxford, Ashmolean Cast Gallery Inv. D076; Athens, National Archaeological Museum Inv. 869; 340-330 B.C. , Pentelic Marble. Ilissos River, Athens (Found in 1874); Height: 1.68m, Width: 1.07m; Bibliography: TCG, 218, D076; CAT 2, 821-4, 2950; DAG 2, 226, 1055.211. Comparanda: NAM, inv. 731; inv. 871.*

Figure 12: *Grave stele of Dexileos. Oxford, Ashmolean Cast Gallery Inv. D067; Athens, Kerameikos Museum Inv. P1130; 394-393* B.C. *Pentelic Marble; Athenian Kerameikos (Found in 1863 in the family precinct of Dexileos); Height: 1.75m, Width: 1.35m; Bibliography: TCG, 216, D067; CAT 2, 143-5, 2.209; DAG 2, 254-5, 1158.248. Comparanda: D066; NAM, inv. 2744; inv. 3708; inv. 3620a.*

Figure 13: *Grave stele of Demokleides. Oxford, Ashmolean Cast Gallery Inv. D064. Athens, National Archaeological Museum Inv. 752; 400-375 BC, Marble. Athens (Found in 1881); Height: 60cm, Width: 45cm; Bibliography: TCG, 215, D064; CAT 1, 316-7, 1.330; DAG 2, 623.122.*

Figure 14: *Funerary lekythos of Onesimos; Oxford, Ashmolean Cast Gallery Inv. D065; Munich, Glyptothek Inv. 209; C.405 BC, Pentelic Marble; Odos Aiolou, Athens (Found in 1811); Height: 48cm, Width: 45cm, Diameter: 20cm; Bibliography: TCG, 215, D065; DAG 1, 87-8, 380.92. Comparanda: D069; NAM, inv. 815.*

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References

Adam, S. (1966): *The Technique of Greek Sculpture in the Archaic and Classical Periods*. British School of Archaeology at Athens.

Barker, A.W. (1924): The Costume of the Servant on the Grave Relief of Hegeso. *American Journal of Archaeology* 28(3): 290–292.

Boardman, J. (1995): *Greek Sculpture: The Late Classical Period*. Thames & Hudson.

Boegehold, A.L. (1994): Perikles's Citizenship Law of 451/50 BC, in Boegehold, A.L. and Scafuro, A.C. (eds.), *Athenian Identity and Civic Ideology*. John Hopkins University Press.

Burton, D. (2003): Public Memorials, Private Virtues: Women on Classical Athenian Grave Monuments. *Mortality* 8(1): 20–35.

Camp, J.M. (2001): *The Archaeology of Athens*. Yale University Press.

Childs, W. (1998): *Reading Greek Art: Essays by Nikolaus Himmelmann*. Princeton University Press.

Clairmont, C.W. (1995): *Classical Attic Tombstones: Introductory*. Kikhberg.

Closterman, W.E. (2007): Family Ideology and Family History: The Function of Funerary Markers in Classical Attic Peribolos Tombs. *American Journal of Archaeology* 111(4): 633–652.

Frederiksen, R. and Smith, R.R.R. (2011): *The Cast Gallery of Greek and Roman Sculpture: Catalogue of Plaster Casts of Greek and Roman Sculpture*. The Ashmolean Museum.

Frel, J. (1973): An Attic Grave Stele with Epigram. *Greek Roman and Byzantine Studies* 14(2): 169–177.

Friis Johansen, K. (1951): *The Attic Grave Reliefs of the Classical Period: An Essay in Interpretation*. Ejnar Munksgaard.

Fullerton, M.D. (2016): *Greek Sculpture*. Wiley Blackwell.

Garland, R. (2001): *The Greek Way of Death*. Second. Bristol Classical Press, London: 21–106.

Gray, C.L. (2011): Foreigners in the Burial Ground: The Case of the Milesians in Athens, in Carroll, M., Rempel, J., and Drinkwater, J.F. (eds.), *Living Through the Dead: Burial and Commemoration in the Classical World*. Oxbow.

Grossman, J.B. (2001): *Greek Funerary Sculpture: Catalogue of the Collections at the Getty Villa*. Getty Publications.

– (2007): Forever Young: An Investigation of the Depictions of Children on Classical Attic Funerary Monuments. *Hesperia Supplements* 41: 309–322.

Hallett, C.H. (2005): *The Roman Nude: Heroic Portrait Statuary 200 BC–AD 300*. Oxford University Press.

Holwerda, I.H. (1899): *Die Attischen Gräber der Blüthezeit: Studien über die Attischen Grabreliefs*. Brill.

Humphreys, S.C. (1993): *The Family, Women and Death: Comparative Studies*. University of Michigan Press.

Hurwit, J.M. (2007): The Problem with Dexileos: Heroic and Other Nudities in Greek Art. *American Journal of Archaeology* 111(1): 35–60.

Kurtz, D.C. and Boardman, J. (1971): *Greek Burial Customs*. Cornell University Press.

Leader, R. (1997): In Death Not Divided: Gender, Family and State on Classical Athenian Grave Stelae. *American Journal of Archaeology* 101: 683–699.
Mee, C. (2011): *Greek Archaeology: A Thematic Approach*. Wiley-Blackwell.
Neer, R. (2010): *The Emergence of the Classical Style in Greek Sculpture*. University of Chicago Press.
Oliver, G.J. (2000): Athenian Funerary Monuments: Style, Grandeur and Cost, in Oliver, G.J. (ed.), *The Epigraphy of Death*. Liverpool University Press: 59–80.
Osborne, R. (1998): *Archaic and Classical Greek Art*. Oxford University Press.
Palagia, O. (2006): *Greek Sculpture: Function, Materials, and Techniques in the Archaic and Classical Periods*. Cambridge University Press.
Pemberton, E.G. (1989): The Dexiosis on Attic Gravestones. *Mediterranean Archaeology* 2: 45–50.
Pomeroy, S. (1997): *Families is Classical and Hellenistic Greece: Representations and Realities*. Clarendon Press.
Richter, G.M.A (1954): Family Groups on Attic Grave Monuments. *Neue Beitrage zur Klassischen Altertumswissenschaft* 60: 256–262.
Sourvinou-Inwood, C. (1995a): Male and Female, Public and Private, Ancient and Modern, in Reeder, E. (ed.), *Pandora: Women in Classical Greece*. Walters Art Gallery.
– (1995b): *Reading Greek Culture: Texts and Images, Rituals and Myths*. Clarendon Press.
Stamatopoulou, M. (1999): *Burial Customs in Thessaly in the Classical and Hellenistic Periods*. DPhil Thesis.
Stears, K. (1995): Dead Women's Society: Constructing Female Gender in Classical Athenian Funerary Sculpture, in Spencer, N. (ed.), *Time, Tradition and Society in Greek Archaeology: Bridging the 'Great Divide'*. Routledge.
– (2000a): Losing the Picture: Change and Continuity in Athenian Grave Monuments in the Fourth and Third Centuries BC, in Rutter, N.K. and Sparkes, B.A. (eds.), *Word and Image in Ancient Greece*. Edinburgh University Press.
– (2000b): The Times they are a changing: Developments in fifth-century Funerary Sculpture, in Oliver, G.J. (ed.), *The Epigraphy of Death: Studies in the History and Society of Greece and Rome*. Liverpool University Press.
Stewart, A. (1990): *Greek Sculpture: En Exploration*. Vol. 1-2. New Haven: Yale University Press: 171–175.
Strauss, B.S. (1993): *Fathers and Songs in Athens: Ideology and Society in the era of the Peloponnesian War*. Princeton University Press.
Stupperich, R. (1994): The Iconography of Athenian State Burials in the Classical Period, in Coulson, W. (ed.), *The Archaeology of Athens and Attica under the Democracy*. Oxbow Monograph 37.
Von Rodenwaldt, G. (1923): *Das Relief Bei Dem Griechen*. Schoetz & Parrhysius.
Wasserman, F.M (1969): Serenity and Repose: Life and Death on Attic Tombstones. *The Classical Journal* 64(5): 193–202.
Wrenhaven, K.L. (2012): *Reconstructing the Slave: The Image of the Slave in Ancient Greece*. Bristol Classical Press.

Intracontinental Exchanges Before "Globalization": The Economy of Pre-Colonial Zimbabwe

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Globalization and capitalism, which structures current modes of relationships are often traced to the European conquest and colonization of the global south. But long-distance trade, industrialization, and mass consumption have their roots in early interactions. These interactions were often local and regional in scope which however increased in complexity and scale. A focus on long-distance exchange as a prime factor in the rise of socially complex chiefdoms and states has often overlooked regional economic networks upon which later economic and cultural interactions interlocked (C. Kusimba, Kim, and S. Kusimba, 2017). Based on the review of literature available on trade, this paper argues that regional and interregional trade involving pre-colonial Zimbabwe were forms of globalization which predate international contacts. This paper evaluates the impact of regional and interregional trade to the economies of pre-colonial Zimbabwean societies particularly Great Zimbabwe, Mutapa, and the Rozvi states. A discussion of the contribution of this branch of the economy (regional and interregional trade) to international trade is also presented. Given the nature of the available literature on regional and interregional trade involving pre-colonial Zimbabwe, the paper finally proposes a multi-disciplinary approach to the understanding of this system of trade.

Introduction

> The role of regional and intercontinental exchange remains very difficult to ignore in southern African antiquity. —Pikirayi, 2017:6

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Globalization is a process of integration and interconnectedness of trans-regional contacts. Often, these contacts results in an exchange of items, information, and ideas. But when and with what degree do these contacts become a process called globalization? Our contemporary conception of globalization regards this process to be a recent one which began in the 19th century CE. Nonetheless, the approach that this paper takes regards contacts, trade, and exchange between different people as globalization. As such, it would be misleading to treat pre-colonial regions of Africa as comprised of the same people. Thus, regional and interregional trade, involving pre-colonial African societies was a form of globalization predating the contemporary emergence of globalization of the 19th century CE.

Despite the above extract from (Pikirayi, 2017) which alludes to both international and interregional trade of Africa, this paper focuses on regional and interregional trade. This paper discusses pre-colonial trade and commerce in the Zimbabwe plateau as proxy for understanding and placing in context the still poorly understood organization of regional and interregional trade. Unlike in contemporary times, politcal and economic boundaries in pre-colonial Africa were fluid and shifted from time to time. This paper focuses on three main clusters of pre-colonial Zimbabwe namely: the southern, centered around Great Zimbabwe, the western, also known as the Mutapa state, and the northern, which is in the Rozvi state (Pikirayi, 1993; fig. 1). These clusters were political and economic successors to Mapungubwe (Huffman, 2000; Huffman, 2009; Huffman, 2015; Pikirayi, 1993; Pikirayi, 2001; Pwiti, 2005).

This paper deals with the period between 800 and 1700 CE, when socially complex societies were supported by an economy reliant upon agrarian and pastoral practices, from which urbanism, regional, and interregional trade emerged (Huffman, 1986; Pwiti, 2005; Mitchell, 2002). This period coincided with the Zimbabwe Culture, which is characterized by an investiment in monumentality and the standardization of craft production (Pikirayi, 2001; Pikirayi, 2013b; Huffman, 1996; Kim and C. Kusimba, 2008). Three distinct phases of Zimbawe Culture have been identified.

The first phase of the Zimbabwe Culture, and earliest manifestation of socially complex societies in southern Africa, originates at Mapungubwe, which is dated to 1200-1290 CE (Pwiti, 2005; Pikirayi, 2006; Kim and C. Kusimba, 2008; Chirikure, Manyanga, Pollard, Bandama, et al., 2014; Huffman, 2015). By 1200 CE, Mapungubwe had developed into a regional state with its citizens engaged in regional trade networks. However, recent research at Mapela, south-western Zimbabwe, has revealed an older chronology of two hundred years earlier suggesting that Mapungubwe is likely younger (Chirikure, Manyanga, Pollard, and Pikirayi, 2013; Chirikure, Manyanga, Pollard, Bandama, et al., 2014). Nonetheless, the evidence from both sites suggest regional transformations of small scale non-state societies into chiefly and state societies.

The second phase of the Zimbabwe Culture is Great Zimbabwe from 1250-1550 CE (Pikirayi, 2006; Kim and C. Kusimba, 2008). With regards to dry stone walling, the Zimbabwe Culture has mainly two types: terraced walls for platforms and freestanding walls for enclosures (Chirikure, Manyanga, Pollard, and Pikirayi, 2013). The freestanding

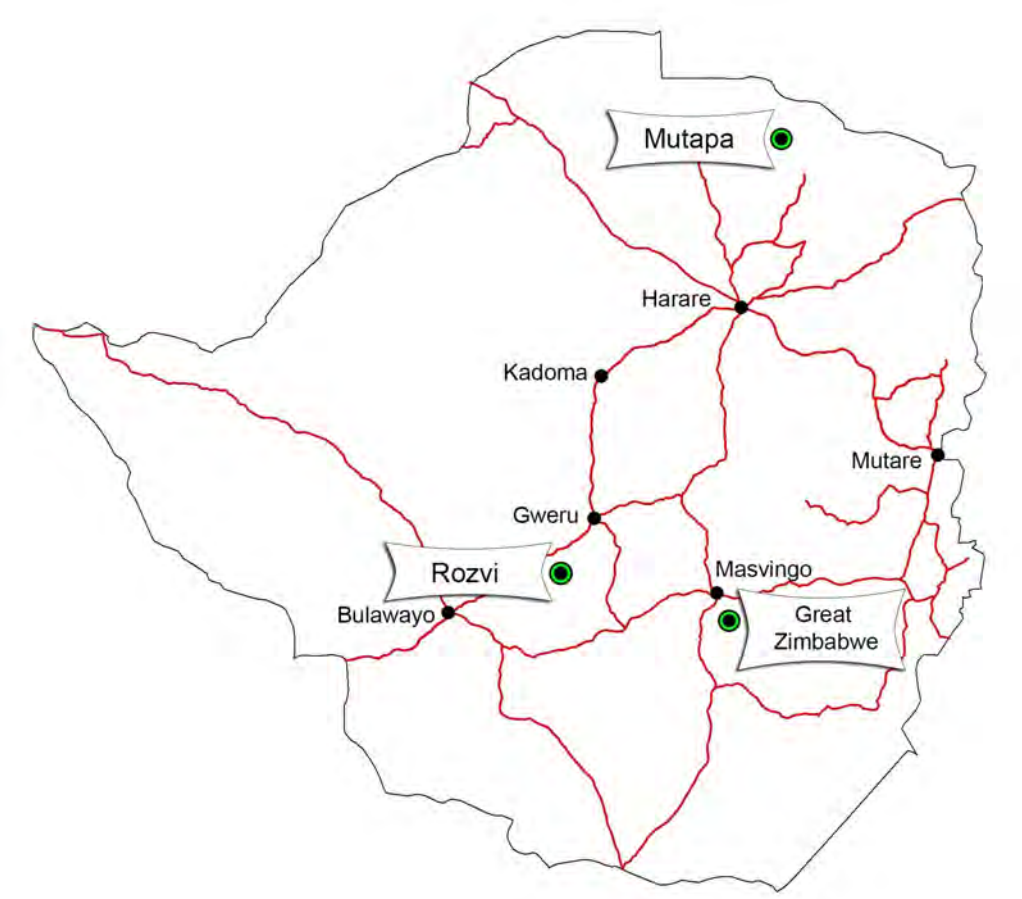

Figure 1: *Map showing Great Zimbabwe, Mutapa and Rozvi states*

walls, decorated with a chevron pattern, housed the elite and characterize the Great Zimbabwe phase of the Zimbabwe Culture.

The third phase of the Zimbabwe Culture is Khami, which spans from 1450 to 1820 CE (Manyanga, 2006; Chirikure, Manyanga, Pollard, Bandama, et al., 2014). Khami was part of the Torwa polity. In terms of pottery designs, Khami phase is characterized by bands and panels of black and red motifs (Huffman and Piesanie, 2011; Chirikure, Manyanga, Pollard, and Pikirayi, 2013). In the Khami phase, freestanding walls are rare as the phase is dominated by terraced platforms decorated by a check pattern (Huffman and Piesanie, 2011; Huffman, 2012; Chirikure, Manyanga, Pollard, and Pikirayi, 2013). This herringbone pattern represents chiefs residences (Pikirayi, 2007; Huffman and Piesanie, 2011).

Since regional and interregional trade networks are visible in the Zimbabwe Culture from Mapungubwe phase, the Farming Communities (formerly referred to as The Iron Age) experience was profoundly transformative in the social, economic and political spheres of southern Zambezia (Pikirayi, 2007). Zambezia refers to the regions drained by

the Zambezi River and the Zimbabwe plateau (Pikirayi, 2001:3). It covers five countries namely Zambia, Zimbabwe, Botswana, South Africa, and Mozambique (Kim and C. Kusimba, 2008). As early as 700 CE local networks of trade and exchange appear to be common, intensifying by 800 CE at Great Zimbabwe, and reached their peak by 1200 CE (C. Kusimba, 1999; Kim and C. Kusimba, 2008).

The impact of both international and regional trade to past societies is crucial in the understanding of the organization of these societies. The investigation of the importance of trade to pre-colonial Zimbabwe and beyond illuminates aspects of economic, political, and social organization. Trade relations and exchange between the coast and pre-colonial Zimbabwe is traceable from 700 CE to 1700 CE (Pwiti, 2005). The scale of regional trade is not fully known and estimates suggest it was relatively small scale in the early phases; but by the 1200 CE, long-distance exchange between the coast and inland southern Africa was well established (Pwiti, 1991; Pwiti, 2005; Chiripanhura, 2017). In most works, the effects of regional trade to past societies is undermined and overlooked, while that of international trade attracts more emphasis. Trade, be it regional or international, had profound effects to communities of Zimbabwe prior to its colonization.

The aim of this paper is two fold. First, it seeks to understand the role and effects of regional and interregional trade which involved pre-colonial Zimbabwean societies. Secondly, it is geared towards initiating reasearch on regional trade in southern Africa and interregional trade with other regions of the continent. In this paper, regional trade implies the contact of societies of the same region, in this case, societies of southern Africa. Interregional trade, on the other hand, implies contact of societies of different regions but of the same continent, for example trade between southern Africa and central Africa.

Great Zimbabwe

Following the demise of Mapungubwe in 1290 CE, dominance of trade routes shifted to Great Zimbabwe, which became a political, economic, and cultural sucessor to Mapungubwe (Pikirayi, 1993; Pwiti, 2005; Manyanga, 2006). Great Zimbabwe covered an area of 700 ha making it one of the largest states in Sub-Saharan Africa, built over centuries beginning 900 CE (Sinclair et al., 1993; Ndoro, 1997; Ndoro, 2001). The impressive architecture is estimated to have had a population of around 20,000 (Garlake, 1973; Hall, 1990; Kim and C. Kusimba, 2008). However, recent research on the population of Great Zimbabwe estimates 5000 inhabitants (Chirikure, Moultrie, et al., 2017). Great Zimbabwe has been a subject of debate for centuries with regards to its origins, known as the "Zimbabwe Controversy" (Tangri, 1990), but this debate has long been resolved to be "essentially African" in origin and character (Randall-MacIver, 1906; Ndoro, 1997). Current debates on Great Zimbabwe revolve upon the use and interpretation of space (see Huffman, 1984a; Huffman, 1984b; Huffman, 1996; Huffman, 2010; Huffman, 2014 on the other hand, Beach, 1998; Chirikure and Pikirayi, 2008; Pikirayi and Chirikure, 2011; Chirikure, Manyanga, Pollard, and Pikirayi, 2013).

Regional trade played a crucial role to the economy and social organization of pre-colonial societies within the Zimbabwe plateau. At Great Zimbabwe, iron gongs identical to those found in Zambia at Ingombe Ilede provide evidence of regional trade (Garlake, 1973). However, the small quantities of these items at Great Zimbabwe might suggest

that these were gifts presented to the royalty rather than a trade item. Copper crosses and barbed spearheads were imports found at Great Zimbabwe from central Africa (Pikirayi, 2006; Pikirayi, 2017). Local products from Great Zimbabwe for regional and interregional trade included soapstone, gold wire, and perforated gold sheets (Garlake, 1973; Pikirayi, 2006; Pikirayi, 2017).

Great Zimbabwe's regional trade links, led to the development of monumental architecture in Makgadikgadi Pans in Botswana (Pikirayi, 2017), such that local and interregional trade thrived and these iron-using farming communities prospered. From the 14th century to the 15th century CE, metal and copper working was intensively and extensively traded by people from Great Zimbabwe (Garlake, 1973) though it was mainly for regional and interregional trade. Hence, the importance of this branch of economy is not to be underestimated as the participation in international trade serves as a metaphor of the efficiency of local economies through regional and interregional trade (Pwiti, 1991; Pwiti, 2005; Manyanga, 2006; Pikirayi, 2006).

The appearance of these trade goods in the interior of southern Africa particularly at Great Zimbabwe is explained by the trade role of communities settled along the East African coast. Communities along the East African coast had established trade networks with traders from other continents prior to the 13th century CE, a period in which Great Zimbabwe became a major trading centre in southern Africa. When Great Zimbabwe emerged as a major trading centre, the communities along the east African coast still arbitrated the transoceanic trade. Goods were exchanged through intermediaries at Kilwa, Mafia, or Mogadishu but Arabs and Asians did not penetrate the interior of Africa (al-Radi, 1990). Consequently, east African coastal centres became affluent from the taxes levied on goods leaving the coast (al-Radi, 1990) and for Kilwa, this is supported by the impressive monumental architecture like the Grand Palace of Husuni Kubwa (Pikirayi, 2006). At Great Zimbabwe, a coin minted by al-Hasan ibn Sulaiman (1230–1233 CE), ruler from Kilwa was recovered showing the eminence of the east African coast centres in this viable trade interaction (Pikirayi, 2006). By the 12th century CE, Great Zimbabwe had extended its trade networks to the coast and to international trade, which became its major trading partner (Pwiti, 2005; C. Kusimba, 2007; Kim and C. Kusimba, 2008). This development was an important aspect of the economy of Great Zimbabwe, which however interlaced an already complex economy.

Great Zimbabwe prospered and reached its peak in the 13th century CE, which is demonstrated by its unparalleled architecture within the region. Wealth from regional and interregional trade could finance the massive investment of dry stone architecture at Great Zimbabwe (Kim and C. Kusimba, 2008). Great Zimbabwe was also involved in international trade which however, began to decline in the 15th century CE. This is indicated by the rare appearance of Chinese porcelain at Great Zimbabwe as the porcelain was now traded elsewhere in the Zimbabwe plateau (Pikirayi, 2006). Despite the strenghtened links between Great Zimbabwe and the coast, in the post 15th century CE period, "Great Zimbabwe was no longer trading" internationally (Garlake, 1973:135). Thus, in southern Africa particularly at Great Zimbabwe, international trade was considerably short-lived compared to regional and interregional trade.

Mutapa state

Little is known archaeologically about the Mutapa state and much of the literature available is historical, thus, attracting more historians than any other kind of researchers (Pikirayi, 1993). The Mutapa state was confined to the north of the Zimbabwean plateau occupying areas between Zambezi river to the north, Hunyani river to the southwest, and Mazoe river to the southeast (Beach, 1976:1). The rise and development of the Mutapa state is linked to the demise of Great Zimbabwe, after people migrated from the southern part of the Zimbabwean plateau to the northern part, where developments took place from 1450-1900 CE (Pikirayi, 2006).

There are suggestions that these migrations were caused by the deterioration of the environment leading to the demise of Great Zimbabwe (Huffman, 1972). However, recent research has established that Great Zimbabwe declined at a time when environmental conditions were favourable (Pikirayi, 2001; Pikirayi, 2006; Pikirayi, 2017; Chirikure, Moultrie, et al., 2017). The development of these historical states, such as Mutapa, rose as populations considered other areas to settle including the availability of resources for exploitation. Traditions on the establishment of the Mutapa state centres on the myth that the inhabitants of Great Zimbabwe left the southern part of the Zimbabwean plateau to the north in search of salt (Abraham, 1961). This implies two critical observations to this discussion of trade, shifting trade routes and the impact of trade to pre-colonial Zimbabwean societies: there is an indication of diminution of resources at Great Zimbabwe causing a shift in dominace of trade.

Trade, both regional and international, was essential to the economy of the Mutapa state. As a means of consolidating their power and authority, the leaders of the Mutapa state controlled economic activities but did not monopolize it (Mudenge, 1974; Mudenge, 1988). With local trade, the leaders of the Mutapa state depended on the alacrity of their subjects (Chanaiwa, 1972). On international trade, the leaders of the Mutapa state relied on tax levied on exports and imports. The northern part of Zimbabwe (where the Mutapa state was located) was rich in gold, silver, ivory, and copper which was destined for regional and international markets (Chanaiwa, 1972). The Mutapa state exported these natural resources in exchange for manufactured products, such as cloth and beads. The exploitation of these natural resources was permitted only by the Mwene Mutapa, who was the king of the Mutapa state. The Mwene Mutapa owned royal mines that locals, fellow inhabitants of the Mutapa state worked in and were rewarded by cattle (Chanaiwa, 1972). Once the natural resources were obtained, the locals would trade with the Portuguese. It is key to note that the Mutapa state was one of the main contributors of interregional trade through gold, copper, ivory, and cattle (C. Kusimba, 1999:126).

However, from the 17th century CE, civil wars and local rivalries were exacerbated by Portuguese intervention which destabilized African societies (Chanaiwa, 1972; al-Radi, 1990; Kinahan, 2000). The Portuguese affected not only the economy of the Mutapa state but the politics of this state, as the Portuguese were agents of disintegration of the complex Mutapa state (Chanaiwa, 1972:435). In the 17th century CE, the Mwene Mutapa became very unpopular and his power dwindled drastically. Consequently, he was incapable of consolidating the peace and order necessary for the success and flourishing of trade; hence, trade was interrupted (Chanaiwa, 1972). In summary, as stated by Chanaiwa (1972:435), "the economy was gone".

Rozvi state

The Rozvi state emerged after the decline of Great Zimbabwe, this is likely due to shifting trade routes in mid 15th century CE. The Rozvi state is dated between 1450 and 1830 CE (Pikirayi, 2006). This historic state has not attracted much archaeological attention, but rather historical like the Mutapa state. The Rozvi state was a political successor of the Torwa state which had its capital at Khami (Pikirayi, 2006; Pikirayi, 2013a; Manyanga, Pikirayi, and Chirikure, 2010). The Rozvi state was founded by a Changamire, the Rozvi king, who in 1670 CE stormed and captured the Torwa. This led to the formation of the Rozvi state, with its capital at Danamombe in south-western Zimbabwe (Mudenge, 1988; Beach, 1980; Huffman, 1996:17). The Rozvi state mainly traded with the Portuguese.

From the archaeological record and historical accounts, the Rozvi craftsmen worked iron, copper, bronze, and gold, produced carved objects from ivory and soapstone, and made beads from ostrich egg shells (Mudenge, 1974). From soft metals, the Rozvi made bangles, chains, earrings, and bracelets. These products ensured that the economy of the Rozvi state flourished through interregional trade. Since agriculture and pastoralism were the basis of the economy of the Rozvi state (Mudenge, 1974), cattle was the main export destined for regional trade. However, this trade item (cattle) is very problematic to prove from the archaeological record. For Mudenge (1974), cattle was the economic prop of the Rozvi state.

Discussion

After discussing the economic organization of the main clusters of pre-colonial Zimbabwe, I look at international trade involving these societies. Furthermore, the implication of regional and interregional trade to international trade will also be discussed.

Global trade from around 1200 CE diversified the economy and society of Great Zimbabwe. Among the principal exports from the region were gold and ivory (Mudenge, 1988; Pwiti, 2005; Pikirayi, 2006). The imports included cowrie shells, porcelain, celadon, Far and Near Eastern stoneware (Garlake, 1973; Garlake, 1982; Pikirayi, 2006), glazed Persian bowls with inscription of Naskhi characters dated to the 13th or 14th century CE (Garlake, 1973). Among the imports were glass beads of various colours of an Indian and Persian origin (fig 2) and Islamic wares (Huffman, 1972; Huffman, 2000; Kim and C. Kusimba, 2008; Chirikure and Pikirayi, 2008). The imported glass beads recovered from Great Zimbabwe (fig 2) are identical to those found at centres of the East African coast (Chirikure and Pikirayi, 2008; C. Kusimba, Kim, and S. Kusimba, 2017). It is probable that the appearance of exotic goods in the interior of southern Africa was the work of Arab and later Swahili traders (C. Kusimba, 1999; Ndoro, 2001:22). Therefore, the earliest international contact with pre-colonial Zimbabwe societies was with the Eastern world. As a result of the colonial contact, European goods found their way into southern Africa during the 15th century CE.

During the Mutapa phase the Portuguese, centered in coastal Mozambique, became the main trading partners. The Portuguese were more interested in monopolizing extractive economies, especially gold from the Mutapa state. After the 1500 CE, the Portuguese aimed at trading directly with African societies including the Mutapa state. Consequently, trading markets (*feiras*) were established at places such as Dambarare, Manyika and Rimuka (Pikirayi, 1993; Pikirayi, 2009). By so doing, the Portuguese aggressively sought to overthrow Swahili and Arab traders of the east African coast,

Figure 2: *Example of imported glass beads found at Great Zimbabwe*
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who had pioneered these networks of exchange (Sinclair, 1987; C. Kusimba, 1999; Pwiti, 2005).

The Rozvi *mambo*, (King of the Rozvi state) by allowing individual participation in long-distance trade avoided rousing undue resentment, but his wealth from external trade was through tribute. Tribute was paid in form of gold, ivory, beads, and cloth, which were the main returns of external trade (Mudenge, 1974). It is in this regard that tribute was important to the leaders of the Rozvi state as it served dual purpose: economic and political. From the Portuguese, the Rozvi received luxury goods like beads, seashells, brass bells, and cloth (Mudenge, 1974). Imports from other continents beyond Africa were important even to the consolidation of power and authority in the Rozvi state. One example is of imported cloth which played an important role in the politics of the Rozvi state. At the investiture of a new chief, the Rozvi mambo would send black and white calico as the official regalia of the new chief (Mudenge, 1974; Bvocho, 2005). Giving the new chief black and white calico might imply the rarity of the cloth. If, however, the cloth was abundant, possibly there was no need to send it to the new chief as the chief could easily acquire the regalia. Or, it may also imply that the cloth was in abundance, but as a sign of the mambo's recognition of the new chief, he would send the imported cloth (Bvocho, 2005). It seems more likely that the latter was the situation since long-distance trade in the Rozvi state was open to individual participation. Nonetheless, the imports within the Rozvi state were luxury goods, which had other internal valuable alternatives (Mudenge, 1974).

The evidence of international trade involving pre-colonial Zimbabwe attests to the presence of regional and interregional trade. From the interior of southern Africa, trade items for international trade had to pass through the east African coast (Pwiti, 2005). The towns of Zuama and Angoche on the Zambezi Delta, for example, were centres where gold and ivory from the Mutapa state was exchanged for cotton, silk, and beads (Barbosa, 1917:15 as cited in C. Kusimba, 1999:130). During international trade, east African coastal centres played an intermediary role linking southern Africa and regions beyond. Trade goods from the interior of Africa were transported to coastal centres like Sofala and Kilwa which was the primary beneficiary of the gold trade from Zimbabwe (Miller, Desai, and Lee-Thorp, 2000; Pwiti, 2005; Pikirayi, 2006; Huffman, 2009). As a

result of the prosperity of this gold trade in the 13th century CE mirrored also at Kilwa, the Grand Palace of Husuni Kubwa reflects the wealth of this state system (Pikirayi, 2006; Pikirayi, 2017). As noted by Pwiti (2005:387) and Pikirayi (2017), communities at Kilwa and in pre-colonial Zimbabwe benefited from each other.

Once these goods reached these trading centres, traders from other continents were not allowed into the interior of Africa (al-Radi, 1990). In light of the above, C. Kusimba (1999) and Manyanga (2006) note that the implication of regional and interregional trade to international trade is that the former required great planning and organization without which the latter could not be established. Hence, from the nature of the organization of international trade, it seems most probable that regions in Africa were involved in trade with each other. In support of this, Pwiti (2005) notes that the decline of Great Zimbabwe in the last half of the 15th century CE is associated with the same development at Kilwa. Thus, the emerging economic picture between these states is that of a symbiotic relationship.

Regional and interregional trade involving Zimbabwe: Future prospects

After discussing the evidence of regional and interregional trade, I will now discuss possible methods that researchers may employ in order to address pre-colonial regional and interregional trade. The application of the methods discussed was drawn from regions where they have been used elsewhere but are still lagging behind in Zimbabwean archaeology. The few methods given here are, however, for purpose of illustration. From the available literature, there is overwhelming evidence of international trade involving southern African societies. This might be a result of the role of international trade, which early researchers assumed was the prime mover in the development of socially complex societies (Huffman, 1972; Huffman, 1982; Huffman, 1986; Huffman, 2009). However, very little is known about regional and interregional trade. Thus, the methods discussed here, if employed, are aimed at increasing our knowledge of pre-colonial regional and interregional trade, which involved pre-colonial Zimbabwe.

The ubiquity of glass beads recovered in southern Zambezia beginning from the Mapungubwe phase have provided the finest example of interregional networks. Due to their portability, affordability, and durability, glass beads were consumed over much of the region and provide the finest signature for evaluating the nature, scale, and distribution of interregional trade (Dussubieux et al., 2008). Advances in geochemistry have made it possible to carry out relatively cheap composition analyses of glass beads. For example, X-Ray Fluorescence (Wavelength Dispersive XRF and portable XRF) is a non-destructive technique that is used to characterise major and minor elements of glass to enable the determination of the overall mineralogical and elemental signature of the samples (Pernicka, 2014:245). These techniques have been used to source the origins of this trade item, as their sources can be established (Wood, 2000). In a recent study of glass beads produced between 800 and 1600 CE, Robertshaw and colleagues established that Zhizo beads dating between the 8th and 10th century CE were made from plant-ash, which is specific to the Middle East, probably Iran and not from South Asia as had been previously assumed (Robertshaw et al., 2010).

Important evidence on the investigation of this topic on pre-colonial Zimbabwean societies is metals, which were exchanged for livestock and grain. Some iron products

were hoes, axes, and spear heads. While gold, ivory, and other valuables were destined for international consumption, iron and copper provide evidence for regional trading networks (Pikirayi, 2017:13). Metals in southern Africa were influential in determining regional trade as metallurgy led to opportunities for trade and exchange at local, regional, and international scales (Chirikure, 2007; Chirikure, Thondhlana, and Bandama, 2013). On archaeometallurgical research in Zimbabwe, the work of Chirikure (2005, 2006, 2007, 2010, 2015) has been exceptional in the last decade or so. Nonetheless, Chirikure, Thondhlana, and Bandama (2013:152) acknowledge that archaeometallurgy in Zimbabwe is still in its infancy. This has been a major setback to the overall appreciation of ancient metals. For example, ingots (known as Katanga crosses) have been found at Great Zimbabwe and their presence has been used as evidence of trade between Great Zimbabwe and central Africa. To date, no geochemical work has been carried out to prove that Katanga is the source of such items.

Similarly, archaeometallurgical studies based on chemical elemental and lead isotopic composition have been instrumental in the analysis of ancient metal working. Lead has four isotopes that are stable, these are ^{206}Pb, ^{207}Pb, ^{208}Pb and ^{204}Pb. The first three are time dependent and are produced by the radioactive decay of parent isotopes ^{238}U, ^{235}U and ^{232}Th, respectively. ^{204}Pb is stable but time independent as its abundance has not changed from the formation of the earth (Molofsky, 2009; Baron, Tamas, and Carlier, 2014; Pernicka, 2014). The application of lead isotopic analyses in archaeology is based on the premise that sources of metals can be distinguished from each other. For example, deposit on bivariate plots (e.g., ^{208}Pb/^{204}Pb vs ^{207}Pb/^{204}Pb) gives a unique signature for that deposit which is used to match its parent ore source (Molofsky, 2009). Molofsky (2009) employed metal provenance studies in southern Africa to understand metal objects from this region. They established that Rooiberg was the source of tin and soft metal working in southern Africa.

