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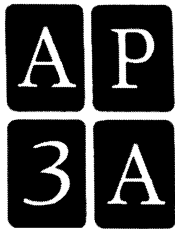
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The Bioarchaeology of Community

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Preface

This volume is the result of a symposium entitled "Establishing a Bioarchaeology of Community" presented at the 79th Annual Meeting of the Society for American Archaeology in Austin, TX, and organized by the editors. The idea for the symposium came out of a discussion between the editors and Celeste Gagnon at the 81st Annual Meeting of the American Association of Physical Anthropology in Knoxville, TN, where we wondered what bioarchaeologists have to offer social investigations of the past. Both editors were coming from a graduate program that was rich with social theory and wanted to push beyond the normal discussions of lesion frequencies and pathological percentages oft-encountered at Biological Anthropology conferences. Why did these numbers matter if we had nothing more to say about them? How do we move beyond cataloging lesions and into the more interesting space of lived experiences? Moreover, we both work in the Andes and we were thus interested in how people working around the globe were engaging with these issues. In reaching out to several other meeting attendees, and circulating a symposium abstract through various bioarchaeology networks, we received positive responses to the idea and quickly filled the proposed session.

The authors of this volume were all original symposium participants, with the exception of Molly Zuckerman, whose chapter on poxed persons in Post-Medieval London adds an important perspective on inclusivity and perceived identities in the past. Benjamin Valentine, Kristina Killgrove, and Christopher Stojanowski each gave riveting papers in the original symposium, but were unfortunately unable to contribute case studies or commentary to the volume. Their participation in the symposium was nonetheless invaluable and their comments resonate throughout the chapters here.

We would like to thank all of the contributors to the volume for their thoughtful papers and their readiness in meeting deadlines. We thank Deborah Blom and Will Meyer on their insightful discussions, bringing our case studies together to provide deeper insight from an insider's and outsider's perspective. Lynne Goldstein, the Publications Director of the Archaeology Division of American Anthropological Association, was instrumental in making this volume a reality and we thank her for her editorial contributions, patience, and aid in helping this happen. We also thank Anna Agbe-Davies who initially recommended we contact Lynne to gauge AP3A interest in the volume. We acknowledge the editorial and review board of the AP3A, for their helpful comments on the prospectus, and our two anonymous reviewers for their insight and engaging critiques on each chapter. We would also like to thank Charlotte Cable for her copy-editing expertise. Finally, we thank Celeste Gagnon for her encouragement from the initial conception of the idea.

We would like to dedicate this volume to the communities around the world who work with archaeologists and bioarchaeologists; through collaboration and communication, we can learn more about past communities and strive towards building a community of voices who speak for the past.

Introduction: Establishing a Bioarchaeology of Community

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ABSTRACT

   In this chapter, we introduce our volume and focus on defining the various ways in which the term *community* is used by bioarchaeologists in this volume, especially with respect to the theoretical ideas within the emerging social and theoretical bioarchaeology. We also provide an initial summary concerning each of the chapters and how each author, or set of authors, focuses on community within their research. Our goals are: (1) to discuss the possibilities and limitations of identifying different types of past community or communities; (2) to expand on methods in bioarchaeology that can be used to identify community; and (3) to develop theoretically based bioarchaeological research on *community* in order to elucidate meaningful relationships that structured past people's lives. [Theoretical bioarchaeology, Community, Social relationships, Daily life, Agency, Practice approach, Group membership]

Bioarchaeology, as a scholarly field, questions how people lived in the past using human skeletal remains from archaeological contexts as the focus. While there are many approaches to examining human bones from antiquity, the research for this volume initially took a speculative approach to broaden our field of study by asking if "community" could actually be "seen" in anything bioarchaeological, or how visible could community be to people who study skeletal remains. My co-author and I also questioned the role of bioarchaeologist as a site specialist, and if that person is responsible for contextual and theoretical interpretations. We both felt dissatisfied with the lack of context when we read things like frequency report comparisons of burial groups, or skeletal differences in specific portions of human anatomy with no reference to the lives of individuals who comprised those bones or teeth. It left us asking who these people were, why culturally would there be differences in pathological conditions, and if these numbers truly represented peoples' existence in the past.

We were not alone, as many other bioarchaeological scholars have begun questioning, through social and theoretical contexts, what the bodies of the dead mean. While this query sounds simple enough, it can be amazingly hard to answer, especially so when we consider the many theoretical and methodological orientations researchers use to ask and respond to the question. We do feel that bioarchaeology is uniquely situated to answer these questions through investigations of past peoples from a perspective different than other subfields. In fact, one of bioarchaeology's original functions was to make these connections between archaeological context and human skeletal remains: in other words, to get skeletons out of the appendices and into the discussion (Buikstra 1977). Because of this emergence and influence from multiple disciplines (i.e., archaeology, medicine, ecology, demography, and skeletal biology), bioarchaeological investigations are naturally multidisciplinary. In addition, bioarchaeologists have been effective at integrating skeletal data and social theory, making prodigious

strides in the last decade toward understanding the social and theoretical nature of the dead from prior foundational research that chiefly studied human skeletal remains as pathological specimens (e.g., *Identification of Pathological Conditions in Human Skeletal Remains* and *The Cambridge Encyclopedia of Human Paleopathology* (Aufderheide and Rodríguez-Martín 1998; Ortner 2003; Ortner and Putschar 1985)). While it is necessary for bioarchaeologists to understand the morbidity and mortality of past populations from a biomedical approach, publications like *The Body as Material Culture: A Theoretical Osteoarchaeology* (Sofaer 2006) and *Bioarchaeology: The Contextual Analysis of Human Remains* (Buikstra and Beck 2006), have shown that bioarchaeology's future must include a contextual, biocultural approach. This change has put bioarchaeologists at an intersection similar to the post-processual crossroads in archaeological theory of the late 1970s and 1980s (e.g., Hodder 1982aa, 1982bb, 1982cc; Miller and Tilley 1984; Shanks and Tilley 1987). Through concepts like identity, agency, and individual experiences, publications such as *Bioarchaeology and Identity in the Americas* (Knudson and Stojanowski 2010), *Social Bioarchaeology* (Agarwal and Glencross 2011), *Breathing New Life Into the Evidence of Death: Contemporary Approaches to Bioarchaeology* (Baadsgaard et al. 2011)*, The Bioarchaeology of Individuals* (Stodder and Palkovich 2012), *Tracing Childhood: Bioarchaeological Investigations of Early Lives in Antiquity* (Thompson et al. 2014), and *The Bioarchaeology of Care* (Tilley 2015) have added significance and social meaning to our understandings of populations around the world.

While these other bioarchaeological researchers have answered the call for robust, theoretically-oriented scholarship, there are still many avenues to pursue. Thus, this volume explores the questions posited to us about community—expanding the breadth of bioarchaeological method and theory by conceptualizing, exploring, and utilizing the term *community*. Taking a global approach, our volume has three goals: (1) to discuss the possibilities and limitations of identifying different types of past community or communities; (2) to expand on methods in bioarchaeology that can be used to identify community; and (3) to develop theoretical bioarchaeological research on community in order to elucidate meaningful relationships that structured past people's lives. Because of these wide-ranging goals, we deliberately define *community* very broadly, as a process by which a group of people share some kind of real and/or imagined connectedness. We see "community" as something that can be repetitive, contextually flexible, and temporally changing, with categories that are not mutually exclusive, but emphasize the importance of connectedness in daily life. The authors of this volume all approach community

or the reconstruction of past communities by going beyond examining the material remains left behind, and by considering human skeletal remains as more than physical bodies; skeletal remains reflect the lived experiences of people. It is through the practice of community (following ideas about community in Canuto and Yaeger 2000, and based around Bourdieu 1977 and Giddens 1984) that bioarchaeology offers compelling insights into past populations using the actual bones of people who experienced these diverse relationships. Community as a focus of investigation is innovative and, if applied more broadly, has the potential to augment our understanding of populations throughout the world.

Describing and Applying "Community"

Bioarchaeology as a discipline has begun to explore nuanced social topics, including identity, ethnicity, social hierarchies, socially determined age categories (e.g., childhood and adulthood), and sex and gender, among others (e.g., Agarwal and Glencross 2011; Arnold 2014; Baadsgaard et al. 2011; Buikstra and Beck 2006; Crandall and Martin 2014; Geller 2016; Knudson and Stojanowski 2010; Sofaer 2006, 2011; Stodder and Palkovich 2012; Thompson et al. 2014). This scholarship has also included discussion of social relationships, including ties of ethnic groups, social classes, residential blocks, religious affiliations, and real or fictive kinship. While these topics have contributed important methodological approaches, comparative frameworks, and innovative analyses, few consider *community* as a way to see groups in which past people participated, versus those designed by archaeologists and bioarchaeologists. There is sometimes a failure to recognize or address the idea that group affiliations can be real and can be constructed, both in the lived experience of the population being studied, and in their creation by scholars. Without contextual approaches and reflexive consideration of how individuals and their bones are placed into groups, research concerning ancient communities will remain disconnected from the perspective of past peoples.

In addition, in both archaeology and bioarchaeology, the term *community* has often been limited by physical proximity of burials, site location, or some kind of shared motifs across grave goods, classifications especially true prior to the publication of *The Archaeology of Community* (Canuto and Yaeger 2000). However, community is often more deeply rooted than simple measures can demonstrate. Communities may not always include neighbors, but can reflect enduring connections to those who live far away, ties that may not be captured through something like settlement pattern analysis alone. Likewise, those who share iconography

do not necessarily identify with each other, or even impart an understanding of symbols in the same way. Instead, communities exist somewhere in-between, structuring the way people view themselves and the cosmos, but also requiring at least the semifrequent copresence of people in order to reinforce social bonds and reestablish norms and practices (Canuto and Yaeger 2000). As discussed by Bentley (1987:32-33), common life experiences generate habitual dispositions, and through the commonality of experience, members of a cohort have a sense of being both familiar and familial to each other. Jones (1997) notes that fine temporal control is required to find groups, and this temporal as well as spatial limitation is echoed by Yaeger and Canuto (2000). Jones (1997:13-14) further states that identification of group membership is based on shifting, situational, and subjective identifications of the self and others, which are rooted in ongoing daily practice and historical experience that is also subject to transformation and discontinuity.

In reiterating these points, our approach to community advocates for considering people as agents of their own lives, with self-identification as members of a community or communities. How do we look for agency considering we cannot question the dead directly, and in many cases there are no written records to tell us about their lives? We consider that people show this agency through practicing their own way of life on a daily basis, and that the skeleton can be used as a record of those embodied experiences. Coming out of ideas from Bourdieu's (1977) *Outline of a Theory of Practice*, we focus on "habitus" and "hexis," especially as they relate to group membership. Unpacking these terms, we define *habitus* as the social (both public and domestic) enactment of everyday life that people do as part of their actions and perceptions in the world around them, which structure, and are structured by, social relations (Bourdieu 1977:72). We see *hexis* as how people express themselves through personal style (e.g., clothing, hairstyles) and deportment (e.g., movement, gestures) (Bourdieu 1977:82, 87). As one of the first bioarchaeologists to apply "habitus," "hexis," agency theory, and practice theory to human skeletal remains, Sofaer (2006:17) noted that, initially, the skeletal body had been treated as a variable that could be simply compared to many other material culture traits. This made it a one-dimensional component of analysis and ultimately left the body removed from those seeking to highlight the embodied human experience (Sofaer 2006:24). Sofaer also argued that "the body cannot exist in some kind of natural pristine state as it both affects, and is affected by, its surroundings. The environment lends potentials and also places limits on the body" (2006:26). As the skeleton is a record of a lived experience with limitations to that record by the very act of survival, it is the total product of that human life, in that it is the actual person represented in his or her skeletal remains who lived that life. Thus, in structuring and practicing daily habitus and hexis, there should be repeated changes associated with, or visible on, the bodies of the dead.

From this background and moving beyond simple group affiliations, we discuss how various social definitions and identities can come together to structure daily practices. This is similar to the successful approach advocated by Yaeger and Canuto (2000) of communities through relationship and the community transference of knowledge. We feel that through our ideas on practice theory, the chapters in this volume explore our definition of *community*—a process by which a group of people share some kind of real or imagined connectedness, or both. It is through the process of practice and the intersectionality of human lives that groups or individuals recognize each other as community members and establish a larger community.

Approaches to Understanding Community: History and Case Studies

While we have given a brief introduction and outlined our goals and plan for this volume, we have left further explorations of the term *community* and its historical usage to the second chapter of this volume by Kakaliouras. Noting the potential pitfalls, such as ambiguity of meaning in the past and trying to recover the immaterial from material remains, Kakaliouras further illustrates how bioarchaeology has historically attempted to address these issues. Using a sociohistorical approach, she discusses how contemporary social theory may inform bioarchaeology. In addition, Kakaliouras provides two cautionary notes for modern bioarchaeologists, echoing our prior concerns on context and interpretation. First, although people from the same burial location represent a kind of interaction, establishing a community amongst these people needs to be as historically and culturally specific as possible, as the dead do not bury themselves. Second, scholars working with skeletal remains need to be reflexive, ethical, and flexible about the stories they write about past communities, realizing the affect they may have on modern populations and/or descent groups.

While being cautious about these potential problems and following well-reasoned contextual approaches, our volume follows other authors' examples by taking a global perspective, with case studies ranging from the New World to the Old World, using the connections between community and the body as an analytical lens. Each chapter in this volume emphasizes diverse ages (3000 B.C.E. through the modern era) and different geographic areas (North, Central, and South America through to Western and Eastern Europe).

The multiple, global, contextual perspectives in the six case study chapters (Chapters 3–8) address community through innovative approaches, interpretations, and collaborations with archaeologists. These chapters' authors also recognize the intersectionality of human lives and agent-oriented approaches to community as something that can be repetitive, contextually flexible, and temporally changing, with categories that are not mutually exclusive, but emphasize the importance of connectedness in daily life, providing real or imagined bonds, or both.

Our third chapter by Juengst focuses on understanding the ritual lives and connections of people from the prehistoric Titicaca Basin region of Bolivia (800 B.C.E.–C.E. 200). Using multifocal and multidisciplinary methods, Juengst evaluates evidence from mortuary contexts, strontium isotopes for change in residence over an individual's life, and biodistance analyses for familial relatedness. She shows that the practice of burial placement at temple versus non-ritual locations had little to do with clear delineations in the ritual community. Instead, people from many hundreds of kilometers away were welcomed into the region, potentially as pilgrims, traders, or, most likely, the beginnings of extended-kin networks of community, connections that we see continue into later time periods.

Becker, who also works in the South American Andes, shows the same potential kin linkages in Chapter 4. She evaluates both heartland sites in Bolivia and colony sites in southern Peru associated with the Tiwanaku culture (C.E. 500–1100). Looking at evidence of labor and activity, she is able to show that community is practiced at varying spatial levels and that at the smallest and most local level, by neighborhoods of craftspeople. In addition, Becker also evaluates the Tiwanaku social and political situation noting how habitual activity varied regionally, suggesting that people worked within these kinship networks reciprocally, rather than at the behest of elites or a centralized state.

Chapter 5 by Novotny moves from the Andes to Central America, with Maya people from the Belize River Valley. She looks at the built environment for the region from a holistic perspective, emphasizing placement of human remains within specific regions as a "genealogy of place," representing local land ownership as well as interconnectedness with one's ancestors. Interacting with these deceased relatives created a kind of community that was generated and reinforced over time through venerative practices. Novotny notes that by contextualizing change in mortuary patterns over time, she can see both the real data and the imagined communities within her research.

Where the dead are buried as part of the practice of community is the focus in Chapter 6 by Cornelison et al. in their research over the Wisconsin Effigy Mound people of North America. Through the type of monumental mound, along with placement of various artifacts, including skeletal remains, the authors note that local ritual ties were kept through symbolism and performance. In addition, they see demarcations in local versus regional community identities, so that people living around many of these mounds in smaller communities, likely kin-based groups, were still part of the larger regional society.

Moving from how past cultures may have viewed their landscape and into present-day understandings, links between topographical differences, geographical change, and modern community reinforcement are the focus in Deskaj's Chapter 7. She progresses this volume into the Old World, bringing a modern perspective to tumuli (i.e., mound) burials and landscape ownership in the Shkodra Plain and surrounding hills of the Balkans in Albania. Deskaj examines how religious monuments, such as the tumuli dating to the Early Bronze Age through the Roman conquest, mark today's territory and create religioscapes from a multidimensional regional perspective. She argues that mortuary landscapes structure the relationships between people from different communities, both a cause and effect of social divisions that recapitulate and reinforce one another, helping or hindering local community relationships.

Zuckerman in Chapter 8 looks at an historic perspective of community inclusivity versus exclusivity, from four Post-Medieval cemeteries in London, UK. Using both historic accounts and modern perspectives on the societal treatment of the diseased, she notes a style of normative burial for the post-Medieval era in this region. Zuckerman expected that burial exclusion would have been practiced if you were considered a "poxed" person who should have been rejected from life in the community. However, she does not find these differences and postulates that the effects of the disease could have been hidden, and therefore, not noted in burial style. Alternatively, normative burial could have been negotiated through Christian charity, or have been commonplace as many people were ill, or that the need for burial of the dead was more important than excluding the diseased dead in cemetery populations.

In sum, this section has given a brief overview of the background that Kakaliouras covers in Chapter 2, while also introducing each of the six case studies using community as a theme. In the next section, we focus on describing where we see the connections between the case studies, as well as ways that bioarchaeology can use these ideas to move further into social and theoretical perspectives. In addition, we introduce the final chapters in this volume, one from a bioarchaeologist's perspective by Blom (Chapter 9) and one from a theoretical archaeologist's view by Meyer (Chapter 10).

Establishing our Bioarchaeology Community: Intersections, Overviews, and Conclusions

Given problems of identifying past communities in archaeology and that archaeologists have struggled with the idea of community (see for example Agbe-Davies 2010, 2011; Davis 2011; Janusek and Blom 2006; Yaeger and Canuto 2000), we advocate for investigating community through scholarly collaborations. The increasing emphasis on cooperation between subdisciplines is also common across modern archaeology. The intersections within the case studies in this volume emphasize that value.

First, adapting archaeological approaches, bioarchaeologists apply GIS mapping (Chapter 7), changes in the ritual landscape (Chapter 3 and 6), as well as ethnographic and ethnohistoric comparisons (Chapter 4, 5, and 7), to understand each past community. Second, each of these case studies uses known methods in new ways within bioarchaeology, showing how a range of concrete, valuable analyses of skeletal material (both destructive and non-destructive) can be used to identify past communities. Tackling a different suite of methods in each chapter demonstrates how multiple approaches to answering the similar inquiries can strengthen our arguments and broaden the range of questions that bioarchaeology can answer. For instance, Juengst (Chapter 3) and Cornelison et al. (Chapter 6) use biodistance analyses in combination with isotopic analysis and/or associated mortuary goods to consider how biological relationships intersect with lived relationships. Novotny (Chapter 5) and Deskaj (Chapter 7) both consider the mortuary contexts of skeletal material and make comparisons with ethnographic and ethnohistoric literature, while both Becker (Chapter 4) and Zuckerman (Chapter 8) use historic, ethnohistoric, and ethnographic examples to investigate what the lived experience would have been like for people from their burial samples. These chapters represent the multiple ways bioarchaeological scholars can investigate the communities in question, and how bioarchaeology provides methods for working with and within modern groups in many political climates.

Third, in addition to the various methods, the range of how communities are recognized—specific to each study region, culture, and time period in these case studies—is useful for understanding *community* from diverse environments and moments of socioeconomic complexity, with the common assumption that communities are central to the practice of daily life. As the settlement scale (i.e., from small horticultural settlements to modern Albania) differs in each chapter, these studies also provide a cross-cultural perspective and comparative schema on community identification. For example, Becker (Chapter 4) finds that pre-Columbian

state-level groups of people were working together as laboring, neighborhood communities in the South American Andes, while Cornelison et al. (Chapter 6) investigate how past corporate identities could be part of regional inclusiveness, possibly even members of multiple communities at a local level within the North American Wisconsin Effigy Mound culture.

Connections between modernity and the past are equally important, as noted in both Deskaj's (Chapter 7) and Novotny's (Chapter 5) contributions. Deskaj sees historic regional mortuary monuments influence modern landscape and religious interpretation, while Novotny notes that the dead from many generations past can be brought to the present as part of contemporary community. These authors view community as both real and imagined among peoples' interactions with their local countryside. In addition, the ability to hide connections is addressed in Zuckerman's (Chapter 8) contribution concerning individuals with venereal syphilis, where this disease should have separated them from others, and may have in life, but in death, their burial style did not set them apart. Hence, depending on the location in time and space, community can be considered as inclusion as well as separation. Overall, these chapters present a range of diversity when it comes to group formation, structure, and practice, while tied to the theme of real and imagined community connectedness.

Fourth, the final two chapters within the volume, one from inside by bioarchaeologist Blom (Chapter 9) and one from outside by archaeologist Meyer (Chapter 10), represent the general reflexivity we hope to promote within bioarchaeology. From her perspective as an Andean bioarchaeologist, Blom summarizes many important aspects of this volume, such as the importance of defining and using community, using a non-static interpretation of community, and that various lines of evidence complement one another to form a more complete means of addressing ancient community dynamics. She brings together the different types of community identified in each chapter, as well as the significant impacts these may have had on ancient societies. Most notably, Blom draws upon her bioarchaeological expertise to discuss how the methods used in each chapter demonstrate the various strengths and weaknesses of a bioarchaeological approach. Overall, she reinforces the importance of contextualization—while bioarchaeologists have much to offer discussions of community, all scholars investigating community must remember the social, cultural, and historical context, and that definitions of kinship, community, and hierarchy shift continually and are heterogeneous over time and space. Blom advocates for interrogating the "noise" of lived social relationships, thus providing a productive space for imagining and analyzing past communities.

In Chapter 10, Meyer helpfully connects important archaeological theory from a social and landscape archaeologist's perspective to the chapters in this volume. He is quick to call us on our tardiness to the theoretical conversation, while also praising broader impacts and major contributions by bioarchaeologists, notably our contribution to the Native American Graves Protection and Repatriation Act (NAGPRA) and addressing NAGPRA-style ethics of working worldwide with descendant communities. Meyer's chapter situates bioarchaeology within the history of thought and theory in archaeology, and anthropology more broadly. Crucially, Meyer reminds us all that the communication between disciplines within anthropology can only be productive, and that a holistic anthropology is necessary for a deeper understanding of what communities may look like in the past and present. He calls for increased awareness of social issues and definitions that continue to plague anthropology more broadly and urges archaeologists of all stripes to engage with social theory in their analyses. Thus, both Meyer and Blom tie the methods and theory into larger archaeological and anthropological debates to promote the novel research opportunities that this framework presents. They also represent a bridge between theoretical and methodological applications of fundamental ethnographic ideas, like community, outside of their typical placement in cultural anthropology, promoting interdisciplinary thinking and research.

In conclusion, as community is at the core of anthropological research and social theory, the circumstances under which people live together has always been a driving force in the study of the human experience. This volume adds new dimensions to this conversation by discussing how these trends extend into the past, and by investigating the ways community can leave its fingerprint on the human skeleton. As such, the chapters in this volume provide unique methods combined with theory to identify communities in nuanced, illustrative, and multidisciplinary ways. Our aims are to identify community and the diverse forms communities take, expand bioarchaeological methods to see community, and to elucidate meaningful relationships that structured past peoples' lives and we feel this volume accomplishes that. Our hope is that this the scholarship from the "Bioarchaeology of Community" volume will influence bioarchaeological and archaeological ideas about the past, present, and future, as well as expand social and theoretical perspectives through the study of human skeletal remains and burial populations.