Evidence of regional and interregional trade in southern Africa and beyond is also in the form of ceramics. As evidence of trade, Garlake (1968:22) observes that prior to the dominance of Portuguese as the major trading partner with Africa, over 90 % of imported ceramics found in central Africa were from Zimbabwe. Thus, ceramics were used in trade relations that were essential to the economy of pre-colonial Zimbabwean societies. Regardless of the centrality of ceramics to past societies, there still remains a handful archaeometric research to understand the role of ceramics in the discusion of trade and exchange in Zimbabwean archaeology (Lindahl and Pikirayi, 2010; Ashley and Grillo, 2015).

The application of petrographic analysis and ceramic provenance studies is vital in the appreciation of trade and exchange of ceramics. Ceramics survive long in the archaeological record, hence, the increased potential to subject this material to a wide range of analyses. In most Zimbabwean archaeological studies, ceramics have been used as pointers to culture change, identify traditions, and patterns of migrations (Huffman, 1972; Pikirayi, 1993; Pikirayi, 1996; Pwiti, 1996) without necessarily looking at how this material culture could have been used in trade and exchange regionally. Wilmsen et al. (2009) used petrology and clay chemistry to identify the origins of ceramics from

Botswana. Their study showed that most of the clay constituents were from Angola, thus, showing patterns of trade and exchange through ceramics.

Overall, tradtional archaeology complemented by laboratory studies clearly demonstrate that networks of exchnage in Africa were vast. The scale of production and investment in local extractive economies including mining, smelting, and making metallurgical products including gold, tin, and iron for wide distribution was well established by 1200 CE.

Conclusion

Contacts involving pre-colonial Zimbabwean societies resulted in an exchange of goods and ideas (Pikirayi, 2017). Such contacts have often been viewed in international perspective as the main consolidator of wealth (Manyanga, 2006) and a precursor of power (C. Kusimba, Kim, and S. Kusimba, 2017) thereby limiting the appreciation of regional and interregional contacts. However, regional and interregional trade was an important facet in the economies of the societies under study, that is the Great Zimbabwe, Mutapa, and Rozvi states. The complexity of interregional trading systems involving southern Africa indicates that interregional trade within Africa was the foundation on which international trade was based. As such, the participation of pre-colonial Zimbabwean societies in international trade indicates the thriving of regional and interregional trade.

Several spheres of exchange including long distance international, regional and interregional interactions characterise pre-colonial Zimbabwean societies. These spheres of exchange transcended state boundaries within and across continents. In spite of this, archeaological research in southern Africa, particularly Zimbabwe, to understand regional and interregional trade is still minimal. The application of characterisation studies in the study of archaeological artifacts will advance our knowledge of the evolution of the states in southern Zambezia. Particularly for Zimbabwean archaeology, complementary techniques drawn from geochemistry, and metallurgy will transform our understanding of pre-colonial Zimbabwean economies. There is need for Zimbabwean archaeology to fully embrace the aspirations of the New Archaeology. Thus, there is a bright future for Zimbabwean archaeology to explore pre-colonial regional and interregional trade.

Dedication

To my loving parents Clement Nyambiya and Rubbee Mutanda-Nyambiya.

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References

Abraham, D.P. (1961): Maramuca: An exercise in the combined use of Portuguese records and oral tradition. *The Journal of African History* 2(2): 211–225.

Ashley, C.Z. and Grillo, K.M. (2015): Archeological ceramics from eastern Africa: Past approaches and future directions. *Azania: Archaeological Research in Africa* 50(4): 460–480.

Baron, S., Tamas, C.G., and Carlier, C. Le (2014): How mineralogy and geochemistry can improve the significance of Pb isotopes in metal provenance studies. *Archaeometry* 56(4): 665–680.

Beach, D.N. (1976): The Mutapa dynasty: A comparison of documentary and traditional evidence. *History in Africa* 3: 1–17.

– (1980): *The Shona and Zimbabwe, 900–1850: An Outline of Shona History*. Gweru: Mambo Press.

– (1998): Cognitive archaeology and imaginary history at Great Zimbabwe. *Current Archaeology* 39(1): 47–72.

Bvocho, G. (2005): Ornaments as social and chronological icons: A case study of south-eastern Zimbabwe. *Journal of Social Archaeology* 5(3): 409–424.

Chanaiwa, D. (1972): Politica and long-distance trade in the Mwene Mutapa Empire during the sixteenth century. *The International Journal of African Hisrorical Studies* 5(3): 424–435.

Chirikure, S. (2005): Iron Production in Iron Age Zimbabwe: Stagnation or Innovation? PhD thesis. University College London.

– (2006): New light on Njanja iron working: Towards a systematic encounter between ethnohistory and archaeometallurgy. *South African Archaeological Bulletin* 61(184): 142–151.

– (2007): Metals in society: Iron production and its position in Iron Age communities of southern Africa. *Journal of Social Archaeology* 7(1): 72–100.

– (2010): *Indigenous mining and metallurgy in Africa*. Cambridge: Cambridge University Press.

– (2015): *Metals in Past Societies: A Global Perspective on Indigenous African Metallurgy*. New York: Springer.

Chirikure, S., Manyanga, M., Pollard, A.M., Bandama, F., et al. (2014): Zimbabwe Culture before Mapungubwe: New Evidence from Mapela Hill, South-Western Zimbabwe. *PLoS ONE* 9(10): 1–18.

Chirikure, S., Manyanga, M., Pollard, A.M., and Pikirayi, I. (2013): New pathways of sociopolitical complexity in southern Africa. *African Archaeological Review* 30(4): 339–366.

Chirikure, S., Moultrie, T., et al. (2017): What was the population of Great Zimbabwe (CE1000-1800)? *PLoS ONE* 12(6).

Chirikure, S. and Pikirayi, I. (2008): Inside and outside the dry stone walls: revisiting material culture of Great Zimbabwe. *Antiquity* 82: 976–993.

Chirikure, S., Thondhlana, T.P., and Bandama, F. (2013): Pre-colonial mining and metalworking in southern Africa: An overview with specific reference to Zimbabwe, in Manyanga, M. and Katsamudanga, S. (eds.), *Zimbabwean archaeology in the Post-Independence era*. Sapes Books.

Chiripanhura, P. (2017): Archaeological Collections As A Prime Research Asset: Objects And Great Zimbabwe's Past. PhD thesis. University of Cape Town.

Dussubieux, L. et al. (2008): The trading of ancient glass beads: new analytical data from South Asian and East African soda-alumina glass beads. *Archaeometry* 50(5): 797–821.
Garlake, P.S. (1968): The Value of Imported Ceramics in the Dating and Interpretation of the Rhodesian Iron Age. *The Journal of African History* 9(1): 13–33.
– (1973): *Great Zimbabwe*. London: Thames and Hudson.
– (1982): *Great Zimbabwe Described and Explained*. Harare: Zimbabwe Publishing House.
Hall, M. (1990): *Farmers, kings and traders: The peoples of southern Africa, 200–1860*. Chicago: University of Chicago Press.
Huffman, T.N. (1972): The rise and fall of Zimbabwe. *The Journal of African History* 13(3): 353–366.
– (1982): Archaeology and ethnohistory of the African Iron Age. *Annual Review of Anthropology* 11: 133–150.
– (1984a): Expressive space in the Zimbabwe Culture. *Man* 19(4): 593–612.
– (1984b): Where you are the girls gather to play: The Great Enclosure at Great Zimbabwe, in Hall, M. et al. (eds.), *Frontiers: Southern African archaeology today*. Cambridge: British Archaeological Reports (Oxford) Ltd.
– (1986): Cognitive studies of the iron age in southern Africa. *World Archaeology* 18(1): 84–95.
– (1996): *Snakes and crocodiles: power and symbolism in ancient Zimbabwe*. Johannesburg: Witwatersrand University Press.
– (2000): Mapungubwe and the origins of the Zimbabwe culture. *South African Archaeological Society* 8: 14–21.
– (2009): Mapungubwe and Great Zimbabwe: The origin and spread of social complexity in southern Africa. *Journal of Anthropological Archaeology* 28: 37–54.
– (2010): Revisiting Great Zimbabwe. *Azania: Archaeological research in Africa* 45(3): 321–328.
– (2012): Historical archaeology of the Mapungubwe area: Boer, Birwa, Sotho-Tswana and Machete. *Southern African Humanities* 24: 33–59.
– (2014): Ritual space in the Zimbabwe Culture. *Ethnoarchaeology* 6(1): 4–39.
– (2015): Social Complexity in Southern Africa. *African Archaeological Review* 32(1): 71–91.
Huffman, T.N. and Piesanie, J. Du (2011): Khami and the Venda in the Mapungubwe Landscape. *Journal of African Archaeology* 9(2): 189–206.
Kim, N.C. and Kusimba, C.M. (2008): Pathways to Social Complexity and State Formation in the Southern Zambezian Region. *African Archaeological Review* 25: 131–152.
Kinahan, J. (2000): Cattle for Beads: the historical contact and trade on the Namid Coast. PhD thesis. Uppsala University.
Kusimba, C.M. (1999): *The rise and fall of Swahili states*. Walnut Creek: AltaMira.
– (2007): The collapse of coastal city-states of East Africa, in Ogundiran, A. and Falola, T. (eds.), *Archaeology of Atlantic Africa and the African Diaspora*. 160-184. Bloomington: Indiana University Press.
Kusimba, C.M., Kim, N.C., and Kusimba, S. (2017): Trade and state formation in ancient east African coast and southern Zambezia, in Chacon, R.J. and Mendoza, R.G. (eds.), *Feast, Famine or Fighting?: Multiple pathways to social complexity. Studies in human ecology and adaptation*. 61-89. Cham: Springer International Publishing AG.

Lindahl, A. and Pikirayi, I. (2010): Ceramics and change: an overview of pottery production techniques in northern South Africa and eastern Zimbabwe during the first and second millennium AD. *Archaeological and Anthropological Sciences* 2(3): 133–149.

Manyanga, M. (2006): Resilient landscapes: socio-environmental dynamics in the Shashi-Limpopo Basin, southern Zimbabwe c. AD 800 to the present. PhD thesis. Uppsala University.

Manyanga, M., Pikirayi, I., and Chirikure, S. (2010): Conceptualising the urban mind in Pre-European southern Africa: Rethinking Mapungubwe and Great Zimbabwe, in Sinclair, P.J.J. et al. (eds.), *The urban mind: Cultural and environmental dynamics*. 573-590. Uppsala University.

Miller, D., Desai, N., and Lee-Thorp, J. (2000): Indigenous Gold Mining in Southern Africa: A Review. *South African Archaeological Society Goodwin Series* 8: 91–99.

Mitchell, P. (2002): *The archaeology of southern Africa*. Cambridge: Cambridge University Press.

Molofsky, J.L. (2009): A Novel Approach To Lead Isotope Provenance Studies Of Tin And Bronze. MA thesis. University of Arizona.

Mudenge, S.I. (1974): The role of foreign trade in the Rozvi Empire: A reappraisal. *The Journal of African History* XV(3): 373–391.

– (1988): *A Political History of Munhumutapa*. Harare: Zimbabwe Publishing House.

Ndoro, W. (1997): Great Zimbabwe. *Scientific American*: 94–99.

– (2001): Your monument our shrine: The preservation of Great Zimbabwe. PhD thesis. Uppsala University.

Pernicka, E. (2014): Provenance determination of archaeological metal objects, in Roberts, B. W. and Thornton, C.P. (eds.), *Archaeometallurgy in global perspective*. New York: Springer: 239–268.

Pikirayi, I. (1993): The archaeological identity of the Mutapa state: towards an historical archaeology of northern Zimbabwe. PhD thesis. Uppsala University.

– (1996): Ceramics and culture change in northern Zimbabwe: on the origins of the Musengezi tradition, in Pwiti, G. and Soper, R. (eds.), *Aspects of African archaeology: Papers from the 10th Congress of the PanAfrican Association for prehistory and related studies*. Harare: University of Zimbabwe Publications: 629–639.

– (2001): *The Zimbabwe Culture: Origins and Decline of Southern Zambezian States*. Walnut Creek: AltaMira.

– (2006): The demise of Great Zimbabwe, AD 1420–1550: an environmental re-appraisal, in Green, A. and Leech, R. (eds.), *Cities in the World, 1500–2000: papers given at the conference of the Society for Post-Medieval Archaeology*. 31-47. Leeds: Maney.

– (2007): Ceramics and group identities: Towards a social archaeology in southern African Iron Age ceramic studies. *Journal of Social Archaeology* 7: 286–301.

– (2009): Palaces, feiras and prazos. An historical archaeological perspective of African–Portuguese contact in Northern Zimbabwe. *African Archaeological Review* 26: 163–185.

– (2013a): Great Zimbabwe in Historical Archaeology: Reconceptualizing Decline, Abandonment, and Reoccupation of an Ancient Polity, A.D. 1450-1900. *Historical Archaeology* 47(1): 26–37.

– (2013b): Stone architecture and the development of power in the Zimbabwe Tradition A.D 1270-1830. *Azania: Archaeological Research in Africa* 48(2): 282–300.

– (2017): Trade, globalisation and the archaic state in southern Africa. *Journal of Southern African Studies*: 1–15.
Pikirayi, I. and Chirikure, S. (2011): Debating Great Zimbabwe. *Azania: Archaeological Research in Africa* 46(2): 221–231.
Pwiti, G. (1991): Trade and economies in southern Africa: the archaeological evidence. *Zambezia* XVIII(II): 119–129.
– (1996): Continuity and change: An archaeological study of farming communities in northern Zimbabwe AD 500-1700. PhD thesis. Uppsala University.
– (2005): Southern Africa and the East African Coast, in Stahl, A.B. (ed.), *African archaeology: a critical introduction*. 378-391. Oxford: Blackwell Publishing.
al-Radi, S. (1990): A brief history of the east African coast, in Powell, R. (ed.). 270-276. Aga Khan Award for architecture.
Randall-MacIver, D. (1906): *Mediaeval Rhodesia*. London: Macmillan.
Robertshaw, P. et al. (2010): Southern African glass beads: Chemistry, glass sources and patterns of trade. *Journal of Archaeological Science* 37: 1898–1912.
Sinclair, P.J.J. (1987): *Space, Time and Social Formation: A Territorial Approach to the Archaeology and Anthropology of Zimbabwe and Mozambique, c. 0–1700 A.D.* Uppsala: Societas Archaeologica Upsaliensis.
Sinclair, P.J.J. et al. (1993): Urban trajectories on the Zimbabwe plateua, in Shaw, T. et al. (eds.), *The archaeology of Africa: Food, metals and towns*. London: Routledge: 705–731.
Tangri, D. (1990): Popular fiction and the Zimbabwe controversy. *History in Africa* 17: 293–304.
Wilmsen, E.N. et al. (2009): The social geography of pottery in Botswana as reconstructed by optical petrography. *Journal of African Archaeology* 7(1): 3–39.
Wood, M. (2000): Making Connections: Relationships between international trade and glass beads from the Shashe-Limpopo area. *South African Archaeological Society Goodwin Series* 8: 78–90.

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Robben Island: Representation and Interpretation of the materiality of apartheid and imprisonment

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Keywords: Apartheid, Imprisonment, material culture

This paper examines the symbolic interpretations and material representations of the apartheid political imprisonment period on Robben Island (South Africa). It is a critical archaeology of conflict, examining what survives, why is that material record important, and what mechanisms exists for retaining its significance in a form that can benefit present and future generations (Howard, 1994:1; Carman 1997 in Beck and Schofield, 2004). Robben Island Museum presents a narration of inhumane political imprisonment, based on the oral histories and memory of former political prisoners, with much emphasis on the 'triumph' of political prisoners in enduring the inhumane prison conditions. Little is being done to engage with the inhumane practices of Robben Island apartheid political imprisonment through the use of material culture objects. Although the values we place on material culture objects are diverse, material culture objects usually provide an experience that is substantially different from oral histories, as oral histories and memory tend to change with space and time. Therefore, this paper intends to connect these oral histories and memories to material culture objects so that they too are part of the apartheid political imprisonment story.

Robben Island is in Table Bay, 6.9 km west of the coast of Bloubergstrand, Cape Town, South Africa, with coordinates of 33.8076° S, 18.3712° E as seen in figs. 1 and 2, and fig. 3 below. The name 'Robben' is a Dutch word 'Robbe' meaning 'Seal'. The island was named after the seals which are found around the island.

Robben Island was declared a National Museum in 1996 and a World Heritage Site in 1999. It is a living museum with the vision of making sure that the history of Robben Island is remembered and promoted as a unique symbol of the "triumph of the human

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Figure 1: *Location of Robben Island in Southern Africa*
© by Google Satellite Maps 2017, image created by the author). Available from: https://www.google.co.za/maps/search/robben+island+museum+in+africa/@-27.2742339,18.2402094,1887137m/data=!3m1!1e3?hl=en. (Accessed on 11 February 2017).

Figure 2: *Aerial view of Robben Island with Table Mountain in the background*
© by South African History online http://www.sahistory.org.za/sites/default/files/u7/robben-island-pic.jpg) Accessed on 09 February 2017).

Figure 3: *Robben Island map*
© by Source: Cape Town heritage website: http://www.cape-town-heritage.co.za/img/robben-island-map.jpg. (Accessed on 09 February 2017)

Figure 4: *Robben Island Museum: (left) entrance to the prison from the harbour, and (right) a view of the maximum prison*

spirit over hardship and injustice" (*Integrated Conservation Management Plan: Abridged Version* 2007–2012) (fig. 4). Although Robben Island Museum's status as a World Heritage Site derives from a far longer history, as a place of banishment, confinement, armament, and settlement, it is most popularly known through apartheid history, as a place of imprisonment.

Many scholars (Hutton, 1997; Nesje, 2005; Rioufol, 2000; Solani, 2000) have argued over the interpretive narratives of Robben Island. In support of the apartheid narrative Rioufol (2000) and Solani (2000) state that, in the creation of a unified national identity, a reconciliatory image, one of 'the triumph of human spirit', was chosen at the expense of a broader apartheid narratives as witnessed on the museum's statement of significance by Ahmed Kathrada:

> While we will not forget the brutality of apartheid, we will not want Robben Island to be a monument to our hardship and suffering. We would want it to be a triumph of the human spirit against the forces of evil. A triumph of wisdom and largeness of spirit against small minds and pettiness; a triumph of courage and determination over human frailty and weakness, a triumph of the new South Africa over the old…
> —*Integrated Conservation Management Plan: Abridged Version* 2007–2012:17

However, this triumphant narrative, and its focus on memory-makers, influential political inmates such as Nelson Mandela and Ahmed Kathrada, neglects the broader apartheid prison experience of inhumanity.

In this paper, I present the inhumanity of apartheid political imprisonment through the use of material culture objects. In presenting these objects I hope to address the imbalances of the Robben Island museum narrative. Furthermore, I discuss the role of museums, as national institutions of knowledge, nation building, and as an instrument of power in confronting the ills of the past.

Current Museum Apartheid Narrative

Solani (2000) explains that the Museum perpetuates the Mandela myth, despite Robert Sobukwe's, the founding president of the Pan African Congress (PAC), house being located in the prison yard, rather much of the attention is paid to Nelson Mandela: his cell and labour in the lime quarry and the courtyard. From my experience as a tour guide in 2015, I noticed visitors were not taken to the Blue Stone Quarry, which is where most of the brutality took place and where the majority of prisoners worked during the 1960's. This focus, as Rioufol (1999) points out, on influential memory-makers neglects the broader apartheid political imprisonment narrative. Accordingly, this focus neglects a broader selection of spaces and material culture available to the museum and the agency of materials to narrate the imprisonment experience.

Within this 'triumphant' narrative the museum prioritizes oral accounts over movable material culture. Although ex-political prisoners are tour guides on the Island who share their experiences during their time of imprisonment, this alone is not enough in fostering the story of the individual, everyday-lived experiences of political prisoners on the Island. However, there has been some effort to include material culture objects in the Museum narrative, especially in the house of Robert Sobukwe (Pan African Congress Leader) and in most of the prison cells. Nonetheless, there remain many spaces that are not filled by objects that could enhance the museum narrative of the everyday life of imprisonment, for instance, in the hospital, kitchen, or church. This gap in the narrative can be addressed by the physical evidence of movable material culture objects that can mediate between the past and the present.

Movable material culture objects have not played a prominent role in the story of apartheid political imprisonment at Robben Island. The second *Integrated Conservation Management Plan: Abridged Version* (2013–2018), argues that the first ICMP Interpretation Plan was not properly implemented, possibly because it was considered too complex and, therefore, difficult to implement. This has produced an ineffectual communication of the histories of Robben Island by not developing the relationship between tangible and intangible heritage. The relationship between tangible and intangible heritage is the attachment of memories on objects in order to let objects speak for themselves, whereby the objects are tangible representations of intangible heritage (Hoskins, 2006).

Robben Island Museum is the custodian of historical objects that were left on the Island by the prison authorities, such as picks, hammers, spades, and ropes (Wintein, 2015). These objects are locked in storerooms; consequently, few of these objects, arguably central to narrating the inhumanity of Robben Island political imprisonment, have been exhibited to the public. Therefore, I chose to document and present these objects.

Method

In carrying out the research, I consulted published and unpublished written records, as well as audio and video interviews of former apartheid political prisoners at Robben Island-Mayibuye Archives. I also attended numerous guided tours with different tour guides to have an understanding of the background of the museum and how it is presented to the public. Museum Collections and Conservation Unit Manager, Ms Caroline Wintein, gave me the Permission under a request from the University of the Western Cape and Robben Island Education Department to tour Museum storage rooms and to take photographs of objects for research purposes. I could have expanded my

research to produce a broader narrative of apartheid political imprisonment on the Island by including other material culture objects at neglected sites such as the hospital, workshop, sports field, kitchen, and agriculture, but I had limited time to complete my research in the fulfilment of my Post Graduate Diploma in Museums and Heritage Studies.

ROBBEN ISLAND APARTHEID INTERPRETATIONS

* * *

Apartheid South Africa

South Africa witnessed segregation and discrimination from 1948 to 1994, the then government passed discriminatory laws to control every aspect of black people's lives, laws about where people could live, work, trade, and learn. Severe measures were taken against those who resisted, and those who fought against these laws were arrested and incarcerated on Robben Island from 1960 until 1991.

Before 1970 most prisoners were sentenced to hard labour working in either the stone or lime quarries, collecting seaweed in the ice-cold sea, and breaking rocks into smaller pieces. Failure to fulfil the quota was punished by having to complete additional labour, such as building roads, clearing fields, and chopping wood. In the process of hard labour, prisoners were also assaulted, beaten with 'baton sticks' (Hutton, 1997:54).

Racial discrimination continued within the prison. Black prisoners were treated differently from Coloured or Asian prisoners, and received less food and clothes. However, organization, discipline, and courage kept political prisoners alive, they fought the brutality and harsh prison conditions through the establishment of committees, such as disciplinary, educational, political, and recreational (Hutton, 1997:55).

Robben Island, during the period of 1962 to late 1970's, became an International concern for human rights violations; it has been extensively documented, more particularly by certain International organizations. Evidence on the conditions and treatment of political prisoners at Robben Island during this period was given to the United Nations Commission for Human Rights and the special Political Committee on apartheid (Alexander, 1994; Red Cross, 2009). In South Africa Mayibuye archives is one of the Institutions with rich literature and oral histories describing the inhumane nature of apartheid political imprisonment. Alexander (1994:21), described Robben Island as a "microcosm of apartheid violence and injustice". This shows how inhumane apartheid imprisonment was and a turning point into a new post-apartheid South Africa.

Post-Apartheid South Africa

Debates took place as a way of constructing the interpretation of Robben Island to the public and the need for a conciliatory narrative was raised and adopted. The Heritage Site became to be regarded as 'the birth of a new and democratic South Africa' and the liberation movement narrative was adopted to interpret the site as the triumph of the human spirit over brutality, the triumph of wisdom, courage and determination over oppression (*Integrated Conservation Management Plan: Abridged Version* 2007–2012:62–63).

This narrative was drawn at the same time South Africa was embarking on the reconciliation strategy, during the political transition from apartheid to a 'new' free and democratic society in which Nelson Mandela became the influential figure and the symbol for the transition. Reconciliation, peace and democracy were preached across the country under the influence of key political figures, former political prisoners. Nesje (2005:43–48), argued that the interpretation of Robben Island was highly politicized. I concur with her in the sense that the key and most influential figure in the making of Robben Island as a museum, Ahmed Kathrada, was the personal advisor to Nelson Mandela, the brains behind reconciliation in the new democratic South Africa.

In support of this narrative the 'Esiqithini' exhibition in 1993 was redisplayed in 1996 and changed its name to Robben Island Gateway project focusing on the prisoner's resistance and resourcefulness. The exhibition focused on political prisoners, those before the apartheid era such as the Khoisan, Xhosa, Koranna, Zulu chiefs, Muslim leaders from India and those during the apartheid era. The pre-apartheid era section of the exhibition focuses on the political prisoners struggle for freedom, poor living standards, ill-treatment, escape attempts and sea drowning, During apartheid era imprisonment, the exhibit focused on how the political prisoners arranged themselves in fighting for the improvement of conditions in the prison and how they were receiving messages of sympathy and admiration from international and national anti-apartheid groups (Nesje, 2005).

The 'Cell Stories' exhibition, which was displayed at Nelson Mandela gateway to Robben Island, narrated how prisoners endured and adapted to the brutality and harsh conditions by turning the prison into a 'University', thus focusing on individual achievements. The exhibition was made up mainly with objects belonging to individuals such as books made of cement bags, waist belt made of sea weed, shoes made of hare skin, sports and academic certificates attained in the prison, the long march to freedom script by Nelson Mandela, sisal mates and woodworks, as well as other objects donated to the museum by former political prisoners (Rioufol, 1999).

In September 2015, I had the opportunity to view the "Journeys of Sorrow and Hope" permanent exhibition, which is displayed at Robben Island Museum Jetty 1. The exhibition explains the place as the embarkation point to and from the Island by political prisoners, visitors, and warders. Inside the historic building, letters of family members, church groups, social services organizations, and legal personnel's seeking permission to visit political prisoners are displayed on the wall as are letters confirming the permission. Photographs of different people who went to Robben Island during apartheid political imprisonment including prisoners, warders, and visitors, are also on display. On the display again is the reference group, these are women mostly wives of political prisoners who managed to visit their husbands on the Island sharing their experiences, how they manage to get travel funds, struggling and failing to have accommodation when they arrive in Cape Town, the harshness of their ferry journey's to and from the Island, and the sad journey back to their homes.

These exhibitions illustrate the 'triumphalism' narrative. From the above exhibitions it can be noted that there is ineffective confrontation of the past horrors considering the

selection of objects for the exhibitions and their themes. Most of the prison materials such as picks, wheel barrows, hand axes, shovels, the 'mary', handcuffs, baton sticks, cane, crockery, bedding and prison clothes are not utilized to tell their stories at Robben Island. In reality did every political prisoner achieve something as a result of imprisonment? I argue that the 'triumphant' narrative does not commiserate those who died or suffered in their health as a result of the inhumane treatment. The political stanza of reconciliation affected the complete representation of Robben Island as a museum to the public in downplaying other memories of the inhumane reality of apartheid political imprisonment as well its legacy in present and future generations.

The agency of objects

> The lines between persons and things are culturally viable [and] in certain contexts, persons can seem to take on the attributes of things and things can seem to act almost as persons —Hoskins, 2006:24

Contemporary discussions about the politics of memory are concerned with doing justice to forgotten voices and victims. With such it is important for the Museum to include tangible objects that were left on the Island that serve as the evidence of the intangible events of the brutality that took place on the Island during apartheid political imprisonment.

Hoskins (2006) further argues that the analysis of material culture objects can be used to interpret human activities in relation to their environment since these materials are culturally made by humans to serve humans. Objects are agents specifically made for a purpose to foster the relationship between humans and the natural environment. Alberti (2000:32–35) also argues that objects act as primary sources of the unseen events of the past. Therefore, objects can be used as the evidence in the study of past events. Harrison (2010) formulates a theory about the creation of objects that could in fact be a theory about the creation of all forms of material culture, he asserts that things are made as a form of instrumental action; objects are produced in order to influence the thoughts and actions of others.

According to the International Council of Museums (ICOM) and South African Museum Association (SAMA) a museum object tells a story through its physical structure and its associations, it is this which determines the value of an object to a museum, and core functions of museums includes research, on collections in order to generate knowledge and on the repacking of existing information and data in ways that make people think, appreciate, and communicate. This process includes the creation of relationships between people and museum objects either through exhibitions, public events, educational programmes, pamphlets, social media, publications, newspaper or magazine articles, as a way to make people participate and respond.

The Robben Island museum is doing an injustice to its collections, which can tell the brutality of apartheid political imprisonment because these important objects are not being used in the interpretation of the museum. I now will provide a counter narrative to the museum's interpretation by outlining material culture objects that depicts the

Figure 5: *Hard Labour objects: (left to right) shovel, hammer and pick axe*
Source: Robben Island Museum, Images taken by the author with permission of the museum

horrors and inhumane nature of apartheid political imprisonment on Robben Island. In so doing, I make use of memories and oral history as a way to attach meanings on objects and establish their importance and value museum narrative.

Material culture objects of political imprisonment

Generally pick axes, shovels, hammers, and wheel barrows are used to make tasks that are ordinarily difficult significantly easier (see fig. 5). Pick axes used to break up soils that a shovel cannot, hardened clay or rocky soils, hard surfaces such as cement, tile and ice can be broken up using the sharp end of the axe or a hammer, whilst a wheel barrow is used in nearly every country in the world for construction, roadwork, masonry and landscaping. Wheel barrows are essential, helping take the load off your back and can be used to transport supplies, tools, compost or debris to and from one place to the other. On Robben Island, however, these objects serve as evidence to the brutality of political imprisonment on the island considering their associations. Hutton wrote:

> It was hard work at the stone quarry, compressor drills vibrated the whole day, shaking their operators like reeds in the wind. Some prisoners wielded huge hammers and pounded metal pins with all their might to split huge rocks embedded below sea level. The bulk of prisoners sat in arranged groups to break the rock pieces into smaller pieces, failure to fulfil the quota were punishable. The rest of the work span carted the crushed stones around in wheelbarrows. Blisters and callused hands were the hallmarks of quarry span prisoners. —Michael Dingake in Hutton, 1997:57

Hutton also wrote about the experience on the lime quarry of Helao Shityuwete of SWAPO who was sentenced to 16 years. Hutton (1997:57) describes Helao's experience on the lime quarry:

> ...we were sent to work in the two lime quarries, chipping away at the rock-face with only picks, shovels and spades. It was very hard work and a drizzling glare came off the white rocks when the sun shone as we had no sunglasses, the eyesight of many of us was damaged. —Hutton, 1997:57

Naidoo (1982:76) also points out that beside the quarries, these material objects have also been used by political prisoners in other various works such as making and repairing roads, dragging seaweed from the beaches and from the sea, clearing fields, and chopping wood.

According to Alexander (1994:131), from 1962 to 1964 brutal assaults of political prisoners were a weekly, often a daily occurrence. Baton sticks represent such assaults during apartheid political imprisonment. Alexander (1994:131) further reiterates that, in the early years of imprisonment most of the warders were indoctrinated such that they actually believed that black people were animals, not humans, and those warders were abusive and quick to react in beatings. A number of prisoners, including Andrew Masondo (a former lecturer in Mathematics at Fort Hare University College) and Dennis Brutus were severely wounded, with Brutus carrying the scars of that day on his body Alexander (1994:132).According to Hutton (1997:52) Michael Dingake, a former political prisoner shared his experience on the use of the baton stick during apartheid imprisonment:

> Armed with batons they raided our single cells in batches of three and four. 'Teen die murr!' (Against the wall!) 'Trek uit.' (Strip). A number of prisoners in the segregation section were assaulted...Andimba Toivoja Toivo, the SWAPO leader was one of those who was severely beaten. After the assault, like the other victims of that 28th day of May 1971 he was forced to clean his blood-spatted cell. —Hutton, 1997:52

Alexander (1994:28) also narrated the same incident "Japhtha Masemola was beaten unconscious, while Abel Chiloane was so severely injured that for days he urinated blood."

The 'mary' and 'bamboo cane' (see fig. 6) depicts severe and cruel maltreatment during imprisonment. According to Indres Naidoo (1982:22), the 'mary' is a wooden frame like a ladder with a foot stand and hand holders on its sides as seen in figure 4.1. This instrument has its origins in the medieval period in Europe and was used for torture. Indres Naidoo, imprisoned on Robben Island in 1963 and serving ten years, is one of the victims of the 'mary'. The punishment was done whilst the prisoner is naked. Indres Naido reiterated that after he was severely caned he had difficulty sitting and could only sleep, lying on his stomach, for about three weeks (Naidoo, 1982).

Prison clothes depict the racial classification of political prisoners inside the prison. Alexander (1994), postulates that black prisoners were given short pants with no underwear, short sleeve shirts, and sandals even in winter, with a large number of black inmates forced to go barefoot for most of the year. Coloureds and Indians were given long pants, shoes and stockings. If a doctor authorized it, certain African prisoners

Figure 6: *Torture Objects: the "mary" (left) and the bamboo cane (right).*
Source: Robben Island Museum, Images taken by the author with permission of the museum.

were given 'Coloured' clothing for reasons of health. Alexander (1994) also reiterated that there was no adequate clothing, each prisoner was given one pair of clothes and shoes or sandals and in most cases when something was alleged to be out of stock or, for instance, when a broken shoe or sandal had to be repaired, in such cases a prisoner was going to be under clothed, and sometimes prisoners were forced to go and work in the rain without the protection of waterproof coverings. This shows the psychological effects of humiliation especially to black political prisoners. Mac Maharaj (in Hutton, 1997:62) described prison clothes, "It used to be made out of khaki and sailcloth, with one thin jersey given to you on 25 April and taken away on 25 September irrespective of whether it was going to be hot or cold in the intervening period…".

Figure 7: *Cruelty treatment: Sisal mate*
Source: Robben Island Museum, Image taken by the author with permission of the museum

Sisal mats as seen in fig. 7, blankets, mattresses and beds depict the harshness of bedding during apartheid political imprisonment period. Alexander (1994) postulates that "bedding was inadequate, three blankets were issued to all prisoners in the early years usually in the worst possible condition, old, thin, dirty, and smelly things that ought to have been condemned years before". At the same time non-political prisoners enjoyed a proper set of blankets, while black inmates were not given beds unless they became ill, they slept on sisal and felt mats. In addition, Mac Maharaj, (in Hutton 1997: 61) also states that no bedding in the form of bed sheets, pillows, bedspreads or pyjamas were provided for black political prisoners.

Censored letters also depict another form of psychological torture during political imprisonment. Most of the political prisoners received their letters with information cut off and in some cases a prisoner can just see the greetings and salutations of the letter with all the content chopped off by prison authorities. In my view, this is denying one's liberty, as Foucault attributed 'deprivation of liberty' as one of the inhumane prison conditions: "in which liberty is a good that belongs to all in the same way and to which each individual is attached" (Foucault, 1995:232). As a result, this affects psychologically, as one can have more questions than answers regarding the actual content of the letter, and can create mental instability to the receiver of the letter.

Although plates, cutlery and cups were the same, the food was not the same, again there was segregation in terms of race as illustrated in table 1. Racism kept the prisoners divided, to break solidarity and unity among political prisoners. Racial segregation can be viewed as a prison inside the prison to black prisoners and as a diplomatic move to separate or to make political prisoners hate each other as a way of avoiding future co-operation and unity among political prisoners in the prison. According to (Hutton, 1997:47), when Robben Island became the maximum prison of political imprisonment, all the Warders were white with black prisoners either Coloured or Asian, and Alexander (1994:131) reiterates that, "in the early years of imprisonment most of the warders

were indoctrinated such that they actually believed that black people were hardened prisoners, and those warders were abusive and quick to punish."

Sanitary buckets in fig. 8 depict the harshness of the prison. Naidoo (1982:67–68) writes that in the 1960's single cells of section B had no toilets so political prisoners kept in that section, mostly leaders, were using the bucket system to relieve themselves but were forced to use the same bucket for bathing. This shows a great deal of dehumanization, reducing human beings to a level lower than animals. Indres Naidoo even stated that sometimes they were even called 'pigs' by prison warders (Naidoo, 1982). Haslam and Loughnan (2014) highlight that people tend to perceive out-group members as less human than in-group members, "It is the most striking violation of our belief in our common humanity; our enlightenment assumption that we are all essentially one and the same. It can be blatant or subtle; driven by hate, lust or indifference; collectively organised or intensely personal" (Haslam and Loughnan, 2014:401).

Hand cuffs and leg irons are commonly used in imprisonment and or detention. Leg irons in and handcuffs in fig. 9 depict punishment and isolation. Martin and Mitchelson (2009) defined imprisonment and detention to "intentional practices that restrict individuals' ability to move from one place to another and impose orders of space and time so that individual mobility is highly constrained, if not eliminated". However, on Robben Island besides using hand cuffs to restrict prisoner's movement, they were used for severely cruel punishment. Mr Salakatya Simuku (in Groups, 2003), a former political prisoner from 1963 till 1966, described one of the uses of hand cuffs:

> Zolie Keke was amongst the youngest political prisoners during the early 1960's could not push the wheel barrow any more as his hands were full of blisters…He was taken to a shed nearby the quarry, three sets of hand cuffs were put on his hands and was asked to lie on a wooden plank that was designed like a triangle. He was beaten until he could not cry anymore from the beatings —Groups, 2003

According to Simuka, when they heard that Zolile Keke was crying endlessly, the atmosphere in the quarry become tense, everybody looked at the shed and stopped working. A voice came loud saying 'Ma Africa niyayibonana lento' (Africans can you see what is happening?) (Groups, 2003). With such it can be seen that instead of the normal use of leg irons and hand cuffs to keep a prisoner from escaping they were also being used for merciless punishment on the Island.

Challenges and Recommendations

In providing a counter-narrative to the triumph interpretation the museum should display these objects of the brutality of apartheid political imprisonment on the Island. However, sea conditions and space shortage are logistical challenges to the broadening of the museum's narrative. Although this is a challenge, there are ways of preserving vulnerable collections for the benefit of the present and future generations. One example has been outlined by a Conservator Toby Raphael during one of his training sessions at the International Centre for the Preservation and Restoration of Cultural Property (ICCROM) in 2005. He recommends that a properly engineered enclosure has an equally

Item	Coloured/Asians	Blacks
Mealie meal/rice/samp	400g	350g
Mealies	-	250g
Bread	250g	-
Meat/fish	110g (4x weekly)	60g (4x weekly)
Dried beans	125g (meatless days)	125g (meatless days)
Vegetables	250g	250g
Soup/Protone/gravy powder	20g	20g
Fat	30g	15g
Milk	-	-
Coffee/tea	Twice daily	Once daily
Phusamandla	-	55g
Salt	15g	15g
Sugar	60g	45g

Table 1: *Adapted from the description of political prisoner's meals by Michael Dingake in Hutton (1997:54).*

Figure 8: *Cruelty treatment: Sanitary bucket.*
Source: Robben Island Museum, Images taken by the author with permission of the museum.

Figure 9: *Punishment and isolation objects: leg irons (left) and hand cuffs (right).*
Source: Robben Island Museum, Images taken by the author with permission of the museum.

great potential for protecting and preserving vulnerable collections and is an efficient and often cost-effective way to meet conservation criteria for an object. When objects on display are housed in well designed and carefully fabricated cases, they can be effectively preserved at levels remarkably close to those provided in storage. The only difference from storage conditions is the exposure to light and this can be controlled as well (Rafael, 2005:245–257).

Conclusion

Considering the above arguments that apartheid political imprisonment on Robben Island represents both the triumph of human spirit over adversity and a place of suffering and banishment, the current Robben Island Museum interpretation should be strengthened to include the tangible evidence that showcases the latter argument. It can be argued that the 'triumphalism' narrative is dominant at the expense of the inhumane and cruelty of apartheid political imprisonment era on the Island due to the absence of physical evidence in the form of material culture objects which can serve to remind and tell visitors of the cruelty of apartheid imprisonment. The current failure to attach memories to material culture objects can have negative effects for future interpretations because oral histories and memory tend to change with time and space leading to misinterpretation, while object tethered narratives are preserved through time in different ways. As such, it is very important for the Robben Island Museum to make use of its current repositories of rich memories and oral histories and to attach them to artefacts from its collections so that the objects may tell their stories.

* * *

References

Alberti, S. (2000): Objects and the Museum. *Isis* 96(4): 559–571.

Alexander, N. (1994): *Robben Island prison dossier 1964-1974*. Cape Town: UCT Press.

Beck, C. M. Johnson and Schofield, W. J. Schofield W. J., eds. (2004): *MatÈriel Culture: The Archaeology of Twentieth-Century Conflict*. Vol. 44. One World Archaeology. London: Routledge.

Foucault, M. (1995): *Discipline and Punish: the birth of the prison*. New York: Vintage Books, Random House.

Groups, Robben Island Museum Ex-Political Prisoners Reference (2003): *Project Blue Stone Quarry*. Vol. 2. Cape Town: Robben Island Museum.

Harrison, R, ed. (2010): *Understanding the Politics of Heritage*. Manchester: Manchester University Press and Open University Press.

Haslam, N. and Loughnan, S. (2014): Dehumanization and Infrahumanization. *The Annual Review of Psychology* 65: 399–423.

Hoskins, J. (2006): Agency, Biography and Objects, in Tilley, C. et al (ed.), *Handbook of Material Culture*. Routledge, London: 74–84.

Howard, P. (1994): The Heritage Discipline. *International Journal of Heritage Studies* 1(1): 1–3.

Hutton, B. (1997): *Robben Island: Symbol of Resistance*. Johannesburg and Bellvile: SACHED and Mayibuye Books.

Integrated Conservation Management Plan: Abridged Version (2007–2012). Cape Town: Robben Island World Heritage Site.

Integrated Conservation Management Plan: Abridged Version (2013–2018). Cape Town: Robben Island World Heritage Site.

Martin, L. L and Mitchelson, M. L. (2009): Geographies of Detention and Imprisonment: Interrogating Spatial Practices of Confinement, Discipline, Law and State Power. *Geography Compasses* 3(1): 459–477.

Naidoo, I. (1982): *Island in Chains*. Penguin books: Cape Town.

Nesje, P. (2005): Representing the Past in the Present with the Future in Mind: A Close Reading of the Cell Stories Exhibition at the Robben Island Museum. MA thesis. University of Cape Town.

Rafael, T. (2005): Preventive conservation and the exhibition process: development of exhibit guidelines and standards for conservation. *Journal of the American Institute for Conservation* 33(8): 245–257.

Red Cross, International Committee of the (2009): *Commemorating 150 years since the battle of Solferino: 24 June 1859-24 June 2009*. Pretoria: Red Cross Regional Delegation of South Africa.

Rioufol, V. (1999): The Making of the New Past for a "New" South Africa: the commemoration of Robben Island. MA thesis. University of Cape Town.

– (2000): *Behind Telling: Post-Apartheid Representations of Robben Island's Past*. Cape Town: University of the Western Cape Press.

Solani, N. (2000): The Saint of the Struggle: Deconstructing the Mandela Myth. *Kronos: The Journal of Cape History* 26(5): 42–55.

Wintein, C. (2015): Robben Island Site Collection Report 1998-2014.

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Indo-Roman Trade at Arikamedu: A contextual analysis of finds from the UCL Institute of Archaeology Collection

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Keywords: Roman Trade, Southern India, Beadmaking, Trading networks, Indian Ocean

Excavations conducted at Arikamedu by Sir Mortimer Wheeler revealed amphorae of Mediterranean origin as well as both imported and locally produced ceramics with Mediterranean-inspired "rouletted" decorations. It was concluded that Arikamedu was a trading post during the reign of Augustus.

The Periplus of the Erythraean Sea shows that the kingdoms of the Indian Ocean region were increasingly growing in wealth and importance due to the significant development of trading networks during Roman times. Nonetheless, in the case of Arikamedu, I argue that Mediterranean trade had long existed prior to Augustus' reign. This essay focuses on the ceramic evidence, together with other imported material, in order to study the nature and continuity of trade between Arikamedu and the Roman world and assess its socio-economic implications.

Introduction

The port city of Arikamedu is located on the Ariyankuppam lagoon, in the South-eastern coast of India. The Gingee river connects it to the Bay of Bengal, which provide access to the Indian Ocean (fig. 1). The area surrounding Arikamedu has several sea inlets and backwaters, thus making it a suitable location for harbouring ships safely. Arikamedu is often identified as the "Poduke Emporium" in the *Periplus*. In this paper, I discuss the proactive role of this trading port in Indo-Roman trading networks.

The medieval *mappamundi*, the map of the world, was commissioned by Emperor Augustus to survey the world. The map encapsulates the political visions of the imperial

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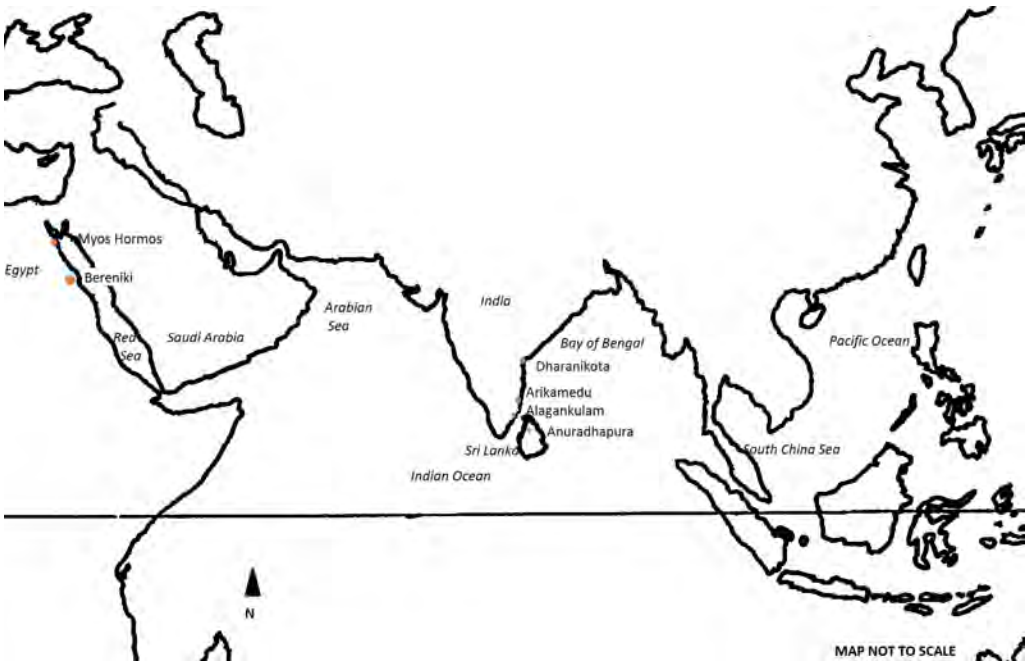

Figure 1: *Map of the Indian Ocean with the sites mentioned in this paper*
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power. Augustus' empire was indeed considered "*imperium sine fine*" (Virgil, Aeneid.279) mainly because of its prosperity, which were partly due to booming trade relationships. The Roman conquest of Egypt improved access to the Indian Ocean world, and a more efficient sea route was established between Rome and India via Egypt. Strabo recounts that by this time (year 26), a hundred and fifty ships sailed to India each year via southern Egypt (Strabo, *Geography*, 2.5:12). In this respect, the port of Arikamedu is particularly important for understanding the trade between Rome and India via Egypt.

India was seen as an 'imperial province' and Tamil kings were amongst the ambassadors who visited Augustus (Pandion King, Strabo, *Geography*, 15.1:4). Ambassadors from Indian kingdoms frequenting Augustus' court was a "thing never seen before" (Aug. *Res Gestae*: 31). Although Rome had no political power in India, the Romans believed that their sovereignty extended to these countries and that Rome had the right to intervene and expect obedience from them (Whittaker, 1994:34-37).

Augustus' knowledge of India can only be derived from literary sources that are available to us, such as Ovid (Ov. Medic. 10), Horace (Odes 1.12.3-57, 1.31.6), Virgil (Geo. 157), and prose writers such as Diodorus (2.35.41). Strabo accounted that the trade between Rome and India began after the annexation of Egypt. The stories were rather fantastic, with only a few literary sources containing indubitable information pertaining to mercantile trade. Such an account is the *Periplus of the Erythraen Sea.* This work contains valuable information about navigational routes and trading ports, and is crucial for developing an inventory of items that were traded across the Indian Ocean. The text has not been dated accurately but many scholars believe that it was written the middle of the 1st

century A.D. (Charlesworth, 1928:98).A reference in the text to a Nabataean King named Malichus has been identified as referring to Malichus II, who reigned around 40-70 A.D. and this identification puts the text around the same period (*PME* 19, Dihle, 1965:9-35.

According to the *Periplus*, ships from the Roman Empire set out in two different routes, one to Africa and the other to India. The ships would leave the Red Sea in July in order to catch the monsoonal currents, easing the long and dangerous voyage to India (*PME* 14). These ships, after procuring the goods, left the ports of India between December and January. The materials sold to Indian traders include wine, glass, metal, coral, textiles, Roman money, and frankincense. The Romans, in return, purchased bdellium, nard, precious stones, ivory, cotton, cloth and silk. The main exports were pepper, Malabathron, Chinese silk, and gemstones. The *Periplus* mentions that large amounts of Roman money were spent in India to procure these luxurious goods, and many Roman coins have indeed been found in India (170 finds from 130 different sites), dating from the Augustan to Tiberian periods (Turner, 1989). It should be noted that the number of Roman coins found in both the Krishna Valley (Andhra Pradesh) and the Coimbatore area of Tamil Nadu is significantly higher than those found elsewhere in the sub-continent (fig. 13).

In early Tamil society, poems and anthologies based on popular social themes were compiled into the Sangam corpus. The Sangam literary corpus refers to foreign ships sailing to the coast of Tamil Nadu, and the consumption of Italian wine. The foreigners were termed *Yavanah* in contemporary literary works. This term may refer to people from the Mediterranean, African and Arabian regions, thus indicating a strong network of merchant traders arriving at the ports of South India. Indigenous Tamil works give detailed accounts of the importance of imported goods and their places of origin. The *Akananooru*, a tamil poetic work on love and separation, speaks about the *Yavanah* wine that was exchanged for rare products of the sea. It also states that when the *Yavanah* ships come, they leave full of black pepper. The *Pattupattu*, written between 200 B.C. to A.D. 300 (Thapar, 2002:231), compares the noise made by the loading and unloading of cargo into large Roman ships with that of the noise made by weavers.

> யவனர் தந்த வினை மாண் நன்கலம்
> பொன்னொடு வந்து கறியொடு பெயரும்
> வளங் கழை மூசிறி ஆர்ப்பழை வளஇ
>
> (Ettuthogai; அகநானூறு 149 lines 9-11)
> Trans.: *The Yavanas come in fine ships bearing gold and leave with black pepper into Muchiri town*

Consumption of wine rather than the local toddy is also mentioned in Tamil literature.

> மட்டு நீக்கி மது மகிழ்ந்தும்
>
> (Pattupattu, Pattinappalai: 108)
> Trans.: *Drink wine instead of palm toddy*

Accurately dating these literary works is difficult, as they are part of a much older tradition passed down purely through oral traditions. It is, therefore, impossible to say with any certainty that these works can be dated to the first century A.D.

The artefacts analysed in this article are currently housed in the University College of London's Institute of Archaeology. The type of artefacts considered here provides a better understanding of the range of products that were being traded. Analysing the typology of amphorae and table ware found at the site enables us to compare goods mentioned in literary sources to the archaeological material, while also facilitating the dating of the site. Correlating fragmentary literary and archaeological data is challenging, but it can provide a balanced narrative. Moreover, excavation reports and published literature based on the reports has also been used here as secondary sources. The aim of the study is to understand the scope and importance of Arikamedu in Roman trade based on the import and export of diverse goods. Recent research, including the preliminary analysis of bones from individuals of potential Chinese origin found in the Southwark area (London) suggests that these individuals likely lived between the 2nd and 4th century A.D. (Redfern et al., 2016) have highlighted Indo-Roman relationships. Improving our understanding of the socio-economic relationships between Asia and the Roman empire is thus paramount. I would argue that the traditional conceptualisation of the nature of these relationships as occasional or minor needs to be thoroughly reconsidered in order to allow for a better understanding of the interconnectivity between regions in the ancient world.

Excavations

Prior to Wheeler's excavation, French and Indian archaeologists had already identified Italian red glazed Arrentine ware and amphorae from the Mediterranean. His excavation at Arikamedu in 1945 was significant for identifying a port named in the *Periplus*, thus improving our understanding of Indo-Roman connections (figs. 2 and 3). Based on the available evidence, Mortimer Wheeler suggested that the trading post in Arikamedu was active during the first two centuries A.D.

Following the *Archaeological Survey of India* and Wheeler's systematic excavation, Jean-Marie Casal investigated the site in 1947-8. The finds from this excavation were published in the monograph *Fouilles de Virampatnam-Arikamedu; rapport de l'Inde et de l'Occident aux environs de l'ère chrétienne.* The occupation near the north and south banks of the site shows that the area was primarily inhabited by fishing communities. The port received a wide variety of wines, cut gems, Roman lamps, glass, and other table wares. During the booming trade, the fishing village developed into a brick built town, spreading northwards. The site also shows a large brick structure, which was over 150 feet long, suggesting the existence of a warehouse (see fig. 2). In the south, excavations revealed a courtyard walled with timber and brick, wells and soak-pits, with superimposed terracotta rings. The industrial quarters were found further south, yielding several containers and piping system for the supply and drainage of effluents and dyes. Wheeler hypothesised that here the muslins were dyed, and beads and objects made of semi-precious stones were assembled and finished (Wheeler et al., 1946). However, the dyeing facilities could not be confirmed by later excavations (Begley et al., 1996:109).

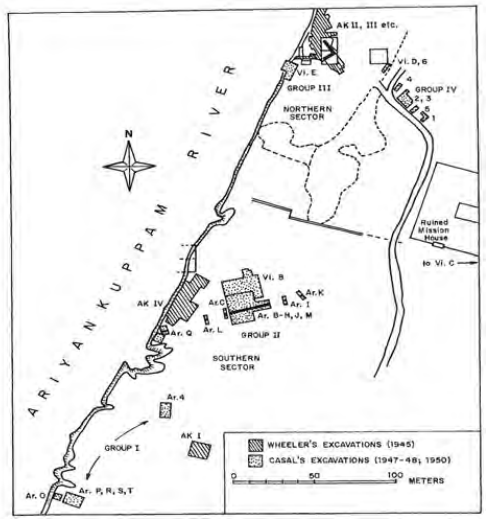

Figure 2: *Site Plan of Arikamedu redrawn after J.-M. Casal (1956), from Begley (1983:465)*
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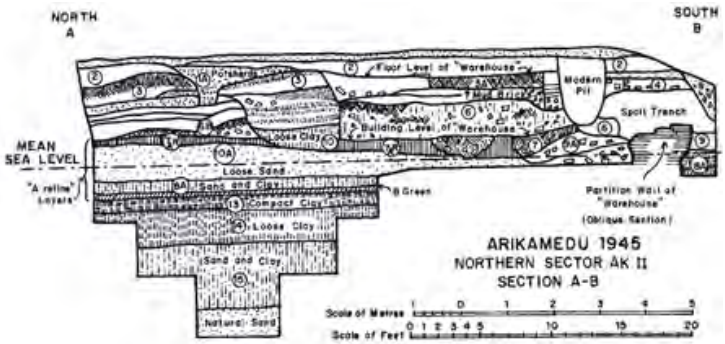

Figure 3: *Section Plan of Arikamedu, after Wheeler et al. (1946)*
© Reprinted with permission, courtesy of Ancient India and Archaeological Survey of India (Begley, 1983:468).

The subsequent layers after the expansion also yielded red pottery made in Arezzo. The layers also contained debris of ivory, iron, copper, and worked and unworked semi-precious stones.

All the strata in this excavation revealed amphorae sherds, together with at least fifty sherds of Arrentine ware, including fragments with pottery stamps (VIBIE, ITTA, CAMVRI, C. VIBI OF) (Wheeler, 1955:177). Other pieces of pottery were found near the "warehouse" where mercantile activities were likely conducted.

Literary and Archaeological analysis of imports

Literary evidence has shed much light upon the Roman presence in India. They suggest that the high point of trade between these two cultures was during the first century A.D. Relevant for archaeological research are the passing mention of goods in ancient literature that have been identified amongst the remains on the site. Works such as Pliny's *Natural History* or Strabo's *Geography* are significant because they narrate details on the area and sea routes to ports and cities mentioned in the *Periplus*. The rich archaeological record of Arikamedu, evidencing intense trading activities, has been associated with Poduke. Poduke is named in the *Periplus* (*PME* 60) and in Ptolemy's *Geography* where it is mentioned once. According to these literary sources, it acted as a local harbour that received goods from other areas in India in the context of international trade rather than a harbour for direct overseas trade.

The pottery found in the excavation can be classified into two different types: amphorae and *terra sigillata* ware. *Terra sigillata* is a red glazed or orange-red coloured pottery with decorative moulding. This ware is also known as Arrentine ware and has an important manufacturing centre in Arrentinium (modern Arezzo, Italy). It is also called stamped

Figure 4: *Ceramic Rim Fragment*

Figure 5: *Amphora fragment*

pottery due to the mould stamps. It was widely used in Roman trade and was found in Arikamedu. The 22 sherds identified in the stratified deposits are flat-base dishes and footed cups bearing potter stamps from Vibi, C. Amurius and P. Atticus (Wheeler et al., 1946:21). The import of wine amphorae began before the original manufacture of Arrentine ware, and continued much after the distribution of this ware ceased. This evidence suggests that Arikamedu was likely a trading port prior to the first century.

Amphorae are trading vessels used in antiquity to carry liquid products such as wine, vinegar, fish products, oil, and other items used in everyday life (fig. 4 and fig. 5). Amphorae are transported for their contents and not for their purpose of utility. The amphorae itself is secondary, as value was only attached to the product it was carrying. The archaeological analysis of these vessels can provide insight into their content and area of manufacture. For example, scientific analysis of the residues absorbed by vessel as a consequence of prolonged storage can provide valuable information regarding its content.

The composition of the clay and the type associated with it can provide information about the place of production. Moreover, some basic shapes of amphorae often relate to the product it contained. This pattern has assisted in the classification of amphorae types, such as the typology established by the Dressel table (Dressel, 1899:Pl III).

Nevertheless, the interpretation of amphorae from Arikamedu was not straightforward. This is due to the complicated nature of the trading networks, the presence of generic vessel types, together with minimal clay and residue analysis of sample types. Despite the problem regarding amphorae types, studies have revealed that some sherds show certain regional characteristic of Greek manufactures.

Several varieties of commercial amphorae found during the excavation suggest a Greco-Roman dimension. The clay analysis of the amphorae has revealed resin residue on the clay body which points towards the importation of Greek wine, because during the Hellenistic age, pine resin was deliberately added in the production of impermeable clays. It also aided in isolating moisture in the vessel (amphorae) that contained the wine, thus contributing to safeguarding the product in transoceanic trade (Zlateva and Rangelov, 2015:222).

One of the amphorae discovered in Arikamedu strongly resemble pottery from the Greek islands of Rhodes and Kos (Begley, 2004:114). This suggests that Koan wine was traded here as it was widely exported by Italian merchants to Asia and the Middle East in exchange for goods. The white Koan variety of wine tasted both sweet and salty, and this type was in demand in Rome and Eastern ports (Pliny. *NH.* 14.78; Sherwin-White, 1978:236-241.Athenaus and Pliny remark that Koan wine was mixed with sea water. Pliny and Virgil note that the wine was of superior quality (Strabo. 14. 2. 15; Pliny. *NH* 14.10), although Athenaus considered Koan wine to have too much salt water in it (Ath. *Deipnosophists.* 1). It is not possible to suggest whether Koan wine highly ranked in terms of quality, despite being widely circulated (Craik, 2015:16).

The Koan type (or Dressel 4) had thinner walls, small rim and a short neck. The Dressel 4 (Koan) type was efficient in maintaining the structure as well as having a better weight to capacity ratio compared to its counterparts (Empereur and Picon., 1989:229; Laubenheimer, 1990:117). Imitation Koan wine jars originating in Pompeii were shipped to India occasionally bearing the words COVM VET (Will, 2001:263). The place of production of this type can be identified in Kos, Knidos, Rhodes, Turkey, Italy, Spain, North Africa, and Nile Valley and a few organic storage jars from Hadramawt.

The spatial and density distribution patterns of amphorae found at Arikamedu suggests that significant amounts of wine were imported to the site. Although a majority of these amphorae jars found at Arikamedu contained wine, clay analysis suggests that some also carried olive oil or *garum*, a type of fish sauce (Will, 1992:150). Wares found in the region also resemble common Mediterranean tablewares (fig. 6 and fig. 7) that are similar to those found in Gaul (Frakes, 2009:69). The assemblage has been dated between the second century B.C. to the late first century A.D. , so potentially starting before the Augustean period.

Fragments of Roman lamps, glass vessels and beads have also been found on site. Carved gems show a significant influence from Greco-Roman artefacts on the local production. Roman glass fragments (fig. 8) of blue colour were also found on the site. In the early Roman period, blue and emerald green coloured glass were distinct and rare. In the 1st century A.D. , there was a shift toward colourless glass from coloured glass as they most resembled crystal rocks (Pliny. *NH.* 36. 67).

A distinctive pottery named 'Rouletted Ware' was also found on the site (fig. 9). Two models were proposed by Wheeler and Begley respectively for explaining the genesis of this type. Wheeler hypothesised that better examples of this ware were imported while those made of softer fabric and Coarse material were locally-made imitations (Wheeler, 1954:149). He suggested that imitations of this technique were based on Greco-Roman

Figure 6: *Fragment of a shallow bowl*

Figure 7: *Ceramic fragment*

techniques of chattering or rouletting. Wheeler further stated that the presence of this type of ware shows the influence of Roman trade on local production. Begley, on the other hand, noted that the ware dated prior to trade with Rome but was still influenced by Hellenistic pottery types (Begley, 1988:427).

Figure 8: *Roman glass fragments*

Based on the stratigraphical analysis, the rouletted ware fragments do predate the Arrentine ware finds and is thus unlikely that it derived its inspiration from the Roman design. Instead, it is possible to suggest that the earliest production of this ware may have begun in Southern India (Begley, 1986:54).

The decorations and motifs inscribed on the Coarse ware were possibly a result of the strong influence of trade. The walls of the Coarse ware sherds were thicker and the fabric contains stone inclusions that are not found in Rouletted ware sherds. The Coarse ware pottery fragments show the presence of this type in tableware dishes and bowls, and large storage jars (fig. 10a and fig. 10b).

Several numismatic finds have also been identified in and around the site. Although these artefacts are not within the scope of this archaeological study, it is worth mentioning them in order to understand the significance of Roman trade in the Indian peninsula. The hoards in the peninsula are from the areas of Chennai, Hyderabad, Mysore, Cochin, Pudukkottai, and Thiruvananthapuram (Turner, 2016). This hoard contained *aurei* and *denarii* from the reign of Augustus and Tiberius. During Nero's reign in A.D. 63, the Roman coin was reduced in its weight for value debasement (Lannoye, 2015:68). Significant modifications were made to the silver and gold coins during this time. The Roman currency was used as bullion, and there was no native currency that was approximated to the Roman coins. The coins were used

Figure 9: *Fragments of Rouletted ware*

(a) **(b)**

Figure 10: *Coarse ware sherd*

as weight measures for gold or silver ornaments and other precious metals (Wheeler, 1955:167).

Although imported finds have been identified on site, it is hard to provide a complete picture of the significance of these imported finds because excavations were not extensively undertaken. Roman amphorae have been iden during surface surveys in sites close to Arikamedu (see fig. 1). Archaeological surveys in Alangankulam have identified Roman

(a) *Unworked carnelian fragments and finished bead*

(b) *Mauve Collar glass bead*

(c) *Carnelian bead finished*

Figure 11: *Carnelians*

pottery and coins from the late fourth century and the fifth century A.D. (Kasinathan, 1994). Similar assemblages have been identified in Coimbatore (Tchernia, 2016:244), Vasavasamudram (Champakalakshmi, 1996:133), Karaikadu (Ramachandran, 1980:111) and other nearby sites. Systematic analysis of find distribution patterns could reveal more information about the quantity and the workmanship of imported objects.

Literary and Archaeological analysis of exports

Pliny (*NH* XXXVI 20), *Periplus* (*PME* 49,55), and Strabo (*Geo.*XV.I.67) refer to the high quality of glass manufactured in India. Pounded quartz used for glassmaking in India ensured that superior quality glass beads were produced. There was also a thriving bead-making industry identified in the archaeological record on the basis of fragments of glass and stone beads found in the industrial area of Arikamedu.

According to the *Periplus*, agate and carnelian were also exported from Ratnapur, India (Chandra, 1977:127). Both worked and unworked fragments of carnelian and white agate (fig. 11a and fig. 11b) have been found in Arikamedu. Agate/onyx blanks of this type were likely exported to Rome to be cut into cameos (Sidebotham, Hense, and Nouwens, 2008:181). A fragment of crystalline quartz shows that drill bits were used to partially drill a hole into the stone (Gwinett and Gorelick, 1988).

Collar beads were the most popular beads made in India between 400 B.C. and 200 A.D. (Francis Jr, 1990a:117). Glass tubes were used as raw stock. They were heated and then subsequently flattened to make the beads. The ends of the glass were pinched to create the shape of the bead (fig. 11c).

According to the data available, red was the predominant colour for beads produced at the site. Carnelian was not naturally found in red colour. Chalcedony with iron content was heated to induce the red colouring in carnelian (fig. 12). This also suggests knowledge of production and modification techniques, as well as customisation.

The quality of finished beads and the various techniques used to produce them suggest that workers were highly skilled. The presence of furnaces, tools, and slag at the site indicates the existence of large-scale bead production at the site. The production of beads was not only tailored to meet the demands of the Roman mercantile trade; beads were also shipped to Thailand and Sri Lanka (Francis Jr, 1990b:4-5). Similar assemblages were also found in Go Oc Eo in Vietnam in the Indo-Pacific (fig. 13), which might suggest

Figure 12: *Red bead slag fragments*
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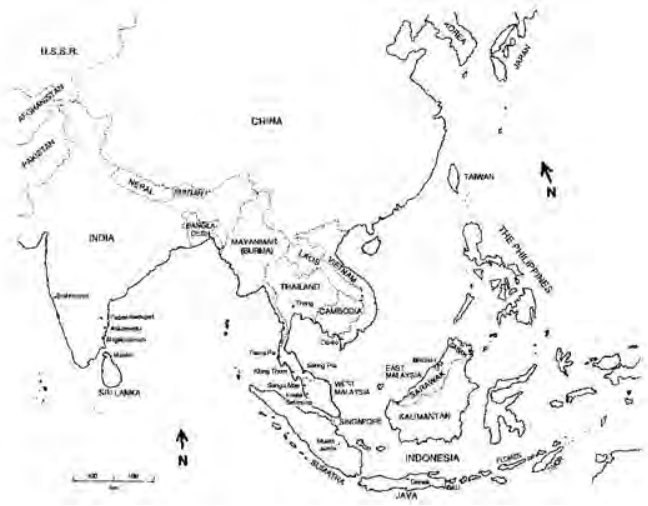

Figure 13: *Map of South and East Asia. The sites shown on the map are confirmed or possible centres of Indo-Pacific bead making, in Francis (2002)*
© Courtesy of Asian Perspectives

that bead-making techniques from India were introduced eastwards along with the beads themselves (Francis Jr, 1990b:17).

Finished coloured beads of various sizes have also been found on the site (fig. 11c). At Arikamedu, minerals such as agate, carnelian, rock crystal, amethyst, black chalcedony and garnets were used for export and local use. The stones were locally sourced from the Krishna-Godavari basin (Newbold, 1844:37), the Deccan trap, and around Hyderabad (Sinkankas, 1996:535).

If the pottery for local use found at Arikamedu was indeed an imitation of Roman types and the assemblage can be considered to reflect intensive trading activities between Arikamedu and Rome, then the economic implications of Indo-Roman trade on the imperial treasury may have been considerable. The payment for luxury goods that were imported along with any bulk goods brought to and from India appears to have cost a significant amount of money. Pliny and Tacitus both show concerns about the outflow of money into foreign countries in the context of trading (Tacitus *Annales* III: 53; Pliny *NH* VI: 23, *NH* XII: 47). However, based on *Periplus*, it can be ascertained that the trade with India was based on barter exchanges rather than extensive monetary payments. Although monetary payments were made (to some extent) in cash or bullion, the purchase of wine, *garum*, and other items from the Empire by merchants in the Indian subcontinent would not have necessarily resulted in a trade deficit. At the same time, it is worth noting that the accounts made by Pliny and Tacitus were based on a moral judgement rather than government policy. These arguments were primarily directed against the vices of *mollitia* and *luxuria* of Roman elites, and thus they may not have been truly indicative of real economic concerns.

Trade with Arikamedu seems to have been conducted by private merchants with little to no involvement from the Roman government or from local Tamil powers. The literary and archaeological records do not show any concrete evidence of governmental influence on the trade. The archaeological record also shows that there were no restrictive product monopolies. For example, textile and gems were also purchased from Arabia as well as India. The market was able to support trade via different routes and places; thus, prices alone may not have determined the selection of the supplier, but they could have contributed to the prolonged continuity of trade.

Internal trade

Internal trading networks are rarely discussed in studies of Indo-Roman trade. However, due to economic demands, internal and external trading networks in the subcontinent worked simultaneously (fig. 14). The needs of both local and international trade led to the formation of transport networks between the source regions, industries and ports. Items that were not available in Arikamedu were likely brought in from other regions in India. At the same time, some of the items procured from Arikamedu were probably bought and sold multiple times on their way to Rome.

A number of goods were made from locally available materials at Arikamedu and others were made of non-local materials, such as shells from inland areas. Fragments of shell from marine life were found on site and across the hinterland. The *Turbinella pyrum* was naturally distributed along the southeastern coast of India (Smith, 2002:141; Nagappan Nayar and Mahadevan, 1974). These typeswere used for making ornaments and bangles. The rounded portion of the shell was sawed into the shape of a bangle. These shell fragments possess a distinctive shape, thus enabling archaeologists to identify their provenance in the archaeological record. Despite the significance of the finds, the involvement of local artisans and local transportation of complete shells is yet to be assessed. Sites in the Coimbatore region and Karur show the existence of shell fragments as well as imported coinage, suggesting a strong connection with the trading network (Kamalakar, 2000:26).

Raw materials for the beads manufactured at Arikamedu were transported from other adjoining regions. Beads such as black onyx, carnelian, and banded agate were sourced from the Godavari and Krishna rivers (Francis Jr, 2002:115). Precious and semi-precious stones such as lapis lazuli, agate, and carnelian, not available in abundance locally, were likely to have been transported from long distances and moved to the manufacturer. For example, lapis lazuli was found in abundance in Badakshan and not locally (Mairs, 2016:29).

These beads were not only traded within the Roman provinces but also along the trade route in Burma, the Isthmus of Kra, Gulf of Thailand and islands of Indonesia, together with other sites along this route (Howard, 2012:106). Collar beads were discovered in the Indonesian site of Gilimanuk (Francis Jr, 2002:46). Rouletted ware from the site was also imported to Indonesia (Ardika and Bellwood, 1991:229). It can be concluded that Arikamedu played a significant role in the trade with South Asian islands; at the same time, one cannot minimise the effect of Sri Lanka and other Southern Indian trading stations on the rest of Asia (Francis Jr, 2002:46). For example, although Arikamedu was one of the largest producers of beads, Muziris was known for exporting beads and gems.

This suggests that beads were manufactured at Arikamedu and shipped to Muziris to be exported along the Roman route.

Egyptian Network

Egypt was a key location in the context of Indo-Roman trade. Some Roman traders operated exclusively within the Indian Ocean, following a diversity of sea routes to reach the different ports where luxury goods such as precious metal and necessity goods such as wheat and cotton were procured and traded. The journey from the ports took a stipulated travel time due to the nature of the monsoons, which was noted by *Periplus*. The unique nature of the trade rendered itself to the formation of trade networks between Arabia, Africa and India. The port of Myos Homos (Egypt) was created to facilitate trade in Africa for procuring war elephants. The Ptolemaic port of Berenike was established to facilitate trade between Egypt and Aegean Islands, particularly Rhodes, in the mid third century B.C. (Tomber, 2012:203) The strategic location of these two ports was no doubt crucial in forming a trading network within the ports of the Indian Ocean. After the annexation of Egypt in 30 B.C. , there was a large-scale increase in international trade, largely involving these ports.