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Theory for a Bioarchaeology of Community: Potentials, Practices, and Pitfalls

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ABSTRACT

This chapter is an exploration of theory and practice that could be useful for the articulation of a "bioarchaeology of community." "Community" is a more complex and vexing concept than meets the eye, and its meaning has changed significantly over the past few centuries. This chapter reviews the varied meanings of community in the recent past, evaluates archaeological understandings of community, and explores current uses of social theory in bioarchaeology. Lastly, I lay out a potential theoretical and ethical roadmap for bioarchaeologists who wish to investigate past communities. [Bioarchaeology, Community, Theory, Ethics]

Bioarchaeology is in an interesting and creative, if perhaps tenuous, theoretical moment, as evidenced by this volume and recent examples in the literature (Agarwal and Glencross 2011; Baadsgaard et al. 2011; Knudson and Stojanowski 2008; Tilley 2015). More bioarchaeologists are employing archaeological and sociocultural theory in their work than ever before. These bioarchaeologists are also reflexively crafting their research around sociocultural issues, and re-evaluating received disciplinary premises about how they should engage with both the human remains of the past and their resonance in the present (Boutin 2011; Deskaj this volume; Geller 2006; Martin et al. 2013). A bioarchaeology of community can be a robust addition to this trend in the field, if its practitioners are prepared to stretch their scientific training into new spheres, ones where questions of the social—relationships between individuals, their kin and ancestors, the structures of power and control that limited people, and the dynamic cultural features that engendered change—are allowed to set the tone for their research.

Bioarchaeology, however, exhibits a longer record of hewing to an objective and materialist scientific tradition, where empirical analyses and interpretations have come from the bottom, or the bones, up (see Buikstra and Beck 2006 and Larsen 1997). In other words, bioarchaeologists have conventionally read the features that may be discerned from human skeletal remains from archaeological contexts, then suggested interpretations based on foundational research linking the morphological and chemical properties of bone to lived experiences, from the dietary, to the physiologically stressed, and even to questions of identity in the past. Bioarchaeology, though, has never been solely a descriptive science; rather, the last four decades of its existence have clearly shown that the practice of bioarchaeology is rooted in both archaeological and anthropological approaches to the study of human remains. Despite this, there has traditionally been an anti- or atheoretical ethos in bioarchaeology—when it has come to *social* theory. Certainly, there is nothing inherently wrong with a bioarchaeology that is both hypothesis-driven and geared toward "anthropological problem solving" (Buikstra 2006a:xviii). If bioarchaeologists want to explore issues around community, though, I believe engagement with social theory is required, something that is a relatively newer practice in the field.

Below, too, I will assert, as others have done before me, that bioarchaeology is and has been a deeply processual endeavor (Buikstra 2006a:xviii). Yet, when bioarchaeology has considered cultural issues it has not, at least until recently, done so in a way driven by the use and consideration of

sociocultural theory. The biocultural approach (see bioarchaeological contributions to Goodman and Leatherman 1998 and also Martin et al. 2013, among others) is a lively and strong exception to this trend, but here I would like to reach even further toward the sociocultural, and suggest that more than a "biocultural" approach, what some bioarchaeologists seem to be reaching for is a *sociohistorical* bedrock for their scientific and interpretive work, one that of course would not exist without the influence of those who do bioculturally oriented and archaeologically contextualized work[1]. I define sociohistorical in this context as a deeper attention to not only how contemporary social theory may inform bioarchaeology, but to how bioarchaeologists can and should be as historically and culturally specific as possible in their interpretations, even in the absence of written histories. Bioarchaeologists have all too often employed a Tylorian comparative method to ground their interpretations in something that is already known, such as a cultural practice that leaves marks on bone, or a set of behaviors that are expressed skeletally in similar ways, even if those instances are far from the places and times they study. Buikstra (2006a) and Goldstein (2006:377) have long called for bioarchaeology to be a deeply contextual endeavor, and here I wish to stretch a smidgen past that, and recommend that bioarchaeologists historically contextualize their work as well, even if that means being left in a place of not knowing the culturally specific significance of a given feature, adaptation, or cultural modification. I will discuss the potential for "sociohistorical" bioarchaeology below, but it is this attention to historical and cultural specificity that will, in my estimation, most effectively ground a bioarchaeology of community, or any kind of bioarchaeology that wishes to concern itself primarily with the recovery and reconstruction of sociocultural relationships in the past. If these approaches are to take hold and influence research in and outside of bioarchaeology, scholars should be open to further theoretical and cultural exploration.

This chapter, then, is a theoretical consideration of the "bioarchaeology of community" in three parts—or, in archaeological parlance, phases, or, in "sociocultural-ese"— movements. First, I will critically consider the concept of "community," specifically how it has been employed in anthropology as a whole, as well as in archaeology. I will evaluate the possibilities of a bioarchaeology of community given Canuto and Yaeger's (2000) earlier call for an archaeology of community. Second, I will enumerate the particular history of how bioarchaeology has gotten to a place where we are considering multiple socially and culturally oriented "bioarchaeologies," borrowing from Buikstra, Baadsgaard, and Boutin (2011:9), and framing at least some of our research in the context of social theories little used in the field

before the last decade or so (e.g., Knudson and Stojanowski 2008). Last, I will end by discussing both disciplinary and ethical potentials and pitfalls, as at least some bioarchaeologists, many represented in this volume, attempt to move forward in establishing a "bioarchaeology of community." Each of these topics clearly deserves a much longer exposition, and I very much hope readers will see them as initial sketches for understanding where we have come from theoretically, and to where we might proceed. Part of this chapter will still tell a rather cautionary tale, but in bioarchaeology's current disciplinary and theoretical context, there is a good deal of interesting work that can be done—if it is done carefully—toward forging a "Bioarchaeology of Community."

The Many Meanings of Community

Why a "bioarchaeology of community" and why now? Before examining the ways community has gained currency within sociocultural anthropology and archaeology, I want to present some cultural and etymological information courtesy of Raymond Williams' *Keywords* (1985), and stress these passages in particular:

> From C17 [the 17th century] there are signs of the distinction which became especially important from C19, in which **community** was felt to be more immediate than SOCIETY (q.v.), although it must be remembered that *society* itself had this more immediate sense until C18, and *civil society* (see CIVILIZATION) was, like *society* and *community* in these uses, originally an attempt to distinguish the body of direct relationships from the organized establishment of *realm* or state. From C19 the sense of immediacy or locality was strongly developed in the context of larger and more complex industrial societies [Williams 1985:75].

and,

> The complexity of **community** thus relates to the difficult interaction between the tendencies originally distinguished in the historical development: on the one hand the sense of direct common concern; on the other hand the materialization of various forms of common organization, which may or may not adequately express this. **Community** can be the warmly persuasive word to describe an existing set of relationships, or the warmly persuasive word to describe an alternative set of relationships. What is most important, perhaps, is that unlike all other terms of social organization (*state, nation, society,* etc.) it seems never to be used unfavourably [sic], and never to be given any positive opposing or distinguishing term [Williams 1985:76].

"Community," then, as "warmly persuasive" has had a contrary relationship to conceptualizations of larger forms of

social organization, especially in the industrialized West. In particular, early social theorists bemoaned the loss of a traditional sort of community in the tumult of industrial capitalism (see primarily Tönnies 1887). Throughout the 20th century, *community*, at least in the West, indexed a kind of social and cultural intimacy between people that was lacking at larger, institutional levels of society[2]. Yet, political theorist Nikolas Rose (1999) asserts that modern ideas of community are actually tied to capitalist forms of governance, where relations of affect are produced and maintained as a type of self-governance, all still ultimately controlled by the nation-state (186,190). Gender theorist Miranda Joseph takes this further, arguing that in order to even be considered a community, a group of people must conform to bureaucratically intelligible traits that, in effect, "turns the raw material of community into subjects of the nation-state and capital" (Joseph 2002:28). She goes on to assert two important points: that when a group exists or moves in circles outside of or unrecognized as positive to state interests, that it is constructed as a "'gang' or an 'underground network'" (Joseph 2002:28) and that the discursive, and the actual use of community as a concept in the West, has flattened distinctions of power, making "one group equivalent to another . . . (white ethnic groups versus African Americans)" (Joseph 2002:28).

From the vantage point of contemporary sociocultural anthropology, Gerald Creed (2006) takes a similar tack, with this pointed statement about the increasing use of "community" in anthropology during the 1980s:

> The dangerous potential of the culture concept was exposed in the emergence of culturally defined racisms . . . and ideas about the clash of civilizations . . . Community seemed a safe generic alternative . . . it is an alternative, but not always or altogether a safe one; many uses reproduce the problematic qualities and dangers of culture [7].

The proliferation of the word community to denote ties of identification between people, in particular marginalized groups, such as the LGBTQ community, or the African-American community—or, closer to archaeology and bioarchaeology, descendant communities—leaves us with a thin layer of community that actually quite uneasily covers more culturally charged gendered, raced, and even biologized identities (see also Joseph 2002). In other words, in this usage, community becomes equivalent to culture, with non-Western or non-majority groups having or possessing community or culture (or both) and dominant groups occupying the unmarked category, in no need of the false security of a "community," since they may reap the benefits of institutional power without question.

Additionally, "community," according to Creed, contains at least three sometimes co-occurring parts, which, though, may or may not be mutually inclusive in all social or cultural situations:

1. a group of people
2. a most often positive comment on the quality of human relationships
3. a given circumscribed place or location [Creed 2006:4]

Community, therefore, is neither a simple nor an unloaded term, especially in recent critical political theory and in the qualitative social sciences. The adoption of the concept of "the community" for a program of research focusing on people, from any time or place, should be done with care and with a clear set of definitions. What might community have meant in the place and time period under investigation? Is there historical or material documentation to substantiate the existence of a community or communities? What kind of community is under investigation? How can the social relationships displayed or evident in the material record be construed to make up the activities of a community, and not some other form of social organization, such as kinship or larger sociocultural dynamics? Does it make sense to tie a given community to a certain place, or are the cultural links spread further and wider?

Likewise, archaeologists have tackled the concept of community and the identification of communities in fairly concrete—but also contradictory—ways, with Canuto and Yaeger (2000) promoting an interactionist model of community based on dynamic human relationships (5), and MacSweeney (2011), an archaeologist of Anatolia, recently advocating for a geographically specific understanding of ties to a particular location or region. Since the editors of this volume have subscribed to Canuto and Yaeger's (2000) notion of community within archaeology, their vision of its theoretical foundations and practice deserve some further explication. First, Canuto and Yaeger review previous social scientific models for the study of community—"structural-functionalist, historical-developmental, ideational, and interactional" (2). Structural-functionalist approaches, as the name implies, consider how communities function within a culture or society, and therefore, like functionalism within anthropology, conceive of communities as inherent and unchanging. The historical-developmental model, named as such by Canuto and Yaeger, is equivalent to world systems theory and political economy, where larger forces are responsible for the relations observed both inside and outside a given community. They find this approach wanting in that it ignores local people's understandings of themselves and the creative ways in which people translate outside influences in their own ways and for their own uses.

They also reject a purely ideational model, the obverse of the historical-developmental approach, where people's own ideas inform the social scientific research on their identities. In this case, they find the exclusion of "external structures" (Canuto and Yaeger 2000:3) incompatible with gaining a full understanding of community dynamics. Instead, they adopt an interactionalist perspective (Canuto and Yaeger 2000:6), where multiple levels of culture/society and identity formation at the individual and local level can be accommodated within the rubric of practice theory. They recommend "pairing the concepts of shared space and practice . . . [to] avoid the reification and essentialization of 'community'" (Canuto and Yaeger 2000:6). They argue that community is "an inherently social entity, diverse in its manifestations and temporally ephemeral" (Canuto and Yaeger 2000:6).

This sophisticated understanding of community leads to an equally nuanced discussion of methodologies for an archaeology of community. Because their idea of a community is versatile and applicable to multiple temporal contexts, they lay out a broad set of methodological concerns, ones also useful to bioarchaeology. First, they warn that a community need not map onto the bounded space of the archaeological site: "the community is not a spatial cluster of material remains to be observed, but rather a social process to be inferred" (Canuto and Yaeger 2000:9). Similarly, bioarchaeologists should not assume a given burial population naturally forms the basis for community that may be examined as such. Second, Canuto and Yaeger advise that archaeologists should take "an explicitly middle level approach" (Canuto and Yaeger 2000:9) in between the level of the individual and that of the larger social and spatial organization, such as the region. Third, Canuto and Yaeger are committed to establishing patterns of interaction as the basis for defining an archaeology of community. And last, they remind their readers that "the archaeological record actually represents a palimpsest of the material outcomes of interactions whose contemporaneity cannot be assumed" (Canuto and Yaeger 2000:11). All three of the above methodological concerns make it incumbent upon bioarchaeologists, then, to understand the archaeological and historical literature and context(s) in the region(s) in which they work, in order to accurately define community at the site, intra-site, or inter-site level. Not only that, but as the "materials" with which bioarchaeologists work are human remains, establishing interaction will require the careful use of both archaeological and historic documentation, if available. Being interred with other people in the same burial location is certainly a kind of interaction, but it may or may not represent an expression of "community" that is separate from kin (or ancestral) relationships, or macro-level relationships such as those at the regional or even state level.

Obviously "community" is, and has been, a conceptual and intellectual moving target in the social sciences. So what are bioarchaeologists to make of these complicated issues around community? Clearly, we should not simply project a late-19th or even a 21st century idea of community onto the past. That is not to say, however, that building a bioarchaeology of community should be forever mired in thought experiments about what community means. The model provided by Canuto and Yaeger (2000) can be especially useful, especially when bioarchaeologists solidly ground themselves in the archaeological context. Bioarchaeologists, however, have a few discipline-specific challenges to face with regard to formulating workable models of community.

History Lesson 1: Populations are Populations, Not People

To enumerate one of those challenges, a sketch of the history of physical anthropology's shift to the population framework is required. Sherwood Washburn's call for a "New Physical Anthropology" (1951) spurred researchers in many of the varied physical anthropological subdisciplines to turn away from individual-oriented case studies and racial-typological work toward population-oriented research on evolution, adaptation, and process. Bioarchaeologists were also later influenced by the rise of processualism in archaeology—quickly defined here as the concern with past processes, systems, or large cultural changes over time, not simply particular or isolated events (Binford 1962; Willey and Phillips 1958; Trigger 1989). The conceptual problem with focusing on populations is, however, that like "pots are pots, not people" so populations are populations, and not people. Even though individuals with their kin are obviously the constituent parts of both populations and communities, populations and communities are not immediately equivalent to each other. Certainly, a researcher could employ a geographically oriented definition (à la MacSweeney 2011) of community to try to avoid the knotty problem of applying patterns of affect to skeletal groups, whatever their size. It strikes me that such a definition, though, may not work for all places, regions, and time periods. Moreover, a simple replacement of the term "population" with "community" is theoretically lazy, at best. Although it may be impossible, in many cases, to emically define and interpret community interactions with biology, or material culture, or historical documentation, grafting population onto community, in essence, is simply a surrender to an unnecessarily etic perspective on a past people.

Second, biology and morphology do not easily map onto community either. Establishing the cultural, ethnic, or class

identities of the individuals that make up a skeletal sample is not demonstrating the existence of a community, or more precisely, the character of the relationships between said individuals that may suggest the presence of a community. It is not principally that relationships within a rubric of community are primarily (or even exclusively) cultural and ephemeral as discussed above—although that is part of the challenge. However, in the pursuit of community, bioarchaeologists may have to pivot even closer to archaeology, history, and ethnohistory.

These moves may be easy, or nigh impossible, depending on the richness of the historical and archaeological record of a particular place, or during a specific time period. Furthermore, when we use archaeological and/or historical sources, we could be much more aware of continuing and contested dialogues in these disciplines about given times and peoples, and we should be cognizant of the dangers of over generalization across long swaths of time. This is the crux of what I called above a sociohistorical approach to bioarchaeology. Beyond contextual or biocultural approaches, a sociohistorical bioarchaeology would rigorously employ social theory and responsibly rely on the archaeological, historical, and ethnohistorical literature, all for the aim to illuminate past sociocultural relationships through the study of human skeletal remains. This would not necessarily be a post-processual bioarchaeology. The ability to observe, analyze, and interpret skeletal morphology, pathology, cultural modifications, and activity patterns represents highly technical skills to learn, requiring years of training, and dependent on decades of received (and sometimes standardized) methodology (i.e., Buikstra and Ubelaker 1994). Bioarchaeologists need not leave their science behind. Bioarchaeologists might, though, more effectively reach out to other disciplines in the social sciences and humanities if they show a more nuanced understanding of the limits of strictly objective and materialist approaches to the past[3]. The bioarchaeology of community could be a useful vehicle for experimentation in this direction.

History Lesson 2: Theory in Bioarchaeology

The emergence of bioarchaeology in the mid– to late–1970s (Buikstra 2006a:xviii)—and its fluorescence into an anthropological subdiscipline with diverse presences at professional meetings and in anthropological, archaeological, and scientific journals—was deeply influenced by two parallel approaches in anthropology: Washburn's (1951) aforementioned "New Physical Anthropology" and the "New Archaeology"—or processualism—in archaeological

practice (Buikstra et al. 2011:8-9). This history is well known and already more richly developed in other venues, as cited above. To this moment, mainstream bioarchaeology remains a solidly processual field, focused on what information can be reconstructed from and what questions we can ask of the surviving material remains of humans in numerous archaeological and temporal contexts. In short, we strive to know more about the past through multifaceted empirical examinations and analyses of skeletal bodies.

I would like to, though, construct a parallel timeline between archaeology and bioarchaeology for the purpose of situating post-processual archaeology alongside the increased attention to sociocultural theory in bioarchaeology we are experiencing, if not promulgating. For approximately two decades, the "New Archaeology" flourished; this period overlaps with the birth of bioarchaeology as we know it. In the 1980s, post-processual or interpretive (Johnson 2010:105) archaeology burst onto the scene (e.g., Hodder 1982; Shanks and Tilley 1987). The interpretive archaeologists of the last thirty years come in many different flavors and orientations, but what has united them is an explicit rejection of scientism, or the exclusive reliance on scientific objectivity in archaeology, and an attention to the ways in which archaeological interpretations are socially and culturally situated products of the present.

For bioarchaeology, though, no such fundamentally divisive, and here clearly over-simplified, rift currently exists. If we were to track the different theoretical and methodological underpinnings in United States' bioarchaeology since the mid-1970s, we might come up with a theoretical trajectory that opposes large population-based studies, and research that enumerates past behaviors (i.e., Larsen 1997; and see Hegmon 2003:215-216 for a discussion of behavioral archaeology) with a "contextualized" bioarchaeology that draws from historical and social theoretical currents in anthropology as a whole, as Buikstra and her coworkers have incisively explained it (Buikstra et al. 2011:9-10). I would add to this contextual "side" the biocultural approach as aforementioned. Yet, bioarchaeology as a general *practice* has not eschewed reliance on objective scientific or even hypothesis-driven empirical approaches; rather, it seems that what we are seeing now in the field is a continuing emergence of a "theoretically-aware bioarchaeology." That is, bioarchaeologists are increasingly using sociocultural theory from areas such as sex and gender, the body (Geller 2004, 2006), ethnicity and ethnogenesis (Stojanowsi 2010), narrative approaches (e.g., Boutin 2008, 2011), materiality (Sofaer 2006), and other frameworks, at the same time they are exploring newer scientific models and even more technical approaches toward empirical understandings of variability between individuals or groups (as evidenced

by some of the papers in this volume, including Deskaj and Novotny).

Theoretically aware bioarchaeology is, then, roughly equivalent to Hegmon's delineation of a "processual-plus" archaeology, where she asserts that "many concepts from the postprocessual archaeology of the 1980's . . . including interests in meaning, agency, and gender—have been incorporated into the processual (plus) mainstream" (2003:216-217). Like processual-plus archaeology, a theoretically aware bioarchaeology still uses the same meticulous analytical methods, though incorporating a greater emphasis on social theoretical trends. Additionally, in archaeology processual-plus is a pragmatic development from inside the discipline. Bioarchaeology, however, has not experienced its own post-processual moment. Therefore, a bioarchaeological turn to social theory probably owes as much to developments in processual-plus archaeology as it does to the social theoretical interests of its practitioners. It has been a few disciplinary generations since post-processual archaeology became popular, and students in bioarchaeology are also heavily (and hopefully) influenced by the archaeologists with whom they have the opportunity to work.

There is really no "post-processual bioarchaeology" as such then, at least not yet. The subject positioning practices evident in the post-processual tradition, and interpretive archaeological critiques of science *in toto* (see Johnson 2010:105–111), are clearly not paths bioarchaeology has chosen to follow (also see Meyer in this volume). That does not mean, however, that bioarchaeology is not potentially positioned to sprout a post-processual wing, as it were. I am sure at least a few disciplinary insiders and outsiders would find such a development intriguing. As it is, though, bioarchaeology remains firmly placed on the scientific side of anthropology and archaeology proper. This also does not mean, however, that bioarchaeology is necessarily "behind" archaeology or the more sociocultural fields. Rather, akin to culture history in archaeology, bioarchaeology stands on the much longer history of paleopathology, osteology, and physical anthropology as a whole. In fact, if we take a social theoretically informed or aware bioarchaeology as a contemporary benchmark, it has only been a few decades since the 1990s, the beginning of bioarchaeology's articulation as a way to interpret behavior, which I will cautiously dub the processual highpoint of the field.

Nevertheless, if we turn to sociocultural theory more and more, we are calling for our objects or subjects of study—call them remains, skeletal individuals, or even ancestors (Kakaliouras 2014)—to become increasingly *social*. That is at least how I interpret a call for a "bioarchaeology of community," or our interesting and increasing emphasis on theories of identity, personhood, ethnicity, gender, as well as other sociocultural categories, in the field[4]. When we use social theory to craft interpretations about past social and cultural life, we are often going beyond the ways the bodies we examine are "marked," physically, biologically, and even chemically. As an initial foray into "thinking with" community in bioarchaeology, perhaps earlier insights in medical anthropology, such as distinctions that Lock and Scheper-Hughes (1990) made between the individual body, the social body, and the body politic, would be useful in delineating the scale of analysis we want to work within. In this framework, the individual body, and the distinction between the self and the individual, varies widely in different cultural contexts. Similarly, the social body is a body in conversation with others, and a body influenced by sociocultural norms, whether said body is healthy, strong, sick, or weak. Finally, the "body politic," as a set of relations between individual and social bodies, can be marked by regulation, and even law. A contemporary example of the actions of the body politic are the "bathroom bills" that attempt to protect women from the different bodies of transgender and gender non-conforming people (Edelman 2016). Within and around these "bodies," "community" might lie precariously in-between the social and the political (see also Lock 1993 and Martin et al. 2013:71-72). A bioarchaeology of community might, with careful use of historical and archaeological evidence, be able to detail these sorts of bodily constructions for people in the past.

Another fruitful area for bioarchaeologists to continue to pursue theoretically, would be work around the issue of embodiment (See especially Knudson and Stojanowski 2008:412–414). Here I would call for embodiment, and the perspective of the body as a social construction, writ large and small, where everything from general morphology to bone chemistry could be seen as just different levels of an individual's (or community's) process of biological and perhaps cultural formation during life. It is clear, though, that when we ask skeletal individuals and assemblages to enact identities and to culturally relate to each other, it behooves us to carefully consider the social site(s) of our analyses.