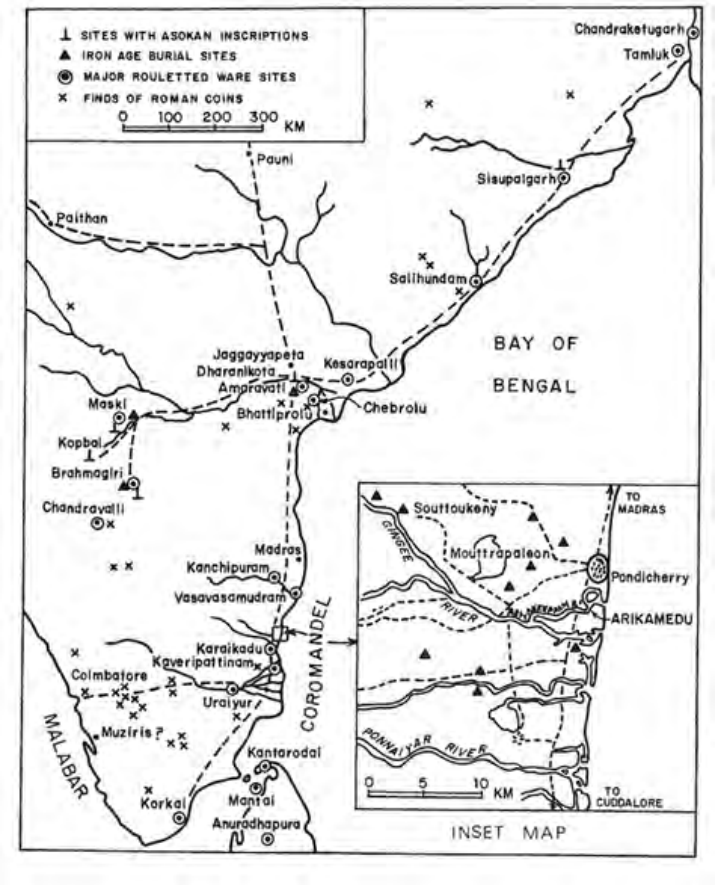

Figure 14: *Distribution of Roman coins in India (Begley 1983, fig. 1)*

A number of items found in the excavations suggest that Berenike was part of a vast network of Roman trade routes. Ostraca excavated from a rubbish dump have given two precise dates: 6 August 33 and 20 September 61. The rubbish accumulated around c. 40/5 and 70/5 based on the other ostraca finds in the area. The finds suggest that the accumulation is part of the Berenike custom station, revealing a list of traded goods, such as wine, for export and consumption (Bagnall, 2000:7). The Egyptian Dressel type 2-4 amphorae were identified along with other Mediterranean amphorae types found at Arikamedu, Pattanam, and Alangankulam located in Southern India. This network shows that trade was organised around ports, which channelled goods from producers to other agents involved in their subsequent distribution.

Quesar-al-Qadim is an important trading port in the Indo-Roman trade route, identified as Leukos Limen. Excavations conducted in Quesar Al Qadim also revealed two ostraca dating to the first century which mentions tamil names such as *Kannan* and *Catan*. The

Figure 15: *Opaque green bead fragments*

Berenike excavations have also revealed two ostraca written in Tamil script (Whitcomb and Johnson, 1982:264).

Traded Indian beads of copper-red colour have been located in several sites along the East African coast, and can be dated to the first and second century A.D. There were several opaque red, green (fig. 15) and yellow beads located in Zanzibar which were typologically and chemically analysed, suggesting an Indian provenance (Chami, 2001:33-44).

The network of trade established by the Roman Empire not only created a market for goods in the West but also contributed to the establishment and consolidation of mercantile ports and communities along the trade route. This ensured that all types of goods were exchanged, meeting several demand requirements and creating flourishing ports for shipbuilding and maintenance. Along both sea routes mentioned in the *Periplus*, intensive trade networks developed over time, due to the intertwined relationship between production areas and trading ports in the context of expanding exchange networks. Articles procured by traders at Arikamedu did not only reach the Roman world but were also sold in Egyptian and Southern Asian ports. Internal trade also expanded, partly in order to acquire raw materials and minerals for producing finished goods.

Conclusion

From the archaeological assemblage found at the site, it can be concluded that Arikamedu was a flourishing trading station in Southern India. The artefacts found in the different periods of occupation suggest that although trade with the Roman world was prevalent in the first century, the trading port operated for centuries, both before and after the Augustean era. The evidence in ancient literature is not extensive enough to conclusively assess the nature of this trade. Besides, Tamil literature does not particularly lend itself completely to this kind of analyses, due to issues regarding the accurate dating of the texts. It can certainly be used to confirm the prosperity of the foreign trade that is already remarked upon in Roman literature.

The prolonged foreign trade resulted in the importation of Mediterranean wares, but also subtle Roman influences in the consumption of particular products, such as wine, and other potential associated implications in terms of social norms. From a quantitative perspective, the assemblage does not necessarily reflect the entire quantity of imports. The northern sector of the site has been submerged under the river, hence the full picture of the site is currently unavailable. Influence of Roman wares on local Coarsewares can also be observed in Arikamedu. Stamped Coarse ware fragments showing influences from the Arrentine ware suggest that Mediterranean pottery types were popular in the region.

The merchants imported a number of goods from the site. Some goods were produced locally, whilst others were brought into the sites from inland areas. Beryls and gems such as amethyst were not locally found, and shells were moved from the inland regions and exported internationally. The archaeological record in India regarding perishable edible products such as spices is almost non-existent. The presence of Indo-Pacific beads found in Indonesia and South-East Asian islands suggests that Arikamedu was not only an important mercantile port for Roman trade but it was also part of broader exchange networks involving multiple Asian regions during the first century A.D.

Perhaps the most important evidence for intensive Indo-Roman trade comes from the sites of the Red-sea region. The assemblages from Quesar-al-Qaudim and Berenike reveals that Arikamedu was an active trading port, and that Tamil merchants were involved in trading with Roman Egypt. The degree of involvement of these merchants is currently unknown and all that can be said is that there are telling similarities between the assemblages from Arikamedu and the Romano-Egyptian port sites.

Indo-Roman trade remained steady and unchanged until the third century A.D. At the end of the century, trade receded, partly due to the political and financial crisis in the Roman Empire. During the next century, the trading network was re-established with a slightly different organisation than it had been in the first century onwards.

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* * *

Abbreviations

PME Periplus Maris Erythraei
NH Naturalis Historia
Ov. Medic Medicamina Faciei Feminae
Geo Geography

* * *

References

Ardika, I. W. and Bellwood, P. (1991): Sembiran: the beginnings of Indian contact with Bali. *Antiquity* 247: 221–232.

Bagnall, R.S. (2000): Introduction, in Bagnall, R.S., Helms, C., and Verhoogt, A.M.F.W. (eds.), *Documents from Berenice Volume I*. Bruxelles: Fondation égyptologique Reine Élisabeth.

Begley, V. (1983): Arikamedu Reconsidered. *American Journal of Archaeology* 87: 461–81.

– (1986): *Rouletting and Chattering*. Expedition Magazine.

– (1988): Rouletted Ware at Arikamedu: A New Approach. *American Journal of Archaeology* 92(3): 427–440.

– (2004), in *Ancient port of Arikamedu new excavations and researches, 1989-1992, Volume 1*. Pondichéry: Centre d'histoire et d'archéologie, École française d'Extrême-Orient.

Begley, V. et al. (1996): *The Ancient port of Arikamedu: new excavations and researches 1989-1992, Part 1*. Tech. rep. Centre d'histoire et d'archéologie, École française d'Extrême-Orient, Paris.

Chami, F. A. (2001): People and contacts in the ancient western Indian Ocean seaboard or Azania. *Man and Environment* 27(1): 33–44.

Champakalakshmi, R. (1996): *Trade, Ideology and Urbanisation: South India, 330 BC to AD 1300*. New Delhi: Oxford University Press.

Chandra, M. (1977): *Trade and Trade Routes in Ancient India*. New Delhi: Abhinav Publications.

Charlesworth, M.P. (1928): Some Notes On the Periplus Maris Erythraei. *Classical Quarterly* 22(2): 92–100.

Craik, E. (2015): *The Dorian Aegean*. London: Routledge Revivals.

Dihle, A. (1965): *Umstrittene Daten Untersuchungen zum Auftreten der Griechen am Roten Meer: Das Datum des Periplus des Roten Meeres*. Ed. by Dihle, A. Koln.

Dressel, H. (1899): *Corpus Inscriptionum Latinarum, band XV*. Berlin.

Empereur, J. Y. and Picon., M. (1989): Les régions de production d'amphores impériales en Méditerranée orientale. *ARHE*: 223–248.

Frakes, J. F. (2009): *Framing Public Life: The Portico in Roman Gaul*. Vienna: Phoibos.

Francis Jr, P. (1990a): Collar beads: a new typology and a new perspective on ancient Indian beadmaking. *Bulletin of the Deccan College Post-Graduate & Research Institute* 45: 117–121.

– (1990b): Glass Beads in Asia, Part 2: Indo-Pacific Beads. *Asian Perspectives* XXIX(1): 1–23.

– (2002): *Francis: Asia's Maritime Bead Trade*. Honolulu: University of Hawaii Press.

Gwinett, A. and Gorelick, L. (1988): A possible lapidary training piece from Arikamedu, India. *Archaeomaterials* 2(2): 183–93.
Howard, M. C. (2012): *Transnationalism in Ancient and Medieval Societies: The Role of Cross-Border Trade and Travel*. Jefferson: McFarland.
Kamalakar, G. (2000): *South Indian Archaeology*. New Delhi: Bharatiya Kala Prakashan.
Kasinathan, N. (1994): Two Roman Coins from Alagankulam Excavation, in Kacinatan, N. (ed.), *Collected Papers (Studies in Tamil Culture)*. Madras: State Department of Archaeology: 31–34.
Lannoye, V. (2015): *The History of Money for Understanding Economics*. North Charleston: CreateSpace Independent Publishing Platform.
Laubenheimer, F. (1990): *Le temps des amphores en Gaule: vins, huiles et sauces*. Paris: Errance.
Mairs, R. (2016): *The Hellenistic Far East: Archaeology, Language, and Identity in Greek Central Asia*. Berkeley: University of California Press.
Nagappan Nayar, K. and Mahadevan, S. (1974): Chank Fisheries and the Industrial use of Chank, in *The Commercial Mollusks of India*. Central Marine Fisheries Research Institute Cochin Bulletin, Volume 25: 122–140.
Newbold, C. (1844): Summary of the geology of Southern India. *Journal of the Asiatic Society* IX: 20–37.
Ramachandran, K. S. (1980): *Archaeology of South India: Tamil Nadu*. Delhi: Sandeep Prakashan.
Redfern, R. et al. (2016): Going south of the river: A multidisciplinary analysis of ancestry, mobility and diet in a population from Roman Southwark, London. *Journal of Archaeological Science* 74: 11–22.
Sherwin-White, S. (1978): *Ancient Cos*. Virginia: Vandenhoeck & Ruprecht GmbH KG.
Sidebotham, S., Hense, M., and Nouwens, H. (2008): *The Red Land: The Illustrated Archaeology of Egypt's Eastern Desert*. Cairo: American University in Cairo Press.
Sinkankas, J. (1996): *Mineralogy: A First Course*. New Delhi: Affiliated East-West Press.
Smith, M. (2002): The Role of Local Trade Networks in the Indian Subcontinent in the Early Historic Period. *Man and Environment* XXVII(1): 139–51.
Tchernia, A. (2016): *The Romans and Trade*. Oxford: Oxford University Press.
Thapar, R. (2002): *Early India from the Origins to AD 1300*. London: Penguin Books.
Tomber, R. (2012): From the Roman Red Sea to beyond the Empire: Egyptian ports and their trading partners. *British Museum Studies in Ancient Egypt and Sudan* 18: 201–215.
Turner, P. (1989): *Roman Coins from India*. London: Institute of Archaeology Occasional Publication 12.
– (2016): *Roman Coins from India*. London.
Wheeler, M. (1954): *Rome beyond the Imperial Frontiers*. New York.
– (1955): *Rome beyond the Imperial Frontiers*. London: Bell.
Wheeler, M. et al. (1946): Arikamedu, an Indo-Roman Trading Station on the East Coast of India. *Ancient India* 2: 17–25.
Whitcomb, D. and Johnson, J. H. (1982): *Quesar Al Qadim 1980 Report*. American Research Center in Egypt Reports 7. Cairo: Undena Publications.
Whittaker, C. (1994): *Frontiers of the Roman Empire: A Social and Economic study*. Baltimore: Johns Hopkins University Press.

Will, E. (1992): Production, Distribution, and Disposal of Roman Amphorae, in Beyll, G.J. and Pool, C. (eds.), *Ceramic Production and Distribution: An intergrated approach.* Boulder: Westview.

– (2001): Truth in Roman Labeling? *American Journal of Archaeology* 105(2): 263.

Zlateva, B. and Rangelov, M. (2015): Chemical Analysis of Organic Residues Found in Hellenistic Time Amphorae from South East Bulgaria. *Journal of Applied Spectroscopy* 82(2): 221–227.

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There and Back Again: Ancestor Veneration and Necromancy in Ship-Themed Scandinavian Burials

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Keywords: ship, burial, Scandinavia, Viking, necromancy, ancestor worship, picture stone

Many interpretations have been applied to ship symbolism in Scandinavian mortuary contexts, the most common of which describes the ship as a vessel to transport the dead from one world to the next. However, many of these interpretations fail to address the role of the ship in the context of cultic practices described in contemporary literature. Through an assessment of literary sources and archaeological evidence present in ship burials, stone ship settings, and picture stones, this paper aims to address these interpretive gaps, making a case for ancestral referencing and veneration as well as necromantic ritual in ship-themed burials. I do not attempt to disentangle ship symbolism from the concept of travel, but rather argue that mortuary ships allow the dead the freedom to depart from and return to the world of the living.

The symbolism of the ship or boat in Scandinavian mortuary contexts has long been a topic of debate. With an expansive history stretching from the Mesolithic into the late Viking Age, there can be no doubt that the symbol acquired a great multiplicity of meanings over time. It is arguably the most prolific motif of this culture, and is found depicted on rock art and bronze artifacts from central to south Scandinavia, on stone ship settings in mainland Sweden and the island of Gotland, in ship burials both in Scandinavia and abroad, and upon the massive and intricately decorated Gotlandic

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picture stones (N. Price, 2008:264–266; Wehlin, 2010:93). While it is not difficult to understand why ships would be greatly revered as a symbol in a maritime economy such as this, the reasoning for the relationship between ships and the afterlife in early Scandinavia remains a matter of speculation.

Interpretations regarding the significance of mortuary ship symbolism during Scandinavia's Bronze, Iron, Pre-Viking and Viking Ages have been plentiful and varied. Some argue that these objects and symbols stood as metaphors not only for an individual's position within his or her community, but also for the relationship between Scandinavia and Continental Europe (Ballard et al., 2004:388). Indeed, ships were not only metaphors for travel and trade; some ship burials bore markers of the identity, ethnicity, religious ideologies, and power of the individual interred within them (N. Price, 2008:265). Other scholars theorize that ship burials and megalithic monuments constructed in the form of ships (hereafter referred to as stone ship settings) were intentionally built near the sea as navigation aids for travelers and traders (Ballard et al., 2004:388). Interpretive distinctions have also been made regarding the ship's underlying meaning particular to time period and the medium used to craft these mortuary vessels. Bronze and Iron Age stone ship settings have variously been interpreted as embodiments of communal or familial identity (Ballard et al., 2004:390) , great symbolic warships (Skoglund, 2008:394–396), and as cult houses where ancestral ritual may have taken place (Bradley, Skoglund, and Wehlin, 2010:97). Burials containing actual ships are understood by many scholars either in the context of their use in transportation (specifically, in transporting the dead to some version of the afterlife) or as a show of wealth and grandeur by the deceased and their families (N. Price, 2008:265). Picture stones, which occur almost exclusively on the island of Gotland, are generally perceived as continuations of the connection between ships and the afterlife, since the bottom register of these intricately carved markers nearly always contains a ship (N. Price, 2008:265). These interpretations emphasize the ship's undeniably crucial role in Scandinavia's development through the ages. Although the manifestations of afterlife cosmology may at first appear different after considering these analyses, I argue that the underlying beliefs, practices, and interactions with mortuary ships and ship symbols may have been quite similar across time and monument type.

Most often these real and metaphorical vessels are interpreted as a method of transportation for the dead to the hereafter (N. Price, 2008:265). However, ship symbolism is not altogether common within mortuary contexts. What distinguishes individuals interred in ship-themed graves from those who did not receive such a burial? Scholars have suggested that ship symbolism in mortuary contexts may be indicative of the high status and aristocratic lifestyle of those with whom the symbols are associated (Hansson, 1998:61; Herschend, 2001:68; Williams, Rundkvist, and Danielsson, 2010:4). The ship may also be representative of 'heroic worldly ordeals (Rundkvist and Williams, 2008:90)," possibly elevating the identity of the deceased individual to heroic or deified status. If this is the case, perhaps these were special, powerful people – men, women, and families – who were chosen due to their high status or esteem within the community to act as guardian spirits over the land and the people. This may suggest that ship symbolism in itself may have been an embodiment of ancestor veneration and hero cult practice.

Based upon evidence from picture stones, stone ship settings, and ship burials, I hypothesize that ship-themed graves, like other burial monuments, were a loci of interaction between the living and the dead. The following two sections address the ways in which references to lineage and ancestor worship can be discerned from all types of ship-related burials. I do not attempt to dispel or disentangle the association between ships and travel, even in funerary contexts; rather the opposite. Secular interpretations of ship symbolism emphasize the ship's use in exploring, raiding, trading, expanding, and ultimately returning home; clearly, these vessels were not built to be used only once. It is therefore not far-fetched to consider that these mortuary ships, too, were capable of making more than one journey – not only of sailing to the realm of the dead, but also of returning to the land of the living. I submit that ancestors who were buried with ships or ship symbols could be summoned back from the land of the dead to speak with or aid their living descendants, travelling between worlds via the sea, a well-known boundary between the lands of the living and dead. Furthermore, the ship was symbolically representative of a journey for the dead but, in being a permanent fixture of the landscape, allowed the living to continue their relationship with the individual buried within or beside it. I argue that the permanence of these burial monuments as mounds, doors, or containing metaphorical homes also gave the dead a place within the landscape to return to; in this way, their souls could not lose their way or become trapped. Finally, I theorize that the placement of these markers in liminal places such as shorelines or boundaries between properties or landmarks allowed the dead to travel easily between worlds. There are at least two purposes of ancestral ritual evident from literature and archaeological findings: to venerate and honor the dead through feasts and offerings, or to wake the dead in order to solicit help or arcane knowledge (Sanmark, 2010:171). Evidence presented within the following two sections will address my hypotheses regarding these functions in the context of ship-themed burials.

Ancestor Veneration in Ship-Themed Mortuary Contexts

Although ancestor veneration is an infrequently discussed aspect of pre-Christian Scandinavian ritual and religion (Nordberg, 2013; Sundqvist, 2015:but see), it is nonetheless a critical component in understanding Scandinavian cosmological perspectives and mortuary practice. Old Norse medieval prose suggests that dead pre-Christian rulers of Scandinavia were honored with public veneration, cult ritual, and sacrifice at their gravesite. After death, these high-status individuals may have been regarded as heroes, mythical beings, or even deities (Sundqvist, 2015:177).

As an extension of this practice, evidence indicates that burial mounds themselves may have been regarded as sacred sites. This notion is substantiated by medieval laws from both Sweden and Norway, which prohibit "invocation" or other cultic practices from taking place at burial mounds and other sacred places within the natural landscape. These texts suggest that during the medieval period and likely before, funerary monuments served as loci for cultic practices which may have included ancestor veneration (Sundqvist, 2015:198–199). Many tales from Old Norse prose reveal the belief that the dead even continued living within their graves, such as in the story of Gunnar of Hlidarendi from Njals saga, who startles passersby as he sings loudly in his burial mound one night (N. Price, 2008:261). Admittedly, the accuracy of the Old Norse sagas in depicting non-Christian beliefs and practices has been contested by some due to

the heavy influence of Christianity in the 13th century. However, the aforementioned contemporary Scandinavian laws condemning these acts would suggest that the afterlife ideology detailed in the Njals saga was no retelling of a mythical pagan past, but was instead based upon a very real collection of rituals and beliefs practiced concurrently with Christianity.

If it is true that other burial monuments were focal points for ancestor rituals and veneration as medieval laws and sagas suggest, I propose that ship-themed burials were not excluded from these practices. Indeed, references to linage and ancestor worship can be discerned from all forms of ship-related burials. However, the ship symbol may have accorded these burials several layers of meaning; unlike those interred in more typical burial monuments who dwelled within the confines of their mounds, those buried in ship-themed burials could come and go as they pleased upon their ships of death. This and other interpretations will be elucidated within the context of each type of ship-themed burial, including stone ship settings, picture stones, and burials containing actual wooden ships.

The mortuary tradition of stone ship settings is colored by a long and motley history. Though these enigmatic megalithic structures are most commonly associated with Bronze Age Gotland (fig. 1), earlier examples have been found in southwestern Sweden, Denmark, and Norway, and the construction of ship-shaped stone settings continued into the Iron Age (Wehlin, 2010:92). During its vast history, the ship symbol in this megalithic mortuary context embodied a number of ideologies; perhaps most well-known is the relationship between ships and the solar cosmology established in the Bronze Age. Based upon the appearance of the sun in conjunction with boat imagery found on Scandinavian rock art and bronze razors recovered from funerary contexts, Kaul (1998) developed an interpretation in which ships, and their crews, ferried the sun across the sky during the day and under the sea at night. However, some scholars argue that this solar mythology belongs only to a select portion of society, namely the ruling class, and does not accurately represent the beliefs of the community as a whole. Here it is relevant to consider that the ship symbol and its relationship with the dead predates the Bronze Age (Westerdahl, 2005:34). It therefore seems likely that a cosmology regarding the association between ships and death was already established at this time, and that a new or potentially foreign sun-worshipping belief system adopted and adapted it for the purposes of maintaining community solidarity (Skoglund, 2009:212–213; Westerdahl, 2015:41–42). What this earlier ideology and its associated rituals might have entailed remains unclear; however, we may look to a comparison between Scandinavian and Southeast Asian ship symbolism (Ballard et al., 2004) for clues. Although these cultures did not interact with one another, an examination of the significance of the ship as a symbol within a maritime economy such as those found within Southeast Asia may shed light on the mystifying phenomenon of ship-related mortuary practices in Scandinavia's past.

Although archaeological data in Southeast Asia is sparse, ethnographic and ethno-historical information suggests that boat imagery and symbolism plays a major role in rituals associated with rites of passage, life transitions, and death. Furthermore, ships act as the basic social units of family and community, representing communal unity

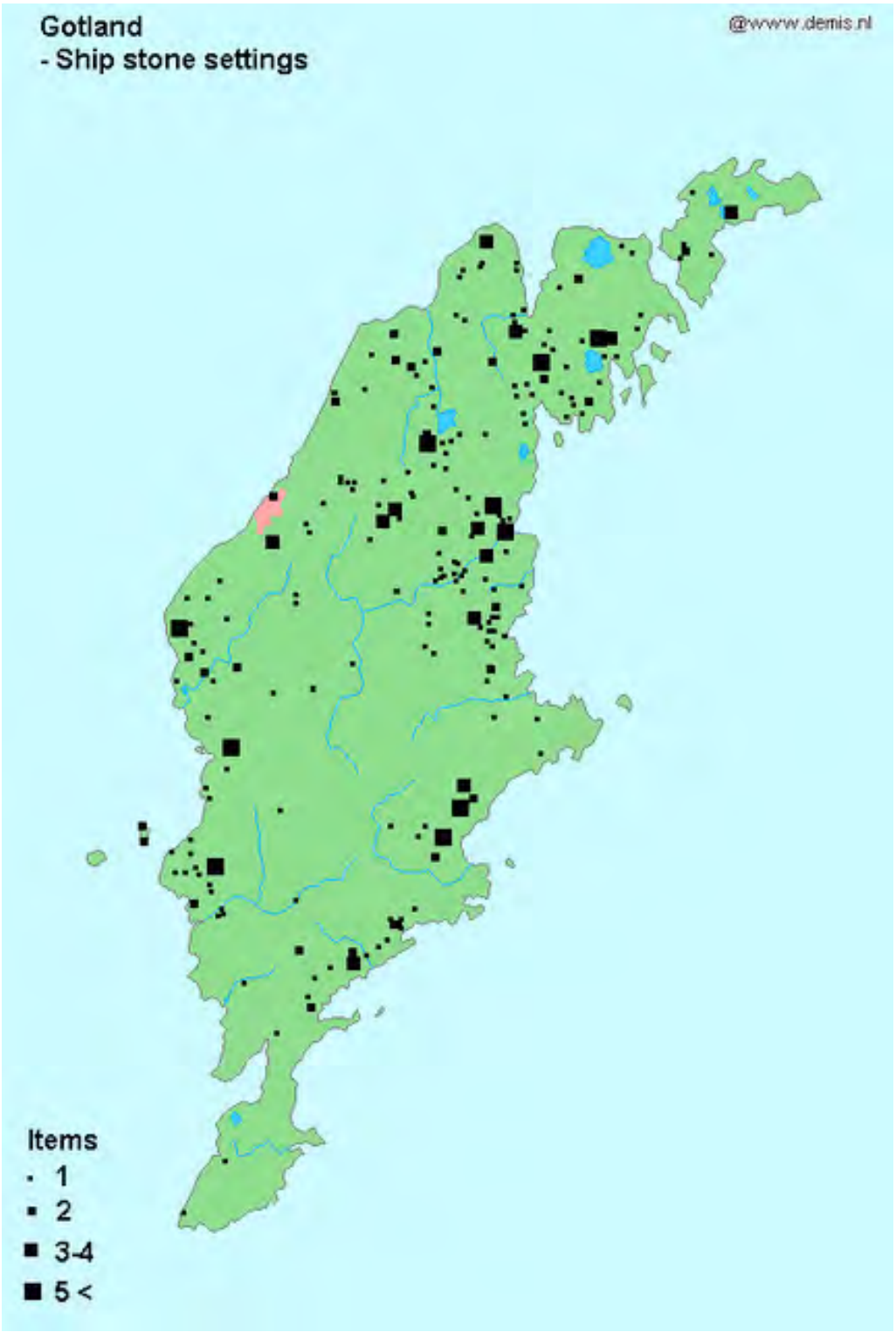

Figure 1: *Distribution of stone ship settings on Gotland, Sweden. 2013.*

and the ordered social group (Ballard et al., 2004:392). This is a logical interpretation; to be part of a rowing crew was a social act, and a boat's crew could be considered a microcosm of the community itself (Westerdahl, 2015:46). In addition, the ship symbol was strongly linked with divinatory, ecstatic, and necromantic ritual in Indonesian and Melanesian shamanic practice; ships could not only be used to ferry souls to the world of the dead, but to communicate with the ancestors (Ballard et al., 2004:392). Indeed, the association between ships and death in most Austronesian-speaking communities is so strong that the terms for 'boat' and 'coffin' can be interchangeable (Ballard et al., 2004:392; Manguin, 1986:196). The connection between ship symbolism and ancestral ritual in Southeast Asia is of particular interest in developing an interpretation of the use and significance of stone ship settings, but what evidence of this relationship can be found in Scandinavian contexts?

Figure 2: *Stone ship setting in Gnisvärd, Tofta, Gotland, Sweden. 2003.*

To answer this question, the construction of stone ship settings must be considered. Stone ship settings exhibit a great degree of variation in size and proportion (Figs. 2 and 3) and, as funerary markers, their osteological remains and grave goods are just as diverse. While the average length is 10 meters, their size may range from 2 to 45 meters (T. D. Price, 2015:222). A proportional standard also seems not to have been established: smaller stone ship settings possess length: width ratios between 2.5:1 and 4:1, while larger ship settings are far narrower, averaging length: width ratios between 6:1 and 8:1 (Bradley, Skoglund, and Wehlin, 2010:95). Some scholars suggest that the ratios of these ship settings may be representative of different types of real ships, including war canoes and transport vessels (Artursson, 2013; Bradley, Skoglund, and Wehlin, 2010; Skoglund, 2014:204-205). This interpretation implies that the stone ship settings, like their wooden counterparts, may have held different connotations and functions based on size. Warships, which have been compared with large ship settings, are representative of communal unity, working together for a common goal, and social engagement. These ideals align well with rituals involving an entire community, or even multiple communities, coming together as one in a ritualized space. Alternatively, transport vessels, which may have been the inspiration for small ship settings, exist for the purpose of ferrying things from one place to another. In a mortuary context, this symbolism can be understood as a method of transport for the ancestors to and from the world of the dead. While both ship setting sizes may have been used for the purposes of commemorative ritual, the connotations vary slightly from one another.

A different perspective of the ship's sizes, and what they may allude to, yields nearly the same results. Bradley, Skoglund, and Wehlin (2010) notes that the measurements of

larger stone ship settings on Gotland also compare favorably with rectangular stone structures believed to be 'cult houses' found on the coast of Sweden, suggesting that perhaps they served similar or identical functions (Bradley, Skoglund, and Wehlin, 2010:97). This concept may have a solid archaeological foundation: the remains of fires and feasts have been recovered from within the boundaries of these burial monuments, potentially indicating their purpose as a commemorative place (N. Price, 2008:261). Yet size distinctions among stone ship settings may have also reflected a difference between memorializing practices; Bradley, Skoglund, and Wehlin (2010:97) propose that large stone ship settings may have acted as cult houses for the veneration of important communal ancestors, while smaller settings may have been utilized for the purpose of ancestor veneration at the familial level.

A final element of stone ship setting construction which deserves consideration is the deliberate choice between building the ship's outline using kerbs or monoliths (Figs. 5 and 4). In an apt comparison between stone ship settings and contemporary Bronze Age rock art, which depicts ships both with and without crews, Bradley, Skoglund, and Wehlin (2010:86–87) theorize that upright stones may not only have had the effect of creating a ship outline – they may also have represented crew members. This effect is compounded when one considers that the monoliths on either side of most Gotlandic ship settings appear to be paired, much like a pair of rowers. Monoliths acting as human representations have ethnographic parallels all over the world, including in Gotlandic folklore. If these stones did indeed represent crew members aboard a ship of the dead, it does not seem implausible to consider that they may have even represented familial or communal ancestors. To be cremated and buried within a metaphorical ship of the dead crewed by one's ancestors may have been considered a rite of passage in which the dead person left the community of the living to join the community of the dead.

Figure 3: *Two Viking stone ships (burial grounds) at Badekunda, near Västerås, Sweden. 2005.*

However, there is yet another layer to the symbolism of these monoliths. Unlike kerb-constructed ship settings, which Bradley et al. suggests may be "empty" vessels and typically have a clear direction of travel based on the monoliths that mark their prow and stern, the directionality of monolith-constructed ship settings is far more ambiguous. It is possible they may have even been considered to travel in two directions (Bradley, Skoglund, and Wehlin, 2010:88). Based upon these interpretations, I posit that stone ship settings were perceived of not only as grave markers, but as ancestral touchpoints – places within the landscape that familial or communal ancestors could return to and depart from aboard a ship that could traverse the boundaries between the worlds of living and dead. Furthermore, some stone ship settings are connected from end to end, lining up one after another (Bradley, Skoglund, and Wehlin, 2010:84). This suggests that groups of stone ship settings may have had the effect of signaling ancestral relationships and lineages.

Figure 4: *Stone ship at Tofta högar (RAÄ Number Hov 109:1) in Hov parish, Bjäre hundred, Båstad municipality, Skåne County, Scania, Sweden. 2010.*

Figure 5: *Stone ship, Gannarve, Gotland, Sweden. 2001.*

Several such examples of Gotlandic stone ship settings which may reference ancestry or familial ties can be found in the Rannarve Klinte parish, in which five definitive stone ship settings and a sixth possible example are found in one place, four of which are in line with one another (fig. 6). Each ship setting contained the cremated remains of one individual. Excavation of the features revealed that within the second ship setting was a house urn containing burnt bone, sand, and two knives. The fourth ship setting may also have held such a vessel, though prior disturbance of the feature makes this difficult to discern (Gustavsson, 2012:7-26). The importance of house urns to an interpretation of ancestor worship will be discussed in the following section.

Not far from this row of ship settings is a circular cairn, surrounded by a sizable number of flint pieces. A ceramic urn was found inside a stone cist at the center of the cairn. Inside it, archaeologists found burnt bone, a razor, an awl, and a bronze bar (Gustavsson, 2012:7–26). At first it may seem that this circular structure may be a clear reference to, or continuation of, the Bronze Age association between ships and the sun depicted in rock carvings and on razors from mainland Sweden (Kaul, 1998; Skoglund, 2008:400). However, the contents of the cairn suggest that the structure may have served as a deposition point for offerings made to the ancestors of this family group by their living descendants; even in other mortuary contexts, evidence exists to support the practice of

feasting and offering rituals at burial sites long after the burial itself takes place (N. Price, 2008:261). I posit that these ritualized offerings may have been indicative of ancestor veneration and that stone ship settings, like the ship symbol in Southeast Asia, may have been considered access points for the living to commune with the dead.

The Kaupang ship burial in Norway is another example of ancestral referencing and possible veneration within ship-themed funerary contexts (fig. 7). In this instance, a ship containing a man, two women, and an infant was buried directly on top of a simple one-man grave created decades earlier. The keel of the boat was aligned precisely with the body of the earlier burial, indicating not only that the burial position and location was remembered decades later, but that the individuals within the boat burial sought to replicate or reference these conditions. In this way, the ship burial may be a continuation of, or a reference to, ancestral lineage (N. Price, 2008:267–268; N. Price, 2012a).

Figure 6: *Stone Ships at Rannarve, near Klintehamn, Gotland, Sweden. 2008.*

Returning to Gotland in a later period, one can also find ships represented in registered carvings upon massive stone stelae called picture stones. Dating from A.D. 400-1100, picture stones are interpreted as commemorative markers for the dead, as burials have been found at the foot of many of these impressive stones (fig. 8). Because no burials containing actual wooden ships have been found on the island of Gotland, scholars suggest that these picture stones may embody a two-dimensional representation of the continuation of the relationship between ships and death. These intricately decorated stones nearly always depict a ship within the bottom register and heroic, even mythological narratives told in the top registers (fig. 9) (Skoglund, 2008:396–398). This may be a pictorial representation of ancestral veneration and the 'hero cult' practice, in which the dead were deified and their identity became conflated with notions of heroism, myth, and legend (Sundqvist, 2015:177). The influence of ancestry and lineage is further manifested upon these stones in the organization of the images themselves. The stories told within the registers reference one another – the top register of one stone can often be found as the bottom register of another stone from the same approximate geographical area. This is suggestive of a familial narrative, telling the story of a lineage in chapters that continue from generation to generation. This not only binds the dead to the living and vice versa, but also deepens the connection between the dead and the land in which they are buried (N. Price, 2012b).