An Ethic for the Bioarchaeology of Community

Last, the complex valences around the concept of community also ask us to consider potential ethical responsibilities bioarchaeologists have in representing past human groups as communities. Working with descendant communities and contemporary people with claims to ancestral skeletal remains and the archaeological past has thankfully become a more regular part of archaeology and bioarchaeology

in the past few decades. Rationales, models, and examples for how ethically to pursue this kind of research are increasingly showing up in the literature as well (e.g., Colwell-Chanthaphonh 2007; Larsen and Walker 2005; Lippert 2008; also see more examples in Buikstra 2006b:407–412 and Martin et al. 2013:45–49). Contributions to this volume also point the way to how recent and contemporary peoples' understandings of dying, ritual, and place can articulate with those of the past (Deskaj, Novotny, and Zuckerman, this volume).

Rather than expound on the benefits of working with descendant communities (especially those whose pasts had been appropriated by archaeology and physical anthropology), or deconstruct the meaning of "community" in descendant communities (which would also be a useful exercise), I will focus here, briefly, on a single ethical aspect of community construction in the past with reference to contemporary people. This ethical concern is simply that bioarchaeologists who wish to focus on communities should be especially careful they do not reify a conception of community that serves to deny descendants their claims to their past and their ancestors. There are two issues that come into play here. First, archaeological and bioarchaeological nomenclature is often highly technical, alienating, and operates in scholarly circles that can have little resonance for laypeople (Dongoske 1997; Kakaliouras 2010). That is, archaeological phases, and names for sites and regional occupations are rarely consonant with descendant communities' understandings of their own pasts (e.g., Kennewick Man vs. The Ancient One). Secondly, and especially with reference to indigenous and marginalized peoples, making a claim as a member or representative of a descendant community is a deeply contradictory process. As religious scholar Greg Johnson (2005) articulates it for the context of repatriation under NAGPRA:

> [R]epatriation politics, which are defined at least in part according to the predilections of majority publics and polities, demand that indigenous orators articulate representations of themselves that are simultaneously pre-modern (pre-colonial identity) and high-modern (identity announced according to the rule of law) [484].

Similarly, 19th and early 20th century anthropology successfully appropriated the pasts of indigenous others for its own purposes (For a discussion of this history, see Reardon and Tallbear 2012), and the residue of that conceit led subsequent generations of archaeologists and biological anthropologists to discount contemporary indigenous people as not authentic enough—the "real" Indians were those we were excavating (McGuire 1997). This is cultural baggage within bioarchaeology that should not be blithely discarded.

Nonetheless, many descendant communities are caught in this very bind of not exhibiting the level of cultural and biological authenticity that anthropologists expect, yet being responsible for proving that authenticity using terms and frameworks developed by anthropologists. Given this disciplinary history and its politics in the present, it would be easier to construct a picture of past communities that seemed somehow more essential, more real, or more basic—more like the now commonsense conceptions of community as a warmly intimate subset of a culture or society discussed above. Bioarchaeologists who wish to investigate community, however, can disrupt the narrative of past community as simply a step up from kin and down from culture, and as a smaller expression of a more pure but illusory form of culture that is potentially inaccessible to descendant claims. The methodological key is, in my estimation, to approach the study of community "bioarchaeologically" with as much care and detail with the archaeological and historical context as bioarchaeologists are able to accomplish with human remains. A potential theoretical key would be to come to the study of community with the realization that there is no fundamentally common or unimpeachable model for what makes a human community for all places and times.

Conclusion

A bioarchaeology of community is certainly possible, even though all this is a very tall order, and I have certainly presented many more complications than solutions in this chapter. There is, too, clearly much more to say about community, and in particular around the complex, dynamic, and sometimes fragmented relationships between ancestral and descendant communities[5]. Even with all these challenges, though, there is a certain excitement around the formation of a new strand in the increasingly varied theoretical landscape of bioarchaeology. The field is as diverse and robust as it ever has been, so simply put, now is as good a time as any to stretch our theoretical legs. I look forward to the historically and culturally informed work this community of bioarchaeologists will propose and produce.

Acknowledgments

bioarchaeology of community. Lastly, I would like to thank all the bioarchaeologists who have been striving to make social and sociocultural theory a part of the discipline; you know who you are. If I have not cited this work as extensively and appropriately as I should have, I regret that error and welcome both feedback and critique.

Notes

1. Biocultural researchers in particular may, understandably, take strong exception to this statement, and to the thin line I am attempting to draw between biocultural and sociohistorical research in bioarchaeology. Biocultural work, though, was and is deeply grounded in political economy, an approach I deeply respect. When dealing with scales of analysis between the individual and the cultural though (such as "community"), and the exploration of social and cultural relationships therein (still of course inflected with the power dynamics of their places and times), I think a little playing with nomenclature may be in order, primarily to explore how deep this social theoretical rabbit hole might go. The most laudable, if somewhat uneven, recent contribution to what I would call a sociohistorical approach to bioarchaeology is *Breathing New Life into the Evidence of Death: Contemporary Approaches to Bioarchaeology* (Baadsgaard, Boutin, and Buikstra 2011).

2. See, however, Anderson (2006), who made the distinction between real and "imagined" communities—which are formed at the level of the nation state—and who inspired a generation of critical inquiry about both.

3. The most interesting work along these lines has been done by Alexis Boutin (Sonoma State University), who crafts fictional narratives from her osteological analyses of burials from the Near East (Boutin 2011). While other bioarchaeologists may not choose to take her particular direction, the level of familiarity with the archaeological and historical literature evident in her work is commendable.

4. See Martin and coworkers (2013 66–81) for a rich and nearly comprehensive review of the uses of social theory in bioarchaeology, from evolutionary to sociocultural approaches. See Knudson and Stojanowski (2008, 2009) for a nuanced treatment of identity in bioarchaeology. And, see Tilley (2015) for an articulation of an emerging emphasis on the "bioarchaeology of care."

5. We should remind ourselves that the term *descendant community* was probably not invented by descendant communities (see Colwell-Chanthaphonh and Ferguson 2008), though it is a useful catchall. Similarly, we should not assume that members of descendant communities conceive of the composition and function of community in the same

way that archaeological and bioarchaeological researchers do. Recently, in a thoughtful contribution to the repatriation literature, Liv Nilsson Stutz argued that "in a world that is increasingly dominated by hybrid cultures, diaspora cultures and transnational migration, the past-present paradigm for culture heritage politics may come to constitute a real problem" (2013:187). Here she is referring to the employment of "strategic essentialism" (186) in claiming continuity between the past and present by indigenous communities in their fight for repatriation; this is also the model that is required by the definition of cultural affiliation under NAGPRA. However, because some indigenous people value their freedom to practice and live as closely as they can to their traditional culture(s), and argue for their similarity to their ancestors (even if it is an essentialist argument), we cannot then assume that they also hold static notions of their communities, and the changes they have and will experience (see also Holtorf 2009 for a similar critical read of indigenous archaeology).

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Inclusive Communities In The Titicaca Basin During The Early Horizon

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ABSTRACT

"Community" is an important analytical lens for investigating the emergence of social hierarchy and shared religious tradition. Burials from the Titicaca Basin of Peru and Bolivia dating to the Early Horizon (800 B.C.E.–C.E. 200) provide an opportunity to investigate how socio-economic changes may have impacted and been structured by existing community structures. Specifically, I use biodistance and strontium isotope analyses to identify kinship and migrant relationships for individuals buried at temple and non-temple sites on the Copacabana Peninsula. I find that despite an emerging ritual tradition and change in subsistence strategy, individuals were likely not creating social hierarchies, but instead, structuring communities around ancestry and extended kin networks. [Community, Andes, Strontium, Biodistance, Dinship]

Archaeologists have become increasingly interested in community over the past two decades. However, identifying past communities still poses a number of methodological and theoretical challenges. Communities exhibit elusive social patterns, making them hard to define and recognize in the archaeological record. Thus, archaeologists have historically used clustered groups of houses, settlements, or burials to describe community, or relied on the imagined relationships as shown by shared iconography, ceramic style, or temples (although innovative work on this being done by scholars such as Agbe-Davies (2010); Canuto and Yaeger (2000); Davis (2011); and others). However, archaeology is often unable to explore relationships that are not materially manifest; bioarchaeology can do so by studying bodies directly. Bioarchaeology explores who people were and who they associated with through their skeletons, as social transformations and interactions are inscribed on people's bodies through what they ate, where and how they lived, and how they were related to each other (Buikstra 1977; Halcrow and Tayles 2008; Knudson and Stojanowski 2009; Martin et al. 2012; Sofaer 2006).

The communities in this research come from the Titicaca Basin of Bolivia in the highlands of the South Central Andes (Figure 1.1) date to the Early Horizon (800–50 B.C.E.) and Early Intermediate period (50 B.C.E.–C.E. 200) (Figure 1.2). During the Early Horizon and Early Intermediate period, there were several large-scale socio-economic changes in the lake basin such as the establishment of the first sedentary settlements, plant and animal domestication, and long-distance trade. At the same time, the first regional ritual tradition, Yaya-Mama, emerged. As this shared ritual tradition emerged in conjunction with the other broad-scale social changes, my research focuses on who actually participated in this ritual, and how they identified with others living in the Titicaca Lake Basin. The social and economic changes of the period were regional and large-scale, altering the ways that people obtained food and resources, occupied the landscape, and conceptualized the cosmos. Transformations of routine practices would have likely impacted people's shared social identities, reflected through community and social hierarchy. I analyze seven burial populations from the Copacabana Peninsula using two methodological approaches—biodistance analysis, a proxy for lived genetic
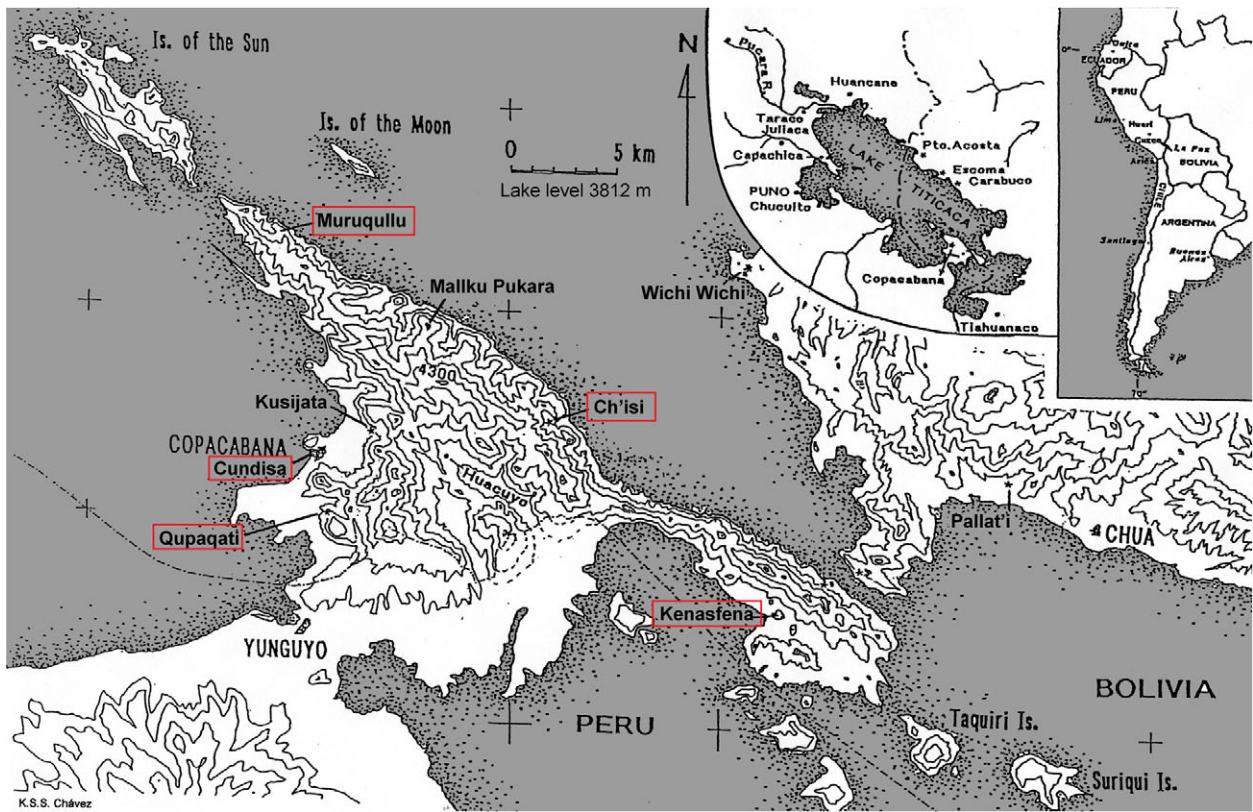
Figure 1.1. The Titicaca basin in the South Central Highlands of modern Peru and Bolivia with archaeological sites and modern cities marked (from Chávez 2012).
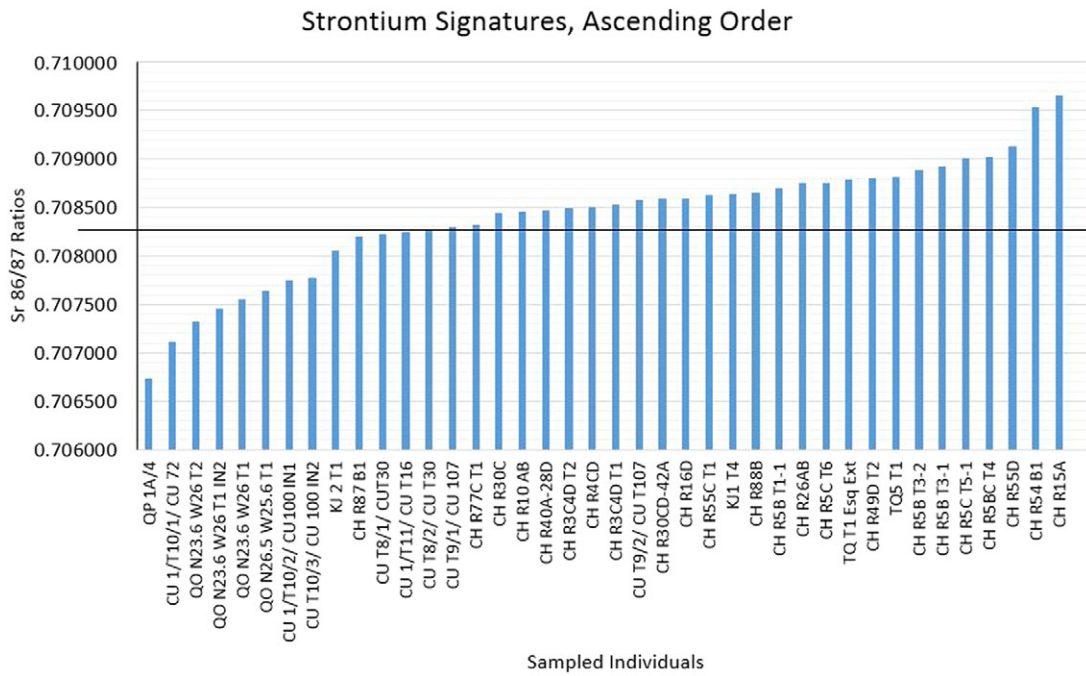

Figure 1.2. Strontium isotope values for 40 individuals from the Copacabana Peninsula.

relationships and ancestry; and strontium isotope analysis, a marker of physical location on the landscape—in order to investigate how Titicaca Basin communities were structured during this time.

Background on the Early Horizon in the Titicaca Basin

Prior archaeological research has shown that the Early Horizon and Early Intermediate period in the Titicaca Basin were times of dramatic social and economic transformation. While people continued to exploit wild terrestrial and lacustrine resources, use of domesticated plants increased, and small-scale herding of camelids was practiced in the surrounding highlands (Bruno and Whitehead 2003; Capriles et al. 2014; Chávez and Thompson 2006; Hastorf 1999; Moore et al. 1999; Moore et al. 2007; Whitehead 1999). An increase in the creation and distribution of basalt hoes, alongside extensive terraces and raised fields, documented the increasing reliance on cultivated plants (Chávez 2012; Erickson 1988, 2000). People lived in semi- to fully sedentary settlements (Bandy 2004) and invested heavily in the landscape by building the first public architecture (K. Chávez 1988 Chávez 2012). Long-distance trade routes brought exotic goods, such as obsidian, into the region from as far as 200 kilometers away, following complicated networks that moved large quantities of high-quality material (Burger et al. 2000; Stanish et al. 2002).

It was in this changing social milieu that the Yaya-Mama Religious Tradition emerged. It is marked in the archaeological record by the appearance of sunken temple courts, stone sculptures, supernatural iconography, and ritual paraphernalia (e.g., ceramic trumpets) (K. Chávez 1988; Chávez 2004; Janusek 2004:128-129). While temples shared many attributes, other aspects, such as ceramic style and exact temple layout, varied significantly throughout the region. Because of the variation in temples across the lake basin, scholars have characterized this ritual tradition in various, overlapping ways: the emergence of social stratification (Levine 2012; Plourde and Stanish 2006; Stanish 1999, 2003; Stanish and Levine 2011); a unifying regional identity with local variation (K. Chávez 1988; Chávez 2004; Janusek 2004:128); a mediator of social tensions (Bandy 2004); and a cult of ancestor worship (Hastorf 2003; Logan et al. 2012; Roddick and Hastorf 2010).

During this time, it is likely that socio-economic changes would have profoundly altered daily life for Titicaca Basin residents. Changes to routine practices likely impacted people's social relationships with each other, reflected through community structures and social hierarchy.

Their communities could have shifted in scale or inclusivity in order to accommodate these changes because of new social roles and power relationships. Identifying how communities were structured during the Early Horizon will provide a more complete understanding of the socio-economic changes that occurred and how they impacted the people living in the lake basin.

Materials

I examined human skeletal remains from the Copacabana Peninsula in order to address questions of community and social relationships during the Early Horizon. The burial sample represents a minimum of 182 individuals from seven previously excavated Early Horizon sites: Ch'isi, Muruqullu, Tawa Qeñani, Qopakati, Kenasfena, Cundisa, and Q'hota Pata[1]. Five of these sites are classified as Yaya-Mama temples (Ch'isi, Muruqullu, Tawa Qeñani, Qopakati, and Kenasfena) and two are classified as non-temple or "other" sites (Cundisa and Q'hota Pata). These sites are considered non-temple as they are not clearly associated with temples nor residential or domestic structures (Chávez 2008a) (Table 1.1). In fact, no habitation sites are associated with any of these remains; all come from cemetery or ritual contexts. I will briefly describe the archaeological context of each site and the associated burials below.

Ch'isi was a Yaya-Mama temple marked by a sunken courtyard on the eastern side of the Copacabana Peninsula. Surrounding the sunken court were rings of burials in tombs lined with stone. These burials were oriented roughly parallel with the sunken court walls although four burials were placed diagonally at each corner of the sunken court (Chávez and Chávez 1997; Chávez 2004). Most tombs included one individual and few tombs had associated grave goods. There were a total of 52 individuals interred at this site. All were associated with the Yaya-Mama occupation of the temple.

Muruqullu was located on the northeastern portion of the Copacabana Peninsula, near the modern town of Sampaya. Muruqullu had two stages of Yaya-Mama occupation and sunken court building. During both stages, people used the site for burial. Burials at this site were placed mostly to the southeast of the site, in a flat area abutting the temple. Eighty-three individuals were associated with the two temple occupations of the site.

Tawa Qeñani was a small, rectangular site on the eastern portion of the Copacabana Peninsula, just south of Ch'isi and Qh'ota Pata. It may have been linked with local control of terraces and fishing (Sergio Chávez personal communication 2015). There were three juvenile individuals buried at Tawa Qeñani.

Table 1.1. List of sites and contribution of individuals to study

Site	Total Individuals	Sex		Age		
		Females and probable females	Males and probable males	Indeterminate	Adults (A)	Subadults (SA)
Temples						
Ch'isi	52	6	13	9	28	24
Muruqullu	83	13	20	25	58	25
Tawa Qeñani	3	0	0	0	0	3
Qopakati	7	4	1	0	5	2
Kenasfena	2	1	0	1	2	0
Non-Temples						
Cundisa	33	6	12	9	27	6
Q'hota Pata	2	1	0	1	2	0
Totals	182	31	44	47	122	60

Qopakati was a Yaya-Mama temple located on the northwestern portion of the Copacabana peninsula, close to the modern border between Peru and Bolivia. Qopakati excavations only included preliminary test pits and a trench, so less is known about temple structure and orientation. However, the trench uncovered several burials associated with the temple structure which appeared to have stone-lined graves. Most of these burials contained the remains of one or two individuals, totaling seven individuals.

Kenasfena was a temple site on the southeastern portion of the Copacabana Peninsula, near the modern town of Huayllani. This site had at least three temple construction events during the Early Horizon. Test excavations revealed two adult burials.

Cundisa was a site located in the heart of modern Copacabana with evidence of continuous occupation and use from the Early Horizon through the modern day (Chávez 2008a). Despite the presence of a Yaya-Mama temple at this site, the Early Horizon and Early Intermediate period burials do not appear to have been closely related to the temple. Because of this, these burials were classified as "non-temple." These burials included at least 33 individuals.

Q'hota pata was a non-temple site located in the valley adjacent to the temple at Ch'isi. Identified by a collection of Early Horizon ceramics, stone tools, and two adult burials, the use of this site remains unclear.

Notably, the temple burial sample is more robust than the non-temple sample, driven by two sites in particular: Ch'isi and Muruqullu. This is mostly due to variation in issues of skeletal preservation and extent of excavation between sites. Despite varying sample sizes, I included all available sites and individuals in this analysis in order to capture as much variability as possible.

Methods

I estimated age and sex for all individuals based on standard methods (Buikstra and Ubelaker 1994). Age categories included in this analysis are adult (A) (20+ years) and subadult (SA) (under 20 years). More detailed age estimates were made but not detailed here as they do not add to the conclusions. Sex categories included female (F), probable female (PF), male (M), probable male (PM), and indeterminate (I).

The two methodological approaches used here were biodistance analysis, a proxy for lived genetic relationships and ancestry, and strontium isotope analysis, a marker of physical location on the landscape. *Biodistance* estimates how closely related different populations were, based on prevalence of certain morphological traits. The basic premise is the morphology of certain biological traits is determined hereditarily, thus populations that are closely related should have phenotypes that look similar when compared to those of groups less closely related, especially when they experience similar natal and neo-natal environments (Hillson 2008). These calculations include within- and between-group variation (Stojanowski and Buikstra 2004). Skeletal and dental traits that are inherited can be used to determine these relationships. Observation of these traits produces a record of shared population traits, which can be statistically analyzed to show outliers within a population (Scott and Turner 1988; Stojanowski and Buikstra 2004; Sutter and Cortez 2005; Sutter and Verano 2006), as well as different morphological compositions between groups (Konigsberg 1990).

Nonmetric dental traits, one body of biodistance data, were observed for 175 individuals from five burial groups: four temples (Ch'isi, Qopakati, Muruqullu, and Tawa

Qeñani) and one non-temple (Cundisa). Results at two levels, individual and population, were compared statistically to show correlation and agreement of the dental traits. I recorded nonmetric dental variation, following the rankings established by the ASU Dental Morphology System (Turner et al. 1991). I included all individuals with observable permanent dentition, complete and incomplete, in order to have the largest comparable population possible. I excluded deciduous teeth and extremely worn teeth as they often do not present the same types of variation or are unobservable. Certain nonmetric dental traits were also selected for statistical analysis in order to avoid the biases described by Sutter and Cortez (2005). Some traits are highly correlated with each other or other individual traits such as sex and are therefore not good markers of biological distance, and were thus excluded from this analysis. I chose to include the same traits as Sutter and Cortez (2005) to preserve comparability between studies as this is now a general standard in bioarchaeological research. Therefore, I included the following nonmetric dental traits in this study: maxillary incisor shoveling and double shoveling; presence of peg or congenitally absent lateral incisors; metacone and hypocone cusp presence and formation of maxillary molars; root number variation for maxillary molars; mandibular molar cusp number and formation; congenital absence of third molars; and supernumerary teeth.

Statistical analyses for calculating biodistance involve establishing the correlation or agreement between pairs of individuals, first for a single burial population and subsequently between populations. Individuals were included if they had scores for at least five of the dental traits listed above and pairs were included when both individuals had scores for matching dental traits. Subsequently, the scores for each pair were averaged across the population to see group cohesion for a single burial population. Outliers with little agreement with any other individual in the population were also noted. Each population was then compared with every other burial group in turn. These statistical procedures were performed using SAS 9.2.

The second measure I used in my research was strontium isotope analysis, as a marker of migration of individuals and populations. This method is effective as strontium isotopes vary according to the age of local geology. Sr^{87} decays from Rb^{87}; the older the rocks are, the more Sr^{87} will be present in the area. This local geologic strontium leaches into groundwater and is incorporated into plants and animals, including humans. Strontium is structurally similar to calcium and is incorporated into human bones and teeth during development. Comparing Sr^{87} to Sr^{86} (a stable isotope) in bone and teeth can thus be used to indicate who is local or not. In teeth, strontium reflects the region where one lived during childhood and adolescence since adult dental enamel is fully formed by 10–15 years of age (Hillson 2008; Slovak and Paytan 2011). Strontium in bones will reflect where one lived in the years prior to death, as bony tissue regenerates continually (Knudson 2004; Parfitt 1983). If a person consumes predominantly local water and food over the course of their childhood and lifetime, their dental and skeletal strontium ratios, respectively, should reflect the local geological strontium. Assuming local resource consumption, strontium ratios more than two standard deviations from the local mean indicates an individual who relocated to the place of burial, either prior to or after death (Ericson 1985; Knudson 2004; Price et al. 2002; Slovak and Paytan 2011).

I tested teeth from 40 individuals excavated from sites around the Copacabana Peninsula in order to see the geographic origins of these individuals. Dental enamel is ideal for this test as it is resistant to diagenetic contamination, especially compared to bone (Knudson 2004; Waldron et al. 1979). Additionally, because strontium ratios in dental enamel reflect where one lived in their early years, any ratios outside of the Titicaca range will indicate immigrants after the individual was 10–15 years old. All tooth samples were prepared and processed by the author or laboratory technician Audrey Horne at the Isotopic Geochemistry Laboratories at UNC.

Table 1.2. Correlation analysis of biodistance markers between all sites. A value significantly below 0.5 reflects great divergence of populations

	Ch'isi	Qopacati	Cundisa	Muruqullu	Tawa Qeñani
Ch'isi	0.501095	0.581135	0.579764	0.485184	0.5518928
Qopacati		0.561033	0.611904	0.529832	0.620498
Cundisa			0.640318	0.534398	0.6855507
Muruqullu				0.465956	0.6169891
Tawa Qeñani					0.8338983

Table 1.3. Individuals sampled for strontium and their resulting strontium values. Lake basin outliers are in bold. Terms are identified in Table 1.1 and in text

Site	#	Burial Provenience	Age	Sex	Tooth	87/86 Exp Corr (-Rb)	%Sd Err
Temple							
Ch'isi	1	CH R3C4D T1	A	PF	M3	0.708534	0.0007
Ch'isi	2	CH R3C4D T2	A	M	LRM3	0.708499	0.0007
Ch'isi	3	CH R4CD	A	M	LRM2	0.708512	0.0008
Ch'isi	4	CH R5B T1-1	SA	I	URM1	0.708705	0.0007
Ch'isi	6	CH R5B T3-1	SA	I	dLRm1	0.708918	0.0006
Ch'isi	7	CH R5B T3-2	SA	I	dURi1	0.708883	0.0008
Ch'isi	8	CH R5BC T4	SA	I	dm1	0.709020	0.0007
Ch'isi	10	CH R5C T5-1	SA	I	dURm1	0.709010	0.0007
Ch'isi	11	CH R5C T6	SA	I	dm1	0.708756	0.0007
Ch'isi	12	CH R10 AB	A	PM	URM2	0.708458	0.0008
Ch'isi	13	CH R15A	A	PM	URM2	0.709657	0.0007
Ch'isi	14	CH R16D	A	F	LLC	0.708593	0.0007
Ch'isi	15	CH R26AB	A	M	NM3	0.708753	0.0007
Ch'isi	17	CH R30C	A	PM	URM3	0.708452	0.0007
Ch'isi	18	CH R30CD-42A	A	PM	URM2	0.708592	0.0007
Ch'isi	22	CH R40A-28D	A	PF	LRPM1	0.708470	0.0007
Ch'isi	23	CH R49D T2	SA	I	nm1	0.708800	0.0007
Ch'isi	25	CH R54 B1	SA	I	ULM1	0.709540	0.0008
Ch'isi	28	CH R55C T1	SA	I	LRM2	0.708629	0.0007
Ch'isi	30	CH R55D	SA	I	dm1	0.709127	0.0007
Ch'isi	32	CH R77C T1	SA	I	dm1	0.708328	0.0008
Ch'isi	34	CH R87 B1	A	F	LLPM1	0.708199	0.0008
Ch'isi	37	CH R88B	SA	I	ULM2	0.708652	0.0006
Tawa Qenani	63	TQ T1 Esq Ext	SA	I	NM2	0.708793	0.0007
Tawa Qenani	65	TQ5 T1	SA	I	LLM3	0.708818	0.0007
Qopakati	**55**	**QO N26.5 W25.6 T1**	**A**	**F**	**NM2**	**0.707639**	**0.0008**
Qopakati	**56**	**QO N23.6 W26 T1**	**A**	**PF**	**NM3**	**0.707559**	**0.0007**
Qopakati	**57**	**QO N23.6 W26 T1 IN2**	**SA**	**I**	**nm2**	**0.707461**	**0.0007**
Qopakati	**58**	**QO N23.6 W26 T2**	**SA**	**I**	**xm2**	**0.707316**	**0.0007**
Nontemple							
Cundisa	47	CU T8/1/ CUT30	A	I	ULM2	0.708224	0.0007
Cundisa	48	CU T8/2/ CU T30	A	I	ULM2	0.708272	0.0007
Cundisa	49	CU T9/1/ CU 107	A	I	URC	0.708305	0.0007
Cundisa	50	CU T9/2/ CU T107	A	I	NM3	0.708581	0.0008
Cundisa	**51**	**CU 1/T10/1/ CU 72**	**SA**	**I**	**NM3**	**0.707114**	**0.0007**
Cundisa	**52**	**CU 1/T10/2/ CU100 IN1**	**A**	**I**	**LLM1**	**0.707744**	**0.0007**
Cundisa	**53**	**CU T10/3/ CU 100 IN2**	**SA**	**I**	**dURm1**	**0.707779**	**0.0006**
Cundisa	54	CU 1/T11/ CU T16	A	PF	LRM3	0.708255	0.0008
Qhota Pata	**68**	**QP 1A/4**	**A**	**PF**	**NM3**	**0.706737**	**0.0007**

Results

At the population level, biodistance results show that most groups in the study were closely related biologically (Table 1.2). Agreement equal to or above 0.5 indicates close correlation and little disagreement between individuals overall. I found that all populations agreed with themselves (i.e., little intragroup diversity or variability of dental traits) and with other temple and non-temple burial populations (i.e., little intergroup diversity or variability of dental traits). The only exception to this was the comparison between two

temples sites (Muruqullu to Ch'isi) and the comparison of Muruqullu to itself, when the correlation analysis results were slightly below 0.5 (0.4852 and 0.466 respectively). However, these results are so close to the agreement cutoff, it is unlikely that they reflect significant results and may have been caused by variability in sample size for each burial group (Chris Wiesen[2], personal communication 2014).

Of the 40 strontium samples tested, the majority of individuals (29/40) are within the Titicaca Basin range (Table 1.3). Eight individuals are clearly outside of this range, and three individuals were just below the lower end

of this range. However, these three individuals were within the normal standard of error and thus not significant or definitive. Of the eight true outliers, four individuals from Qopakati (a temple), three individuals from Cundisa (a non-temple), and one individual from Qhota Pata (a non-temple) had strontium isotope ratios from other areas of the Andes. Notably, no adult foreigners were definitively estimated to be male; two were estimated female; two were probable female; and one adult was of indeterminate sex. There was also a range of nonlocal signatures, from 0.7067, normally associated with the Moquegua Valley of Peru and possibly other Peruvian coastal valleys, to 0.7078, associated with areas like the Atacama Desert (northern Chile) and the Eastern Cordillera of the Andes (Knudson 2004; Knudson and Tung 2011). Regardless of where people were coming from, it is clear that movement and migration through the Andes was fairly common during the Early Horizon.

Discussion

Shared Ancestry across Sites

Biodistance analyses showed that all burial populations, temple and non-temple, were very closely related. Given the proximity of the sites included here (ranging from a two- to twelve-hour walk between the nearest and furthest sites) (S. Chávez personal communication 2012, 2015) and the small size of the population, this is not entirely surprising. This relatedness likely comes from shared ancestry across these populations and ongoing reproductive relationships, maintaining biological kinship ties across various burial groups. The relatively small populations and close proximity of these burials probably necessitated regular interaction and marriage-exchange between these groups. Most notably, burial at temple or non-temple does not seem to differentiate lineages or have prevented individuals from engaging in reproductive relationships with people ultimately buried at other sites. This may indicate that temple and non-temple burial populations saw each other as viable reproductive partners during life, as opposed to hierarchical opponents or "off-limits." This is supported by analyses of the mortuary artifacts associated with these burials. One of the hallmark signs of hierarchical stratification is the inclusion of elaborate or plentiful grave goods as disposable wealth and provision of the afterlife (Parker Pearson 2003). However, archaeological analyses showed that very few mortuary objects were included in any tombs at temple and non-temple sites (Chávez 2012:446–449). In addition, paleopathological analyses of these burials suggest there is little to no health status difference between burial groups

(Juengst 2015). Combining these lines of evidence (relatedness, mortuary goods, and paleopathology) indicates social class or hierarchy did not dictate whether people were buried at temple or non-temple sites.

Migrants in the Titicaca Basin

The presence of eight people who spent (at least) their childhood outside the Titicaca Basin suggests a few possible scenarios. Notably, these individuals were buried at both temple and non-temple sites, indicating the Yaya-Mama Religious Tradition was not necessarily responsible for their presence, and that foreign status did not exclude people from temple burial. These individuals also did not appear to be buried differently from the local individuals surrounding them (with the exception of Qopakati where all individuals were foreign). Foreign individuals appear to have been integrated into Copacabana communities in a few possible ways. I describe possible interpretive scenarios below for the eight strontium outliers on the Copacabana Peninsula. First, individuals with 0.707 signatures could be from the northern shores of Lake Titicaca, a region where the Pukara culture developed at the end of the Early Horizon just after Yaya-Mama dwindled in prominence, indicating potential pilgrimage to or trade relationships with the Yaya-Mama temples (Scenario A). Alternatively, strontium outliers with 0.706 and 0.707 signatures could be about trade relationships (Scenario B). These scores come from regions like the Atacama Desert and the Moquegua Valley, areas much farther away, but noted for their important trade connections to the highlands hundreds of years later. These individuals could represent early traders between the two regions. Finally, while not mutually exclusive to the prior two scenarios and possibly as part of an ongoing process in the Andes, strontium outliers could also represent early formation of ayllus (Scenario C). *Ayllus* represent extended kin networks through multiple eco-zones who maintain community enclaves even when far from home. Notably, none of these scenarios involve forced relocation. There is also little evidence for skeletal trauma in this burial sample and the strontium outliers did not appear to be marked as captives or outsiders in any significant bodily or mortuary way.

Scenario A: Pilgrims or Traders from the Northern Titicaca Basin

The cultural developments in the northern Titicaca Basin during the Early Intermediate period were similar to those of the Copacabana Peninsula during the Early Horizon. Sunken courts, decorated pottery, and elaborate temple rituals associated with the Pukara cultural complex were well developed

by the end of the Early Horizon and show refinement of ceramic styles seen at Yaya-Mama. However, unlike the Copacabana Peninsula, there is evidence for raiding and localized violence (shown by menacing iconography and skeletal analyses of trauma), increasing social stratification, and a controlling elite class associated with this cultural complex (S. Chávez 1992; Cohen 2010; Plourde 2006; Plourde and Stanish 2006; Stanish and Levine 2011). Despite these new types of power at play, S. Chávez and other scholars agree that it is likely that Pukara drew on similar cosmologies and ceremonies as Yaya-Mama.

As such, people from the northern shore of the lake could have travelled to Yaya-Mama temples during the Early Horizon, witnessing and participating in the rites that occurred at these sites. They also could have engaged in trade and kinship networks, as travel between these two areas could have happened on a semi-regular basis. Burial of northern lake shore residents at both temple and non-temple sites could have easily resulted from these interactions. Others could have moved the ritual traditions there back home with them and incorporated their own ideas, escalating the scale of ritual, elaborating the ceramics, and cultivating an elite class. In this scenario, individuals with 0.707 strontium signatures buried on the Copacabana Peninsula could represent these pilgrims to Yaya-Mama rites or traders between the regions.

Scenario B: Long-distance Trade with the Moquegua Valley and Atacama Desert

By C.E. 500, Tiwanaku was established as a regional power and cosmopolitan city center just south of Lake Titicaca. Among other activities, this state established several colonies at lower altitudes (see Becker this volume). Maize was a key export from these colonies; this crop was brought back to the *altiplano* (the highland plain where the lake basin is located) where it was central to elite diet and used extensively in ritual in the form of *chicha* (fermented corn beer) (Berryman 2010; Goldstein et al. 2009; Janusek 2008). One important region colonized by Tiwanaku was the Moquegua Valley, located approximately 137 miles or 220 kilometers from the Titicaca Basin. The Moquegua Valley is a rich agricultural region amidst the desert, irrigated by the Moquegua River. In this region, maize grew very well and Tiwanaku colonists supplied the capital city with vast amounts (Becker 2013; Goldstein 2000a, 2000b, 2005).

Another region under Tiwanaku influence was San Pedro de Atacama, an outpost along important trade routes between the coast, the highlands, and other desert oases located about 700 kilometers (440 miles) away. While not directly controlled by Tiwanaku, San Pedro de Atacama residents often buried their dead with Tiwanaku-style vessels, adopted

Tiwanaku cranial modification styles, and increased their consumption of maize through association with the state (Knudson 2008; Torres-Rouff 2002). While there is little evidence for Tiwanaku colonization of this region, this area traded with Tiwanaku regularly, providing salt and other resources from the southeastern areas of modern Bolivia and Chile.

In addition, the Moquegua Valley and the Atacama Desert have different underlying geology from each other and the Titicaca Basin, and thus the strontium signatures from people who lived in these places are different, averaging around 0.706 and 0.707, respectively. Strontium outliers from Copacabana sites could represent individuals who moved through the Andes following fledgling long-distance trade routes. Trade with the Cusco region to the north and with the Arequipa region to the west occurred during the Early Horizon and increased through the Early Intermediate period, as marked by the movement of obsidian (Burger et al. 2000; Stanish et al. 2002). Trade to these other regions may have developed during the Early Horizon as well, allowing the later Tiwanaku civilization to exploit these routes once they gained power. While the durability of obsidian makes this trade item easy to track, people likely used these trade routes to exchange more than just lithic resources. In this scenario, strontium outliers could reflect the intrepid individuals moving great distances around the Andes and linking important resource regions hundreds of years earlier than previously thought.

Scenario C: Extended Kin Networks

An extended kin network could explain both the shared genetic signatures and varied strontium signatures. Extended kin networks called *ayllus* have been ethnohistorically and archaeologically documented in several areas of the Andes. Ayllu membership could be based on biological and fictive kinship, creating close and meaningful ties between far-flung living individuals and their ancestors (Albarracin-Jordan 1996; Goldstein 2000a; Janusek 2008; Kolata 2013; Murra 1980; Rowe 1946). While the antiquity of this type of kinship is unknown, it is possible to use ayllu organization as an analogy for kinship patterns in the Early Horizon. Strontium outliers from Copacabana could have been community members or kin (biological and fictive) who lived elsewhere in the Andes but had significant connections to the Titicaca Basin because of these kin networks. In addition, individuals born and raised in other parts of the Andes may have been brought back to the Titicaca Basin and buried at important sites in order to reconnect with important ancestral figures and remain a part of the kinship network.

Notably, three strontium outliers were estimated female or probable female and another three were juvenile

individuals. The movement of females and children (and their associated reproductive symbolism) supports the idea that people were moving around the Andes because of familial ties or extended kin networks. These females could have relocated to the Titicaca Basin in adulthood, after their dental enamel strontium had been set. However, this would not explain why subadults are associated with foreign isotope signatures, as their enamel strontium is determined by maternal location during pregnancy and breastfeeding (Hillson 2008; Knudson 2004; Slovak and Paytan 2011). Subadults with foreign strontium signatures must have had mothers who also lived in other parts of the Andes, at least during gestation and the early infancy of their offspring. If Yaya-Mama was, at least partially, devoted to goddess and female ancestors, as Hastorf (2003) suggested, perhaps the inclusion of females with foreign strontium signatures underlies this point. Female family members were especially important to bury at significant locations in the "heartland" of the kin group because of their status under Yaya-Mama.

An ayllu-type kinship network would also explain the range of strontium signatures seen in the sample. Community enclaves outside of the Titicaca Basin would have been located in several different areas to gain access to a variety of resources. Whether these individuals were coming from the northern shore of Lake Titicaca, the Moquegua Valley, the coast, or other regions, their connections to the Titicaca Basin brought them back to the region for burial.

Overall, it is important to note that these scenarios are not mutually exclusive. Trade and pilgrimage in the Andes have often been structured through kinship networks and vice versa (Murra 1980). While I present these models as separate in order to think about the different reasons why people may have been moving long distances during the Early Horizon, likely movement was happening for all three reasons, among others.

Conclusion

The study suggests two important findings about community on the Copacabana Peninsula during the Early Horizon and Early Intermediate period. First, it does not appear that temples represented exclusive communities or the emergence of an elite social class, given the high level of relatedness between all sites and supporting mortuary and pathology data reported elsewhere. This is unlike the contemporaneous Pukara civilization on the northern side of Lake Titicaca, which was marked by escalating competition and violence amongst emerging social classes (Plourde 2006; Plourde and Stanish 2006). Second, individuals with foreign strontium signatures were present at temple and non-temple sites, emphasizing inclusivity of communities.

Taken together, these lines of evidence show that Copacabana Peninsula communities during the Early Horizon were constructed with broad definitions of identity and even those born outside the peninsula were candidates for burial at sacred locations, possibly because of shared ancestry and kinship networks.

This study also noted some previously unidentified trends, including patterns of population movement and group affiliation. Assuming that burials on the peninsula were necessarily local because of the early time period would have missed an important part of kinship and movement of people in the Early Horizon. In addition, assuming that social hierarchies or the development of an elite class and the emergence of ritual are correlated would have misrepresented the communities that existed in this region of the Copacabana Peninsula. By combining these lines of evidence, this paper has presented a more nuanced picture of community and social interactions for these peoples.

As social issues are brought to the forefront of bioarchaeological research, our methods for answering these new questions must also be developed. Many studies struggle to identify social roles or community groups beyond physical proximity and shared iconography. Yet, communities were created and re-created through interactions that may not have preserved in material remains. The human skeleton can offer ways to "see" community that were previously unrecognized. Uniting the multiple avenues of inquiry used here would be useful in other situations as well, to support or contrast with archaeological interpretation of the past.

Acknowledgements

Notes

1. The remains were excavated from these seven sites between 1992 and 2001 under the direction of Karen Mohr Chávez and Sergio Chávez, and 2003–2008 under the direction of Sergio Chávez and Stanislava Chávez. All excavation was done as a part of the International and Interdisciplinary

Yaya-Mama Archaeological Project (also called the Yaya-Mama Project). The skeletal remains used in this research were curated by the Yaya-Mama Project in Copacabana, Bolivia. The remains excavated between 1992 and 2006 were initially analyzed and documented by Dale Hutchinson as a member of the Yaya-Mama Project (Hutchinson 1997; Hutchinson and Norr 2002), studies that I build upon in this paper. The skeletal remains are currently being returned to local peninsular communities following the original written agreements with them (Chávez 2008b). Teeth used for isotopic analysis in this project were obtained with official export permits in 2006 from the National Institute of Archaeology in Bolivia (INAR).

    2. Staff Statistician at the Howard W. Odum Institute for Research in Social Science at the University of North Carolina, Chapel Hill.

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Community Labor and Laboring Communities within the Tiwanaku State (C.E. 500–1100)

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ABSTRACT

    Understanding how work was managed and who participated in state-level societies can help elucidate daily activities as well as community development within an emerging complex society. Tiwanaku, with multiethnic neighborhoods in the Titicaca Basin, Bolivia and colonies near present-day Moquegua, Peru, provides a comparison of labor between groups. Specific skeletal evidence of activity (i.e., musculoskeletal stress markers and osteoarthritis) was evaluated to infer how habitual activity varied within this state. Labor rates show that laborers did not work at the behest of elites and results suggest instead, that people worked as reciprocal laborers in a guild-like system. [Organized labor, Bolivia, Peru, Musculoskeletal stress markers, Entheses, Osteoarthritis, Practice theory]

The organization of labor as part of resource management is one way to understand the development of complex societies. People in the past worked at various jobs, creating communities based around tasks, such as craft production or farming, as well as building homes and homelands for themselves (e.g., Brumfiel 1991; Costin 2004; Costin and Earle 1989; Crumley 1987, 2007; Crumley et al. 1987; D'Altroy 1992; D'Altroy and Earle 1985; Earle 1997; Kunen and Hughbanks 2003; Levy 2006; Moseley 1975). Often, these workers are defined archaeologically through the product of their labor, such as monumental architecture, ceramics, or lithic tools. While this evidence does provide information about people's daily life, additional knowledge can be gained from a bioarchaeological methodology that uses the evidence of labor and activity on human skeletal remains, complimenting an artifactual approach, and engaging with the actual individuals who lived this lifeway. Remembering that these people were once a community is also essential. At the very least, a community involves some kind of shared background where group members recognize each other as different from others (i.e., "us" versus "them") (cf., Barth 1966; Goldstein 2000a; Gupta and Ferguson 1992; Isbell 2000; Reycraft 2005; Yaeger and Canuto 2000).

How to evaluate group membership can become complicated when skeletal remains are the focus, as bioarchaeologists may face challenges associated with an incomplete burial record due to issues like skeletal preservation, sample representativeness, or choice of excavation location (e.g., Cook and Buikstra 1979; DeWitte and Stojanowski 2015; Gowland 2006; Halcrow and Tayles 2008; Hoppa and Vaupel 2002; Roberts and Mays 2010; Sofaer Derevenski 1994, 1997; Waldron 1994; Wood et al. 1992; Wright and Yoder 2003). In addition, questions posed by Canuto and Yaeger (2000) in *The Archaeology of Communities* on how to define past communities still stand, and must be reengaged from a nuanced perspective on how we can define "community" from skeletal remains and burial populations (see Chapter 2 of this volume by Kakaliouras for a review). Of the theoretical approaches to community Yaeger and Canuto (2000:3) describe in their introductory chapter, practice theory provides a useful way to address group labor and civic membership, as people's lives can become inscribed on their physical bodies via their regular daily habits (Bourdieu 1977; Budden and Sofaer 2009; Merleau-Ponty 2013; Sofaer 2006). Through the repeated practice of laboring, the household tasks executed and the occupations people perform can

set them apart from others within the larger society. These jobs may have been done at the behest of leaders of their society for maintenance of their civilization, or for members of their peer group as part of their social or familial requirements. Whatever the reason, this agent-oriented approach considers the people performing these activities as part of a past community. Moreover, Yaeger and Canuto (2000:5-6) note that a within-region but supra-household pattern, along with a limited time frame of cultures studied, makes a good and flexible way to discuss community archaeologically while also avoiding reification and essentialization of this concept.