Necromancy and Ship-Themed Burials

As described in the previous section, both burial mounds and cult houses have historically been used for the purposes of ritual, ancestor veneration, and even communication with the dead. Considering the similarities that ship-themed burials share in common with these architectural features, it follows that analogous activities may have taken place at ship burials, stone ship settings, and picture stones – all commemorative markers equal

Figure 8: *"The Hunninge stone": Picture Stone n°1 from Hunninge, Gotland. 8th century A.D. The Gotland Museum (Visby).*

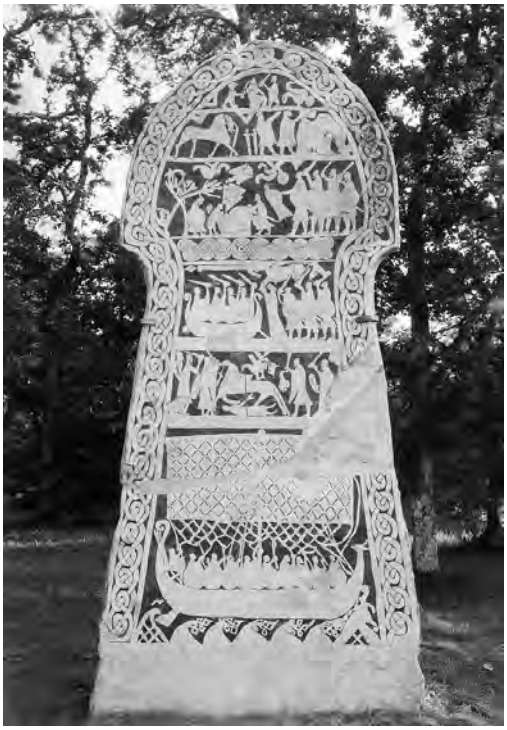

Figure 9: *Viking Age picture stone from Stora Hammars on the island of Gotland, in Bunge Open Air Museum.*

in scale and significance to other monuments constructed to honor the dead. However, if ancestor veneration and ritual is a theme throughout Scandinavian mortuary contexts, what effect can ship symbolism have upon these rituals and perceptions?

If people buried in regular mounds are believed to live there, are people buried within ship-themed burials also considered to reside within their graves? The answer may be more complex than a simple 'yes' or 'no.' Rather, I suggest that these dead ancestors are believed to undertake great journeys in the afterlife, but that ships and other portals have been provided at the gravesite to forever bind them to the land. Perhaps they are not considered to live there, but are given points of entry so that they might come and go at will or else be summoned by the living. I propose that ancestors who were buried with ships or ship symbols could be summoned back from the land of the dead to speak with or aid their living descendants, travelling between worlds via the sea, a well-known boundary between the lands of the living and dead.

Evidence of necromancy – specifically, waking the dead from their burial mounds to communicate with the living – can be found in runic inscriptions as early as A.D. 650-700. Several references to this practice can also be found within the Poetic Edda: *Grogalder* is the story of a son who wakes his mother from the dead to solicit her help. The

Second Poem of Helgi Hundigsbani is the tale of a man named Helgi who, after his death and subsequent journey to Valhalla, was summoned to his burial mound to comfort his widow (Sanmark, 2010:171). Based upon this tale, one can conclude that even the dead who ventured to another world, rather than residing in their mounds, could be summoned back to the realm of the living and communicated with. If this is the case, it therefore seems plausible that the practice of calling ancestors back from their seafaring afterlife voyages may have been as common as other forms of ancestor veneration and necromancy.

A more explicit example of the relationship between ship burials, ancestor veneration, and necromancy can be observed from the well-known Oseberg ship burial of Norway (fig. 10). This burial is the final resting place of two women interpreted variously as two volva sorceresses, a volva and her apprentice, two ostentatious queens, or a queen and her servant (Ruffoni, 2011). An array of artifacts including clothing, shoes, cookware, combs, sledges, and tents, as well as the remains of fifteen horses, six dogs, and two cows have been recovered from this funerary context. This richly extravagant ship burial is representative of the relationship between high status burials and ship symbolism throughout the 9th century in Scandinavia (Ruffoni, 2011:20–25). The plentitude of grave goods seems to suggest that the ship and its passengers were well equipped for a long journey into the world of the dead. However, this symbolism is contradicted by another intentional feature of this burial: the ship itself is moored, tied to a massive and immovable boulder (N. Price, 2008:262).

Figure 7: *A boat burial from Kaupang, Norway, early 10th century. Image by Þórhallur Þráinsson.*

Several theories have been proposed to explain the dichotomous nature of symbolism in this burial. Archaeologist Anne Stine Ingstad posited that the act of fastening the ship to a boulder would have ensured that the Oseberg women would remain in the mound that covered their ship burial to guarantee prosperity and fertility to the land they surveyed. Norwegian archaeologist Brit Solli offered another tantalizing interpretation. Presuming that one of the women in the burial was a volva sorceress, Solli proposed that this intentional mooring was indicative of necromantic practices. Specifically, this burial feature was designed to guide the woman's soul back to her mound, referred to as her "dwelling," after being summoned to perform some magical task by the living (Ruffoni, 2011:33). A final interpretation theorized that the mooring of the ship burial does not discredit the implication of posthumous travel suggested by the vessel; rather, this act may indicate that the women dwelled in the burial mound only temporarily, and could decide for themselves when to depart from this world aboard the ship within which they were buried (Bill, 2016:216–217). The Oseberg burial was broken into and raided over a century later; archaeologist Jan Bill suggests that this act was meant to rob these high status individuals of their power to

Figure 10: *Oseberg ship in The Viking Ship Museum, Oslo, Norway. 2010.*

legitimate other rulers in the area. If this is the case, it seems plausible that the two women were believed to reside within the mound and possess agency and power over the living for at least a hundred years after their burial (Bill, 2016:218). Particularly relevant to my interpretation is the concept that "the ship is lying ready for departure, but is still connected to the imaginary coast (Bill, 2016:212)." It is through this metaphorical connection that the dead remained bound simultaneously to their descendants, to the land, and to the afterlife.

Symbolism suggestive of both travel and domesticity is reflected in mortuary ships and the mounds within which they are buried, as well as stone ship settings and the house urns found within them. Indeed, house urns found in stone ship settings may have had a similar effect to the mooring evident at Oseberg. Archaeologists and historians are still in disagreement as to whether house urns may have represented real houses – on Gotland, abroad, or as a spiritual 'house' in the afterlife (Runesson, 2010:80). At first glance, it seems possible that these metaphorical houses may have been integrated in funerary monumentality with the express intent of providing a home for the dead to dwell in after death. However, much like other mortuary settings, I suggest that these miniature houses were meant to be used as a touchstone – a point within the landscape to which the dead could always return, either from their travels in the afterlife or after being summoned by the living via necromancy. This interpretation seems more likely

in the context of a ship burial; the juxtaposition of symbolism suggestive of both travel and sedentariness insinuates that both aspects of life were crucial in the afterlife.

Similar symbolism may also be apparent in examples of stone ship settings on the Swedish mainland. These ship-shaped monuments were typically paired with small, rectangular stone settings whose proportions mimic Late Bronze Age domestic buildings, albeit on a miniature scale. It has been suggested that the pairing of ship and house symbolism was meant to represent the sea and the land (Bradley, Skoglund, and Wehlin, 2010:93). However, considering this from the perspective of mortuary behavior and cosmological ideologies, it does not seem a stretch to perceive of the dichotomy exemplified by these structures as representative of the ancestors' travels between the worlds of living and dead. The ship, clearly linked with the concepts of travel, is offset by the ideological representation of a home to which the dead can also return.

The practice of ancestor veneration and communication may also apply to the picture stones of Gotland. Scholars have observed that the shape of these massive memorial stones for the dead strongly correlates with the shape of stave church doors (Eriksen, 2013:195-196). The parallelism of these two architectural features may indicate that these monuments were believed to be access points – doors – to the realm of the dead. Indeed, verses from the Poetic Edda allude to doors as portals used for travel to the death realm; the gateway to Hel is even described as a door. Other passages from the Poetic Edda explicitly reference the relationship between doors and necromancy. In one, Odin journeys to the death realm to solicit the advice of a dead volva, who is buried "east of the door," and whom he awakens with sorcery. Another poem describes a son waking his sorceress mother from the grave, saying, "Wake three, Groa, wake, mother good, at the doors of the dead I call thee (Eriksen, 2013:191-194)."

The relationship between ships and doors is further elucidated in Ibn Fadlan's firsthand account of a chieftain's ship burial, which provides a detailed characterization of the use of doors in funerary and necromantic ritual, including those mortuary contexts grounded in ship symbolism. Fadlan described how a slave girl, who volunteered to be sacrificed for her dead master, is raised above a ritually crafted "door"; the girl, upon peering over the top of the door, exclaims, "Behold, I see my father and my mother… Behold, I see all of my dead kindred… Behold, I see my master, seated in Paradise (Montgomery, 2000:17-18)." Based upon this literary evidence, it seems that doors and door-shaped picture stones in mortuary contexts were explicitly used as a way to see, travel to, or communicate with the afterlife (N. Price, 2012b). For the purposes of my argument, Ibn Fadlan's account has the added benefit of merging the ritual use of doors with both ship burials and necromancy, substantiating the claim that the dead interred in ship-themed burials were actively venerated and communicated with. The relationship between doors and ships found in Ibn Fadlan's narrative is mirrored in the form and design of Gotlandic picture stones, the bottom register of which always features a ship. It is possible that ship and door symbolism worked in conjunction with one another. Perhaps ships were considered the vessel within which the dead could travel between the living and dead worlds, while doors and door-shaped picture stones served as portals through which the dead and living could communicate.

Although moored mound-dwelling ships, stone ship settings containing house urns, and door-shaped picture stones may at first seem to convey various underlying meanings, I argue that the implied permanence of these burial monuments as homes or as access points to the world of the living provided the dead a place within the landscape to return to when summoned by their descendants. In this way, their souls could not lose their way or become trapped during their journey, nor could they be fully separated from their land or lineage.

The deliberate liminality in the placement and construction of ship-themed burials is a final and crucial component in the interpretation of ancestor veneration and necromancy in association with mortuary ship symbolism. The intentional positioning of Gotlandic picture stones along property lines is evocative of cosmological boundaries as well as travel between the worlds of living and dead. This symbolism is compounded by the shape of these monuments; doors are, in and of themselves, suggestive of travel and transition, and these mortuary doors are representative of points of entry from one world to another (Eriksen, 2013:195–196; N. Price, 2012b). Liminality is also apparent in the placement and construction of stone ship settings. All recorded discoveries of these monuments have been situated near water. Though this may be a clear parallel to the real objects they imitated (Wallin, 2010:47), it is imperative to consider that bodies of water were also cosmologically liminal places, demarcating the periphery between the lands of living and dead (Ballard et al., 2004:388; Helskog, 1999; Wehlin, 2010:91). Curiously, the construction of monolithic stone ship settings also displays a certain ambiguity in the directionality of travel. It is possible that these monuments were believed to travel in both directions (Bradley, Skoglund, and Wehlin, 2010:89), eliciting the concept of afterlife mobility in terms of both departure and return. I suggest that the placement of these burial features in intermediary points within the landscape was a deliberate aspect of ship-themed burial ritual that allowed the dead to travel back and forth between the worlds with ease.

Conclusion

While mortuary ships are typically understood as vessels of transportation from the world of the living to the world of the dead, I believe this interpretation is far too simple. The symbolism contained within ship-themed burials is incredibly complex, but it is clear that these burials fit firmly within a mortuary tradition that honored and communicated with dead ancestors. While individuals buried in mounds were often believed to dwell within the land, it seems that those whose burials contained ship symbolism were believed to be capable both of journeying to another world and of returning when called upon via necromancy. Elements of their construction frequently evoke both travel and domesticity, departure and return, while simultaneously referencing ancestral lineage. The liminal position and construction of burials containing ship symbolism is suggestive, too, of transition and travel between worlds. The ship these ancestors were buried with enabled them to cross the proverbial sea, the cosmological boundary between the worlds of living and dead. However, the evidence presented in this analysis suggests that even the dead interred within ship-themed burials were still anchored to the world of the living. Sometimes the connection between the worlds was manifested in obvious physical ways, like the mooring of the Oseberg ship and the house urns found within stone ship settings. Alternately, the link between the ancestors and the world of the

living may have been maintained through cultural perspectives and interactions with the dead. Evidence of this practice can be found in the remains of commemorative feasts and rituals that took place within Gotlandic stone ship settings, or in literature describing the necromantic practices employed by Old Norse peoples to wake their ancestors from their graves, including those in ship burial mounds and burials beneath picture stones.

Although the evidence presented within this paper addresses the practice of ancestor veneration and necromancy within the context of ship-themed burials, many questions remain for future research. Why were certain ancestors chosen to experience an afterlife of travel within the cosmic sea, while others remained within their mounds to sing and watch over the land? Did early Scandinavian people believe that ancestors buried with ship symbols could access sacred knowledge unattainable to those who dwelled eternally in their mounds? Was there an archaeologically observable difference between the commemorative and necromantic practices of burial mounds and ship-themed burials? Some of these questions are quite cerebral in nature and thus, their answers may elude us. This does not mean that we should not make the attempt to address these questions, however. It is my hope that in the future, interpretations of mortuary ship symbolism will finally move beyond the simple and much-studied notion of posthumous travel and will instead endeavor to further explore the relationship between identity, cosmology, and ship symbolism.

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References

Artursson, Magnus (2013): SHIPS IN STONE: SHIP-LIKE STONE SETTINGS, WAR CANOES AND SAILING SHIPS IN BRONZE AGE SOUTHERN SCANDINAVIA. *Counterpoint: Essays in Archaeology and Heritage Studies in Honour of Professor Kristian Kristiansen*: 499–504.

Ballard, Chris et al. (2004): The ship as symbol in the prehistory of Scandinavia and Southeast Asia. *World Archaeology* 35(3): 385–403.

Bill, Jan (2016): Ambiguous Mobility in the Viking Age Ship Burial from Oseberg. Ed. by Bjerregaard, I Peter, Rasmussen, Anders Emil, and Sørensen, Tim flohr: 207–220.

Bradley, Richard, Skoglund, Peter, and Wehlin, Joakim (2010): Imaginary vessels in the Late Bronze Age of Gotland and South Scandinavia. *Current Swedish Archaeology* 18: 79–103.

Eriksen, Marianne Hem (2013): Doors to the dead. The power of doorways and thresholds in Viking Age Scandinavia. *Archaeological dialogues* 20(2): 187–214.

Gustavsson, Anders (2012): Artefacts and bone patterns in stone ship settings on Gotland. MA thesis. University of Gotland.

Hansson, Martin (1998): Graves, Grave-Fields and Burial Customs. *Lund Archaeological Review for 1998*: 49–65.

Helskog, Knut (1999): The shore connection. Cognitive landscape and communication with rock carvings in northernmost Europe. *Norwegian archaeological review* 32(2): 73–94.

Herschend, F (2001): *Journey of Civilization: The Late Iron Age View of the Human World.* (Uppsala, Uppsala University Department of Archaeology and Ancient History).

Kaul, Flemming (1998): *Ships on Bronzes: A Study in Bronze Age Religion and Iconography: Catalogue of Danish Finds. II.* National Museum of Denmark, Department of Danish Collections.

Manguin, Pierre-Yves (1986): Shipshape societies: boat symbolism and political systems in insular Southeast Asia. *Southeast Asia in the 9th to 14th Centuries*: 187–213.

Montgomery, James E (2000): Ibn Fadlan and the Rūsiyyah. *Journal of Arabic and Islamic studies* 3: 1–25.

Nordberg, A. (2013): Fornnordisk religionsforskning mellan teori och empiri. *Acta Academiae regiae Gustavi Adolphi* CXXVI.

Price, Neil (2008): Dying and the dead: Viking Age mortuary behaviour. *The Viking World*: 257–73.

– (2012a): *Life and Afterlife: Dealing with the Dead in the Viking Age.* youtube. URL: https://www.youtube.com/watch?v=uu2gN8n15_A&t=1694s.

– (2012b): *The Shape of the Soul: The Viking Mind and the Individual.* youtube. URL: https://www.youtube.com/watch?v=7Db9sG1PSsQ&t=1169s.

Price, Theron Douglas (2015): *Ancient Scandinavia: An archaeological history from the first humans to the Vikings.* Oxford University Press, USA.

Ruffoni, Kirsten (2011): Viking Age Queens: The example of Oseberg. MA thesis. University of Oslo.

Rundkvist, Martin and Williams, Howard (2008): A Viking boat grave with amber gaming pieces excavated at Skamby, Östergötland, Sweden. *Medieval Archaeology* 52(1): 69–102.

Runesson, Gunilla (2010): Gotlandic Bronze Age Settlements in Focus. *Baltic Prehistoric Interactions and Transformations*: 79.

Sanmark, Alexandra (2010): Living on: Ancestors and the soul, in *Signals of Belief: Anglo-Saxon Paganism Revisited*: 162–184.

Skoglund, Peter (2008): Stone ships: continuity and change in Scandinavian prehistory. *World Archaeology* 40(3): 390–406.

– (2009): Beyond chiefs and networks: corporate strategies in Bronze Age Scandinavia. *Journal of Social Archaeology* 9(2): 200–219.

– (2014): Social landscapes of Bronze Age Scandinavia, in. Routledge: 201–214.

Sundqvist, Olof (2015): The Pre-Christian Cult of Dead Royalty in Old Norse Sources: Medieval Speculations or Ancient Traditions? *Scripta Islandica: Isländska Sällskapets Årsbok* 66: 177–212.

Wallin, Paul (2010): Neolithic monuments on Gotland: material expressions of the domestication process. *Baltic Prehistoric Interactions and Transformations: The Neolithic to the Bronze Age*: 39–62.

Wehlin, Joakim (2010): Approaching the Gotlandic Bronze Age from sea: future possibilities from a maritime perspective. MA thesis. University of Gothenbourg/Gotland University.

Westerdahl, Christer (2005): Maritime cosmology and archaeology. *Deutsches Schiffahrtsarchiv* 28: 7–54.
– (2015): The Viking Ship in Your Mind. Some comments on its cognitive roles. *Ãrbok Norsk Maritimt Museum* 14: 33–70.
Williams, Howard, Rundkvist, Martin, and Danielsson, Arne (2010): The landscape of a Swedish boat-grave cemetery. *Landscapes* 11(1): 1–24.

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2017 Schaub Family Farm Archaeological Survey

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In early 2017, an archaeological survey was conducted across a large section of the Schaub family farm in northeastern Peoria County, Illinois. The purpose of the survey was to locate and delineate any and all archaeological sites within the defined survey area and register them with the Illinois State Museum. One previously unknown site, newly registered as Site 11P852, was discovered within the survey area; this site includes a prehistoric component and two separate historic components. The prehistoric component consists entirely of lithic remains, chiefly lithic debitage, as well as several tools or tool fragments. Diagnostic prehistoric artifacts found across the site indicate that it was occupied by Native Americans over a period of thousands of years, possibly as early as the Early Archaic Period (8000–6000 BCE). The westernmost historic component is a scatter of surface artifacts in a tilled agricultural field, while the easternmost historic component contains three intact features, including a cellar pit and a brick vault cistern, as well as several surface and subsurface artifacts. The integrity of the site varies, as large areas have been damaged by plowing or erosion, whereas other portions have remained relatively intact.

In March and April of 2017, the author conducted an archaeological survey on a farm owned by the Schaub family in Peoria County, Illinois. The goal was to locate any previously unknown archaeological sites within the study area, by identifying any surviving artifacts or features. Such an endeavor could potentially yield new information about North America's history and/or prehistory, especially if a new site (or sites) were found. If any sites were found, the survey's goal was also to determine the age or cultural affiliation of the remains, their exact horizontal and stratigraphic location, and finally, to evaluate whether the remains were intact enough, and significant enough, to offer meaningful information. Prior to fieldwork, some background research was

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conducted on the farm; environmental data and historic maps were consulted in order to provide context for the survey. During the survey, both prehistoric and historic artifacts were recovered and mapped. The presence of diagnostic artifacts and features indicates that the site may offer considerable data for future research.

The survey was intended to answer the following research questions:

1. What archaeological sites, if any, are located within the survey area?
2. What kinds of archaeological deposits (i.e., artifacts, features), if any, are located within the survey area?

If any archaeological deposits were discovered over the course of the survey, the following research questions would be addressed:

1. What is the horizontal and vertical distribution of archaeological deposits within the survey area?
2. What is the approximate temporal and/or cultural affiliation of the archaeological deposits within the survey area?
3. Do any of the archaeological deposits retain enough integrity to offer meaningful data for interpretation?

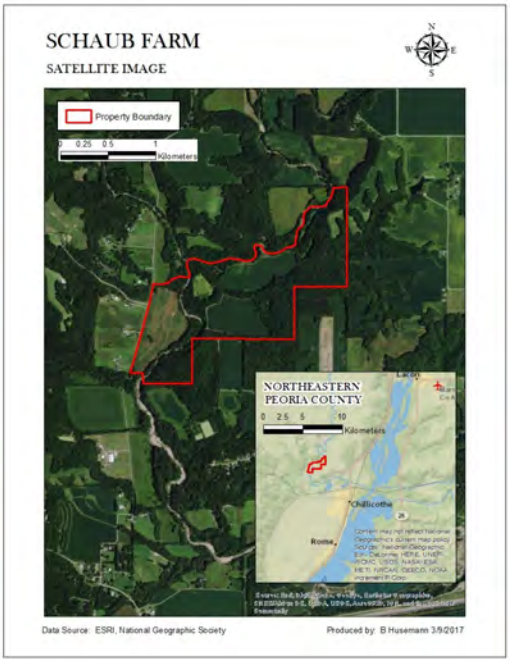

Figure 1: *Satellite image of Schaub farm*
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Environmental and Cultural Background

The study area is located on the Schaub family farm, a tract of approximately 300 acres in Central Illinois. The Schaub farm is a combination of agricultural land, Conservation Reserve Program (CRP) prairie grass, and secondary growth forest (see 1). It is split between Hallock and Chillicothe Townships in northeastern Peoria County, Illinois; the nearest town is North Hampton, a small, unincorporated community located in Hallock Township. The larger town of Chillicothe lies approximately three kilometers to the south, and the Illinois River lies roughly three kilometers to the east.

No prior archaeological study had ever taken place on the property; however, landowner Tony Schaub offered some anecdotal accounts of projectile point/knives found on the farm. These artifacts were no longer in his possession, so they could not be examined; furthermore, they would have had no clear provenience.

Environmental Background

The farm is located within the vicinity of several ecological regions, or "ecoregions," as designated by the Environmental Protection Agency (EPA). It lies entirely within an ecoregion known as the River Hills, which consists of the steep bluffs that rise above the Illinois River, dissected in many places by narrow creeks (Agency, 2015). This ecoregion could be very suitable for early human habitation, given the combination of high ground and easy access to running water (see fig. 2).

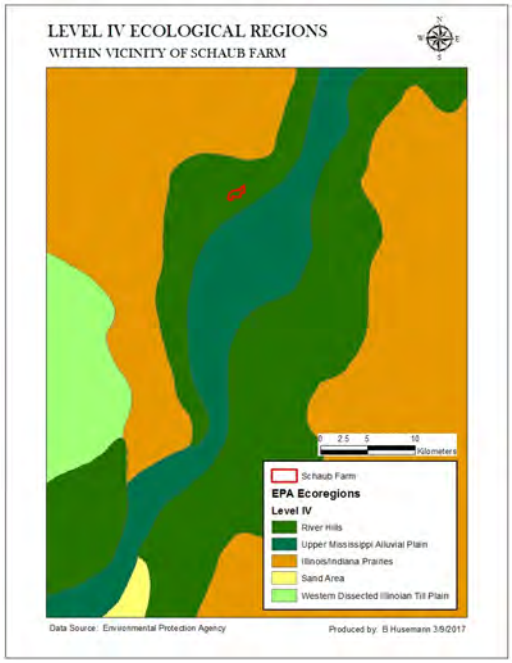

Figure 2: *Map of ecological regions near Schaub farm*
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The current terrain of the Schaub farm can be divided into upland terraces and lowland floodplains. On the map below (fig. 3), the floodplains are identified as "frequently flooded" soil types.

The formation of the upland areas was influenced by glacial activity during the Pleistocene Epoch. The most recent glaciation was the Wisconsin Glacial Episode, which affected what is now Northern Illinois from approximately 23,000 to 11,500 BCE, though the glaciation lasted longer in other parts of North America (Ehlers, 2004). During this time, the Laurentide Ice Sheet covered much of Northern Illinois, including what is now the Schaub farm. As the ice sheet receded, meltwaters from the glacier carried silt particles out onto the lower plains, and the wind picked up these particles and deposited them on upland areas, as periglacial loess. Because this accumulation of loess mainly occurred during the glacial episodes, there has probably been very little new deposition on these upland landforms since the end of the Pleistocene (Carroll, 1970). Without any deposition of new sediment to bury cultural remains, any artifacts left on these upland areas since 11,500 BCE would probably be located at or near the ground surface, without any chronological stratification.

Because the lowland areas are prone to flooding, much of the sediment there is likely alluvial in origin, and its deposition could possibly be much more recent than that of the upland loess. If this were so, then some cultural remains could be buried deep beneath the recent sediment, leading to a possible chronological stratification of artifacts.

Cultural Background

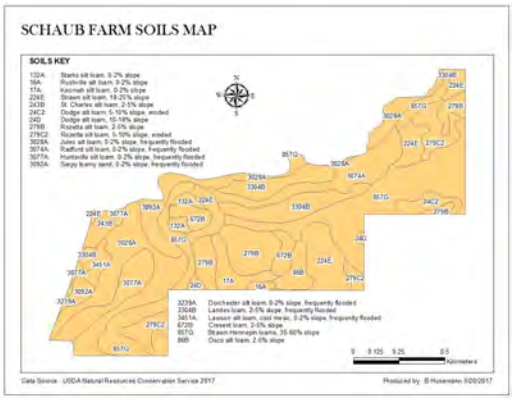

Figure 3: *Map of soil types within Schaub farm*
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The earliest inhabitants of Central Illinois were prehistoric Native Americans. Before the arrival of Europeans, the indigenous people of eastern North America (the "Eastern Woodlands") underwent four major cultural phases (the dates of which are very subjective, and vary by region):

- Paleoindian Period (first arrivals-8000 BCE)
- Archaic Period (8000-1000 BCE)
- Woodland Period (1000 BCE-700 CE)
- Mississippian Period (700-1700 CE)

The basic chronology of the Eastern Woodlands is as follows: the continent's first inhabitants (the "Paleoindians") were hunter-gatherers. Their descendants during the Archaic Period continued to live primarily as hunter-gatherers, but they made new technological innovations, such as the creation of ground-stone artifacts, and projectile point/knives with notched or stemmed bases. Later, during the Woodland Period, the people of the Eastern

Woodlands began to develop agriculture, particularly the cultivation of maize, but still relied heavily on hunting and gathering. They also developed the use of pottery. Finally, during the Mississippian Period, Native Americans in the area depended heavily on maize, and lived in settlements built around earthen mound complexes. However, this general chronology is vastly oversimplified, and there are many regional exceptions (Gibbon, 1998).

The Illinois Inventory of Archaeological Sites keeps a record of all the known prehistoric sites in Illinois; however, their locations are not divulged to the general public. In fact, only a handful of prehistoric sites in Central Illinois have been made widely known. One particularly significant site is the Rench site (11P4), which is located near Mossville, Illinois, approximately eight kilometers south of the Schaub farm. An excavation at the Rench site in the early 1980s revealed charred feature stains indicative of a wigwam and a separate trench-built house, both dating to the Late Woodland or early Mississippian Period, roughly 1000 CE (McConaughy, 1985). A little farther north, in southern Marshall County, Illinois, lies the Marshall site (11Ma269), a Native American petroglyph site of indeterminate age, discovered in 2011 (Wagner, 2013).

When Europeans first documented the area in the late seventeenth century, the inhabitants of Illinois were members of the Illinois Confederacy, an alliance of tribes including the Peoria, Kaskaskia, Cahokia, and many others, all of whom used related Algonquin languages. The Illinois River valley, where the Schaub farm is located, was occupied by the Kaskaskia (Murphree, 2012). Later, during the early nineteenth century, the central Illinois River valley was occupied by Kickapoo and Potawatomi settlements (Wagner, 2013).

The first European settlers in the area were the French. In 1680, the French explorer Robert Cavalier Sieur de LaSalle established a short-lived stronghold known as Fort Creve Coeur along the Illinois River, east of what is now the city of Peoria. American citizens first settled at the site of Peoria (then known as Fort Clark) in 1819 (McCulloch, 1902). The first American settler in what is now Hallock Township, in northeastern Peoria County, is believed to have been Lewis Hallock, who had lived among the Native Americans as a fur trapper for many years, before building a cabin in Central Illinois in 1820. The first settler in what is now Chillicothe Township, to the east, was Mahlon Lupton, who arrived in 1829 (Johnson, 1880).

The first comprehensive plat map of Peoria County was drafted in 1861, by the surveyor D.B. Allen. This provides the first detailed map of the land currently occupied by the Schaub farm. Two early landowners, T. Baldwin and E.L. Burnett, owned structures on their respective parcels, and both of these structures appear to be in or near the current boundaries of the Schaub farm. In 1861, Senachwine Creek was drawn flowing to the west of the Baldwin house, but since then, it has shifted eastwards considerably. It is likely that the creek undercut and obliterated the Baldwin house (Allen, 1861).

In the map below (fig. 4), the modern boundaries of the Schaub farm can be seen superimposed against the 1861 plat:

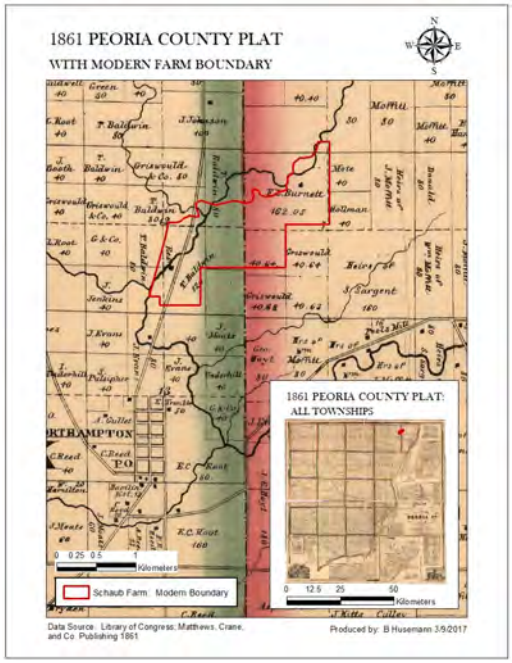

Figure 4: *1861 plat map*
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Figure 5: *1873 plat map*
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Another plat map of Peoria County was drawn in 1873, by the surveyor A.T. Andreas. A portion of Andreas' atlas, featuring Chillicothe Township, is shown below (fig. 5). According to the atlas, the area that now comprises the Schaub farm contained two structures in 1873 (on the eastern side of the township boundary). One structure belonged to F.S. Wilmot, who owned a large, heavily wooded parcel. Roughly half a kilometer to the southwest, there was another structure on a smaller parcel owned by S.M. Murry, or possibly Murray (Andreas, 1873).

One notable feature of the Schaub farm's history is that it is located near the route once taken by the Peoria and Galena Coach Road, one of Illinois' first official state roads. In 1833, the state of Illinois commissioned the surveyor Levi Warner to lay out an official road from Peoria to Galena, Illinois. North Hampton Road, a modern, paved thoroughfare in Hallock Township, is believed to follow roughly the same route as this early coach road (Illinois General Assembly, n.d.). North Hampton Road lies directly adjacent the Schaubs' property, and it is likely that the early coach road passed near, or through, the land that now comprises the farm (see fig. 6). Even though the farm is currently located in a remote and sparsely populated location, at one time, it was close to one of Illinois' major byways, which could increase the likelihood of finding historic sites.

The survey was conducted in accordance with the regulations established by the Illinois Historic Preservation Agency (IHPA) for Section 106 compliance surveys in Illinois. Artifacts more than 50 years old were recorded, but clearly modern artifacts were ignored.

Two survey methods were used in the field: shovel testing and pedestrian survey. The real world coordinates of every shovel test and surface find were recorded in TerraSync, using either a Trimble GeoXT or Trimble GeoXH receiver. ArcGIS was used to draft maps of the findings within the survey area.

Pedestrian survey was conducted at regular five-meter intervals in tilled agricultural fields with more than 40 percent surface visibility. It was also conducted in other areas where the ground had been mechanically disturbed. Shovel testing was implemented in areas with less than 40 percent surface visibility, such as in wooded areas where the surface was overgrown by vegetation, and areas of no visible surface disturbance. Shovel testing was not implemented on steep slopes

(see fig. 9), drainage areas, or areas of wetland vegetation, regardless of the surface visibility (due to contextual issues and ecological sensitivity). Additionally, if artifacts were identified in the pedestrian survey, at least one shovel test was excavated in the immediate area in order to document the stratigraphy. 40x40 centimeter test pits were conducted at 15-meter intervals along the natural contours of the land. Pits were excavated at least ten centimeters into the subsoil (B horizon) and sieved through 1/4 inch hardware cloth. The stratigraphy of each shovel test was documented by color and texture, using Munsell color codes and USDA textural classes. The individual strata were measured by depth, and classified by pedologic horizon (i.e., Ap horizon, Bt horizon, etc.).

In some places, positive shovel tests were flanked with radial tests, in order to more closely define the site's boundary. Radial shovel tests were placed at five-meter intervals, with the goal of producing two consecutive negative tests. The first radial would be placed ten meters from the primary positive test, and if negative, another radial would be placed at five meters from the primary. If the ten-meter radial was positive, another radial would be placed at 15 meters.

While delineating the site(s), any artifacts that were more than 100 meters apart, with no other artifacts between them, would be considered to belong to separate sites. Any artifacts within 100 meters of one another would be considered part of the same site, regardless of temporal or cultural affiliation. Any site that contained both prehistoric and historic remains, either overlapping each other or in close proximity to one other, would be characterized as "multi-component."

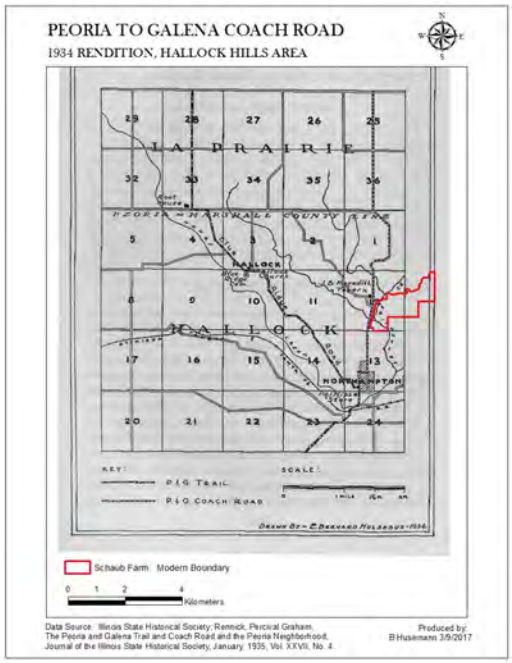

Figure 6: *Map of early trail and coach road from Peoria to Galena, Illinois*
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It was not feasible to methodically survey all 300 acres of the Schaub farm, so a smaller research area was defined. The actual survey area was restricted to 78 acres within the middle of the farm. The survey area encompassed two frequently tilled agricultural fields (fig. 8), as well as a large patch of woodland. One of the agricultural fields occupies an upland terrace, overlooking Senachwine Creek to the west. Directly to the east, across a steep ravine, lies another upland terrace, this one heavily wooded. Both terraces overlook a floodplain to the north, formed by alluvial sediment from the Senachwine's overflow. This floodplain is also occupied by an agricultural field. The full survey area can be seen outlined below (fig. 7).

Survey Results

Over the course of the survey, a large, previously unknown archaeological site was discovered and documented, Site 11P852. This site contains an extensive prehistoric component that overlaps or comes in close proximity to two distinct historic components (fig. 10). It is almost certain that the site extends well beyond the arbitrary boundaries of the survey area, as some artifacts were found far outside the survey area, but they

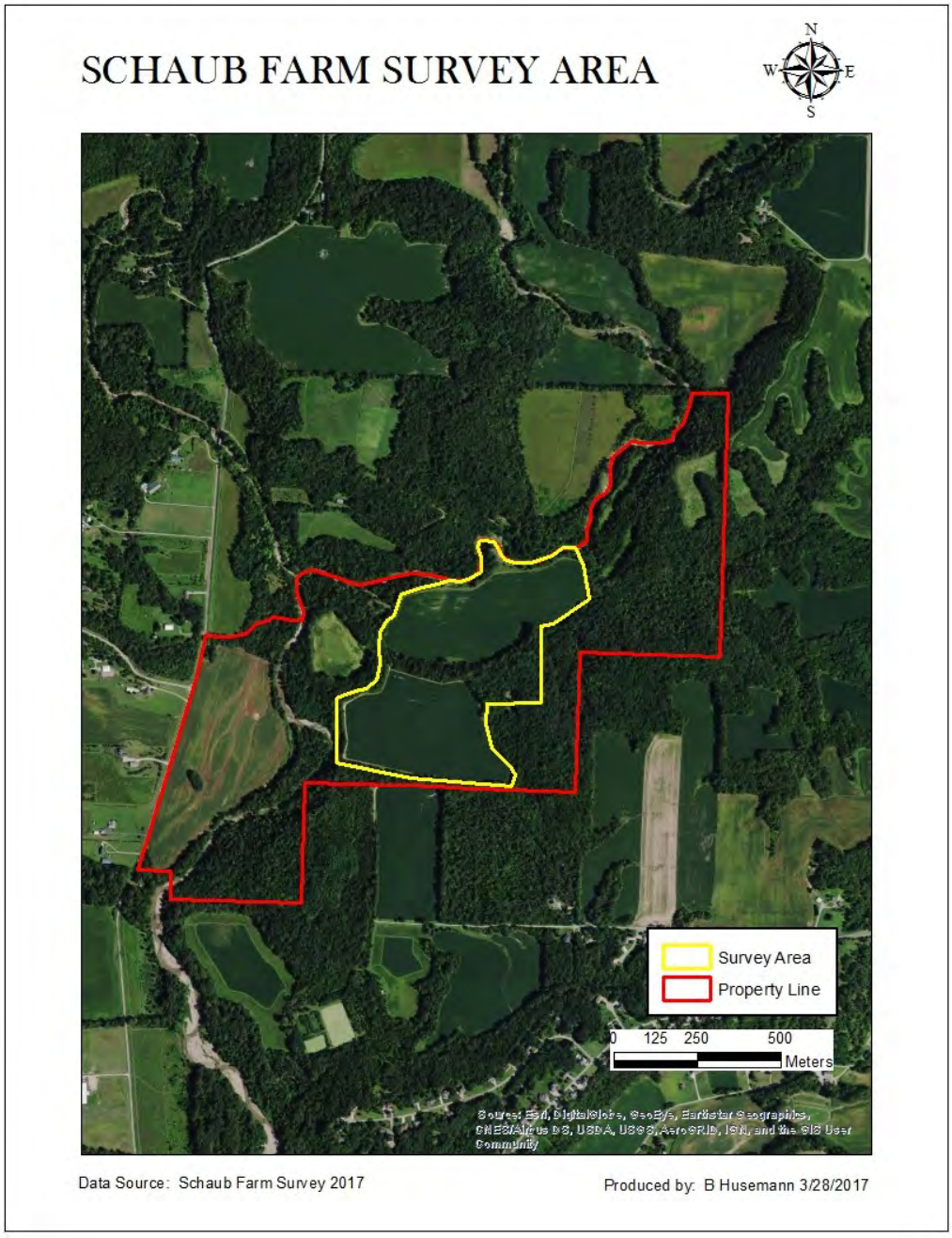

Figure 7: *Map of survey area within property boundary*

were not recorded. Thus, the site cannot be said to have been fully delineated (though its boundaries within the survey area were defined).

Prehistoric Component

The prehistoric component is the most expansive element of the site, and extends across virtually the whole survey area (as well as beyond the survey area). The survey yielded a diverse array of prehistoric lithics; the predominant lithic material was a white chert, probably Burlington chert. The vast majority of these artifacts were flakes of lithic debitage (knapping debris), some of which display evidence of having been retouched along the edges. These artifacts were scattered across both of the upland terraces, as well as the lowland floodplain to the north, but they were mainly concentrated on a high spot along the gently undulating surface of the western terrace. Artifacts are also heavily distributed along the western and northern edges of this terrace (fig. 11). Some flakes were even noticed on the face of a cliff overlooking Senachwine Creek, indicating that the ground has been eroded out from under them (however, due to the dangers involved, these flakes were not recovered or mapped).

Figure 8: *Tilled agricultural field where pedestrian survey was implemented, on upland terrace, viewshed facing south; pin flags denote artifact locations*

Figure 9: *Wooded north-facing slope, declining from upland loess terrace to lowland floodplain, viewshed facing east; no shovel testing was implemented here*

Most of these artifacts were recovered by pedestrian survey (Table 1) , but a few were found in shovel tests (Table 2). All of the artifacts found in shovel tests were recovered from the A horizon (topsoil), no more than 40 centimeters below the surface. Shovel tests throughout most of the site were fairly similar, with minor local differences. A typical test revealed an Ap horizon (plow zone) extending 30-50 centimeters below the surface, ranging in color from 10YR4/3 to 10YR5/3, and ranging in texture from a silty loam to a silty clay loam. Below the Ap horizon was a Bt horizon, ranging in color from 10YR5/4 to 10YR5/6, and ranging in texture from a silty loam to a silty clay.

312 prehistoric artifacts were recovered, including:

- 4 projectile point/knives
- 3 broken point tips
- 1 drill tip
- 1 celt (polished stone adze)
- 1 bifacial scraper
- 3 biface fragments
- 1 possible fire-cracked rock (FCR)
- 10 cores or core fragments
- 288 fragments of lithic debitage (including retouched flakes)

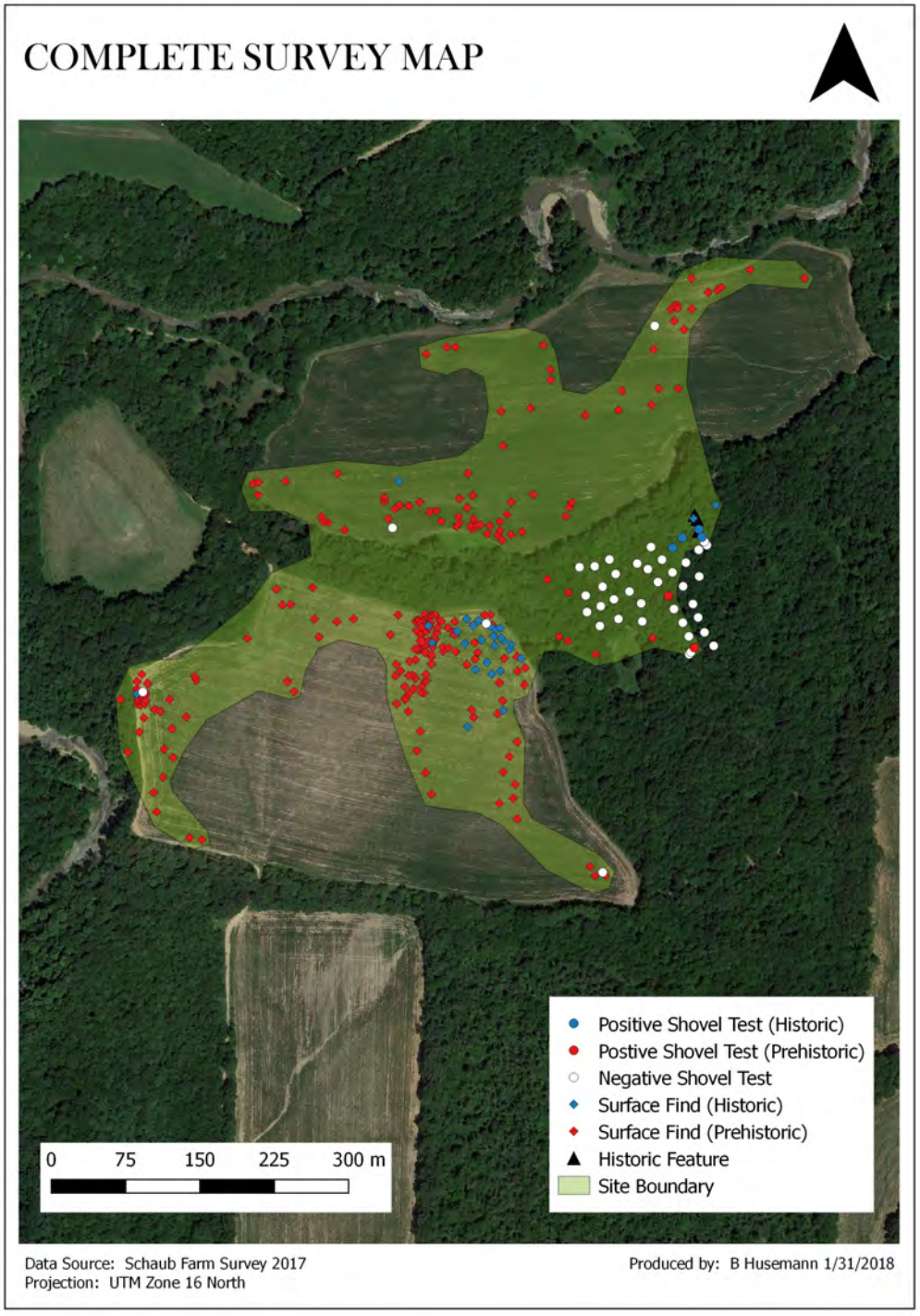

Figure 10: *Site 11P852, within survey area*

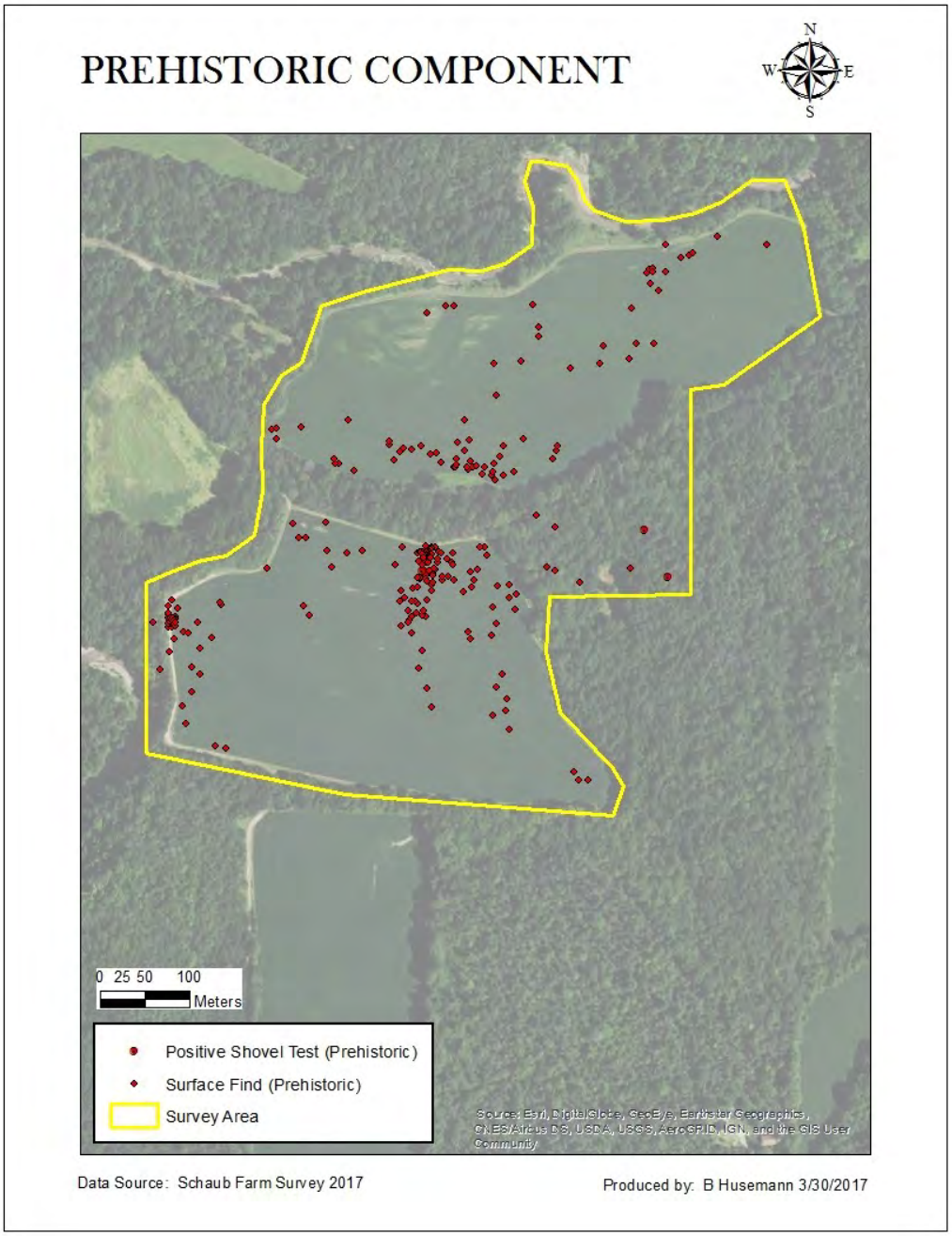

Figure 11: *Map of prehistoric lithic scatter*
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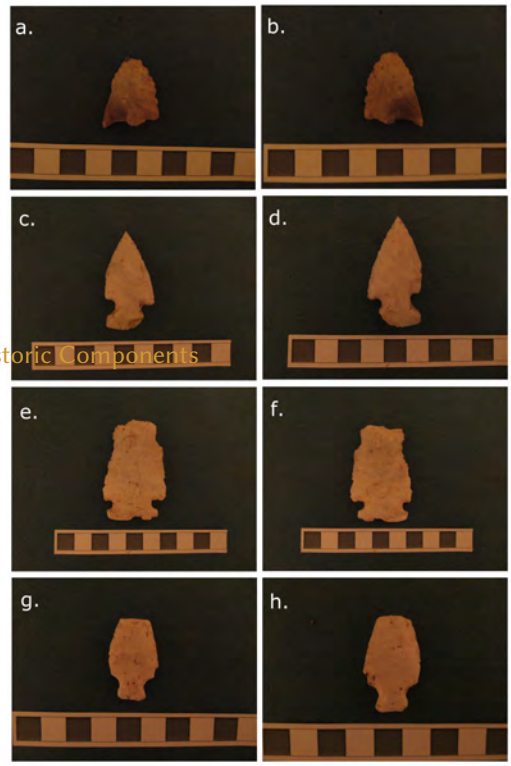

Figure 12: *Diagnostic Projectile Point/Knives: a. Kirk Corner-Notched Point, Early Archaic (8000-6000 BCE) b. Kirk Corner-Notched Point, reversed c. Godar Point, Middle to Late Archaic (6000-1000 BCE) d. Godar Point, reversed e. Osceola Point, Late Archaic to Early Woodland (3000 BCE-1 CE) f. Osceola Point, reversed g. Apple Blossom Point, Late Archaic to Early Woodland (3000 BCE-1 CE) h. Apple Blossom Point, reversed*

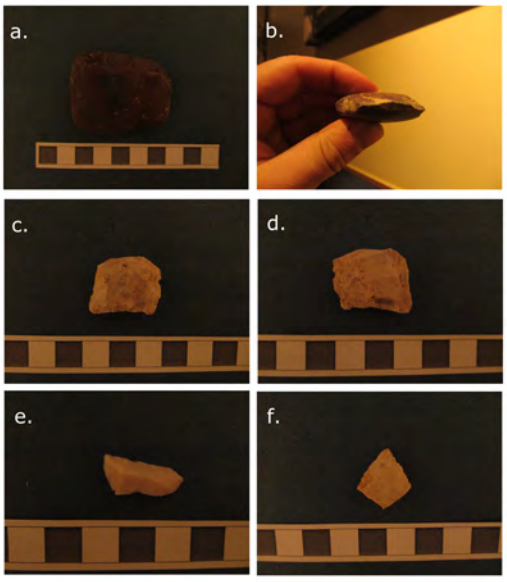

Figure 13: *Non- Diagnostic Tools or Tool Fragments*
a. Celt; b. Celt, with cutting edge shown; c. Biface fragment; d. Biface fragment, reversed; e. Drill tip; f. Broken point tip

Historic Components

The four projectile point/knives are intact enough to be diagnostic (fig. 12). They indicate that the site was occupied by Native Americans over several thousand years, beginning in the Early Archaic Period (8000-6000 BCE). These typologies are tentative at best, however.

The survey also recovered several tools or tool fragments that were not strictly diagnostic (see fig. 13). The map (fig. 14) shows the location where each projectile point/knife was recovered.

Site 11P852 also includes two separate historic components, both of which correspond to houses shown on Andreas' 1873 county plat (fig. 5). The western historic component is a scatter of historic artifacts in a tilled field, including whiteware, vessel glass, and salt-glazed stoneware. Whiteware is a type of ceramic dishware with a white glaze, commonly used during the nineteenth and early twentieth centuries (though still made today). Salt-glazed stoneware is another, generally thicker ceramic, often used to make storage vessels; it was widely used in the nineteenth century, but still remained in use into the twentieth century. This western component contains no apparent features or structural remains, except for fragments of window glass. None of the artifacts here are diagnostic. This scatter corresponds to the location of a house on the parcel belonging to S.M. Murry (possibly Murray) on the 1873 atlas.

The eastern historic component is located on a wooded terrace overlooking the floodplain to the north. It includes three historic features, including a cellar pit, a cistern (tank for collecting rainwater), and a small pit of indeterminate usage (see table 3). The cistern contains a relatively intact brick vault, with an agricultural harrow hanging into it. In the surrounding woods, there are several surface artifacts, including bricks, glass, and ceramic dishware. Shovel testing also yielded seven artifacts, including bricks, whiteware, vessel glass, and a square-cut nail; the nail most likely dates to the nineteenth century. All of these artifacts were found either within the topsoil (A horizon) or within a mottled layer of fill dirt near the features (the fill dirt was a sandy loam, 10YR5/2 mottled with 10YR5/6). In addition to the intact features, this component yielded a number of potentially diagnostic artifacts, including a sherd of ironstone dishware manufactured by J. & G. Meakin between 1890 and 1907, and an amethyst bottle that had been decolorized with manganese dioxide, probably before the First World War. The survey also yielded

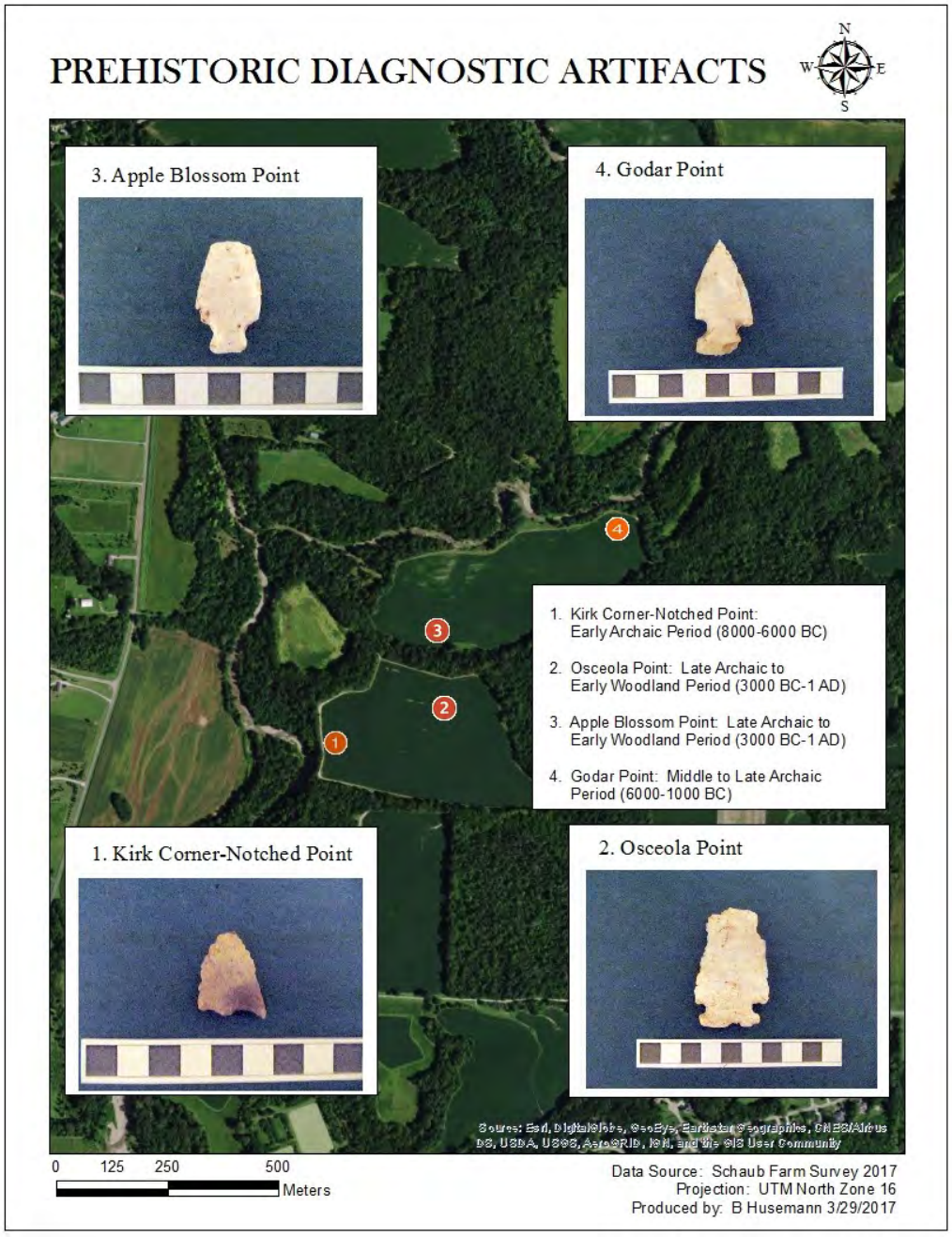

Figure 14: *Map of projectile point/knife locations*

a sherd of decorated salt-glazed stoneware, and a fragment of decorated blue vessel glass, which have not yet been typed. This component roughly corresponds to the location of a house that belonged to F.S. Wilmot, according to the 1873 atlas.

Discussion

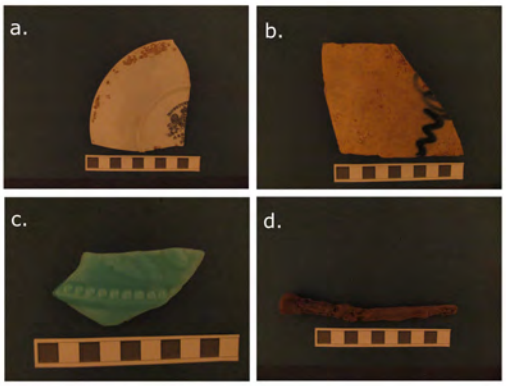

Figure 18: *Historic artifacts from Wilmot house:*
a. J. & G. Meakin Ironstone Dishware, 1890-1907
b. Decorated salt-glazed stoneware with maker's mark
c. Decorated vessel glass
d. Square-cut nail

At the beginning of the survey, five specific research questions were stated. Ultimately, the survey was able to answer all five.

1. What archaeological sites, if any, are located within the survey area?

The survey located exactly one archaeological site within the 78-acre research area; the Illinois State Museum registered it as 11P852. The site boundary is fairly subjective. This survey classified any cultural resources located within 100 meters of one another as being part of the same site, but other surveyors might have used different parameters, which would have required that 11P852 be divided into multiple sites. In all likelihood, the site actually extends well beyond the survey area, so more research would be required to fully delineate the site.

2. What kinds of archaeological deposits (i.e., artifacts, features), if any, are located within the survey area?

The survey area contains both prehistoric and historic archaeological remains. Over 300 prehistoric artifacts were recovered, all of them lithics (primarily lithic debitage). Aside from the fragments of debitage, there were also four relatively intact projectile point/knives, three broken point tips, three biface fragments, a drill tip, a bifacial scraper, 10 cores or core fragments, and one ground-stone tool (a celt, or polished adze). The presence of these prehistoric artifacts supports the assumption that the River Hills ecoregion would have been a hospitable place for early humans. The survey also yielded three historic features and several historic artifacts. The features include a cellar pit, a brick vault cistern, and a small pit of uncertain usage. The artifacts include samples of whiteware, salt-glazed stoneware, window glass, vessel glass, bricks, and one square nail. This seems to vindicate the earlier assumption that the survey area's proximity to the Peoria and Galena Coach Road might increase the possibility of finding historic remains. Also, the 1873 county plat had alluded to the possibility of finding historic sites.

3. What is the horizontal and vertical distribution of archaeological deposits within the survey area?

Archaeological deposits were scattered across large swaths of the survey area. The prehistoric lithics were found on both of the upland terraces, as well as the lowland floodplain. Their greatest concentration was on the western terrace, particularly on a high spot along the terrace's surface. A detailed map of their distribution can be seen in fig. 12. It is worth noting that artifacts may seem most prevalent on the western terrace

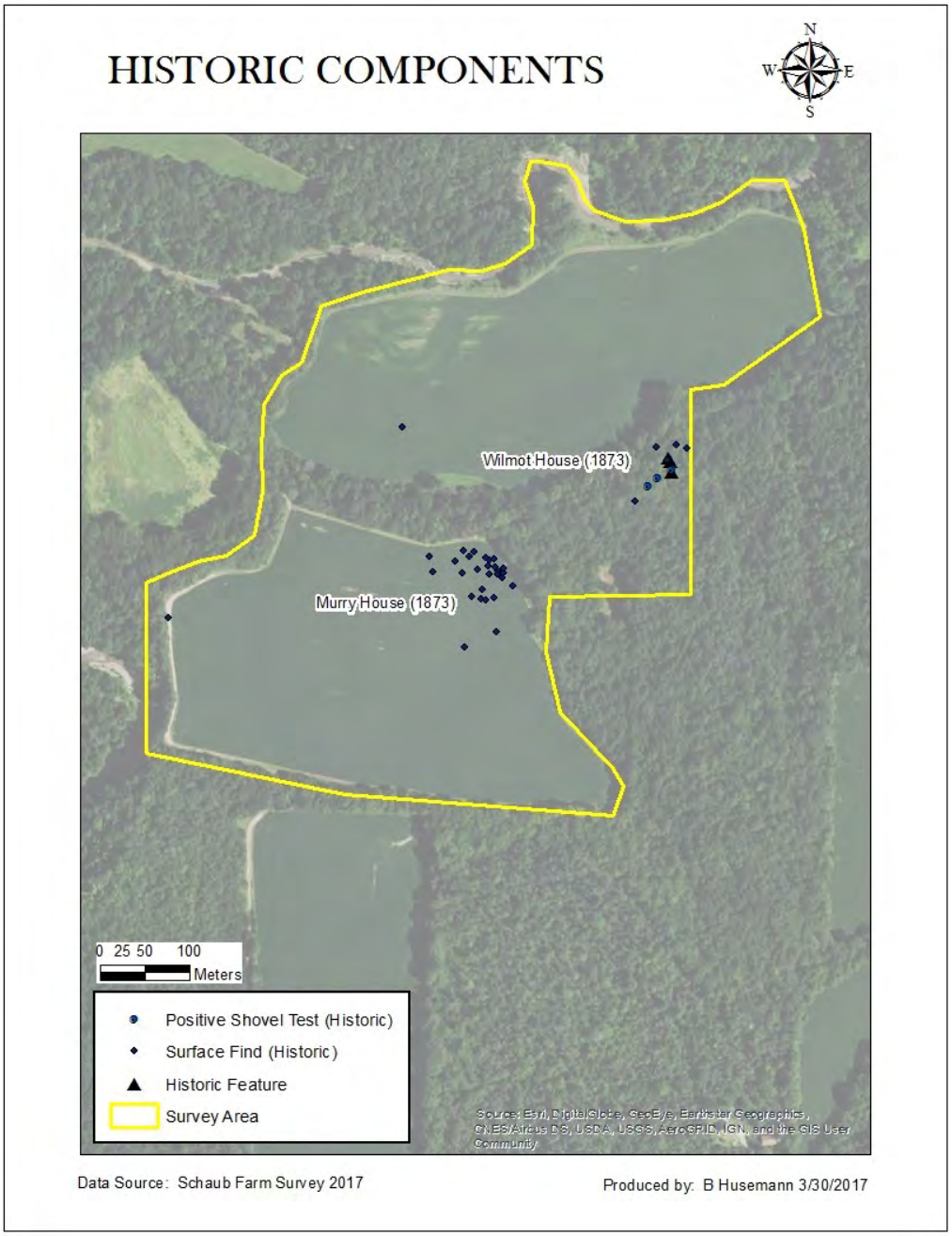

Figure 15: *Map of historic components*
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Figure 16: *Cellar pit, Wilmot house, viewshed facing southeast, with cistern in background*

Figure 17: *Interior of brick vault cistern, Wilmot house, with collapsed agricultural machinery*

because they were more exposed, due to tillage. Were the eastern terrace not so heavily forested, more artifacts might have been seen there.

The historic artifacts and features were divided into two main concentrations, or "components." Each of these concentrations was once the location of a house, according to the 1873 plat. One concentration was located on the western terrace, and the other on the eastern terrace, as seen in fig. 15.

As for the vertical, or stratigraphic, distribution of artifacts, all were located either on the surface or in the topsoil (no more than 40 centimeters deep). A few were found within an artificial layer of fill, associated with the historic features. None were found in the subsoil, and there is no evidence of stratification by time period. Earlier, it was speculated that most of the artifacts found on the upland loess terraces would be concentrated at or near the surface, due to a lack of recent deposition. The survey findings vindicated this assumption. However, it was also speculated that any artifacts found on the floodplain might be buried beneath layers of alluvial sediment, leading to possible chronological stratification. The survey findings did not support this speculation. All of the artifacts found on the floodplain were located on the surface; none were buried.

4. What is the approximate temporal and/or cultural affiliation of the archaeological deposits within the survey area?

The four projectile point/knives hint at the temporal affiliation of the prehistoric remains; it appears that the site may have been occupied, or repeatedly visited, by Native Americans from the Early Archaic Period (8000-6000 BCE) to the Early Woodland Period (1000 BCE-1 CE). As of yet, there is no evidence of any prior or subsequent prehistoric habitation, but it is still fully possible that such evidence may surface. All that can be said with certainty is that Native Americans occupied the site over a broad period of time, beginning during a period when they would have been predominantly hunter-gatherers, and possibly extending into a period when agriculture and the use of ceramics became more widespread (though no prehistoric ceramics were found). Throughout most of

this time period, the site probably would have been used as a temporary campsite by transient hunters. The historic artifacts and features, having been left by American settlers, belong to a much narrower spectrum of time, ranging from the late nineteenth century to the early twentieth century. Historic evidence indicates that there were two houses within the survey area at least as early as 1873 (but after 1861). A sherd of ironstone dishware associated with the Wilmot house can be positively dated between 1890 and 1907. An amethyst bottle, also affiliated with the Wilmot house, was probably made prior to the First World War.

5. Do any of the archaeological deposits retain enough integrity to offer meaningful data for interpretation?

The integrity and significance of the site are mixed, depending on which portion of the site is considered. Because the site is so large, some areas are much more intact than others, and some areas are more significant than others. The prehistoric component has already yielded four diagnostic artifacts and several tools or tool fragments, as well as over 300 other artifacts, which is a fairly significant development. It may be able to offer considerable data for interpretation, if it were to be excavated in the future. Also, the antiquity of the site, possibly dating back to the Early Archaic Period, could add to its significance.

However, the site's integrity has been damaged by agricultural plowing. Most of the prehistoric component has been thoroughly plowed, and the plowing has possibly displaced or damaged many artifacts, as well as destroyed any feature stains, though there may be intact portions of features below the plow zone. It is worth noting that many of the prehistoric artifacts are still concentrated on high spots in the landscape, which are likely settlement areas, indicating that these artifacts have not moved far from where they were left. These artifacts may be relatively in situ, despite the plow damage.

Figure 19: *Cliff overlooking Senachwine Creek, viewshed facing south*

Erosion has also damaged the site, particularly on the western side of the terrace overlooking Senachwine Creek. The western side of the terrace is a cliff that faces the convex side of a bend in the creek, and as the creek has slowly swung eastwards over time, it has been eroding the terrace. Part of the site has already been eroded away, as evidenced by prehistoric artifacts found on the face of the cliff. It is not clear how much of the site has already been destroyed in this manner.

The two historic components are very unequal in their integrity. The westernmost component (the Murry house) has been extensively plowed, and has no features, structural remains, or diagnostic artifacts. Very little remains intact, and it offers very little data for interpretation. However, the easternmost historic component (the Wilmot house) may be the most intact portion of the whole site. It has three intact features, in addition to multiple diagnostic artifacts. Furthermore, it does not appear to have been plowed. This component could offer significant data for interpretation, but its relatively recent

age (late nineteenth century and early twentieth century) could dissuade scholarly interest.

Conclusion

The survey indicated that the Schaub family farm does, in fact, contain substantial archaeological remains. Only a relatively small section of the farm was surveyed, but this survey area yielded an extensive archaeological site, with a large prehistoric component and two separate historic components. The prehistoric component seems to consist entirely of lithics, including four diagnostic projectile point/knives, several other tools or tool fragments (including a celt and drill tip), and nearly 300 flakes of lithic debitage. The two historic components both seem to date to the late nineteenth or early twentieth centuries; they include fragments of window glass, vessel glass, whiteware, stoneware, and bricks, among other artifact types. One of the historic components, corresponding to the house owned by F.S. Wilmot on the 1873 county atlas, also contains three intact features (including a cellar pit and a brick vault cistern), potentially making it the most intact portion of the site.

* * *

Acknowledgements

The author would like to acknowledge the Schaub family for allowing the survey to take place on their farm; Dr. Scott Palumbo, for agreeing to supervise the project; and James Parker of HDR, Inc., for assisting in the analysis of historic artifacts and features. And a special thanks to the Starbucks at the corner of Prospect and War Memorial in Peoria, Illinois, for letting the author use their internet connection, even while covered in mud from the field.