Using these ideas on societal formation, labor, and community, this chapter focuses on the Tiwanaku civilization. This culture formed a state-level society around C.E. 500 in the Andean highlands region of the Lake Titicaca Basin, and expanded (ca. C.E. 500–650) into a lower elevation colony near present-day Moquegua, Peru (Figure 4.1) before its collapse in both areas around C.E. 1100[1]. My research addresses patterns of habitual labor observable on the bones of people who lived in the Tiwanaku state using specific skeletal evidence of activity (i.e., musculoskeletal stress markers and osteoarthritis) in order to understand what life was like for people working within this culture. The Tiwanaku heartland and hinterland provide an ideal opportunity to compare activity between individuals from these two areas. In addition, it also provides the opportunity to examine the formation of smaller laboring "communities" within its variety of multiethnic neighborhoods[2] (Becker 2013; Berryman 2011; Blom and Janusek 2004; Couture 2003; Couture et al. 2008; Couture and Sampeck 2003; Goldstein 1993a, 2000b, 2005; Janusek 1999, 2003, 2005; Janusek and Blom 2006; Vallières 2010, 2012). My goals involve showing how the bioarchaeological evidence of labor can define different working communities at various levels, and to discuss how each fits within this emerging complex society.

Tiwanaku's Background and Cultural Context

Archaeological excavations have shown that the main heartland or core of the Tiwanaku state emerged around C.E. 500 in the high, flat plains of the Lake Titicaca Basin, Bolivia with the main city of Tiwanaku emerging as an important population center with growing cultural and political influence among the Titicaca Basin's residents (Kolata 1986, 1993a). Within the city, distinct neighborhoods (i.e., *barrios*) developed around the municipality's center, archaeologically noted as home to various peoples, such as elites, stone tool manufacturers, potters, weavers, or herders (Couture et al. 2008; Couture and Sampeck 2003; Geisso 2011; Janusek 1999, 2005, 2008; Rivera 1994;

Vallières 2012). Initially, these barrios were thought to be focused on supporting elite settlements, with influence declining the further away one was from the "center" of elite power. This idea was described as a "concentric cline of the sacred that diminished in intensity from the city core to its far peripheries . . . . Inhabitants of the Tiwanaku occupied physical space in accordance with their relative social and ritual status" (Kolata 1993a:93-94; 2003). Kolata (1997:253) also suggested that the Tiwanaku city's whole purpose was for servicing elites and their aristocratic lineages, and that Tiwanaku urbanites and craftspeople serving the aristocracy enjoyed high status living.

More recent excavations and analyses of the Tiwanaku culture instead suggest that independent households or larger artisan collectives performed craft production autonomously or semiautonomously, especially in their social and exchange relationships (Bermann 1994; Goldstein 2005; Janusek 1999, 2004, 2008; Rivera 1994, 2003). Bermann (1994) and Janusek (1999) note that regular household activities and their associated artifacts (e.g., food processing lithics, ordinary textiles, and utilitarian hoes for agriculture) occurred in areas of focused craft production, suggesting household living more than specialist elite-production enclaves. Goldstein (2005:77) described this style of labor organization, combining urban and craft living, as "embedded in Tiwanaku's diverse and segmentary social substructure and not dictated by the demands of patrician sponsors." Janusek (1999) attributes these "embedded" craftspeople, who were not attached to elites but also not strictly independent, as a way the Tiwanaku state dealt with political integration without forcing assimilation or loss of corporate identity. As such, the closest parallel to these embedded neighborhoods may be the Western notion of a labor guild where work was small-scale, and social capital built through craft production seen as for the good of the larger society (Epstein 1998; Jovinelly and Netelkos 2007; Kieser 1989; Ogilvie 2004; Vardi 1988). In addition, the members of each Western guild community identified with her or his work (e.g., masons, goldsmiths, woodworkers, weavers, potters), even adopting the trade as a surname for identification. Thus, it is likely these Tiwanaku neighborhoods would have been responsible to the larger community for the production of various goods in a reciprocal environment that was not elite-driven. Instead, crafts would have been for the general public, while the crafting process also reified each local community's barrio identity (Janusek 1999:125).

In addition to crafting, during Tiwanaku times and in association with the urban environment, pastoral and agricultural production increased, likely to support the growing population[3] (approximately 20,000–40,000 people). The city of Tiwanaku established control over local agricultural
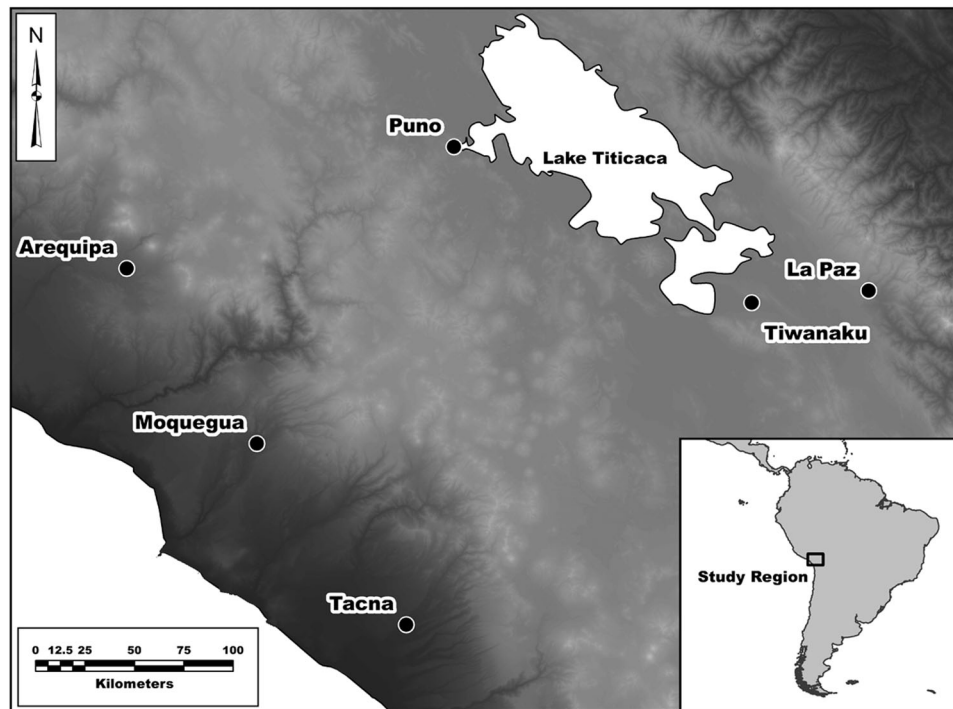
Figure 4.1. Map of heartland core Tiwanaku area in the Lake Titicaca Basin of Bolivia around the present-day town of Tiwanaku and the hinterland colony region near the present-day town of Moquegua, Peru.

production centers (i.e., raised-field agricultural beds) in the nearby Katari Valley with increasing local control of trade routes and an emphasis on an agro-pastoral lifeway (Janusek 2008:20). Bandy (2001:204) interpreted many of these changes as a successful strategy involving a system of labor management. This system increased political and ideological control with greater levels of ceremonialism and large-scale feasting, so that by C.E. 500, "Tiwanaku was a city [that] had become capable of dominating the entire Titicaca Basin politically, economically, and militarily" (Bandy 2001:204).

After the advent of the state in C.E. 500, Tiwanaku-style material culture was also found increasingly farther away from the heartland area in the warmer, lower-elevation hinterlands. Prior to this expansion, there is very little evidence for control over lowland areas, just trade exchanges (Goldstein 1989, 2000a, 2005; Goldstein and Owen 2001). Archaeologists (Albarracín-Jordán 1999; Goldstein 1989, 2005; Janusek 2004, 2008; Kolata 1993a, 1993b) generally agree that this expansion to lower elevation areas was a political one. The Tiwanaku peoples had a wish for luxury items, such as maize or coca, which can only be abundantly grown at lower elevations and in warmer climes. Goldstein (1989:251) noted that sometime within C.E. 500–650, Tiwanaku peoples arrived in lowland valleys, such as

the Moquegua Valley of Peru, "suddenly and in force," bringing Tiwanaku-style material culture with them[4]. In this region, colonization was primarily focused on riverine agro-pastoral production in three different areas (i.e., Omo, Chen Chen, and Rio Muerto). The control of these important agricultural lands would have secured the maize supply beyond levels that could have been traded for in this pre-market economy, especially as *chicha* (fermented corn beer) was important for ritual feasting to both heartland and hinterland peoples[5] (Berryman 2011; Goldstein 2005).

During C.E. 800–1100, increased construction around the city of Tiwanaku occurred alongside mass produced Tiwanaku-style ceramics (Janusek and Kolata 2004) and intensified agricultural production in the Katari Valley (Bermann 1994; Janusek 2004, 2008; Janusek and Kolata 2004). Janusek (2008:192-193) noted that "raised-field farming became the signature productive regime of the Lake Titicaca Basin." Other agro-pastoral activities (e.g., herding, fishing, and rain-fed farming) would have been lower status tasks as the main push was on raised-field crops. These agricultural goods funded the cyclical feasting that helped Tiwanaku's residents negotiate power relations (Janusek 2008:193).

The change in agriculture intensification may have had a direct impact on lower elevation colonies. After

C.E. 900, a destruction and rejection of Tiwanaku-style material culture in the Moquegua Valley coincided with the Tiwanaku state losing control of this region (Goldstein 1993b:42). In addition, the focus on agricultural intensification in the highlands had eventual negative consequences in the Titicaca Basin. The region underwent a long-term drought that started around C.E. 1000 and could have been a factor in the collapse of Tiwanaku about 100 years later (Binford et al. 1997; Erickson 1999, 2006; Kolata et al. 2000; Moseley 1997; Ortloff and Kolata 1992). Any major construction projects were discontinued by C.E. 1000, and around this time, monuments associated with elites and elite ancestors were ritualistically defaced and buried. After C.E. 1100, populations shifted from large, urban centers to small, hilltop fortress settlements (*pukaras*) (Albarracín-Jordán 1992; Arkush 2011, 2012; Stanish 2003; Zovar 2012).

Materials and Methods Used to Study Labor and Activity

To examine activity differences within different areas of Tiwanaku society, I compared 1,235 adults from the two areas: the heartland in Bolivia, which had 452 individuals, and the hinterland colony in Peru, which had 783 people. I evaluated all individuals for two skeletal measures of physical activity: musculoskeletal stress markers (sometimes referred to as entheses) and osteoarthritis. Because bones and muscles work in conjunction with each other while tasks are performed, my primary interest was in patterns and levels of activity in order to understand the social structure of labor in the various laboring communities of the Tiwanaku state. In order to do this, I looked at labor in the Tiwanaku state from four different spatial perspectives: (1) heartland versus hinterland colony; (2) heartland Tiwanaku Valley versus the Katari Valley; (3) between each of the three hinterland colonial settlements; and (4) within each highland valley (i.e., within the Katari Valley, and within the Tiwanaku Valley). The fourth objective was especially important in this research per the previously reported multiethnic communities of laborers and possible elite peoples, which could provide bioarchaeological evidence of neighborhood-based work groups.

In order to estimate labor, I first evaluated the evidence of musculoskeletal stress markers within Tiwanaku skeletal populations. Prior medical and bioarchaeological research (e.g., Bridges 1989; Churchill and Morris 1998; Yu et al. 2011) has shown that certain tasks, like farming, show an increase in muscle mass over an individual's lifetime. Since muscles work like bony levers for the underlying skeleton, and where the muscles attach to bone as a person increases muscle mass, so too can the connection points on bone grow

and strengthen. The attachment points, or musculoskeletal stress markers, can help identify directional movement in kinds of activities people did as well as levels of physical labor such as workload. Overall, I looked at 37 muscle attachment points and sorted them into five groups according to location on the body: upper arm (i.e., shoulder movement), lower arm (i.e., forearm movement), mid-body (i.e., hip movement), lower body (i.e., knee movement), and feet (i.e., ankle and foot movement). For each point, a score of present or absent was assigned.

Osteoarthritis (OA) was the second activity indicator I used. Osteoarthritis shows injuries helpful in determining repetitive movement as it can measure the same motion used over and over again, such as grinding grain or weaving textiles. I looked at 24 joint surfaces within seven joints: shoulder, elbow, wrist, sacroiliac, hip, knee, and ankle. For each individual, the multiple surfaces within each of the seven joints were noted as present or absent for the evidence of osteoarthritis.

Data were analyzed using generalized estimating equations (GEE), a population-averaged method accounting for correlation among measures within subjects (Agresti 2007; Ghislatta and Spini 2004). GEE works well for this type of data because it models estimates of population parameters that are calculated using individually recorded data points, allowing for the largest possible sample size. However, each of these data points remains linked to the individual, thus preserving individual level information (Ghislatta and Spini 2004). The GEE procedure retains the categorical dependent variable while keeping the data points linked (for example, for each of the different joint surfaces), and does not bias the data even though there are multiple data points within each joint. It also accommodates variables that are not normally distributed, small sample sizes, and randomly missing or unobservable variables, which is especially useful in bioarchaeological studies, and social science research in general (Becker 2012, 2013; Gagnon and Wiesen 2013; Nikita 2014, 2015). GEE can also evaluate any number of nominal or quantitative predictor variables that cannot be assessed using bivariate analysis, such as controlling for age-at-death and sex, as has been previously performed for these datasets (Becker 2013). All data were evaluated for significance at .05 level using the chi-square statistic.

Results and Discussion of Laboring Communities

Comparisons between the Heartland and Hinterland

When looking at the muscle marker scores between the heartland and hinterland, four out of five areas are
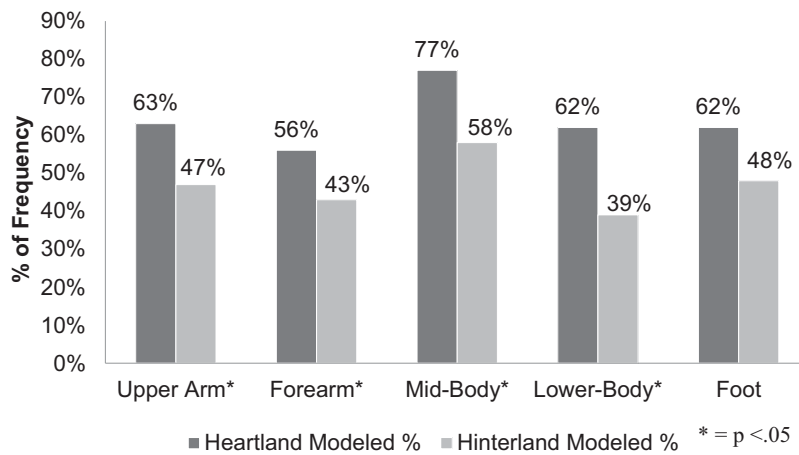
Figure 4.2. Results of heartland and hinterland comparisons for musculoskeletal stress markers.

significant at a .05 level with only foot musculature not significantly different between these two regions (Figure 4.2). Frequency results show that labor levels in musculoskeletal stress markers are higher in the heartland than the hinterland colony. For osteoarthritis, the only significant results were in the sacroiliac joint between these two regions, with people from the heartland Titicaca Basin area showing higher rates (Figure 4.3).

Overall, the regional comparison between the heartland and hinterland shows that activity levels were higher in the heartland than in the hinterland colony in the Moquegua Valley of Peru and these results may represent differences

in agricultural practice. As noted in modern reconstructions of prehistoric agricultural practice (Erickson 1988, 2006; Erickson and Candler 1989), raised-field agriculture in the highland Titicaca Basin may have taken more effort than riverine farming. In addition, it is also likely that the higher rates in the heartland are about labor reciprocity in the Andes, a practice still common today. It may have been that during the Tiwanaku state, calling on local neighbors to labor for you and promising to work for them in return was easier than convincing colonists to come back (approximately a four-week walk) to the highlands for reciprocal obligations. The archaeological evidence of increasing intensity
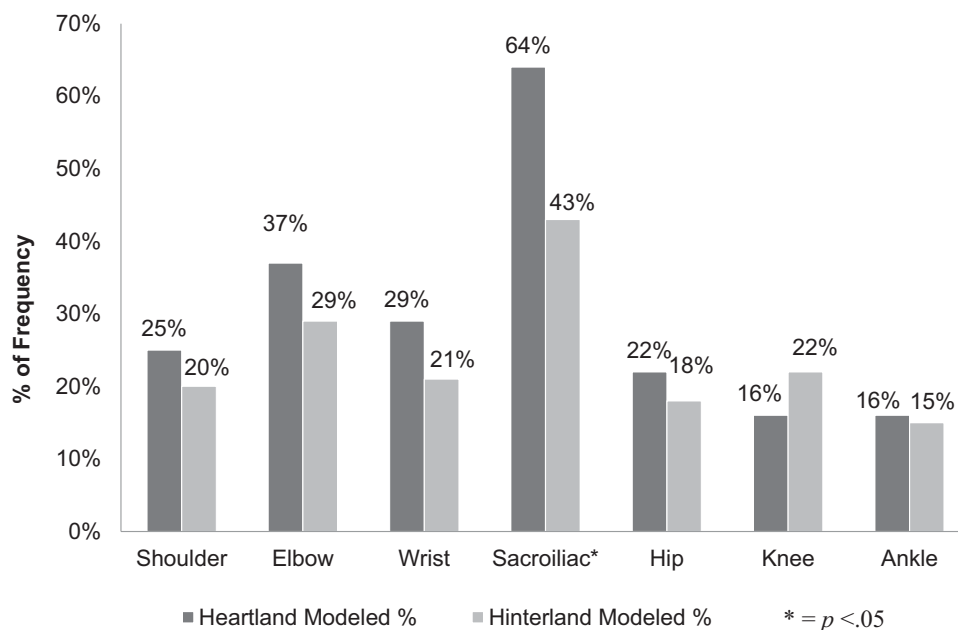

Figure 4.3. Results of heartland and hinterland comparisons for osteoarthritis.

of raised-field farming post-C.E. 800, a possible heavier labor load in order to perform this style of farming, and increased labor sharing in the Titicaca Basin may explain heartland levels of labor.

The high rate of osteoarthritis in the sacroiliac joint also deserves some attention, especially as the sacroiliac joint is not extremely flexible. In researching clinical literature, I found a link between osteoarthritis in this joint and people running or walking with heavy backpacks on (Chosa et al. 2004; Whiting and Zernicke 2008:281). As such, these results may represent people in the highlands using *aguayo*—a cloth backpack that is tied across the sternum and clavicle (i.e., collar) bones (Figure 4.4)—to carry heavy loads. This type of backpack is used by modern Andean people to carry any number of objects (e.g., babies, dogs, cases of beer, food). In other studies (Becker 2013, 2016a, 2016b; Becker and Goldstein 2015), I found evidence of osteoarthritis on the lumbar vertebrae of individuals from the heartland, which could support the idea that these peoples carried heavy loads on their backs. In addition, there were two cases (both from the Moquegua colony) where the sacrum was fused to the os coxa, but only on one side of the body. This could be indicative of transporting loads that were predominantly carried on one side of the body or the other, and that labor during the Tiwanaku state may have included goods transport using aguayos.

Within the Heartland and within the Hinterland Comparisons

In addition to the heartland and hinterland comparison, I looked at activity rates between the heartland Tiwanaku Valley and Katari Valley. This comparison yielded no significant differences and likely means that both workload and repetitive labor were generally equal between these communities. In the comparison between the three hinterland settlement areas in the Moquegua Valley of Peru, colonists buried at Omo and Rio Muerto had similar labor levels, possibly indicating they worked similar tasks, while those buried at Chen Chen had lower levels. These results may indicate differences in occupation or a different style of agricultural work performed at Chen Chen. Exploring the data from these three areas when separated into stylistic differences, Omo-style versus Chen Chen-style, prior research has shown that labor levels relate to ease of access to riverine farmland areas. People who were last to settle in the Moquegua Valley were farthest away from good farmlands and show the highest levels of labor (Becker 2016a; Becker and Goldstein 2015).

Figure 4.4. Woman demonstrating proper placement and usage of an aguayo *(Drawing by Kathleen Huggins).*

Comparisons within the Katari Valley and within the City of Tiwanaku

Finally, my fourth comparison was to understand labor within the smaller communities of each highland valley. Within the Katari Valley, labor rates were highest from the urban site of Lukurmata, with its varied communities of farmers, crafters, and local administrators. In comparison, labor levels were equal between the two agriculturally oriented sites in the Katari Valley. This may again indicate
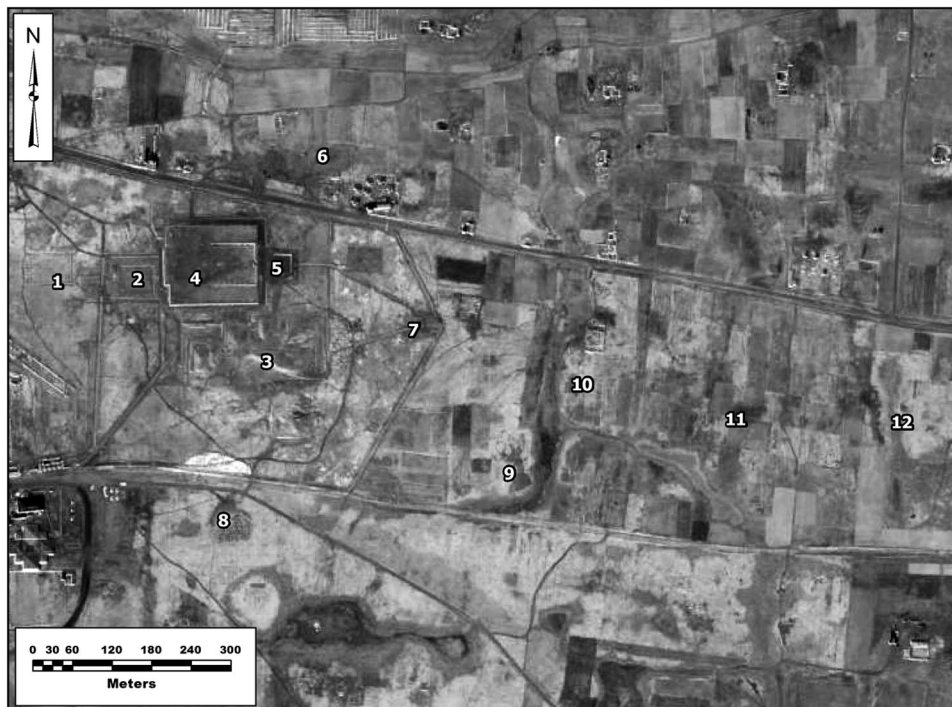
Figure 4.5. Differing areas within the city of Tiwanaku: (1) Kerikala, (2) Putuni, (3) Akapana, (4) Kalasasaya, (5) Subterranean Temple, (6) La Karaña, (7) Kantatallita, (8) Mollo Kontu, (9) Akapana East 1, (10) Akapana East 2, (11) Marka Pata, and (12) Ch'iji Jawira.

some kind of labor reciprocity, with a higher labor obligation placed on those in the urban area than those already working in the rural farming communities. In addition to the Katari Valley, I was able to compare labor between five different barrios (i.e., Putuni, La Karaña, Akapana East, Ch'iji Jawira, and Mollo Kontu) in the Tiwanaku city (Figure 4.5). The lowest labor rates were noted for the site of Putuni, and the second lowest was La Karaña. Both of these sites were noted archaeologically as likely home to elite people (Couture and Sampeck 2003; Escalante 2003; Portugal Ortíz 1988). The reasoning for elite settlement is that there were various higher status goods (e.g., lapis lazuli, obsidian, high quality ceramics), as well as spatial separations (i.e., walled compounds or decorated walls at Putuni), access to freshwater and waste removal canals, and storage for agricultural products (Couture and Sampeck 2003; Escalante 2003; Portugal Ortíz 1988). There was, however, some evidence of labor and activity, which does indicate that the people buried here, if elite, were working elites who participated in some manual labor, as opposed to aristocratic individuals who were waited upon by those around them, as was suggested by Kolata (1997:253).