* * *

Table 1: *Results of pedestrian survey*

ID	Artifacts	Latitude	Longitude
sf1	1 point fragment, 1 tertiary flake	40.94966335	-87.5280935
sf2	1 retouched flake	40.94958407	-89.52788806
sf3	1 point	40.94915395	-89.52764964
sf4	1 secondary flake	40.94841371	-89.52727554
sf5	1 primary flake	40.9484285	-89.52742573
sf6	2 tertiary flakes	40.9486522	-89.52782901
sf7	1 tertiary flake	40.94883028	-89.52787151
sf8	1 tertiary flake	40.94897144	-89.52776448
sf9	1 core fragment	40.9492281	-89.52776117
sf10	1 secondary flake	40.94941522	-89.52767095
sf11	1 tertiary flake	40.94937536	-89.52806444
sf13	2 tertiary flakes	40.94962667	-89.52809194
sf14	1 shatter	40.94962032	-89.52805687
sf15	1 tertiary flake	40.94950339	-89.5280134
sf16	1 tertiary flake	40.94963538	-89.52800544
sf17	1 tertiary flake	40.94965328	-89.52802595
sf18	1 secondary flake	40.94966725	-89.52799988
sf19	”1 core fragment, 1 tertiary flake”	40.9496856	-89.52803395
sf20	1 core	40.94965948	-89.52806452
sf21	”1 core fragment, 2 tertiary flakes”	40.94968097	-89.52808971
sf22	”3 tertiary flakes, 1 stoneware”	40.94972018	-89.52810655
sf23	1 retouched flake	40.94975428	-89.52810943
sf24	2 tertiary flakes	40.94976751	-89.52810645
sf25	”1 tertiary flake, 1 secondary flake”	40.9498316	-89.52810721
sf26	1 primary flake	40.94989497	-89.52805395
sf27	1 retouched flake	40.94981654	-89.52798297
sf28	1 tertiary flake	40.94973524	-89.52800218
sf29	1 tertiary flake	40.9497093	-89.52800631
sf30	1 shatter	40.94971709	-89.52804101
sf31	1 tertiary flake	40.9497171	-89.52806701
sf32	1 tertiary flake	40.94970053	-89.52802665
sf33	”1 secondary flake, 1 tertiary flake”	40.94956983	-89.52782244
sf34	1 tertiary flake	40.9495253	-89.52750855
sf35	1 tertiary flake	40.94967932	-89.52771129
sf36	1 core fragment	40.94988861	-89.52741928
sf37	1 secondary flake	40.94985947	-89.52740205
sf39	1 secondary flake	40.95024988	-89.5268014
sf40	1 secondary flake	40.95070412	-89.52646785
sf41	1 tertiary flake	40.95056157	-89.52639152
sf42	1 tertiary flake	40.95057016	-89.52629411
sf44	”1 FCR, 1 tertiary flake”	40.95072869	-89.52603597
sf45	1 tertiary flake	40.95044356	-89.52600355

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Table 1: *continued from previous page*

ID	Artifacts	Latitude	Longitude
sf46	1 tertiary flake	40.95028082	-89.52594142
sf48	1 shatter	40.94987261	-89.52630411
sf49	1 tertiary flake	40.9497836,	89.5262213
sf50	1 secondary flake	40.95042505	-89.52573454
sf51	2 tertiary flakes	40.95045562	-89.52553479
sf52	1 tertiary flake	40.950319	-89.52508753
sf53	”1 point, 1 tertiary flake”	40.94993277	-89.52477434
sf53a	1 tertiary flake	40.94986651	-89.5246975
sf54	1 tertiary flake	40.9499595	-89.52480887
sf55	1 tertiary flake	40.9499532	-89.52485436
sf56	1 bifacial scraper	40.94994775	-89.52501497
sf57	1 tertiary flake	40.94999461	-89.52495485
sf58	1 core	40.95008413	-89.52484783
sf59	1 biface fragment	40.95009964	-89.5247779
sf59	1 tertiary flake	40.95018641	-89.52475365
sf60	”1 tertiary flake, 1 shatter”	40.95019884	-89.52478306
sf61	1 tertiary flake	40.95019788	-89.52475426
sf62	1 primary flake	40.95016785	-89.5246658
sf64	2 tertiary flakes	40.95005369	-89.52500774
sf65	1 secondary flake	40.95050061	-89.52500237
sf66	”1 primary flake, 1 tertiary flake”	40.95044923	-89.52479091
sf67	2 secondary flakes	40.95046421	-89.52476255
sf68	1 tertiary flake	40.95046009	-89.52474702
sf69	1 secondary flake	40.95043143	-89.52473175
sf70	1 tertiary flake	40.95044108	-89.52471769
sf71	2 tertiary flakes	40.9504436	-89.52469468
sf72	1 tertiary flake	40.95045829	-89.52469072
sf73	2 tertiary flakes	40.95047559	-89.52469747
sf74	1 tertiary flake	40.95036439	-89.5247777
sf75	”1 secondary flake, 1 tertiary flake”	40.95046626	-89.52466693
sf76	”1 primary flake, 1 retouched flake”	40.95045562	-89.52463776
sf77	1 shatter	40.95043794	-89.52466056
sf78	2 tertiary flakes	40.95042365	-89.52467165
sf79	2 tertiary flakes	40.95040597	-89.52467157
sf80	1 celt	40.95038124	-89.52468533
sf81	3 tertiary flakes	40.95035622	-89.52468469
sf82	”1 core fragment, 3 tertiary flakes”	40.95035775	-89.52465694
sf83	2 primary flakes	40.95040093	-89.52463644
sf84	”1 tertiary flake, 1 window glass”	40.95041334	-89.52463445
sf85	5 tertiary flakes	40.95043298	-89.52461559
sf86	1 tertiary flake	40.95044312	-89.5246119
sf87	1 shatter	40.95048302	-89.52462516

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Table 1: *continued from previous page*

ID	Artifacts	Latitude	Longitude
sf88	”1 secondary flake, 1 tertiary flake”	40.9504956	-89.52460872
sf89	1 tertiary flake	40.9505093	-89.52460525
sf90	1 tertiary flake	40.95051249	-89.52455681
sf91	1 tertiary flake	40.95012896	-89.52458865
sf92	1 tertiary flake	40.95014781	-89.52458535
sf93	3 tertiary flakes	40.95021973	-89.5245784
sf94	1 tertiary flake	40.95023946	-89.52458972
sf95	1 amethyst glass	40.95025849	-89.52458468
sf96	1 retouched flake	40.95027176	-89.52456371
sf97	”1 drill fragment, 2 tertiary flakes”	40.9502991	-89.5245654
sf98	1 tertiary flake	40.9502896	-89.52454664
sf99	”1 shatter, 1 tertiary flake”	40.95035401	-89.52453234
sf100	1 tertiary flake	40.95039653	-89.52452628
sf101	1 tertiary flake	40.95046115	-89.52450839
sf102	1 secondary flake	40.95045723	-89.52448173
sf103	2 tertiary flakes	40.95039865	-89.52440469
sf104	1 tertiary flake	40.95022052	-89.524454
sf105	1 shatter	40.95021693	-89.52438445
sf106	1 tertiary flake	40.95018466	-89.52444871
sf107	1 tertiary flake	40.95006659	-89.52458796
sf108	1 secondary flake	40.94997004	-89.52464923
sf109	1 secondary flake	40.94991675	-89.52464662
sf110	1 secondary flake	40.94980572	-89.52466662
sf111	”1 secondary flake, 2 tertiary flakes”	40.94981196	-89.52470122
sf112	3 tertiary flakes	40.94984189	-89.52479066
sf113	1 tertiary flake	40.94985748	-89.52489918
sf114	1 tertiary flake	40.94979951	-89.52484212
sf115	1 tertiary flake	40.94975889	-89.52488284
sf116	1 secondary flake	40.94974051	-89.52488991
sf117	1 tertiary flake	40.94963306	-89.52484763
sf118	1 tertiary flake	40.94945542	-89.52469502
sf119	1 primary flake	40.94927683	-89.52473281
sf120	1 biface fragment	40.94908033	-89.52462171
sf121	1 tertiary flake	40.94888714	-89.52454081
sf123	1 tertiary flake	40.94969854	-89.5249904
sf125	1 secondary flake	40.95018296	-89.52429881
sf126	1 tertiary flake	40.95033576	-89.52431811
sf127	”2 tertiary flakes, 1 secondary flake”	40.95036164	-89.52433617
sf128	1 whiteware	40.95036824	-89.52429207
sf129	1 tertiary flake	40.95045736	-89.524324
sf130	1 whiteware	40.95048569	-89.52418032
sf131	1 window glass	40.95042432	-89.52410044

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Table 1: *continued from previous page*

ID	Artifacts	Latitude	Longitude
sf132	1 stoneware	40.95047129	-89.52403482
sf133	1 core fragment	40.95052204	-89.52396686
sf134	1 tertiary flake	40.95052742	-89.52389739
sf135	1 tertiary flake	40.95043939	-89.52387351
sf136	1 stoneware	40.95042152	-89.52388797
sf137	2 window glass	40.95041133	-89.52377489
sf138	1 green glass	40.9503933	-89.52382725
sf139	1 stoneware	40.95033141	-89.52385113
sf140	”1 tertiary flake, 1 stoneware”	40.95029528	-89.52399401
sf141	1 secondary flake	40.95027049	-89.52407741
sf142	1 whiteware	40.95025967	-89.52419254
sf143	1 tertiary flake	40.9500681	-89.52416227
sf144	1 stoneware	40.95002652	-89.52405535
sf145	1 stoneware rimsherd	40.95009587	-89.52392194
sf146	1 aqua glass	40.94998837	-89.52385997
sf147	1 tertiary flake	40.94991664	-89.52376541
sf148	1 aqua glass	40.95001736	-89.52376021
sf150	1 window glass	40.95021977	-89.52365344
sf152	1 clear vessel glass	40.95026486	-89.52363635
sf153	”2 stoneware, 1 green glass”	40.95031935	-89.52364501
sf154	2 stoneware	40.95029563	-89.52372804
sf155	4 window glass	40.95032048	-89.52375713
sf156	1 whiteware	40.95013985	-89.52351437
sf157	1 shatter	40.95005362	-89.52346045
sf158	”1 primary flake, 1 retouched flake, 1 tertiary flake”	40.95002315	-89.52355251
sf159	1 secondary flake	40.94990431	-89.52346562
sf160	1 secondary flake	40.9497558	-89.52371989
sf161	1 brown glass	40.94966713	-89.52371068
sf162	1 tertiary flake	40.94963829	-89.52377479
sf163	1 tertiary flake	40.94966525	-89.52408893
sf164	1 primary flake	40.94959686	-89.52406058
sf165	1 stoneware	40.94950887	-89.52412912
sf166	1 tertiary flake	40.94882226	-89.52372596
sf167	1 tertiary flake	40.94868542	-89.52350372
sf168	1 core fragment	40.94887093	-89.52355887
sf169	2 tertiary flakes	40.94899819	-89.52354185
sf170	1 tertiary flake	40.94910867	-89.5236878
sf171	1 tertiary flake	40.9492494	-89.52361912
sf172	1 tertiary flake	40.94938578	-89.52353135
sf173	1 stoneware	40.95024796	-89.52383476

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Table 1: *continued from previous page*

ID	Artifacts	Latitude	Longitude
sf174	"1 green glass, 1 stoneware, 1 whiteware"	40.95025796	-89.52372628
sf175	1 primary flake	40.95015357	-89.52356523
sf176	1 retouched flake	40.95018284	-89.52403452
sf177	"1 whiteware, 1 stoneware, 1 aqua glass"	40.95000464	-89.52392499
sf178	1 tertiary flake	40.94827048	-89.52261659
sf179	1 tertiary flake	40.g394819692	-89.52242734
sf181	1 secondary flake	40.9481897	-89.52255491
sf182	"1 shatter, 1 tertiary flake"	40.94966676	-89.52830119
sf183	"1 shatter, 1 tertiary flake"	40.94919022	-89.52819365
sf184	1 tertiary flake	40.95165738	-89.52678554
sf185	1 tertiary flake	40.95167117	-89.5267255
sf186	1 core	40.95155757	-89.52672249
sf187	1 tertiary flake	40.95168914	-89.52639571
sf188	1 tertiary flake	40.95137371	-89.52595282
sf190	1 tertiary flake	40.9513237	-89.52587515
sf190a	1 tertiary flake	40.95133208	-89.52593177
sf191	1 shatter	40.95125993	-89.52567386
sf192	1 tertiary flake	40.95177146	-89.52577385
sf193	1 tertiary flake	40.95153148	-89.52520687
sf194	1 tertiary flake	40.95156715	-89.5252106
sf195	1 secondary flake	40.951467	-89.52507684
sf196	1 tertiary flake	40.95137367	-89.52515201
sf197	1 tertiary flake	40.95013417	-89.52371607
sf200	1 point	40.95149946	-89.52501709
sf201	1 glass bottle base (1948)	40.95172058	-89.52504096
sf203	2 tertiary flakes	40.95149625	-89.5249107
sf204	1 tertiary flake	40.95153266	-89.52478338
sf205	1 secondary flake	40.95144546	-89.52465978
sf207	1 tertiary flake	40.95145944	-89.52458343
sf208	"2 tertiary flakes, 1 secondary flake"	40.95132396	-89.52433631
sf209	2 tertiary flakes	40.95130089	-89.52414541
sf210	1 tertiary flake	40.95039616	-89.52462425
sf211	1 tertiary flake	40.95039627	-89.52471669
sf212	1 tertiary flake	40.95032887	-89.52472975
sf213	1 tertiary flake	40.95027136	-89.52468689
sf214	1 tertiary flake	40.95027306	-89.5246306
sf215	1 tertiary flake	40.95022678	-89.52467668
sf216	1 tertiary flake	40.95018432	-89.52466982
sf217	1 tertiary flake	40.95012185	-89.52406551
sf220	"1 tertiary flake, 1 secondary flake"	40.95136577	-89.52451983

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Table 1: *continued from previous page*

ID	Artifacts	Latitude	Longitude
sf221	1 tertiary flake	40.95135438	-89.52430518
sf222	1 shatter	40.95140959	-89.5243117
sf223	1 secondary flake	40.95149602	-89.52421285
sf224	2 tertiary flakes	40.95157711	-89.52430846
sf225	1 tertiary flake	40.95160776	-89.524149
sf226	1 tertiary flake	40.95180761	-89.52421283
sf227	1 secondary flake	40.9520647	-89.52380549
sf228	1 tertiary flake	40.95241683	-89.52348517
sf230	1 secondary flake	40.95299296	-89.5233553
sf231	1 retouched flake	40.95295133	-89.52440865
sf232	1 secondary flake	40.95295114	-89.52451167
sf233	1 core	40.95287841	-89.52475525
sf234	2 tertiary flakes	40.95139048	-89.52413098
sf236	3 ”tertiary flakes, 1 secondary flake”	40.95133661	-89.5240851
sf237	2 tertiary flakes	40.95134356	-89.52404946
sf238	1 tertiary flake	40.95126128	-89.52396289
sf239	1 tertiary flake	40.95133568	-89.52393586
sf239	1 tertiary flake	40.95276942	-89.52326287
sf240	1 tertiary flake	40.95125348	-89.52383571
sf241	1 secondary flake	40.95129284	-89.5238144
sf242	1 tertiary flake	40.95121122	-89.52378142
sf243	1 tertiary flake	40.95129061	-89.52354562
sf244	1 tertiary flake	40.95155873	-89.52368673
sf245	1 tertiary flake	40.95163049	-89.52342614
sf246	1 retouched flake	40.9515273	-89.52298341
sf247	1 tertiary flake	40.95157144	-89.52296178
sf249	1 secondary flake	40.95144096	-89.52302815
sf250	2 tertiary flakes	40.95126107	-89.52367702
sf251	1 secondary flake	40.95236467	-89.52282811
sf252	1 tertiary flake	40.95242076	-89.52243148
sf253	1 tertiary flake	40.95260106	-89.52239536
sf254	1 tertiary flake	40.95247778	-89.52203888
sf254	1 tertiary flake	40.95262722	-89.52195638
sf255	1 tertiary flake	40.95263262	-89.52172333
sf256	1 secondary flake	40.9529838	-89.52203161
sf257	1 secondary flake	40.95334947	-89.52183701
sf258	1 tertiary flake	40.95338457	-89.5218029
sf259	2 tertiary flakes	40.95339174	-89.52176618
sf260	1 point	40.95366914	-89.52024879
sf262	1 tertiary flake	40.95316993	-89.52167525
sf263	1 tertiary flake	40.95336156	-89.52176009
sf264	1 tertiary flake	40.95336241	-89.52158914

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Table 1: *continued from previous page*

ID	Artifacts	Latitude	Longitude
sf265	1 tertiary flake	40.95363958	-89.52160283
sf266	1 tertiary flake	40.95353867	-89.52128902
sf267	1 secondary flake	40.95356289	-89.52124301
sf268	1 tertiary flake	40.95373246	-89.52090442
sf269	1 tertiary flake	40.95351418	-89.5213983
sf270	1 tertiary flake	40.95324654	-89.52179653
sf271	1 tertiary flake	40.95034527	-89.52306386
sf272	1 blue glass	40.95145657	-89.52149604
sf273	”1 ironstone sherd, 1 stoneware, 1 amethyst bottle”	40.95162062	-89.52137667
sf274	1 tertiary flake	40.95031147	-89.5229528
sf275	2 tertiary flakes	40.95019684	-89.52262138
sf276	”1 primary flake, 2 tertiary flakes”	40.95075132	-89.52296895
sf277	”1 point fragment, 1 tertiary flake”	40.95133007	-89.5241619
sf278	1 point fragment	40.95132564	-89.52432695
sf279	1 tertiary flake	40.95137512	-89.52381621
sf280	1 tertiary flake	40.95144304	-89.5237325
sf281	1 tertiary flake	40.95238326	-89.52384006
sf282	1 tertiary flake	40.95267827	-89.52325574
sf283	bricks	40.95159207	-89.52164346
sf284	brick	40.95158544	-89.52123303
sf285	bricks	40.95103447	-89.52190462
sf286	1 tertiary flake	40.95035914	-89.52194232
sf287	1 tertiary flake	40.95086583	-89.52322686

Table 2: *Results of shovel testing*

ID	Artifacts	Latitude	Longitude
stp2	1 tertiary flake	40.95026807	-89.52471951
stp55	1 square nail, 1 whiteware, 1 clear vessel glass	40.95135977	-89.52142825
stp54	1 aqua glass	40.95127987	-89.52162316
stp53	1 whiteware	40.95118693	-89.52173608
stp29	1 tertiary flake	40.95074795	-89.52176926
stp33	1 tertiary flake	40.95028218	-89.52144072
stp55_10S	2 bricks (not collected)	40.95128898	-89.52138859

Table 3: *Location of features*

ID	Latitude	Longitude	Feature Type
feature1	40.95148667	-89.52148618	Cellar pit
feature2	40.95145196	-89.52145442	Brick vault cistern
feature3	40.95134446	-89.52143335	Pit

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References

Agency, United States Environmental Protection (2015): Level III and IV Ecoregions of the Continental United States. URL: https://www.epa.gov/eco-research/level-iii-and-iv-ecoregions-continental-united-states.

Allen, D. (1861): *Map of Peoria Co., Illinois*. Philadelphia: Matthews, Crane, and Co. Publishers. URL: https://www.loc.gov/item/2013593079/.

Andreas, A. (1873): *Atlas map of Peoria County, Illinois; Compiled, drawn, and published from personal examinations and surveys by A.T. Andreas*. Chicago. URL: https://catalog.hathitrust.org/Record/100319188.

Carroll, Dorothy (1970): *Rock Weathering*. New York: Plenum Press.

Ehlers, J, ed. (2004): *Quaternary Glaciations - Extent and Chronology: Part II: North America*. Amsterdam: Elsevier.

Gibbon, G. (1998): *Archaeology of Prehistoric Native America: an Encyclopedia*. New York: Garland Publishing, Inc.

Illinois General Assembly, 94th General Assembly (n.d.): Full Text of SJR0073. URL: http://www.ilga.gov/legislation/fulltext.asp?DocName=%5C&SessionId=50%5C&GA=94%5C&DocTypeId=SJR%5C&DocNum=73%5C&GAID=8%5C&LegID=24935%5C&SpecSess=%5C&Session=.

Johnson, ed. (1880): *The History of Peoria County, Illinois*. Chicago: Johnson & Company. URL: https://books.google.com/books?id=j4w6AQAAIAAJ.

McConaughy, M. (Sept. 1985): Two Early Mississippian Period Structures from the Rench Site (11P4), Peoria County, Illinois. *Midcontinental Journal of Archaeology* 10(2): 171–193. URL: https://www.jstor.org/stable/20707948.

McCulloch, D, ed. (1902): *Preface - Historical Encyclopedia of Illinois and History of Peoria County*. Chicago: Peoria: Munsell Publishing Company. URL: https://books.google.com/books?id=4wZJAQAAMAAJ.

Murphree, D, ed. (2012): *Native America: A State-by-State Historical Encyclopedia*. Vol. I. Santa Barbara: Greenwood. URL: https://books.google.com/books?isbn=0313381275.

Wagner, M. (2013): The Marshall Site: A Native American Petroglyph Site in the Central Illinois River Valley. *Illinois Archaeology* 25: 141–161.

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The Green and White Grocery: Change and continuity on Austin's East Side

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As more historic structures in East Austin, Texas are lost to the forces of gentrification, this paper demonstrates the importance to the Austin Mexican-American community of one such structure listed in a recent survey but not yet identified for historic preservation. The Green and White Grocery is an American Craftsman-style grocery store/botánica in Austin, Texas dating to the late 1930s or early 1940s. It is owned by John Lopez Cazares, descendant of the original owners Noberto and Susie Lopez. Basic surveying of the structure's elevation and floor plan, documentary research, and oral interviews with Cazares reveal the business's impact on the community, the reasons for certain design and aesthetic choices, and how the structure went from being a traditional grocery store to a store selling personal religious iconography. Little archaeological work on Mexican-American grocery stores exists; this paper also contextualizes the store compared to similar African-American stores that have been researched. While it is important not to assume decisions made by Noberto and Susie Lopez apply to the broader Mexican-American community, I hope to provide ideas for further comparative research.

The population of Austin, Texas grew from 1.20 million in 2000 to more than 2 million in 2015, and has grown by 37 percent in the last five years alone (Kerr, 2016). The resulting demographic pressures have changed the city's cultural landscape. One of the front lines in the city's gentrification is East Austin, a region usually defined as east of Interstate-35 and north of the Colorado River (Hernandez-Ehrisman, 2016).

East Austin is historically important for minority, especially Latino, residents of the city (Hernandez-Ehrisman, 2016). Texas was once part of Mexico, and Mexican-American cultural influence in Austin includes everything from an obsession with breakfast

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tacos (Hernandez-Ehrisman, 2016) to *botánicas* – small stores selling localized religious paraphernalia such as incense, Catholic votive-style candles, and herbs – and other representations of the complex belief system developed in Mexico and the southern United States (Kreneck, n.d.).

Lack of resources and interest has left historic structures in the area relatively unprotected. But the city government has not completely forgotten the importance of the region. A 2016 survey by *Hardy, Heck, Moore, Inc.* lists 345 structures that surveyors believe could be considered for local historic recognition, but constraints of the survey limit the level of detail provided for specific individual structures. The *Hardy, Heck, Moore, Inc.* survey includes a two-page report on each structure and two standard (i.e., non-rectified or otherwise edited) photographs. This might be considered the most basic level of surveying according to Lane (2016:25) or Pluciennik, Newman, and Godfrey (2015:370). While limited, the reports provide strong foundations for further research, such as approximate dates of building ownership pulled from city records. However, for a business in a minority community, a cursory summary may miss important details. An example at the Green and White Grocery (fig. 1, fig. 2, and fig. 3) is a conflict over dates: the owner commented during an interview that the business dates to the 1930s, but city directories do not have an address for that property before 1940 (Hardy and Moore, 2016:75-76).

A larger detail overlooked by the survey is the fact that the Green and White Grocery is not a grocery store at all. Like many buildings, it has evolved since its opening. It began as a taco stand and became a traditional Mexican-American grocery store selling tamales, dry goods such as beans and rice, salsas and hot sauces, and ice out of an ice box, as well as some religious paraphernalia. At some point in its early history, its owners probably built a rear extension and eventually sealed the opening for the ice box, but in general, I believe the outer structure has changed little. Yet as new family members took over, it lost the food and became a botánica. The change may seem radical, but the continuity of family ownership and the family's role in the Mexican-American community mean that the building itself has changed perhaps less than an outsider might expect.

The façade of the Green and White Grocery is similar to the original structure and current owner John Lopez Cazares, who is the grandson of original owners Noberto and Susie Lopez, claims to have left most floor shelving as it was, making it ideal for studies of the design choices of past and current owners. These sorts of studies are the heart of vernacular architecture as defined by Glassie (2000). Vernacular architecture focuses on the history of quotidian structures as a way of making statements about the society in which they were built. In this field, design choices represent culturally-influenced decisions, and a design choice can thus tell us about the culture in which the designers lived.

Little archaeological research exists on Mexican-American grocery stores, despite their importance in communities and the potential for insights about diet and lifestyle choices (Kreneck, n.d.:279). However, research exists on similar African-American grocery stores in urban areas, such as that by Mullins (2008). This research allows me to make certain

Figure 1: *The Green and White Grocery at 1201 E. 7th St. on the corner of Waller and E. 7th (Property ID 192881, Geographic ID 0205070101) in Austin, TX. Northern elevation*
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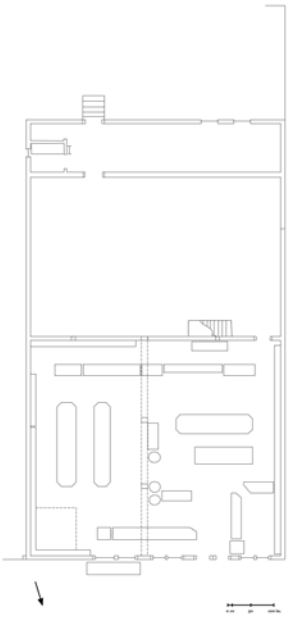

Figure 2: *Floor plan of the Green and White Grocery*
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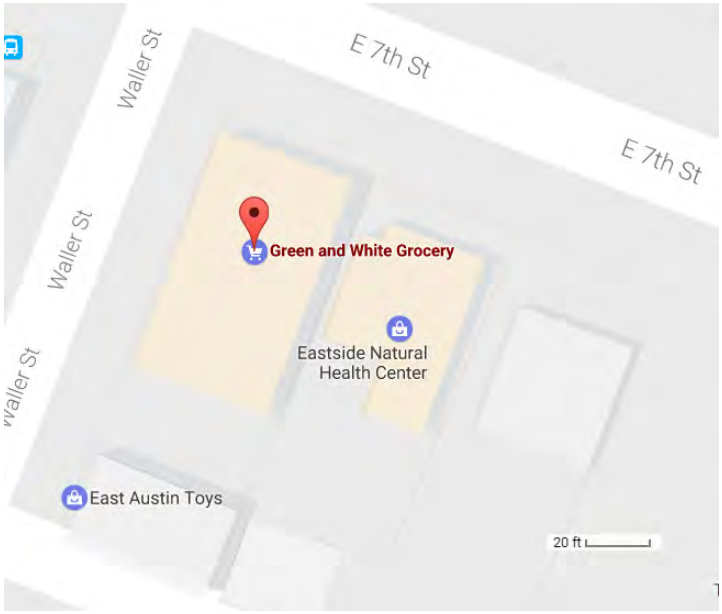

Figure 3: *A 2017 map of the area around the Green and White Grocery created using Google Maps*
© Maps (2017)

Figure 4: *Historic photo of the structure*
Source: Anonymous (1958).

Figure 5: *Northeastern approach*
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comparative statements, but they are limited by the broad differences between Mexican-American and African-American communities. While these differences could make an entire research project in their own right, for the purposes of this paper, access to culture is perhaps the biggest difference. Mexican-Americans face discrimination in Texas, but they are able to interact with Mexican traditions. However, for African-Americans, "the slavery system imposed a filter which very few African traditions were able to penetrate" (Mörner, 1967:122). This can be seen by the scarcity of African-style goods found by Mullins (2008). In some cases, the only characteristic that the Green and White Grocery and the spaces examined by Mullins share is that they are minority-owned businesses. Botánicas and the personalized Spiritist beliefs of their patrons have been investigated for decades in U.S. scholarship (e.g., Delgado and Humm-Delgado, 1982; Fisch, 1968; Romberg, 2005). Unsurprisingly, this scholarship becomes less problematic over time, but little of it addresses actual spatial considerations of botánicas or the buildings that they occupy. A single building cannot be considered a portrait of a community. Due to lack of research in the surrounding area it is impossible to say how similar the Green and White Grocery is to other grocery stores or botánicas. Still, I hope this study can serve as a starting point both for preservation of the Green and White Grocery and for broader comments on the history of Mexican-American owned businesses.

What we think we know

Before we take a tour of the building, it is important to acknowledge the difficulty of documentary research when it comes to minority-owned businesses. Documents are artifacts of their time, and should be weighed beside the material culture actually found at sites (Moreland, 2001). This is true in the case of the Green and White Grocery, where the Travis Central Appraisal District lists the structure as having been built in 1920 (TCAD, 2017), but neither Cazares himself nor Hardy and Moore (2016:75-76) agree with this statement. Cazares's grandfather may have owned the property by 1920, although Cazares suggests that his grandfather bought it at a later date, probably 1936. The idea of a later date for the building itself is supported by its absence from a 1921 Sanborn

Figure 6: *Green and White Grocery northern façade*

fire insurance map according to Hardy and Moore (2016:75-76). Sanborn maps can be powerful resources for historic research, as they typically include detailed lot sizes of buildings assessed for liability purposes. These maps show the addition of new lots over time. But Sanborn maps are poor records regarding East Austin, and their most closely dated map from 1935 (Company, 1935) does not include East Austin at all.

However, a 1934 map suggests why Sanborn might not have been so concerned with East Austin. The 1934 map describes which Austin neighborhoods are "best" and which are "hazardous" (Print, 1934). The region of the city with the most "hazardous" areas was East Austin. As mentioned, East Austin was a low-income area with a large minority population (Hernandez-Ehrisman, 2016). The property where the Green and White Grocery would stand was in this supposed "hazardous" area of East Austin. Telling as this is about Austin's imaginings of its minority population, the 1934 map also does not show individual lots, only neighborhood groups.

A photograph from 1958 though provides documentary evidence of the building's facade (Anonymous, 1958, fig. 4), which has been more or less maintained in the intervening years. While not a formally-recognized historic building, the Green and White Grocery has been recognized in the 21st century by local groups for its role in East Austin history. Two examples of this are available on YouTube through the East Austin Project (Becker and Garcia, 2003; Lepe, 2002). These videos include footage of the facade and interior, supporting Cazares's comments that he has not made major changes, at least not in the last two decades.

A tour of the Green and White Grocery

If you expect to grab some eggs and milk at the Green and White Grocery, your first sign that you may not get what you came for would not be the building itself, nor the logo which looks little different than it did in 1958 (fig. 5). The Green and White

Grocery is an American Craftsman structure (Hardy and Moore, 2016:75-76), a style derived from the Arts and Crafts movement which is typified by rustic or naturalistic objects designed to suggest quality workmanship (Frampton, 1982:42-56). But in Texas, American Craftsman specifically describes a type of one-story building which was popular in the early 1900s, probably inspired by Californian architects Charles and Henry Greene (Robinson, 2010).

The Green and White Grocery's double eaves and roof slope suggest this style, but most American Craftsman structures were houses, not stores (Robinson, 2010). You will not mistake the Green and White Grocery for a house: between its double eaves, capital letters spell out the store's name, stylized as "GREEN & WHITE GRO" (fig. 6). The large glass windows and double doors are also signatures of a commercial operation. But from the outside, you might mistake the Green and White Grocery for a traditional grocery store.

However, you might start to notice that something is strange about the Green and White Grocery when you see the two Federico Archuleta murals painted in 2014 as Casares recalls (fig. 9, fig. 10). But Archuleta's murals are found on other Mexican-American-owned buildings in Austin, none of them hiding a secret as profound as the Green and White Grocery's. Your first real sign about the true inventory of the Green and White Grocery would be the stylized Aztec eagle on the entrance (fig. 7).

Figure 7: *The Aztec-style cuauhtli (eagle) on the door*
© Zach Lindsey rendering

When you open the door though you will realize the store sells spiritual, not physical, nourishment. Instead of milk, you will find powders, incenses, candles, and statues expressing a variety of personalized religious beliefs. These beliefs are sometimes referred to as syncretic, a term used to describe mixed religious beliefs. However, practitioners often do not see their beliefs as a mixture of systems but a singular, coherent, and personalized system (Romberg, 1998; Romberg, 2005). Instead, 'Spiritist' may be more appropriate, as it implies belief in a spirit world but does not confine the system to beliefs from specific regions (Romberg, 2005). Objects for sale in the store include saint candles of Mexican Catholic tradition, representations of Mesoamerican ceremonial death masks, and even iconography from other world religions.

The majority of objects, from candles and statues of Christian saints to incense from the copal tree, represent local or indigenous Mexican, Mexican-American, and Chicano spiritual beliefs. Many of them are representative of the history woven by Chicanx philosophers, as they mix pre-Hispanic Mesoamerican values with the Spanish Catholic imagery. In Chicano philosophy, the use of pre-contact Mesoamerican imagery is a way of maintaining a distinct identity within broader U.S. culture (see, for example, Anzaldua, 2012).

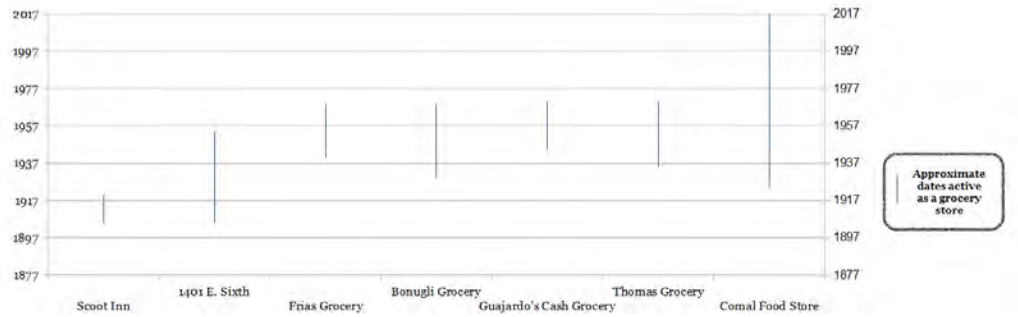

Figure 8: *A comparison of relative lengths of time East Austin structures mentioned in the Hardy, Heck, Moore, Inc. (2016) report operated as grocery stores*
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Figure 9: *The north mural by Federico Archuleta*
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Figure 10: *The west mural by Federico Archuleta*
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Figure 11: *Overview of store space*
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Figure 12: *Original shelving*
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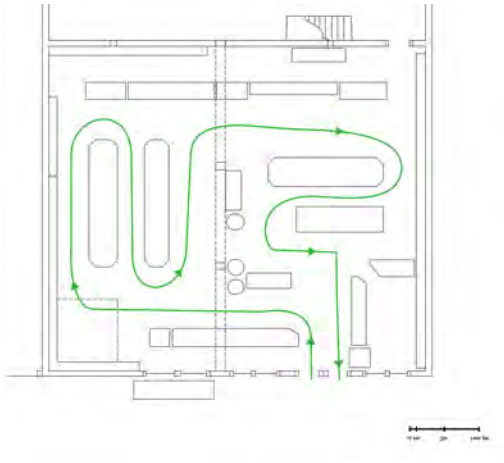

Figure 13: *One potential foot traffic map allowing customers to interact with almost all shelving without disruption*
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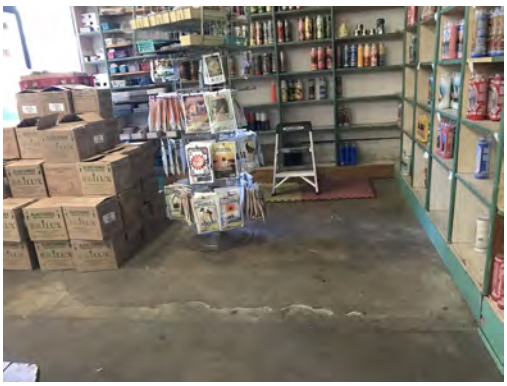

Figure 14: *Disruption in concrete fabric indicating removed ice box*
© Zach Lindsey , illustration

Location was important in pre-contact Mesoamerica. The ancient Maya connected with their ancestors at specific sacred temples, Teotihuacanos buried important ancestors under the floor often with masks similar to the ones on display at the Green and White Grocery, and the ancient Mixtecos cremated their ancestors to keep them close (Ashmore, 2004:184; Linne, 2003; Joyce, 2004:7). All these practices share the core belief that places are sacred. And it is through families that places are imbued with energy over generations. What was once a grocery store now is firmly an herbal shop, a botánica. Yet, like the temples of the pre-contact people of Mexico, it has neither resisted change nor lost the basic elements which make it important to its users.

This is more than poetic divergence. The two biggest alterations to the building itself, an extension and a roof remodeling, were both in the building's early history. What we see today is what John has known for most of his life. This includes the shelving, which provides a circuit for customers leading down all the aisles and to the cash register.

Most buildings control access to some extent or another (Campion, 1996; Glassie, 2000:52), and in this way the Green and White Grocery has resisted change. A customer visiting the Green and White Grocery in 1958 would have had the same relative access points: a tree blocked access to the east side as the gate does today; the Green and White Grocery sits on a corner lot, exposing two sides of the building to sidewalk; and only one of these sides permits access: the north side. Though the main doorway was replaced in the 1980s, it remains at the same location, and though the ice box was removed, this was never an access point to the interior.

Early customers also could have bought the candles, incenses, and other religious paraphernalia that make up the entirety of the Green and White Grocery's inventory today. Casares recalls that Noberto and Susie Lopez imported candles and incenses from

the same distributor who provided them with foodstuffs. Over the years Cazares has moved away from food, but the legacy of those days is still obvious right down to two old Coca-Cola coolers.

This is not to deny that important changes have happened at the store, but they appear to be measured, deliberate changes. In 2003, Cazares told the East Austin Project, "I'm still learning, and all my practices are going to keep me learning, because you never know everything, and you never refine anything. It's a constant refinement" Becker and Garcia, 2003. Even since then, the storefront has changed: Archuleta painted his murals and a newspaper vending machine in the East Austin Project's two videos has been replaced with a flower planter. But most changes are minor, resulting from basic upkeep. The GREEN & WHITE GRO. logo, for example, though maintained with new paint, is the same lettering style as in the 1958 photograph (fig. 4). Besides the removal of the ice box, the most drastic change visible in the 1958 photograph is a change to the slope of the roof. The Green and White Grocery is recognizable for its double set of eaves: the lower eaves shade entry to the store, while the higher eaves serve as the natural outcropping of the roof.

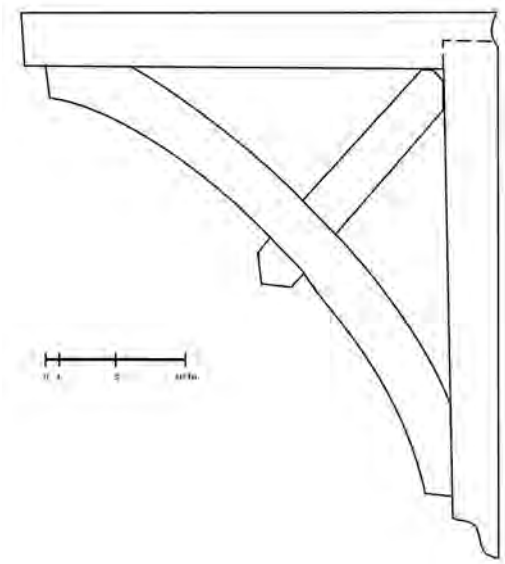

Figure 15: *Eaves bracket, lower eaves. The dotted line represents presumed cut of wood based on other brackets; paint was too thick to measure confidently*
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The photograph (fig. 4) shows this to be a legacy of the building's original form. However, the original higher eaves were restricted to the center of the facade and about a fourth of the length of the wall to either side. The sloped roof was extended, eliminating the "Old West" flat facade of the original building. This probably occurred shortly after the photograph was taken because Cazares did not remember it, noting that in his time he has only maintained but not altered the roof. As for the rear addition reported by Hardy and Moore (2016:75-76), little internal evidence exists for it today and Cazares was unaware of it. Though the outside west wall shows a discontinuity in material use for the foundation (toward the back of the building, it turns to rubble), this does not equate to an internal change in wall or floor pattern. (However, the inside floor at the discontinuity is wooden.) The floor in the southernmost rooms of the structure-which is concrete-appears similar to the floor in the northernmost portions, again making statements about an extension difficult.

If an addition was built, it appears to have been early in the building's history and using rough-cut stone as a foundational element. This change occurs at 56'3.6" (c. 17.70 meters) from the front of the building. If this does mark a rear addition, the original floor plan would have been about 20 feet (about 6 meters) shorter than the current floor plan. The rubble fabric extends past the base of the building for a short distance before turning into stairs which allow access to the backyard and the Cazares' home through a wooden gate.

Figure 16: *New shelving showcasing Mesoamerican-style stone masks*
© Zach Lindsey

Figure 17: *The back room*
© Zach Lindsey

Cazares has added quite a few extra shelves to the original ones. Wire racks (which I did not include on the map because of their easy mobility) fill some space that the shelving does not. And in the back room, drums and other musical equipment as well as martial arts gear is somewhat haphazardly placed about. Most are quite mobile, so they're unmapped. The most important changes to the interior of the structure itself are the removal of the ice box and the removal of kitchen equipment in the back. The ice box faced outward along the north wall of the facade so that customers could grab their ice from outside as they left. When the family stopped selling ice it became a storage area for returnable soda bottles, according to Cazares. When they replaced the doors in the late 1980s, Cazares said they blocked up the wall as well.

The kitchen equipment has also been gone for years, but a wall in the back room still includes tiling suggestive of a kitchen space. There are three smaller rooms behind that wall in the southernmost portion of the building, a washroom with a sink, a restroom with a toilet, and a storage area. A door in this area leads out to the lawn and to the house behind the store. While a refrigerator in the area is new, much of the material in this space looks quite old and the wall paneling is similar to that used on other portions of the structure.

Contexts of the Green and White Grocery

Small, locally-owned grocery stores in Indianapolis were most common from the late 19th to early 20th century according to Mullins (2008). In the case of African-American grocery stores, the model collapsed in the 1930s due to urban renewal and an increase in chain stores (Mullins, 2008:88). However, for whatever reason, Austin's corner stores did not suffer the same fate in the 1930s; whichever of the three building dates is correct, the Green and White Grocery was still a true grocery store in the 1970s. Other important East Austin grocery stores also survived the 1930s. Hardy, Heck, Moore, Inc. (2016) surveyors list seven buildings that hosted grocery stores at some point in East Austin: two were built after the 1930s, four changed uses in the late 1960s or early 1970s. One, the Comal Food Store, operated until at least the early part of 2017. However, as of the writing of this paper, a fence has blocked access to the structure for at least two months. It is unclear if the store will open again or not.

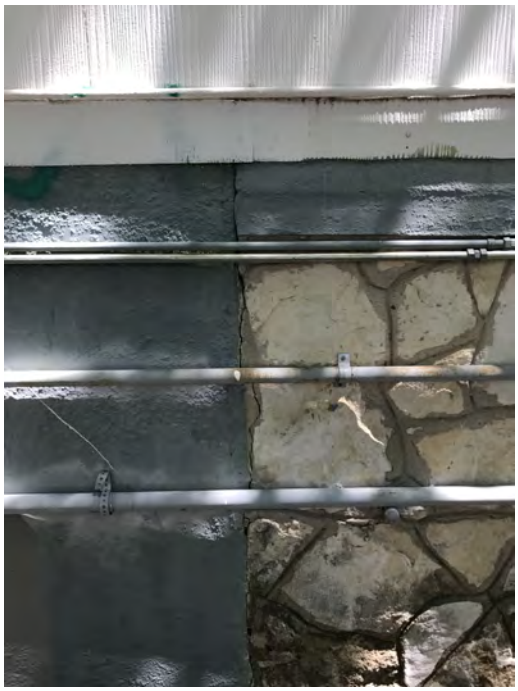

Figure 18: *Variation in fabric on west side*
© Zach Lindsey

Mullins (2008) notes the ethnic insularity of many grocery stores in Indianapolis; while he describes African-Americans occasionally creating campaigns to patronizing other African-American businesses, it is hard to imagine a large amount of choice in this insularity. Noberto and Susie Lopez, the original owners of the Green and White Grocery property, also opened their grocery store in a predominantly Mexican-American community and served a predominantly Mexican-American population, but it is difficult to say whether that was choice, opportunity, or the rigid segregation of Austin at the time (Hernandez-Ehrisman, 2016). Noberto and Susie's descendants remember their grandparents as deeply committed to their community like the other store owners described in Mullins (2008). The original grocery store provided a service Cazares still provides: credit. He and other family members declare it the first Mexican-American store in Austin to offer credit (Lepe, 2002). While it is probably impossible to verify, a casual search of evidence related to Austin development does not find any other claimants to the title. John even noted something important about his grandparents' perception of clients: in the book Noberto kept listing how much people owed, each customer was listed by name, not a number. This suggests Noberto saw his clients as members of a community, not simply potential sources of profit, according to Cazares.

More importantly, store stocking principles were different. Mullins describes a careful negotiation with Anglo-American goods and African-American cultural preference at the store in Indianapolis with an example: his team found only one African-American-style broach on the property despite the majority African-American store patrons (Mullins, 2008:92). But Mexican culture was more accessible in Texas than African culture in Indianapolis, and the goods at the Green and White Grocery have always represented that. Cazares does remember selling hamburgers, but he (and almost everyone interviewed by Lepe (2002:75-76) and Gandara (2012)) also remembers selling tamales, a pre-Hispanic food still eaten in most parts of Mexico. Because of Austin's proximity to Mexico, Noberto was able to travel to Mexico to buy goods like regionally-made salsas, and in many cases Mexican merchants came to Austin. The ability to stock Mexican goods made the Green and White Grocery an important place for Mexican immigrants who missed certain products and tastes and Mexican-Americans who valued their heritage. One of the merchants Noberto bought his inventory from sold not just salsas but saints' candles and polvos which are the main inventory of the Green and White Grocery today. As the inventory changed, the clientele's relationship with the Green and White Grocery must have changed as well. But one important aspect remains the same: the goods the Green and White Grocery sells allow Mexican-Americans to connect with their cultural heritage in a way they might not otherwise be able to in a predominantly Anglo-American city. You can't get your eggs and milk there, but the present-day botánica plays a similar role to the original Green and White Grocery.

Conclusion

More studies on the Green and White Grocery itself would determine exact age of additions, and a small test plot on the east side of the building could perhaps uncover evidence of earlier merchandise sold at the store. Also, John and his family live on the property as previous family members did. Their home was built in the late 1940s according to Travis Central Appraisal District records (TCAD, 2017:75-76). This second building was left out of the survey, but a future survey could examine it. This would allow us to better understand the relationships business owners had with their stores. As living on the same property as a business was also common in Indianapolis (Mullins, 2008), it is important to know if this trend crosses ethnic groups and what these houses commonly looked like.

But perhaps the most pressing study for the East Austin area is one which compares the Green and White Grocery to other minority-owned businesses: how common were trends like living on the property or starting out as food truck vendors? A broader understanding of East Austin history will make it easier to safeguard both individual structures like the Green and White Grocery and the history of East Austin in general. John has a daughter, and she could very well take over the store if she wants, phasing it slowly into something new. But as the property taxes rapidly rise (TCAD, 2017), it is necessary to recognize the property as both important in the historical and contemporary culture of East Austin, or the Green and White Grocery could pass from the hands of the family and disappear the way other important East Austin structures have.

* * *

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* * *

References

Anonymous (July 1958): Green and White Grocery Store. Photograph. URL: texashistory.unt.edu/ark:/67531/metapth531415/.

Anzaldua, G. (2012): *Borderlands/La Frontera: The New Mestiza*. San Francisco: Aunt Lute.

Ashmore, W. (2004): Classic Maya Landscapes and Settlement, in Hendon, J. and Joyce, R. (eds.), *Mesoamerican Archaeology*. Oxford: Blackwell: 169–191.

Becker T., J. Boisvenue and Garcia, S. (2003): *The Green and White*. Video. The East Austin Project. URL: https://youtu.be/a77OV42ISHY.

Campion, G. (1996): People, Process and the Poverty-Pew: a functional analysis of mundane buildings in the Nottinghamshire framework-knitting industry. *Antiquity* 70: 847–860.

Company, Sanborn Map (1935): *'Austin 1935 Key Map.' New York: Sanborn*. New York: Sanborn. URL: https://texashistory.unt.edu/ark:67531/metapth575205.

Delgado, M. and Humm-Delgado, D. (1982): Natural Support Systems: Source of Strength in Hispanic Communities. *Social Work* 27(1): 83–89.

Fisch, S. (1968): Botanicas and Spiritualism in a Metropolis. *The Milbank Memorial Fund Quarterly* 46(3): 377–388.
Frampton, K. (1982): *Modern Architecture: A Critical History*. New York: Oxford.
Gandara, R. (2012): Longtime Green and White Grocery Owner Remembered for Kindness to All. URL: http://www.statesman.com/news/local/longtime-green-white-grocery-owner-remembered-for-kindness-all/HavYksN29sukmzss1rKQtM/.
Glassie, H. (2000): *Vernacular Architecture*. Bloomington: Indiana University.
Hardy, Heck and Moore, Inc (2016): *City of Austin Historic Resources Survey*. Vol. IV. TX: Hardy, Heck and Moore, Inc.
Hernandez-Ehrisman, L. (2016): Breakfast Taco Wars: Race, History, and Food in Austin and San Antonio. URL: https://endofaustin.com/2016/09/22/breakfast-taco-wars-race-history-and-food-in-austin-and-san-antonio/.
Joyce, R. (2004): Mesoamerica: A Working Model for Archaeology, in Hendon, J. and Joyce, R. (eds.), *Mesoamerican Archaeology*. Oxford: Blackwell: 1–42.
Kerr, B. (2016): *Greater Austin Profile: Population*. Austin Chamber. URL: https://www.austinchamber.com/upload/files/ed/population.XLS.
Kreneck, T. (n.d.): Documenting a Mexican American Community: The Houston Example. *The American Archivist* 48(3) (): 272–276, 278–285.
Lane, R. (2016): *Understanding Historic Buildings: A Guide to Good Recording Practice*. Historic England.
Lepe, E. (2002): *The History of the Green & White Store*. The East Austin Project. URL: https://youtu.be/FKsKnojVWHo.
Linne, S. (2003): *Archaeological Researches at Teotihuacan, Mexico*. Tuscaloosa: University of Alabama.
Maps, Google (2017): Google Maps location for 1201 E 7th St. Austin, TX. URL: https://www.google.com/maps/place/Green+and+White+Grocery/@30.2649964,-97.7301178,20z/data=!4m5!3m4!1s0x0:0x63bde337444e6a51!8m2!3d30.2650983!4d-97.7300119.
Moreland, J. (2001): *Archaeology and Text*. London: Duckworth.
Mörner, M. (1967): *Race Mixture in the History of Latin America*. Boston: Little, Brown & Company.
Mullins, P. (2008): Marketing in a Multicultural Neighborhood: An Archaeology of Corner Stores in the Urban Midwest. *Historical Archaeology* 42(1): 88–96.
Pluciennik, M., Newman, C., and Godfrey, M. (2015): *The Archaeology of Standing Buildings*. Leicester: University of Leicester.
Print, Miller Blue (1934): *Austin Texas Street Guide*. URL: https://www.lib.utexas.edu/maps/texas/austin-redlining-large-1935.jpg.
Robinson, W. (2010): *Architecture*. Handbook of Texas Online. URL: http://www.tshaonline.org/handbook/online/articles/cmask.
Romberg, R. (1998): Whose Spirits Are They? The Political Economy of Syncretism and Authenticity. *Journal of Folklore Research* 35(1): 69–82.
– (2005): Ritual Piracy of Creolization with an Attitude. *NWIG: New West Indian Guide/Nieuwe West-Indische Gids* 79: 175–218.
TCAD (2017): Travis Central Appraisal District property search. Search query: Green & White Grocery 0205070101. URL: https://propaccess.traviscad.org/clientdb/?cid=1.

Part III

Conference Reviews

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ICOMOS International Committee on Archaeological Heritage Management (ICAHM) 2017 Annual Meeting: A Review

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The ICOMOS International Committee on Archaeological Heritage Management (ICAHM) Annual Meeting is an event where heritage experts, academic professionals and students meet to share, discuss and advance the management of archaeological heritage and archaeological research all over the world. The ICAHM 2017 Annual Meeting was held in Bagamoyo, Tanzania thereby becoming the first ICAHM meeting to be held in Africa. The theme of the meeting was Archaeological Heritage in Sub-Saharan Africa, International Trade Routes, and Conservation which encouraged collaboration in archaeological research and archaeological heritage management in Sub-Saharan Africa. Here, we review this annual meeting alas with a bias towards students' participation.

The International Committee on Archaeological Heritage Management (hereafter referred to as ICAHM) is a scientific committee of the non-governmental International Council of Monuments and Sites (ICOMOS). ICOMOS is responsible for the evaluation of all nominations of cultural properties against the criteria laid down by the World Heritage Committee. ICAHM advises ICOMOS and the World Heritage Committee on matters that pertain to all aspects of the management of archaeological sites and landscapes (http://icahm.icomos.org). This objective is fulfilled through promotion of the understanding of the importance of the archaeological heritage to the general public, government institutions and all stakeholders. Thus ICAHM promotes the development, and propagation of best practices for both archaeological research and cultural resource management.

ICAHM is interested in all archaeological sites, landscapes and related resources in the world as such, it collaborates with international, national, regional and local organizations that pursue similar goals. One of the roles of ICAHM is to review nomination dossiers for cultural sites nominated for World Heritage listing. Another key role for

ICAHM is to develop a network of professionals who share varied experience essential to the management of archaeological heritage and research. ICAHM seeks to achieve these goals through Annual Meetings and workshops to discuss best practices for a) management of archaeological heritage sites, b) archaeological research, c) aspects of cultural resource management. In the past, the Committee has arranged Annual Meetings in 2012 in Cuzco, Peru; 2014 in Jishou, China; 2016 in Salalah, Oman and most recently 2017 in Bagamoyo, Tanzania, which is the focus of this review.

The 2017 ICAHM Annual Meeting was held in the historic town of Bagamoyo, Tanzania. This conference was first in the history of ICAHM to be in Africa. The theme for the conference was *Archaeological Heritage in Sub-Saharan Africa, International Trade Routes, and Conservation*, which stimulated sessions, oral presentations and poster presentations that were important to the international community. From this theme, emphasis was on the conservation and sustainability of archaeological heritage in Sub-Saharan Africa particularly towards Sustainable Development Goals (SDGs). Ultimately, this conference theme attracted 90 delegates from about 30 countries.

Conference Sessions

ICAHM hosted this Annual Meeting in Tanzania to discuss Sub-Saharan Africa and International Trade Routes. Eastern Africa, Tanzania in particular has rich paleoanthropological sites. These include Olduvai Gorge and the Laetoli World Heritage Sites in the Ngorongoro Conservation Area carry the remains of *Australopithecus boisei*, *Australopithecus aethiopicus* and *Australopithecus afarensis*. In addition, 3.60 million years old hominin footprints have been discovered in the country. Tanzania is known for coastal sites such as Kilwa Kisiwani and Zanzibar. These are attached with rich tangible and intangible heritage aspects. The island has been depicted historically and archaeologically as having connections within Africa, the Middle East and the Far East, *i.e.*, Southeast Asia.

The conference proceedings started with a keynote address from Dr. Webber Ndoro on the Africa Initiative programme (fig. 1). The Africa Initiative programme came as a realization that there are few World Heritage Sites from Africa on the World Heritage List given the number of sites that have the potential to become World Heritage sites from the continent. Thus, ICAHM launched the Africa Initiative programme in 2011 with the aim of increasing World Heritage Sites from Africa. The wish of ICAHM to increase the number of sites on the World Heritage List from Africa is shown by the fact that it will be one of the 2018 Annual Meeting session themes to be held in Sicily, Italy. Thus, there is need for concerted efforts among archaeologists, cultural heritage practitioners and related professionals for the Africa Initiative programme to materialize.

The conference themes were as follows:

1. Trade Routes: Africa's role as a gateway to the rest of the World
2. Conservation and sustainable use of paleoanthropological sites
3. World Heritage Sites as Sources for Sustainable Development
4. Maritime Underwater Cultural Heritage
5. Digital Technologies and Archaeological Heritage Management

Figure 1: *Dr. Webber Ndoro discussing the Africa Initiative programme during the keynote address.*

Research papers of various topics were presented under the themes of the conference by different presenters from all over the world. In the Maritime Underwater Cultural Heritage session, exchange of expertise among professionals was encouraged as there is lack of training and resources especially in Africa.

Student Participation at the ICAHM 2017 Conference

Analysis of the ICAHM conference database has shown that its Annual Meeting is one place where experts in archaeological heritage management around the world meet, discuss and map ways forward to achieves the goals and mission of ICAHM. The conference theme and the 2017 Annual Meeting was well received with 90 participants from different parts of the world, with about 30 countries being represented. Of the 90 people who attended the conference, only 9 of them were students from different institutions and countries (table 1, fig. 2).

Registration fees were a requirement and were demarcated between foreign participants from developed countries, foreign participants from developing countries, participants from Tanzania, Students from developed countries, Students from developing countries and students from Tanzania. The registration fee included all the conference proceedings as well as a GIS workshop for interested participants. Registration fees for students were US $75 for students from developed countries, $40 for students form developing countries and $20 for students from Tanzania, to participate in the conference proceedings. Thus, this shows that the registration fee for students to participate in ICAHM's Annual Meetings is affordable to many students.

Students were given an opportunity to participate and presented papers in the following session themes: Trade Routes: Africa's Role as a Gateway to the Rest of the World; World Heritage Sites as Sources for Sustainable Development; Digital Technologies; and Archaeological Heritage Management. However, a major challenge faced by students,

Table 1: *Statistics on students attending ICAHM conferences*

Conference meeting	Year	Number of students	Total participants
Cuzco-Peru	2012	22	170
Jishou-China	2014	12	105
Salalah- Oman	2016	1	80
Bagamoyo-Tanzania	2017	9	90

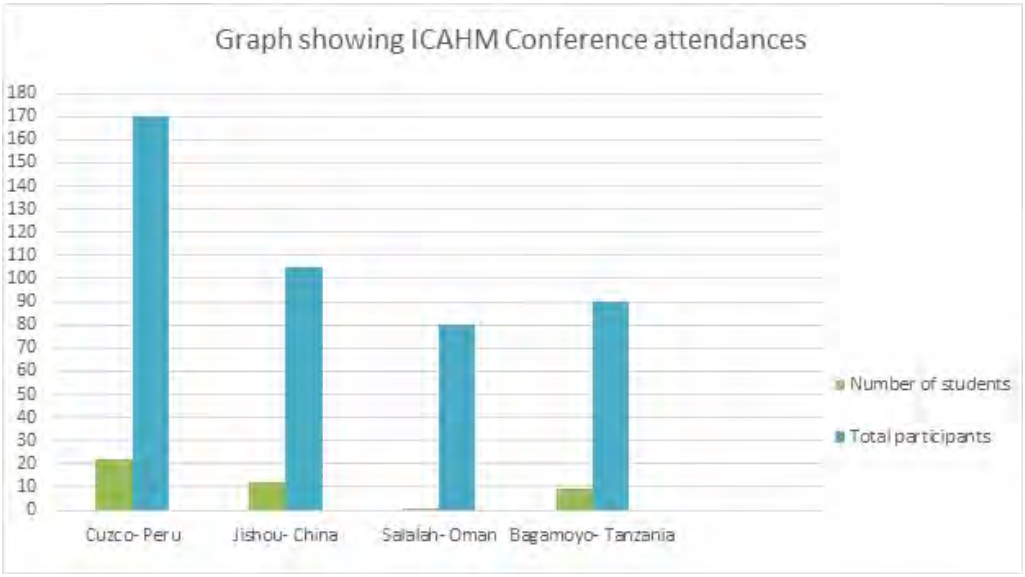

Figure 2: *Graphical presentation of the ICAHM conference attendances.*

was particularly on raising funds to attend the conference. Some students who had their papers accepted after the call for papers failed to attend and present their papers as they had no funds to travel to Bagamoyo, Tanzania. But nonetheless, those who attended benefitted immensely from the event and learnt a lot about archaeological site management from the various sessions held.

Although the number of students increased as compared to student attendances in Oman, the attendance of students to ICAHM conferences is still low. Moreover, there is need for archaeological and heritage professionals and experts to integrate students in the planning of such events and also to encourage them to attend conference meetings of this kind because most of the experts and professionals work in institutions with students in either way. It is a thing of the past for professionals and experts to work in isolation with students. A piecemeal integration between these two would go a long way in addressing a major concern among students.

Workshop: GIS and Direct Detection of Archaeological Sites in a Landscape Context Using Aerial and Satellite Imagery and Open Source Software

This workshop was held as part of ICAHM 2017 Annual Meeting with the aim of locating archaeological sites using GIS. The workshop was facilitated by Dr. Douglas C. Comer where the use of GIS in archaeology was accentuated. In this workshop, GIS Software was used. For purposes of demonstration and for time constraints, four natural

Figure 3: *The Germany Boma.*

Figure 4: *Curio shop (Bagamoyo Art Market).*

World Heritage Sites in Tanzania were located. The four are Kilimanjaro National Park, Ngorongoro Conservation Area, Selous Game Reserve and Serengeti National Park. To identify these sites, aerial photographs were used in association with the coordinates of the sites.

In archaeological prospection, GIS is used to locate sites where vegetation might be a pointer to an archaeological site. In most instances, vegetation with stunted growth may be a result of past habitation where the resources used in habitation impede growth of vegetation. Depending on the nature of the vegetation, greener vegetation might also indicate an archaeological site or past areas of activity. For example, a place which was once used as an animal kraal might have greener vegetation than its surrounding area. However, GIS in archaeology has been criticized for being environmentally deterministic, thereby dehumanizing the past. But in any way, there is a close relationship between the environment and people regardless of which factor affects the other. Similarly, in a world where technology seems to dominate all aspects of human existence, there is need to fully embrace this technique.

Guided walk through Bagamoyo

After the workshop on GIS and Direct Detection of Archaeological Sites in a Landscape Context Using Aerial and Satellite Imagery and Open Source Software, the conference delegates had the opportunity of a guided walk by a representative of the Tanzanian Antiquities Department through the historic town of Bagamoyo. The places visited included the Germany Boma, the fish market and the curio shop (Bagamoyo Art Market). The Germany Boma was built by the German in 1897 as the colony's central administrative office and residence of the colonial administrator (fig. 3). It is associated with the slave trade. The fish market in Bagamoyo is on the shores of the Indian Ocean. The inhabitants of Bagamoyo are earning a living from this fish market. The curio shop visited by the conference delegates' shows works of art. Some of the products sold are carvings, pieces of adornments, picture paintings and drawings (fig. 4). In any case, the products have a traditional aspect added to them.

As a result of this tour, there was a general satisfaction among conference delegates of the historicity of this town. Indirectly, this tour reiterated the sentiment made by Dr. Ndoro in his keynote speech that there is need for concerted efforts among heritage professionals to nominate Bagamoyo on the World Heritage List.

The ICAHM Meeting was preceded and succeeded by excursions. Here we would like to outline the main phases of the post-conference excursion. The conference ended on October 5 with a group excursion to the Village Museum and National Museum in Dar es Salaam. In the National Museum we were offered the unique opportunity to visit the vault where Prof. Charles Musiba showed the participants various hominid discoveries by the famous palaeoanthropologists Louis and Mary Leaky. From 6 to 9 October 2017, a post-conference excursion took place where 30 participants had a tour to Karatu where they spent two nights and visited the Laetoli Footprints and Olduvai Gorge in the Ngorongoro Conservation Area. The participants visited the Ngorongoro Crater on 7 October. The post-conference excursion was as great as the conference, and the participants appreciated it.

Recommendations

Since one of the functions of ICAHM is to develop and enhance a network of professional archaeologists and archaeological site managers for the purpose of transmitting theoretical and practical skills and encouraging high standards and best practices for a) management of archaeological sites and resources; b) archaeological research; and c) aspects of cultural resource management, we recommend that students be more involved in ICAHM programs. This can be through the creation of student membership or an ICAHM student forum as they are upcoming experts in the field. This is because, currently, membership to ICAHM is confined to experts and professionals. Regarding a student forum, ICAHM's Annual Meetings could involve students in the planning of the same such that during a conference there is time specifically dedicated to students. This can be time for students, professionals, and experts to meet and discuss the prospects of their careers. We believe there is more that students can contribute towards the cause of ICAHM through programs aimed at promoting the preservation, conservation and utilization of archaeological resources as well as research.

To most students particularly from developing countries, international travel is expensive such that most students cannot afford it. Since ICAHM does not charge a membership fee, there are usually no funds available for travel grants for conference attendees. Ideally, this should be a different situation all together when it comes to students. We recommend that ICAHM makes provisions for travel grants especially to students. The absence of travel grants could be one of the major setbacks resulting in decreased number of student participation in ICAHM's conferences. Overall, we believe that such a lacuna can be filled if the above recommendations can be adopted.

Conclusion

The ICAHM Annual Meeting held October 2 to 5, 2017 was an excellent meeting and exchange opportunity for participants. The whole of activities carried out ensures that we keep a good memory of the colloquium and that the conference was an excellent crucible of initiation and training on the management of cultural heritage. In the future, we hope there will be an increase in student participation at ICAHM Annual Meetings.

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Review of the European Society for the Study of Human Evolution – 7th Annual Meeting, September 21st - 23rd 2017 Leiden, The Netherlands

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Leiden is a cosy, monumental city in South Holland, crossed by multiple canals that provide a refreshing atmosphere, particularly during the scarce but precious moments of sunshine. It proudly hosts the oldest university in the Netherlands with an archaeological department at the forefront of the discipline. Dr. Marie Soressi and Prof. Wil Roebroeks, prominent Leiden academics and Board officers of the *European Society for the Study of Human Evolution* (ESHE), acted as illustrious local hosts of the well-organised 7th ESHE Annual Meeting (21st - 23rd September 2017).

The day before the start of the ESHE Annual Meeting, I had the pleasure to attend '**25 years of Palaeolithic Research at Schöningen**' Symposium in Leiden, kindly invited by its host, Prof. Thijs van Kolfschoten (Leiden University). Although this event was not directly related to the ESHE, it was a memorable learning experience I want to share in this review. The event explored the history of research at Schöningen, with an emphasis on the oldest wooden spears in the world, which arguably radically transformed our understanding of hominin subsistence practices (Thieme, 1997). The talks by Dr. Jordi Serangeli and Prof. Nicholas Conard (Tübingen University) highlighted the past and future potential and significance of the site. Dr. Charles Turner (Cambridge) brought controversy to the fore by arguing that the 'palaeolake' so frequently described in environmental reconstructions at the site may have never existed, and that geomorphological evidence appears to suggest that it was a river channel with somewhat 'shifting' banks. Dr. Silvia Bello (NHM London) discussed the analysis of the abundant bone tools at the site, raising fascinating questions about resource procurement and exploitation as well as issues of expediency versus specialisation and continuity of technological patterns. The voices of the incoming generation of researchers were also present, such as the work of Ivo Verheijen on carnivore taphonomy and Bárbara Rodríguez (Tübingen

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Figure 1: *Stadsgehoorzaal lecture hall, which hosted the Podium and Pecha Kucha presentations given at the ESHE*

University) on cognitive archaeology through lithic analysis. Sander Aerts (MOLA London) provided a perhaps surprisingly enjoyable talk on beetle remains, and Dr. Simon Parfitt (UCL) closed the event with a comparative assessment of the Middle Pleistocene record of Germany and Britain.

In contrast with the monothematic setting of the Schöningen symposium, the following day was packed with fascinating albeit highly diverse presentations as part of the ESHE Conference, combining sessions of 20-minutes podium talks with fast-paced Pecha Kucha presentations, encompassing almost every strand of human evolutionary studies. It would be impossible to offer a comprehensive analysis of each of the papers presented at the Stadsgehoorzaal lecture hall (fig. 1), but I would like to highlight some of the themes discussed during the three days that the Conference lasted.

On the evening of the 20th of September, there was a public lecture at the Rijksmuseum van Oudheden, by Dr. Marie Soressi on the topic of 'Neanderthals and us: news from our ancestors, and why it matters'. She explored recent ground-breaking developments in ancient DNA studies and how they provide information on the genetic histories of present populations, and the significance of Neanderthal interactions with modern humans in Europe.

Figure 2: *Nick Stephens (MPI-Leipzig) podium presentation on trabecular bone patterning across the human hand*

Throughout the conference, the ESHE explored 'classic' themes, such as palaeoanthropological research, such as the study of new dental remains from Atapuerca-TD6 by Dr. María Martinón-Torres, a comparative assessment of premolar root and canal variation in the hominin clade by Dr. Matthew Skinner, or the highly-visual presentation on trabecular bone patterning across the human hand among past and present populations by Nicholas Stephens (fig. 2).

ESHE also proved to be an unrivalled opportunity to introduce new and promising research projects, such as the excavations at the Middle Pleistocene site of Marathousa I (Greece), directed by Prof. Katerina Harvati (Tübingen University), which echoed the excellent preservation at Schöningen. A multidisciplinary team led by Dr. Susana Carvalho (University of Oxford) is also starting a long-term project at Gorongosa National Park in Mozambique, the southernmost end of the Rift Valley, which will undoubtedly contribute to better understanding the prehistory of the African continent. Tamara Dogandzic and her team at the Max Planck Institute (MPI-Leipzig) are shedding new light into the Middle-Upper Palaeolithic transition in a key region such as the Balkans. Dr. Katerina Douka (Max Planck Institute-Jena) is spearheading a new and game-changing project that innovatively applies ZooMS (Zooarchaeology by Mass Spectrometry) to identify hominin remains in Southern and South-East Asia.

Similarly, several presentations explored alternative perspectives for understanding hominin subsistence practices and lifestyle. These included Dr. Amanda Henry's authoritative reminder of the importance of wild plant foods, particularly tubers and other underground storage organs (USOs), which tend to be available year-round, for understanding winter subsistence by hominin populations, especially in mid and high latitudes. Also in relation to subsistence strategies and their impact in hominin lifestyles, Manuel Will argues that coastal adaptations constitute a "consistent behavioural signature" for Middle Pleistocene hominins, complementing inland resources and thus maximising their "dietary breath and quality". Lastly, in a highly original piece of research that was awarded the Student Presentation Prize, Andrew Sorensen (Leiden University) explored the potential of handaxes, the multi-purpose tool par excellence, to play a role in the process of fire-making, on the basis of microwear suggesting "repeated percussion and/or forceful abrasion with a hard-mineral material". The hypothesis is plausible, particularly given the inherent properties of flint for spark-generation.

The chronological framework constitutes a fundamental dimension of archaeological research, and multiple papers were devoted to broadening the range of techniques and refinements within the field, from AMS radiocarbon dating in the Zagros Mountains (Lorena Becerra-Valdivia), Luminescence dating in Shanidar Cave (Marine Frouin), and at Sima de las Palomas (Prof. Michael Walker), U-series dating of rock art in Cantabria (Dr. Dirk Hoffmann), single-amino-acid radiocarbon dating at Vindija (Dr. Thibaut Devièse), and dendrochronology (Dr. Sahra Talamo). Understanding the temporality of the archaeological sequence is paramount, and changes in the temporal framework do transform the meaning of the archaeological remains themselves. Particularly striking was Gianpiero di Maida's re-assessment of Fontana Nuova (Sicily), long-believed to be Aurignacian and thus the oldest site of Sicily. His new data suggest an early Holocene temporal adscription instead.

The poster sessions, arranged thematically, were a fantastic opportunity for students and professionals alike to engage in networking while having lunch, although the sheer number of posters might have prevented some participants from seeing them all. Of particular interest to me were those related to taphonomy, which explored site formation processes (Domenico Giusti and George Konidaris for Marathousa I, Marta Pernas-Hernández for the avian record of Bell Korongo, Olduvai Gorge, and Gonzalo Linares Matás for the late Early Pleistocene site of Cueva Negra), use-wear in experimental bone tools (Giulia Gallo), and the spatio-temporality of accumulation, such as Dr. Nohemi Sala's study of the hominins from Sima de los Huesos, Spain. Taphonomical issues also featured in some podium presentations, such as Dr. Ashley Kruger's study of post-mortem disarticulation patterns of the *Homo naledi* assemblage from the Dinaledi Chamber, or Laurence Dumounchel's Pecha Kucha talk assessing the fossil *Suidae* record to understand the environment and subsistence strategies of *Australopithecus anamensis* in the Omo-Turkana basin. Taphonomical research will continue to play a paramount role in understanding the ways in which the archaeological record may inform researchers about the lived experiences of past human populations in their socio-ecological contexts.

Figure 3: *Homo erectus remains from the Dubois-Trinil collection at the Naturalis museum.* © Gonzalo Linares Matás . Picture taken by the author, with permission from the Naturalis Biodiversity Center.

The closing Q&A session tackled important issues regarding the accessibility and organisation of ESHE meetings; for example, after a much-applauded proposal from the audience, the Board promised exploring the viability of childcare provision for future ESHE Conferences.

On the Sunday after the Conference, the local organisers arranged an exclusive guided visit to the Dubois/Trinil collection, housed at the Naturalis Biodiversity Centre, which is currently closed to the public due to ongoing restorations. The exhibition showcased the *'Pithecanthropus' erectus* femur, skull cap, and molar (fig. 3), in addition to the engraved *Pseudodon vondembuschianus trinilensis* shell, the original manuscript in German describing *'Pithecanthropus' erectus*. Some fauna from Trinil were also included, such as water buffalo molars (*Bubalus bubalis*); these are interesting to people pursuing zooarchaeological analyses because although their occlusal surfaces resemble those of horses, the roots are more similar to those of other *Artiodactyla*. These guided exhibitions provided attendants with an even more enriching experience.

Overall, the ESHE Conference was a very positive experience, and a great setting for a newcomer to present their first poster at a conference. Next year, the 8th Annual Meeting of the ESHE will be taking place in Faro (Portugal); the sunny beaches of the Algarve seem to be openly promising an enjoyable time learning about human evolution.

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References

Thieme, Hartmut (1997): Lower Palaeolithic hunting spears from Germany. *Nature* 385: 807–810.