At the Akapana East site, individuals buried here were actively working the muscles of their arms, especially

when compared to other sites. A prior study (Berryman 2011) on the diet of the Tiwanaku people in the highlands indicates up to 70 percent of the diet of these Akapana East peoples may be attributed to maize, likely in the form of *chicha* (corn beer). Along with the archaeological evidence of ritual paraphernalia in burials (Janusek 2008:148) and isotopic evidence of high maize-based diets (Berryman 2011:39, 290–291), it seems likely that the Akapana East people were chicha brewers who developed heavy upper arm musculature required to stir the pots and possibly, the lower body musculature required to hoist and move large containers of the brewed corn beer.

At the site of Ch'iji Jawira, residents' upper arm and forearm musculature indicated that these people performed tasks that were different from other people within the Tiwanaku Valley. Ch'iji Jawira peoples had significantly high modeled rates of osteoarthritis in the elbow and wrist joints. Along with the archaeological evidence of Ch'iji Jawira as a ceramic production center (Janusek 2004; Rivera 1994, 2003), and as forearm musculature is generally active in more precision tasks, these results support the idea that Ch'iji Jawira's residents were craft specialists, likely potters working within the city of Tiwanaku (Becker 2016b). In

addition to physical labor defining community boundaries, Janusek (2004:147) argued that there were social, political, and economic impacts to Ch'iji Jawira people as semiautonomous embedded craft specialists and not elite-sponsored attached crafters. Ch'iji Jawira residents were ceramic manufacturers who were "not directly controlled by or conducted [production] for ruling elites . . . rather conducted and managed in a local residential context" (Janusek 2004:158) and ceramics produced at this site were likely for the Tiwanaku public (Janusek 1999, 2004, 2008). Stone cores at the site also support Janusek's theory as they indicate that these people maintained and reconstructed their own lithic tools instead of obtaining them from lithic production specialists, as would be expected for specialists attached to elites (Geisso 2011; Janusek 1999). Thus, these semiautonomous labor groups can go beyond simple spatially designated borders and exhibit community as loci of power relationships.

Mollo Kontu people had high mid-body, lower body, and foot rates of musculoskeletal stress markers and high rates of OA throughout the lower body joints. This suggests that residents performed heavy labors, repetitive activities, and were highly mobile. In addition, Mollo Kontu peoples' diets contained a high percentage of meat (Berryman 2011; Berryman et al. 2007; Berryman et al. 2009) and zooarchaeological evidence from this site shows evidence of butchered camelids (versus camelid remains as offerings) indicating a higher prevalence of these animals at this site than others (Vallières 2010, 2012). My activity pattern data reinforce the dietary and archaeological evidence of the Mollo Kontu people as *llameros*, herding their llamas and possibly transporting the maize from the colony in Moquegua.

Scholars (Browman 1978, 1981; Janusek 1999, 2004; Rivera 1994, 2003) have noted that archaeologically distinct areas of craft specialization within Tiwanaku could be described as embedded producers, family groups working together at various types of production. My current and prior labor research (Becker 2013, 2016b) supports this idea of a local, guild, family-based labor force, as the many sites within the city of Tiwanaku reflect significantly different levels of labor and activity. In addition, along with evidence of laboring Tiwanaku elites at the sites of La Karaña and Putuni, this research supports the idea that the various barrios were not elite-serving neighborhoods. Instead, these embedded laborers likely worked as part of a multi-tiered community, functioning locally within each of the barrios, regionally in their social and exchange relationships within the larger city of Tiwanaku, and nationally within the state—building social capital and working for the common good of the larger society.

Conclusions

Societal formation, labor, and community have been the focus of this chapter on the Tiwanaku culture (C.E. 500–1100). This research addressed labor patterns and levels of activity using musculoskeletal stress markers and osteoarthritis evidence on the skeletal remains of people from this prehistoric polity in order to understand group membership and daily life among its inhabitants. By applying practice theory to address the idea that physical differences can be noted on the human skeleton through the routine of daily living (Bourdieu 1977; Budden and Sofaer 2009; Merleau-Ponty 2013; Sofaer 2006), these results reflect the variety of communities within the larger Tiwanaku culture. Thus, I have been able to look bioarchaeologically at community, spatially scaling from regional comparisons between heartland and colony, to more minute, neighborhood contrasts within the city of Tiwanaku, demonstrating the within-region, but supra-household approach called for by Yaeger and Canuto (2000:5-6).

Overall, results in the heartland versus hinterland colony comparisons show that living in the highlands meant higher levels of activity, possibly from a heaver workload no matter where in the heartland a Tiwanaku resident lived. These prehistoric labor levels may be similar to work group reciprocity practices used by the modern Aymara people of highland Bolivia (Carter 1967; Hardman 1981; Mitchell 2003; Murra 1968). These Andean people work for relatives in a reciprocal kin network, forming labor groups and creating community obligations to each other in a communal network. Hence, this practice of community membership and labor sharing may have been something established early on by Andean peoples. In addition to the results from the highlands, Tiwanaku colonists had lower labor levels and significantly different results between the three colonial communities. Initial information suggests higher labor rates in the colony were associated both with when people migrated to the Moquegua, Peru area, and proximity to good, riverine farmlands (Becker 2016a; Becker and Goldstein 2015). I have also been able to address community membership within smaller enclaves in the city of Tiwanaku, adding to the information we have on these multiethnic cooperatives of laborers living in each barrio, whether they were home to *chicha* brewers, pottery producers, or *llameros*. These results from the heartland and hinterlands likely indicate a variety of tasks performed, more localized control, and possibly a regionally based labor collectives with reciprocal maize obligations between the regions, but minimal exchange of laborers.

Tiwanaku people distinguished themselves through various occupations and differing levels of labor, setting

themselves apart as communities, all while still participating in this pan-Andean, multiethnic state. Through the helpful lens of practice theory, I have been able to document a corporeal record of the daily contributions on the bones of the Tiwanaku people, expanding our scientific and contextual knowledge of peoples in the past. In addition, group membership concerns have also been addressed when analyzing skeletal remains by using a large sample size with good preservation and strong statistical methods to document bioarchaeological changes, as have been called for by various scholars (e.g., Agarwal and Glencross 2011a, 2011b; Buikstra 1991; Buikstra and Beck 2006; Buikstra and Pearson 2006; DeWitte and Stojanowski 2015; Klaus 2014; Knudson and Stojanowski 2008; Sofaer 2006; Stodder and Palkovich 2012). This research supports the evidence of laboring communities within the Tiwanaku civilization, and our ability as bioarchaeologists to identify these types of communities using activity estimation and reconstruction techniques.

Acknowledgements

Notes

1. While the Tiwanaku culture dates to C.E. 500–1100 and is usually referred to as the "Tiwanaku period," it does overlap with part of the chronology referred to in the Andes as "Middle Horizon" (C.E. 600–1000). However, the Middle Horizon period and its dates are based around cultures from Peru.

2. The sites are not currently dated radiometrically, and the chronological context stretches over the whole Tiwanaku period (C.E. 500–1100). However, stratigraphically, it is likely that the sites in this study were used contemporaneously.

3. Reports on the size of the Tiwanaku population vary, but recent estimates suggest that the city's population has been underestimated (Stanish 2013).

4. In addition to the artifactual evidence of similar ceramic assemblages, textiles, and stone tools, the architecture, especially the replica of a highland temple at Omo M10, has direct reference to highland Tiwanaku (Goldstein 2005). Additionally, many isotopic studies have been performed using these collections, along with biodistance data, to show that the Moquegua colonists were originally from the Titicaca Basin and that highland Tiwanaku people continued to migrate to the Moquegua Valley throughout the settlement period (C.E. 500–900) (Blom and Knudson 2007; Knudson 2004, 2008; Knudson and Blom 2011; Knudson et al. 2004; Somerville et al. 2015).

5. Berryman (2011) saw high isotopic rates of maize consumption in the Tiwanaku heartland, thus noting its importance in Tiwanaku ritual feasting and possibly as payment to labor groups.

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Defining Community in the Upper Belize River Valley during the Late Classic Period: A Micro-regional Bioarchaeological Approach

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ABSTRACT

For the ancient Maya, mortuary practices offer crucial insight into how communities created and reproduced themselves. For example, most individuals local to the Belize River Valley are interred in a prone position, with head to the south. My research questions whether other rituals involving the deceased body, including body positioning and interaction with human remains through tomb re-entry (i.e., skull removal, interment of multiple individuals in one grave), could indicate affiliation to local or imagined communities. Comparing two Belize River Valley sites, Chan and Zubin, I found similar types of interaction that may indicate participation in a regional imagined community. [Maya, Bioarchaeology, Mortuary practices, Community identity]

The concept of community has historically eluded a satisfactory definition. As Agbe-Davies notes, scholars exploring the concept trace the use of the word to the age of exploration, the 17th to the 19th centuries, to explain social relationships at a small scale and to differentiate these from nation states and language groups (Creed 2006:25, cited in Agbe-Davies 2010:375). Redfield (1955:4), whose ethnographic work was influential in Mesoamerica, was instrumental in developing the concept of community in archaeology and proposed four key aspects of community: difference from other communities, smallness, homogeneity, and self-sufficiency. These attributes of community have since been challenged, particularly the attributes of homogeneity and self-sufficiency, which imply isolation from broader influences (Lohse and Valdez 2004; Robin 1999, 2012, 2013; Schwartz and Falconer 1994). Canuto and Yaeger (2000) brought together scholars of the ancient Americas to assess the concept of community and compiled an important discussion of various aspects of community. In particular, Isbell (2000) suggested that archaeologists consider the work of Anderson (1991) on "imagined"

communities, which conceptualized community as a process constituted by social and historical context. Imagined communities are contrasted with "natural" communities, which draw on ideas of shared space, interests, and experiences.

Agbe-Davies (2010) recently turned a critical eye on the community concept working from the perspective of archaeologists attempting to engage with living social groups through archaeological research. Using archaeological as well as ethnographic data collected from local people associated with her archaeological projects, Agbe-Davies (2010:375) summarizes the principal elements of community as common interest, common locale, and a common social system or structure. Agbe-Davies (2010:383) concludes that community, in reality, "is not natural or essential, but rather processual or generative. Therefore, as social scientists, we need to familiarize ourselves with the objectively real phenomena with which individuals and groups produce their understanding of their communities." Like Agbe-Davies, I grapple with how to study communities both as objects (i.e., as natural locales where humans share space and experiences) and as subjects (i.e., as imagined, where human

Table 5.1. Chronology for sites mentioned in the text (Courtesy of the Chan Project)

Time Period	Calendar Years, approximate
Early Postclassic	C.E. 900–1150/1200
Terminal Classic	C.E. 800–900
Late Late Classic	C.E. 670–800
Early Late Classic	C.E. 600–670
Early Classic	C.E. 250–600
Terminal Preclassic	C.E. 100–250
Late Preclassic	300 B.C.E.–C.E. 100
Middle Preclassic	650–300 B.C.E.
Early Middle Preclassic	800–650 B.C.E.

participation and interaction generate community), as both aspects were likely important to ancient people. Bioarchaeology has a unique voice in this debate as skeletal data can be used to speak to both the lived experiences of individuals as well as to broader regional interaction and tradition.

In this paper, I attempt to identify "objectively real phenomena" (Agbe-Davies 2010:383) for the ancient Maya (Figure 5.1): specifically, the built environment and repeated mortuary practices. I assess how these aspects of community were generated over time through ancestor veneration practices, following Yaeger and Canuto (2000) and this volume's loose definition of community as the sharing among people of real or imagined connectedness. Ethnohistoric and ethnographic data are reviewed to show that Maya sites can be conceived of as both natural and imagined, and that these conceptions likely blurred into one another. From here, I turn to ancient data from two sites in the Belize River Valley, Belize, and discuss how each represents natural and imagined communities through mortuary ritual. Mortuary practices at the Chan site are compared with those at a geographically proximate site, Zubin. These sites are appropriate for this study as they have burial data from throughout the entire site occupation and because they are both classified as mid-level, which means that they are at the mid-point of the Belize Valley settlement continuum (see below), making them easily comparable (Ashmore 1981; Iannone 2004). The data are contextualized within broader sociopolitical changes in the Belize Valley in the Late Classic period (C.E. 250–900) (Table 5.1).

Linking Natural and Imagined Communities

Isbell (2000), as well as other chapters in this volume, provide a detailed account of the development of the community concept in anthropological archaeology and bioarchaeology and thus, it will not be recounted here. However, important to this chapter are the links specifically between natural and imagined communities. As mentioned above, early ideas of community, particularly those of Redfield, conceived of communities as static, small, homogenous, and relatively isolated from the outside world, and many of these ideas have been cast aside or further refined by contemporary scholars. Isbell (2000:247) finds fault with Redfield's concept of the little community as a "holistic spatial entity." Yet, this one aspect of the natural community retains salience for the contemporary and ancient Maya.

The core of contemporary Maya social organization is the nuclear family, which organizes daily activities such as education and subsistence (Farriss 1984:132; Redfield and Villa-Rojas 1962:89; Restall 1997:13; Wilk 1988:139, 142; 1991:205). Most nuclear families reside on a house lot with members of their extended family living in adjacent houses (Vogt 1969; Wauchope 1938). Eventually, the extended family groups grow large and segment, with brothers or sons leaving to start their own independent household (Fox et al. 1996; Vogt 1969; Wilk 1991:210). The geographic and biological connection to a nuclear family is the first step in identifying oneself as part of a social group. As described below, active participation in one's community is essential and the family group is the first evidence of one's willingness and ability to be a good community member; personhood is even predicated on this behavior (Fischer and Hendrickson 2003; Watanabe 1992). The family group is an example of a natural community—where shared experience and physical proximity generate community.

Colonial-era documents describe similar descent and co-residential behavior for the Maya. Roys (1957:2) recounts for Yucatecan Maya peoples, that "every person had a patronymic, and the bearers of the same patronymic constituted a recognized group. This was called a *chi'bal* . . . And the Maya thought of it and called it a lineage." Restall (1997) emphasizes residence and biological relatedness to a *cah* (to be) as the most important factor in Maya personal identity during colonial times. *Cah* can be used as the verb "to be" and to describe the sentiment of "I am here," clearly indicating an ethnic and geographical identity associated with being the member of a "cah." Geographically, the *cah* was a house lot within which relatives of the same patronym also resided. "Cah" indicates one's literal place of residency as well as the social identity of membership in a social group. The word is used in wills to describe one as a homeowner and testators give the name of one's parent's "cah" as a personal identifier (Restall 1997:16).

Ancient material culture correlates with the aspects of contemporary Maya social organization described above. For instance, throughout the Maya area, residential structures are grouped similarly to descriptions in colonial texts, around an open plaza with expansion over time through
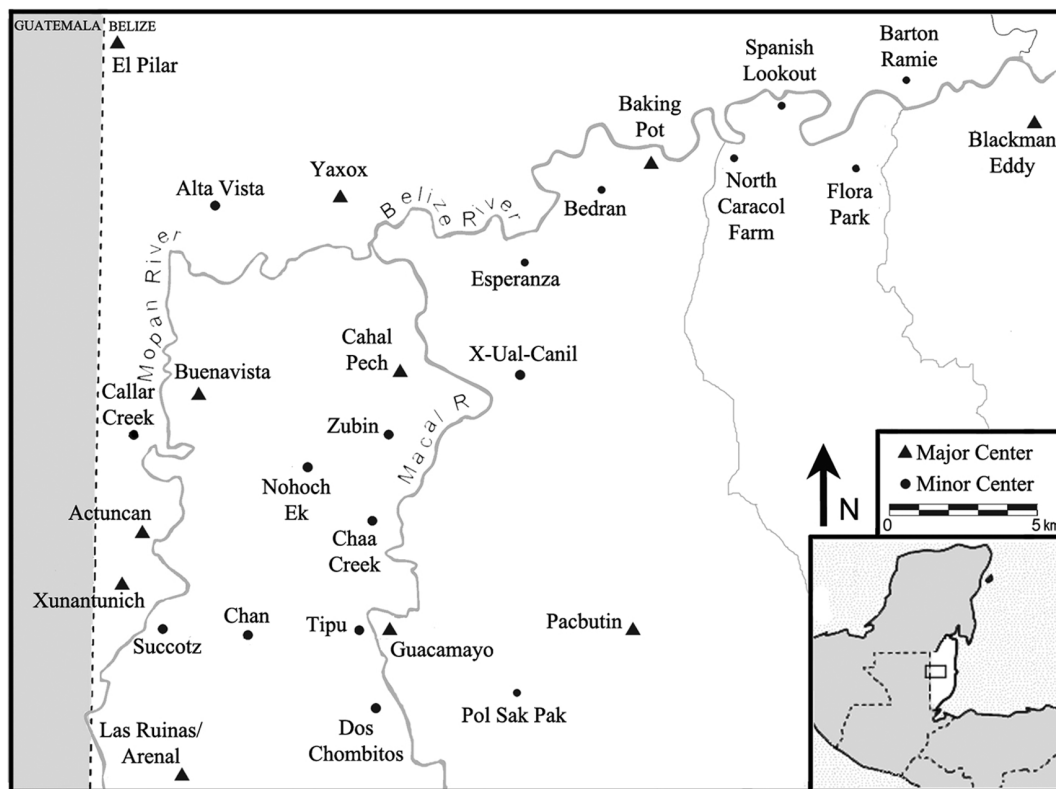
Figure 5.1. Map of the Belize River Valley with sites marked that are mentioned in the text. (Drawing courtesy of the Chan Project).

additions to existing structures or establishment of new buildings. Archaeologists interpret these groups as the homes of an extended family group consisting of a parental unit and their children with their spouses and children (Ashmore 1981; Haviland 1988; Wilk 1988:142-143). Haviland (1988:126–131) used settlement models to reconstruct the expansion of a family residential group over several generations, including the death and burial of the first occupants in one of the houses.

I argue that the built environment, as it creates a "holistic spatial entity" (Isbell 2000:247), is a key touchstone for ancient Maya communities. The anchoring of community in the built environment is emphasized by the placement of human remains within structures and not within cemeteries. Human remains are most commonly found beneath the floors and walls of residences, though they are also recovered in public locations such as ceremonial platforms and plazas (McAnany 2013; Tozzer 1941; Welsh 1988). Select individuals were interred within structures interpreted as ancestor shrines (McAnany 2013). Becker (1971) identified pyramidal platforms, often located on the east side of residential groups at the site of Tikal, as possible ancestor shrines or *oratorios* (oratory) (Tozzer 1941:129).

Physically establishing a "genealogy of place" through burial of distinguished ancestors in ancestor shrines has been interpreted as a means to maintain the descendant's right to access agricultural landholdings and other material possessions of their antecedents (Gillespie 2001; 2002:70; Goldstein 1981; McAnany 2013:65).

The work of Agbe-Davies (2010) and Isbell (2000) encourage anthropological archaeologists to consider how "community" can be seen as generative and as a process rather than represented solely as a static entity. While I argue that the built environment is an important aspect of community identity, so are relationships, established and maintained over time, constitutive of community. As bioarchaeologists, we need material evidence of these otherwise-ephemeral actions to assess the process of community building. For the ancient Maya, this material evidence of maintaining generative community relationships is seen in interaction of the living with the skeletal remains of the deceased within particular structures at Maya sites.

Maya worldview is described as relational—it is rooted in maintaining relationships with human and nonhuman beings in a reciprocal manner (Astor-Aguilera 2009, 2010; Fischer 1999; Monaghan 1996, 1998; Watanabe 1992).

For example, the living provide for the life essences of the deceased so that the deceased will exert their influences in positive ways on the lives of the living. Both sides must act reciprocally in order to keep order and balance in the universe. They must act together because humans and non-humans exist in different experiential realities and thus have different physical capabilities. Personhood itself is defined by the extent to which an individual willfully participates with his or her community in daily activities. In Maya world-view, the daily actions of participants create community and community, in turn, creates participants (Astor-Aguilera 2010:206-207; Monaghan 1998:140; Watanabe 1992:90-91). Change over time is also integral to Maya worldview, as regeneration and renewal in an ancestral form are foundational concepts (Carlsen and Prechtel 1991). Persons and their life essences are shaped by behavior over the course of a person's life (Fischer 1999:468; Fischer and Hendrickson 2003:85; Monaghan 1998:139; Watanabe 1992:90).

McAnany (2013:11) states that for the Maya, a critical characteristic of ancestor veneration, possibly part of the creation of an ancestor, is that of protracted burial rites. Grave re-entry is documented for Maya royalty, both archaeologically and epigraphically (Fitzsimmons 2009). Fitzsimmons (2009:142), synthesizing data from throughout the Maya lowlands, states that re-entry involved, first, the removal of capstones, modification of the grave goods and often the skeleton. Typically, incense was burned and sometimes bones were removed. Finally, the chamber was re-sealed, either temporarily or permanently. Re-entry rituals occurred at major lowlands sites throughout the Classic period (Fitzsimmons 2009:142). Much is known, McAnany points out, about mortuary ritual and ancestor veneration from the point of view of the elite. She notes that "across social fields, the generalizability of royal texts and iconography that refer to ancestralizing practices is undetermined and represent an understudied topic" (McAnany 2013:xxiii, xxvii). The research presented here is part of a larger initiative whose goal is to illuminate ancestral practices in non-elite contexts.

Ethnohistoric accounts of Maya cosmology associate human bone with corn, a staple food of the Maya. The original humans were formed from corn dough by an elderly woman (Tedlock 1996:43). Contemporary Yucatec Maya link corn and reproduction with human bone. Astor-Aguilera (2010:9) recounts that seminal fluid is associated with a corn gruel consumed on ritual occasions (see also Freidel et al. 1993; Meskell and Joyce 2003). Maya near Lake Atitlan in the highlands of present-day Guatemala refer to seeds of maize as little skulls (Carlsen and Prechtel 1991). The sowing of the little skulls produces small plants, referred to as "children." After death, the deceased are placed within the earth, "sown" like maize seeds, to give life to the next generation (see also Gillespie 2001; Tedlock 1996:32).

A clear and compelling case can be made for the cosmological significance of human skeletal remains for the ancient Maya. It is important to note, however, that human remains are truly powerful when they have an attached life-essence (Astor-Aguilera 2009, 2010). Although skeletal remains are used as a tool of communication with the deceased ancestors, the life-essence is not permanently attached to the skeletal remains after death; it must be ritually summoned and "tethered" to them (Astor-Aguilera 2009). From this perspective, while human bone has broad, inherent cosmological significance, it represents only a potentially powerful link to the ancestors because they are not present in the bones all the time.

Cultural and Historical Context

The Belize River Valley is located in west central Belize and is demarcated by the Maya Mountains to the south and the Yalbac hills to the north, as shown in Figure 5.1. The confluence of the Mopan and Macal Rivers creates the Belize River just north of the modern town of San Ignacio. Ancient Maya settlements are dense along both banks of the river from the upper Belize Valley through the central parts of the valley. The Belize River Valley has seen nearly a century of archaeological exploration of all parts of ancient Maya society, from kings to crafts-people and agriculturalists (Chase and Garber 2004). Consistent excavations provide a good picture of the history of the valley.

The present analysis is concerned not with major centers but with mid-level sites and how they maintained natural or imagined communities. Mid-level sites are neither the smallest (a group of several residences) nor the largest (an urban center with residential, religious, and administrative functions) settlements (Ashmore 1981). The sample exemplifies sites that are relatively small, but that might have served one or all of the functions of urban centers (residential, religious, and administrative). Mid-level sites are defined by having at least two plazas, a temple at least five meters high, and evidence of having served multiple functions (i.e., administrative, ritual, residential) (Iannone 2004). Iannone and Connell (2003) hypothesize that these mid-level sites were the most dynamic within the sociopolitical system because they were forced into constant negotiations about their place as the influence of major centers expanded and contracted over time. In the following sections, I compare the mortuary practices at ancestral locations at mid-level sites in
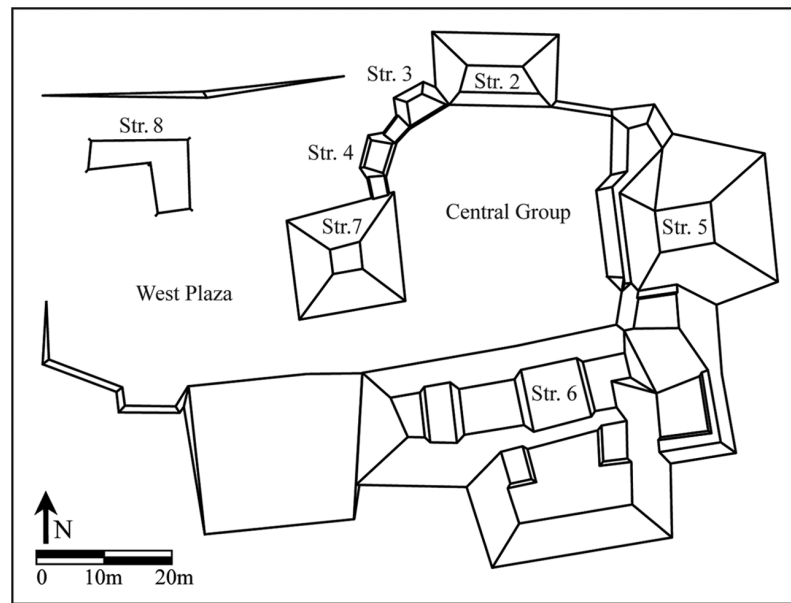
Figure 5.2. Map of the Chan site, central architectural group. (Drawing courtesy of the Chan Project).

the Belize River Valley and conclude by discussing their relationship to broader sociopolitical fluctuations in the Belize River Valley in the Late Classic period.

The Chan Site

Crowning a hilltop in the upper Belize River valley, the Chan site was settled by the Middle Preclassic period (650 B.C.E.), with occupation continuing through the Early Postclassic (C.E. 1150/1200) (Kosakowsky 2012). The E-group complex, a tripartite structure marking the eastern side of the main plaza and facing a single pyramid on the western side, was constructed on the highest point of the Chan settlement in the Late Preclassic (Figure 5.2). E-groups are found across the Maya lowlands and served a ritual purpose associated with agricultural cycles (Aimers and Rice 2006). A series of rituals, beginning before the construction of the E-group and continuing until the abandonment of the Chan site, established this hilltop as an important and ritually charged place (Robin et al. 2012).

Interaction with human skeletons by the living during Middle, Late, and Terminal Preclassic periods included removal and re-deposition of skulls as well as reuse of grave space for secondary burials. In the Late Preclassic era, all individuals were interred in an extended, prone position with head to the south (Novotny 2012). In addition, all individuals show strontium isotope values consistent with childhoods spent at the Chan site (Freiwald 2011; Novotny 2015). Heirloom middle Preclassic figurines were found

in two graves dating to the Late Preclassic. The presence of Middle Preclassic figurines is intriguing for several reasons. First, each figurine head is slightly different, suggesting that it is a portrait (Awe 1992; Kosakowsky and Robin 2010). Second, the figurines were broken and taken out of circulation by being placed in special deposits. Breaking and discarding ritual objects may be evidence of deliberate forgetting of individual ancestors (Joyce 2003: 107).

There were few burials dating to the Early Classic period. However, the Late Classic is better represented, allowing for observation of changes in the type of mortuary deposits and the nature of interaction with skeletal remains at Chan over time. First, in the Late Classic, females were interred in the site center for the first time. Second, multiple individual burials containing only adults were placed in the site center. Previously, multiple individual burials occurred but included children, more typical for Maya mortuary treatment of children (Welsh 1988). Third, grave inclusions consisted mostly of personal adornment items and not heirlooms. By the Late Classic period, grave inclusions were fewer in number and limited to utilitarian items or personal items of adornment. In addition, no representations of humans were placed in graves (Novotny 2012:248). All individuals for which the data were observable were positioned face down with heads to the south. Finally, there was no evidence of re-entry into tombs to curate or redeposit skulls or other skeletal elements. All individuals from the Late Classic period also show strontium isotope values that are

consistent with childhoods spent at Chan (Freiwald 2011; Novotny 2015).

The mortuary record at Chan illustrates aspects of both the natural and imagined community introduced above. The eastern structure at the site and the consistent ritual activity therein is an example of the establishment of a genealogy of place, a holistic spatial entity that represents a natural community. The interaction of the Chan residents with the skeletal remains entombed in the eastern structure exemplifies how the imagined community was continuously created and re-created through this interaction. Radiogenic strontium isotope data indicate that all individuals interred at Chan were life-long residents of the Belize River Valley and the majority of the individuals were buried in Belize Valley style—prone with head to the south. They were likely considered members of the Chan and Belize River Valley natural communities during life and continued to be part of those communities as well as imagined community of ancestors after death. Engaging with human skeletal remains links Chan to an imagined community spanning the Maya lowlands, as interaction with skeletal remains has been documented at a number of other sites, both large and small (Fitzsimmons 2009; McAnany 2013).

The differences in interaction with skeletal remains between the Preclassic and Late Classic periods may indicate a transition in the way that ancestors were materialized. There is an apparent transition from veneration that focused on the bodies of individual ancestors (single individual burials, wealthy grave goods, individualized figurines) to veneration that emphasized the community as a whole (multiple individual burials, fewer individual specific grave goods, no manipulation of specific individual bodies). A dramatic population increase in the late Late Classic period (C.E. 670–800/830) changed the makeup of the Chan community (Robin et al. 2012:32-33). It is possible that individual ancestors and materializations of them did not reflect the newly diverse populace. Furthermore, neighboring regions show an increase in multiple individual burials in the Late Classic period (Schwake 2008), suggesting participation in an imagined community whose boundaries far exceeded the Belize River Valley.

The Zubin Site

Zubin is located in the upper Belize River Valley, two kilometers south of the larger site of Cahal Pech on an east-west oriented limestone ridge near the banks of the Macal River (Iannone 1993:10) (Figure 5.3). Zubin was occupied from 850 B.C.E. to C.E. 875, with the Preclassic and Early Classic activity limited to a hilltop shrine

(Iannone 2003:14), likely due to its subsidiary relationship with nearby Cahal Pech. The residents seemed to have gained power in the Late Classic (C.E. 600–900) and the group took on a residential function. The site core consists of three plazas (A–C) surrounded by pyramidal and range structures. Plaza A contains the largest architectural complex at the site, and was the prime focus of burial activity. This plaza is enclosed by pyramidal structures on its eastern and western edges and closed at the north and south by range structures.

As noted above, participation in a natural community may have been indicated by shared physical space and experience while imagined communities may have been indicated by interaction with human skeletal remains in the form of tomb re-entry. It is expected that broader sociopolitical circumstances may affect participation in these communities and that practices will change over time. During the Late Preclassic period, the data suggest that the people responsible for interments at Zubin did not symbolize their participation in a natural or imagined community in the same way as at Chan. The presence of a natural community at Zubin is lacking as there was no evidence of residential occupation or establishment of a lineage in the form of sequential burials in an eastern structure. The burials include one child and two adults, all interred in the central group in the Late Preclassic period in two different structures. Although one was slightly disturbed by looters, all individuals were primary interments of single individuals with no evidence for extraction of body parts or other interaction with the remains. Two burials were interred with small beads only but one individual was interred with a number of exotic and unusual grave goods, including a vessel depicting the Jaguar God of the Underworld. Iannone (1996) interprets this individual as a ritual practitioner, possibly specializing in divination. No figurines were placed in burials during this time, as they were at the Chan site. Two of these earliest burials had strontium values consistent with the Belize Valley, but locations far from Zubin (Freiwald 2011).

As at Chan, there were few burials placed at Zubin in the Early Classic period, and none of these had evidence of engagement by the living with human skeletal remains. The majority of the interments at Zubin were placed in Structure A1 in the late Late Classic period—10 burials containing 14 individuals. It is during this time period that we see similarities with the mortuary practices at Chan and when, I argue, Zubin materialized both a natural and imagined community. One multiple individual burial, Burial 3, was placed in Structure A1 at this time. As at Chan, the interment contained five adult individuals of both sexes. There were few grave goods, two drilled feline teeth, and portions of a broken vessel dispersed throughout the grave (Iannone 1996). All bodies were
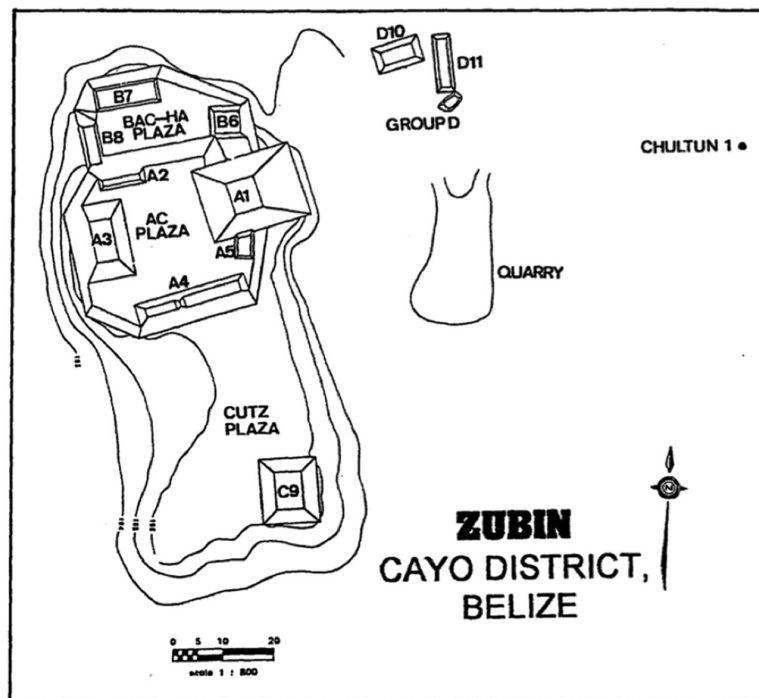
Figure 5.3. Map of the Zubin site, central architectural group. (Iannone 1996).

primary interments placed in prone, extended positions with heads oriented to the south. One of the individuals in Burial 3 had a strontium isotope value consistent with developmental years spent in the upper Macal River valley, as did a second late Late Classic burial (Freiwald 2011).

No children were interred in A1, or anywhere in the site center, during the Late Classic period. Three other burials were interred at this time. They were all adults and had simple grave goods like beads and, in one case, two obsidian blades. They were in extended, prone positions with heads to the south.

One burial at Zubin was re-entered in the late Late Classic period and items were removed and subsequently placed in another burial context. Burial 7 placed in an extended supine position, was interred in about C.E. 675–750. Between C.E. 750 and 875, a cache was excavated above Burial 7 that intruded into the grave space. The base of the cache was a thick limestone slab "capstone." Directly under this capstone were two vessels dating to the early part of the Late Classic (C.E. 600–750) placed lip-to-lip within a Mount Maloney Black: Mount Maloney Variety bowl that is indicative of the late Late Classic (C.E. 750–875) in the Belize Valley (Iannone 1996:346-347). Burial 7 was a primary burial but, with the exception of two small fragments, the cranium and all teeth were missing. This suggests that that the skull was removed when the grave was re-opened in the late Late Classic. Coeval with the placement of a

cache in Burial 7 was the interment of Burial 5, a primary interment placed in an extended and supine position. Within Burial 5, several jadeite disk beads were recovered whose shape and material matched those from Burial 7. Iannone suggests that jadeite beads were removed from the grave of Burial 7 through the cache and placed in Burial 5 as an offering.

According to the concepts of natural and imagined communities laid out above, it seems as though Zubin did not represent a community in the same way that Chan did in the Preclassic period. In the Preclassic period, Zubin did not serve as a residence but likely was a ritual location for the inhabitants of nearby Cahal Pech (Iannone 1996), which is evident in the burial of an individual associated with objects of divination. Interments were made in two separate structures, not in one holistic spatial location—creating a genealogy of place relies on repeated interments in one structure. This suggests a non-ancestral meaning for the burials at Zubin in the Late Preclassic. There is no evidence of interaction with the skeletal remains dating to the Preclassic period, suggesting that the living Maya who interred the dead at the Zubin site center did not choose to maintain their relationships with these deceased, or chose to do so in a different manner. Specifically, they did not participate in the imagined community of ancestor veneration, at least the aspect that included communication using human skeletal remains. There were only a few burials and none were re-entered. Representations

of humans were also not recovered from these contexts, as the figurine heads at Chan were. It is possible that in actuality the people of Zubin were participating in an imagined community of ritual practitioners in the Belize River Valley, which could be evaluated with a regional mortuary dataset.

In the Late Classic period, when the site shifted to a predominantly residential function (Iannone 1996), burial practices elide in some ways with those of Chan. Numerous burials were interred within a structure on the eastern side of the central Zubin architectural group creating a genealogy of place. One of these interments was re-entered and skeletal elements removed. A second grave context was re-used multiple times and contained the remains of at least five individuals before it was sealed. In these examples, a connection can be made between the idea of Zubin as a natural community—anchored by a specific spatial entity, the eastern structure—and an imagined community, materialized through interaction with skeletal remains. These differences are likely due to its change in function over time as well as its relationship to the nearby site of Cahal Pech.

Discussion and Conclusion

As Yaeger and Canuto's (2000) definition of a community reinforces, social institutions are ever emergent. Change over time is expected in the way communities choose to display their own sense of themselves and how they relate to other communities. The communities of Chan and Zubin had burial practices that were generally consistent with their site function, emphasizing ritual or residential activities, and changed over time according to these functions. Chan participated in both types of community—natural, forged through shared space and experiences (here indicated by shared residence), and imagined, historically contingent as indicated by the existence and changes in ancestor veneration practices. Zubin's initial function was not residential and there are no clear indicators of burials that suggest shared experiences or space of natural communities. The burial of a ritual practitioner is perhaps more representative of individual rather than community connections.

Zubin gained some degree of autonomy from the large nearby site of Cahal Pech in the Late Classic and the residents began to represent themselves through their rituals as a residential community with an ancestral shrine (Iannone 1996). Ceremonies of regeneration and renewal became important to the site occupants as they established themselves as a residential center. At this time, their practices were similar to those of the continuously residential Chan site in terms of multiple individual burial and tomb re-entry. A key difference is the episode of re-entry and extraction of beads, and possibly a skull, from Burial 7 and the bead's placement in Burial 5 in the Late Classic. The Chan site has a similar instance of grave re-entry and extraction of both objects and skeletal remains. The Chan case also involved the removal of a skull and jade pieces, several of which were then placed in nearby caches. However, this burial was the earliest burial at Chan, dating to 1600 years before the re-entry of Burial 7. What links these episodes of re-entry is that they occurred at the beginning of residential occupation, possibly the establishment of a lineage at each site. Clearly, re-entry and bone extraction is a practice with deep antiquity that seems to be linked with the establishment of residential groups, the heart of ancient Maya physical and cultural reproduction.

While the above analysis focused on tomb re-entry as a materialization of an imagined community of ancestor veneration, two other aspects of body treatment may also be indicative of participation in an imagined community of the broader Belize River Valley. In the Late Classic period 70% individuals were interred in an extended, prone position and 85% were oriented with head to the south (Novotny 2015). This has emerged as a distinctly Belize River Valley mortuary tradition (Awe 1992; Freiwald 2011). Nearly all of the individuals at Chan and Zubin were interred in this manner in the Late Classic period. It is possible that Chan and Zubin were participating in a geographically broad imagined community through their mortuary rituals, as well. Research just outside the Belize Valley has shown that multiple individual burials in the southeast Petén and Vaca Plateau regions, located west and southwest of the Belize Valley, respectively, increased in the Late Classic period (Schwake 2008). Similarly, multiple individual burials at Chan and Zubin occur most consistently in the Late Classic. Thus, body treatment can be interpreted as expressions of community at the level of the site, the settlement continuum (mid-level), and of the region. This also lends support to the idea that the natural community is a real phenomenon for the Maya—the regional specificity of their mortuary traditions suggests that grounded, shared experience was acknowledged in these rituals.

The stated goal of this paper was to identify objectively real phenomena indicative of community for the ancient Maya. Objectively real phenomena that characterize both natural and imagined communities are apparent—the built environment anchors community to a geographical location at which residents shared lived experiences and generated a natural community. Mortuary practices, including repeated interments within eastern structures and tomb re-entry, link the sites of Chan and Zubin to a broader imagined community of ancestor veneration practitioners throughout the

Maya lowlands. Participation in a Belize Valley imagined community is also identifiable in the shared practice of consistently placing the deceased in a prone, head to the south position, as is participation in a broad extra-regional imagined community evidenced by placement of multiple individual interments during the Late Classic. The motivation for these practices lie in the ethnographic and ethnohistoric literature that allow us to reconstruct a worldview that emphasized maintaining relationships with both the living and the dead.

An important point to underscore is that it is prudent to anchor ideas about community in culturally specific material representations and links to observed, practiced behavior. Even though we, as humans, participate daily in a variety of natural and imagined communities, we cannot assume inherent understanding of how relationship building and maintenance, the essence of community membership, works in other cultures. The desire to maintain relationships with the deceased is knowable for bioarchaeologists as these behaviors have archaeological signatures, such as burial location, number of individuals, and taphonomic effects. Of course, we must always be critical when applying ethnographic data to the archaeological record and be conscious of the spans of time and inevitable social transformations we are bridging. Careful observation of ethnographic and ethnohistoric accounts of relationship building coupled with carefully chosen bioarchaeological data is a sound approach to identifying past communities and exploring their dynamism.

Community dynamics are accessible to bioarchaeologists through contextual information in the form of broader sociopolitical circumstances, like the changing of the function of a site over time. If this analysis considered only the Chan site, the data would show a pretty clear representation of natural and imagined communities. Considering a location with a different historical trajectory, Zubin, paints a more complex and nuanced picture, one that shows the generative, fluid, responsive, and processual nature of community.

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Contextual and Biological Markers of Community Identity in the Effigy Mound Manifestation of Southern Wisconsin

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ABSTRACT

   Utilizing a practice theory approach with multiscalar data, we combined mound form, internal mound features, and skeletal data to investigate how corporate identity was created and represented within Wisconsin Effigy Mound communities. There is evidence for a widespread ritual and social system shared by participants. However, contextual and biological variability and other idiosyncrasies in material culture among mound groups suggest deliberate actions demarcating identity through symbolism and ritual performance. Our results reflect this, suggesting at least two distinct corporate identities: (1) a larger, overarching communal identity with regionally shared effigy mound construction and select ritual paraphernalia, and (2) a localized, corporate kin-based identity with variation in the type and location of goods within and between the mounds. [Effigy Mound, Community identity, Biological distance, Mortuary analysis]

This research focuses on the Effigy Mound people of the Midwestern United States during the Late Woodland period (ca. C.E. 400–1000). During this time, large mounds were constructed in either effigy or geometric shapes, and many contained burials of human remains. While the mound phenomenon was far-reaching within this region, our prior research suggests that variability in the mortuary program among specific Effigy Mound groups was an important mechanism for communicating and highlighting community identity (Cornelison 2013; Goldstein 1981, 1995; Lackey-Cornelison 2012). We recognize Effigy Mound monumentalism as an overarching, regional, mound building phenomenon, with both regional and local community

identities reflected in the mounds and mound inclusions. It is broad in that there was a regionally shared ritual of constructing geometric and effigy mounds that included ritual paraphernalia and human burials. However, the smaller-scale suggests ritual agents asserted a unique identity at the local (mound group) level, as noted through variety in predominance of select mound forms, idiosyncratic ritual paraphernalia, and location of that paraphernalia.

   This study considers the importance of skeletal remains within their burial context, interpreting mortuary ritual, and by extension, specific markers of both local and regional corporate identity recognized by communities participating in this program. We focus on 517 individuals from 10 Effigy

Mound sites with 215 excavated mounds (135 geometric and 80 in the effigy style) within southern Wisconsin. We argue that the purposeful inclusion of certain individuals, marked by a combination of who was interred and how they were interred (i.e., burial type and placement within the mound), or exclusion of certain age classes, signaled important information to participants in the local and regional mound building tradition and mortuary practice. We test ideas that there may have been at least two community affiliations recognized by southern Wisconsin Effigy Mound communities: a larger, overarching identity reflected by broad use of shared ritual paraphernalia in the mortuary program and a more localized, kin-based identity.

We employ a practice and multiscalar approach to account for symbolic consistency and idiosyncrasies in the Effigy Mound ritual mortuary program. Practice theory emphasizes that the social structures of society involve a two-way interaction between the structure and the agent (actor) (Chesson 2007; Dobres and Robb 2005; Gillespie 2001; Owoc 2005). Social institutions (the structure), regional identities, and local community identities were created and reproduced through the agency of participants in Effigy Mound ritual. Specifically, the routinized action of mound construction created a symbolic structural system that was actively reinforced and/or challenged through the agency of individuals and/or collectives determining what mound forms to build, rituals to perform, individuals to include (if any), and what form those burials should take (Cornelison 2013; Lackey-Cornelison 2012).

In order to look for these affiliations, we use four approaches that may elucidate these distinctions: 1) mound feature and artifact variation between sites; 2) patterns in the placement of burials; 3) age and sex correlations with mound form (i.e., effigy or geometric); and 4) epigenetic variability among mound groups and regions. These four ways of evaluating the mound sites and burials assume a practice theory approach, emphasizing that both systematic patterns and idiosyncratic features in the mortuary context are a means to interpret the fundamental, and likely purposeful, variability among groups. Our investigation determines whether patterning of burials and associated ritual features show that the mortuary practices of Effigy Mound peoples were structured by an overarching regional identity or by local identities and communities.

Background

The widespread emergence and construction of mounds, known as the "Effigy Mound Manifestation," occurred during the Late Woodland period (ca. C.E. 400–1000)

Figure 6.1. Shaded area presenting area of Effigy Mound Manifestation; dot in top left insert shows study area.

in southern Wisconsin, eastern Iowa, southeastern Minnesota, and northern Illinois (Figure 6.1). Previous research (Birmingham and Eisenberg 2000; Goldstein 1995; Mallam 1976; Rosebrough 2010) has shown that most mounds were generally pre-planned, constructed in one seasonal episode, and built directly on the ground's surface. In rarer cases, the topsoil (i.e., the A-Horizon) was removed in preparation and construction followed with basket loads of soils, clays, or sands (Goldstein 1995).

In general, researchers have noted two different mound forms in spatial proximity to each other: those comprised of geometric shapes and those that were formed as an effigy. Mallam (1976) and Goldstein (1995) argue that mound building and maintenance was done by a single corporate unit or lineage, as each regional group has a unique mound form or class of mounds associated with them. Further, analyses of various Effigy Mound peoples' ceramic styles support the idea that closely related families or lineages likely maintained these monumental structures (Rosebrough 2010). Within specific mound groups, Lackey-Cornelison (2012) suggests that geometric mound forms represent the visual corporate group identity, while effigy mound forms symbolize distinct social positions, possibly ritual practitioners. Finally, mounds are highly visual objects on a landscape. As groups moved from larger riverine habitation sites to smaller tributaries and associated upland areas during the Late Woodland (McElrath et al. 2000; Milner 2004; Nassaney and Cobb 1991), it is possible that, in part,
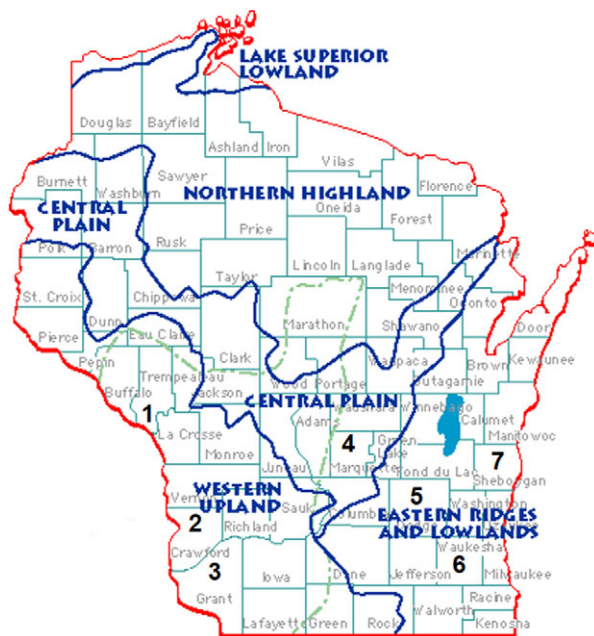
Figure 6.2. Map of Wisconsin physiographic provinces and associated mound groups. Sites within region: 1 = Trowbridge, 2 = Polander, 3 = Raisbeck, 4 = McClaughry, Neale, and Kratz Creek, 5 = Nitschke and Kolterman, 6 = Big Bend, and 7 = Kletzien. (Map adapted from Martin 1965 and Wisconsin Online – wisconsinonline.com/wisconsin/geoprovices/)

their construction advertised control and access to critical resources in the area (Goldstein 1995).

Within each mound, typical features included burials, earthen fireplaces, stone altars, ceramic vessels, and clay and pebble cists. Inhumations consisted of primary flexed burials[1], secondary bundle burials, cremations, and various combinations of all three. Within a single mound, there were typically one to four burial features, ranging from a single burial up to 109 individuals per each feature, with an average of one to three individuals per feature (Cornelison 2013). These skeletal remains, found in both geometric and effigy mound forms, were placed in three different vertical locations: 1) above the floor or prepared surface in the fill; 2) directly on the prepared mound floor; or 3) in a subfloor pit. In geometric mound forms, features were in or near the center of the mound, while in effigy forms, features were found in the heart, head, stomach/hip, legs, or wings (in cases of bird-shaped mounds) of the animal form.

The 10 Effigy Mound sites are situated in seven counties within southern Wisconsin. Most Wisconsin counties tend to have materials from at least one mound site housed at the Milwaukee Public Museum (MPM). The 10 sites used here span three physiographic regions: the Western Uplands, Central Plain, and the Eastern Ridges and Lowlands (Martin 1965) (Figure 6.2).

Summary descriptions of each site are noted in Table 6.1 (full descriptions can be found in Lackey-Cornelison (2012) and Cornelison (2013)). These mound sites were primarily excavated by W. C. McKern (1925; 1928; 1929; 1930) as part of a program funded by the Milwaukee Public Museum (MPM) to understand who constructed the Effigy Mounds, why and how the mounds were built, what they were used for, as well as the temporal dimensions of the Effigy Mound phenomenon.

Materials and Methods

The dataset from these 10 Effigy Mound communities includes 215 excavated mounds (135 geometric and 80 effigy forms), 153 burials composed of 56 primary, 87 secondary, and 10 primary/secondary mixed burials, and a minimum number of 517 individuals identified from skeletal analyses, site reports, and museum records. All of the skeletal material and supporting documentation are curated at the MPM. Due to the fragmentary condition and the comingling of individuals in multiple individual burials, each burial was inventoried and a minimum number of individuals (MNI) was determined following Bedford et al. (1993). If skeletal remains were not present at the MPM but burials were noted in site reports, then site reports were used to estimate the MNI (although age and sex could not be estimated for most of these cases). In addition, site reports, field notes, and maps of the mound groups were consulted to understand the excavated mound forms, features found within the mounds, vertical and horizontal location of burials in the mound, and the disposition of the burials (e.g., primary, secondary, and cremation). Few radiocarbon dates have been obtained within and among the mound groups, suggesting that at least some of the contextual and biological variability may be due to changing social conditions over time during the Late Woodland period.

The skeletal remains were analyzed for age, sex, and epigenetic (non-metric) skeletal traits. Age and sex data were collected for reconstruction of demographic profiles of individual burials, as well as their application to placement within mounds, mound groups, and physiographic regions. Estimation of sex was accomplished metrically and non-metrically using skeletal indicators of sex, primarily features of the skull and pelvis, following prior skeletal biology research (i.e., Buikstra and Ubelaker 1994; France 1998; Phenice 1969; Rogers and Saunders 1994; Stewart 1979). Cutoff values for metric measurements resulted in categories as male, female, probable male, probable female, or indeterminate. Due to small sample sizes when sex was able to be estimated, analyses using sex as a variable grouped probable

Table 6.1. List of sites in this study with location and additional scholarly citations

Mound Region	Mound Groups / County and Site Number	Additional Citations
Western Uplands Physiographic Region	1. Trowbridge / Trempealeau County – site # 47-TR-28/66 2. Polander / Crawford County – site # 47-CR-39 3. Raisbeck / Grant County – site # 47-GT-112	Squire and Davis (1848), Rowe (1956), Thomas (1894), and McKern (1929)
Central Plains Physiographic Region	4. Kratz Creek / Marquette County – site # 47-MQ-39 5. McClaughry / Marquette County – site # 47-MQ-38 6. Neale / Marquette County – site # 47-MQ-49	Barrett and Hawkes (1919) and McKern (1928)
Eastern Ridges and Lowlands Physiographic Region	7. Kletzien / Sheboygan County – site # 47-SB-61 8. Kolterman / Dodge County – site # 47-DO-189 9. Nitschke / Dodge County – site # 47-DO-27 10. Big Bend / Waukesha County – site # 47-WK-196	McKern (1925, 1930, 1936), Wittry and Bruder (1955), Bruder (1953), and Wood (1936)

males and probable females as male or female. Age was estimated utilizing multiple skeletal and dental reference points, according to standard methods (Buikstra and Ubelaker 1994; Iscan et al. 1984, 1985; Jackes 2011; Lovejoy et al. 1985; Scheuer and Black 2004; Suchey and Katz 1998). Due to the relatively small sample size, individuals less than 15 years were pooled as juveniles, while individuals over the age of 15 years were pooled as adults.

In combination with contextual data, epigenetic data were utilized for understanding the biological and social relationships (i.e., biological distance) among mound groups and regions within the sample area. These studies are guided by the principle that groups who exchange mates will be more phenotypically similar than those that do not exchange mates (Stojanowski and Schillaci 2006). By extension, it is assumed that phenotypic homogeneity between two groups indicates close social interaction between the groups. As the samples were fragmentary, only infracranial and cranial nonmetric epigenetic traits that measure biological distance were collected, using methods provided by Buikstra and Ubelaker (1994) and Saunders (1977). In order to analyze these traits, SPSS statistical software was used for most data entry and statistical analyses. Frequency analyses and Fisher's Exact (FE) tests were employed to explore variability of specific traits among mound groups. If variability was observed, these traits were included in the analysis. In addition, a two-by-two contingency table using the chi-square statistic, FE test, and binomial regression statistical analyses were used to examine potential influences of age and sex effects

on traits. Any traits that were found to be sex- or age-linked, or that did not contribute to variability, were excluded.

After this, a Smith's Mean Measure of Divergence (MMD) test was performed to look for further biological distance results among differing mound groups (Donlon 2000; Harris and Sjøvold 2003; Sołtysiak 2011). As MMD requires discrete (presence/absence) traits for analysis, variations in the expression of nonmetric traits were converted to present or absent prior to the MMD test. Data for nonmetric traits that presented adequate sample sizes ($n > 70$) were analyzed using an R script (Sołtysiak 2011) in the R statistical software for the MMD procedure. A squared MMD matrix was produced reporting each nonmetric numerical value between each pair-wise (i.e., mound site A vs. mound site B) comparison. Higher MMD values indicate greater biological distance and lower values show potential familial similarity. In addition, a standard deviation matrix was generated to determine statistical significance if the sum of two standard deviations exceeds the MMD matrix value for each mound group (Harris and Sjøvold 2003; Sołtysiak 2011). Since frequencies of many traits were low, the Freeman and Tukey correction was used (Harris and Sjøvold 2003; Sołtysiak 2011). Euclidean distance calculations were employed to produce cluster dendrograms and multidimensional scaling scatterplots, as has been used elsewhere to document potential biological affinities of human groups (Sutter and Verano 2007). These analyses may suggest the genetic relationships among Effigy Mound peoples and, by extension, the extent of interactions. More importantly, the biological distance analyses may elucidate the contextual patterns observed.

Other dimensions of the mortuary program include material features such as earthen fireplaces, rock altars, pottery, clay and pebble cists, and various site-specific features. Since such features likely held a ritual significance, they were included in the analyses exploring community identity, especially as they varied with other important identifiers. Frequencies of mound forms, mound features, feature positions, burial dispositions, age, sex, and nonmetric traits were recorded to explore sample sizes and to evaluate patterns in the data. Categorical inferential probability statistical procedures (i.e., Pearson's Chi-square and FE tests at the 95% confidence interval) were performed to investigate patterns among the variables. In cases where robust differences were found, additional binary or multinomial logistic regression tests were employed to analyze variation and similarities among mound groups and to calculate odds ratios (i.e., likelihood of an event happening if a certain trait is present or absent). In this scenario, an odds ratio is calculated for each independent variable when one variable is held constant as the dependent variable.

Results

Overall, due to the fragmentary nature of some of the remains or archaeological context, only select sites could be included in every comparison. Wherever possible, as many sites as possible were included within each comparison and the results are given below.

Co-variation of Features and the Spatial Dimension

There was a considerable amount of regularity in features among Effigy Mound sites across southern Wisconsin, and at the same time, variability at the local site level (Table 6.2). Three main patterns were identified. First, at most mound groups, the majority of mounds contained burials. Second, burials tended to co-occur with other ritual features. Third, few mound groups incorporated non-burial features in mounds. Idiosyncratic features, not represented in Table 6.2, were incorporated in a few specific mound groups. Examples of these idiosyncratic features include the use of stone plats and stone tombs at Polander (McKern 1929), layering of light and dark sands and fire layers at Kratz Creek (Barrett and Hawkes 1919), and the inclusion of clay and pebble cists[2] at McClaughry and Neale (McKern 1928). Finally, it should be noted that the Big Bend mound group was excluded from analyses of burial features due to a lack of records regarding archaeological context.

An analysis of the spatial dimension of features among mound groups revealed that the horizontal position of features within both geometric and effigy mound forms was fairly standardized. For the horizontal position of burials in geometric mounds, 108 of 117 burials were in or near the center of the mound. The same pattern held for other ritual features. We interpret this common pattern of centralized placement of burial and other ritual features in geometric mounds as an overarching pattern among Effigy Mound peoples of southern Wisconsin.

When we examined the anatomic position for burial in effigy mound forms, we found that most burials occurred in the heart position in most mound groups (Figure 6.3). However, there was considerable variation among mound groups for alternative anatomic positions. For example, at Raisbeck, burials also occurred in the head position, at McClaughry and Nitschke there was great variability in burial location, and at Neale and Kolterman, burial occurred secondarily in the stomach position. This same consistency of pattern was also found with the horizontal position of other features.

Vertical placement of burials also varied significantly among the mound groups (FE, $p = 0.000$) (Figure 6.4). The modal burial disposition for most sites was below the mound floor. The primary difference was when burials were placed directly on the mound floor or above the mound floor. For the Western Uplands group and the McClaughry Mounds, both of these two locations were used. However, at McClaughry, there was a somewhat equal preference for burial directly on and below the mound floor. At Nitschke, in the Eastern Ridges and Lowlands, there was a secondary preference for burial directly on the mound floor.

The vertical position of earthen fireplaces (FE, $p = 0.000$) and stone altars (FE, $p = 0.002$) also exhibited considerable variation among mound groups. Earthen fireplaces appear to be fairly ubiquitous across the region, with the exception of Polander and Trowbridge (Western Uplands) and Kolterman (Eastern Ridges and Lowlands). However, the vertical placement of these fireplaces within mounds was variable (Figure 6.5). Like earthen fireplaces, stone altars (a group of burned or unburned flat stones purposely placed) occurred frequently at sites. The vertical position of stone altars also varied between sites, yet appeared to be consistent with earthen fireplaces at the site level (Figure 6.6).

Burial Disposition

We investigated burial disposition variation among mound groups. However, it is important to note that burial disposition was analyzed at the level of burial feature and not the individual. Also, mixed and indeterminate burial dispositions were excluded from the analyses. Secondary burial was the modal and most frequent type of burial at

Table 6.2. Summary of frequency and approximate percentage of features occurring in mound groups. The Big Bend data were not included

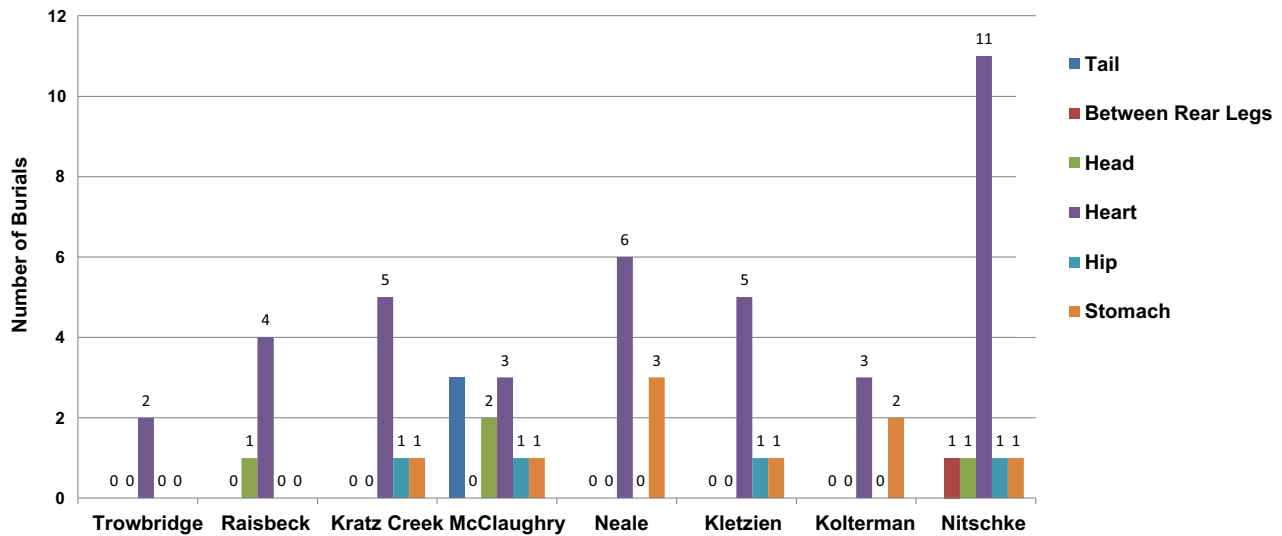| | Mound Groups | | | | | | | | |
| | Western Uplands Region | | | Central Plains Region | | | Eastern Ridges & Lowlands Region | | |
Types of Inclusions:	Trowbridge N / % of Total	Polander N / % of Total	Raisbeck N / % of Total	Kratz Creek N / % of Total	McClaughry N / % of Total	Neale N / % of Total	Kletzien N / % of Total	Kolterman N / % of Total	Nitschke N / % of Total
With a Burial	13 / 76%	15 / 83%	18 / 90%	8 / 22%	28 / 80%	11 / 46%	14 / 52%	4 / 100%	28 76%
With a Burials and any other features	1 8%	2 13%	13 72%	5 63%	16 57%	7 64%	8 57%	1 25%	6 21%
Without burial that contain any features	0 0%	1 33%	1 50%	4 14%	3 43%	6 46%	2 15%	0 0%	0 0%
With Burials and Earthen Fireplaces	0 0%	1 7%	5 28%	4 50%	5 18%	4 36%	6 43%	1 25%	1 4%
With Burials and Stone Altars	0 0%	1 7%	10 56%	2 25%	9 32%	3 27%	0 0%	0 0%	3 11%
Total excavated:	**17**	**18**	**20**	**36**	**35**	**24**	**27**	**4**	**37**

Figure 6.3. Frequency of the horizontal position of burials in effigy mound forms among mound groups.

most sites while mixed burials were rare (Figure 6.7). Most mound groups, with the exception of Kratz Creek (Central), Neale (Central), Kletzien (Eastern), and Nitschke (Eastern), exhibited higher frequencies of secondary burial. After excluding the mixed burials, there are significant differences in burial disposition among mound groups (FE, $p = 0.001$).

Burial disposition was also analyzed by mound class (geometric and effigy) among the mound groups. There was a greater proportion of secondary burials in geometric mound forms and a greater number of primary burials in effigy mound forms (Figure 6.8). Kratz Creek (Central), Kletzien (Eastern), and Nitschke (Eastern), are the only mound groups that had a higher number of primary burials in geometric mounds. There was significant variation for burial disposition in geometric mounds among mound groups (FE, $p = 0.015$). Although there was no statistically
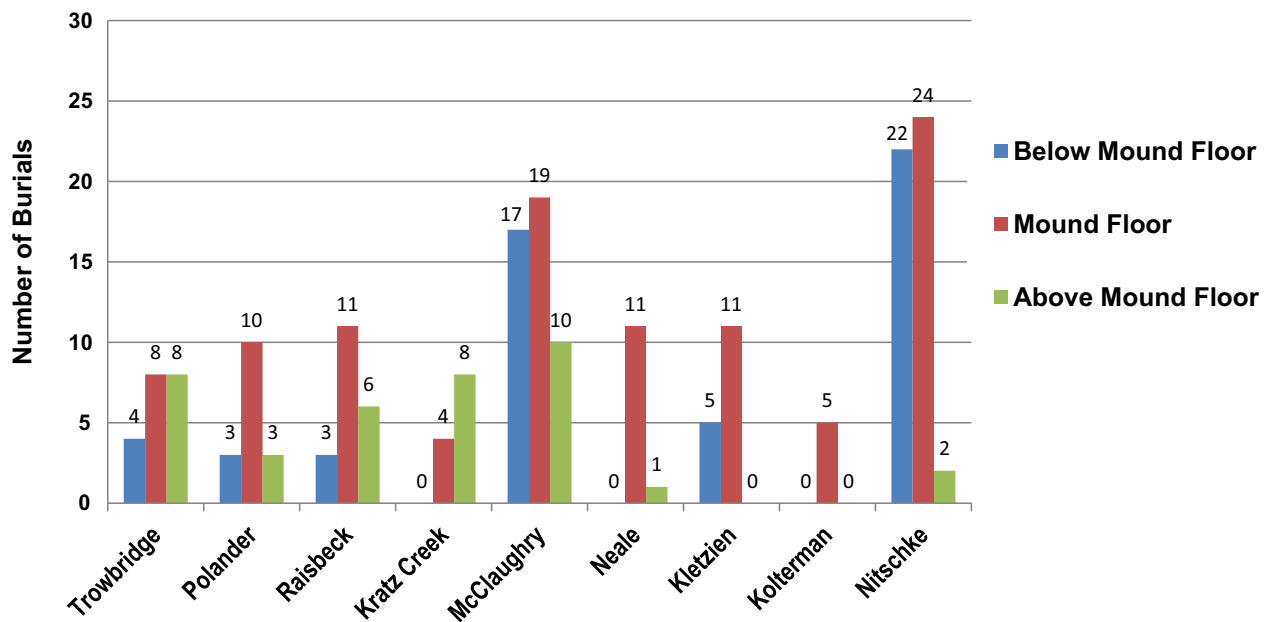
Figure 6.4. Frequency of vertical position of burials among mound groups.

significant difference among effigy mound forms (FE, $p = 0.222$), there was some observed variation. At two mound groups, Raisbeck (Western) and McClaughry (Central), secondary disposition was most common for both effigy and geometric mounds, departing from the overall trend of effigy mounds generally including primary burials.

Age and Sex Selection between Mound Forms

To observe any demographic patterning within mounds and among mound groups, we analyzed a sample of 218 males, 115 females, and 154 adults of indeterminate sex. Kolterman (Eastern) was excluded from this analysis since
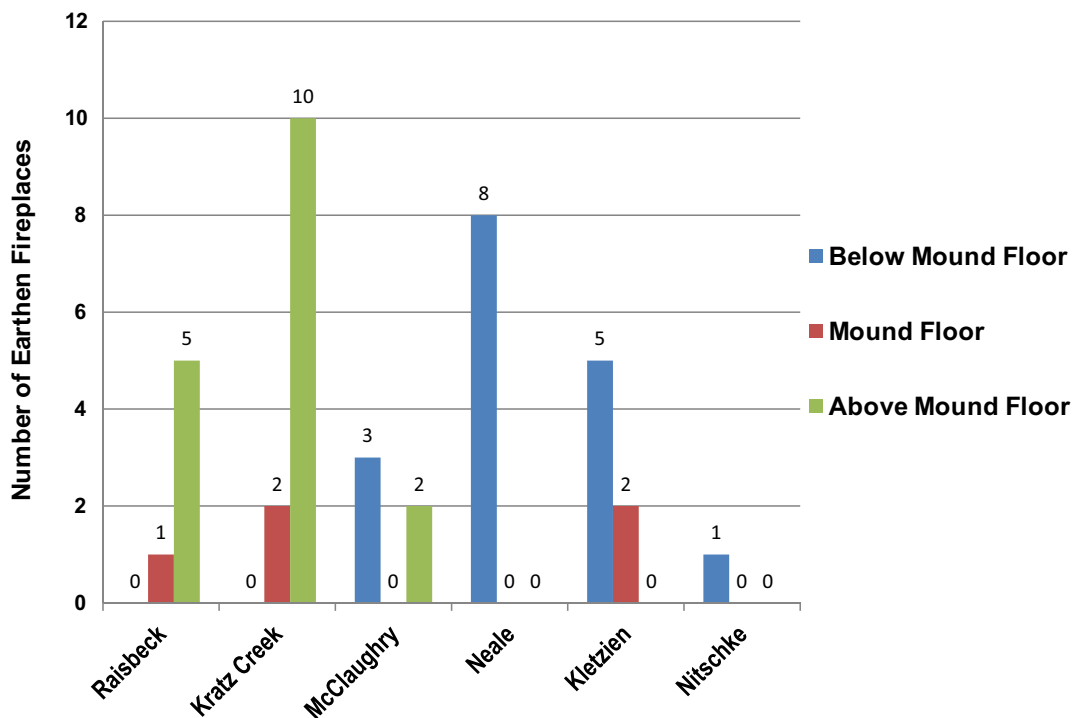

Figure 6.5. Frequency of vertical position of earthen fireplaces among mound groups.
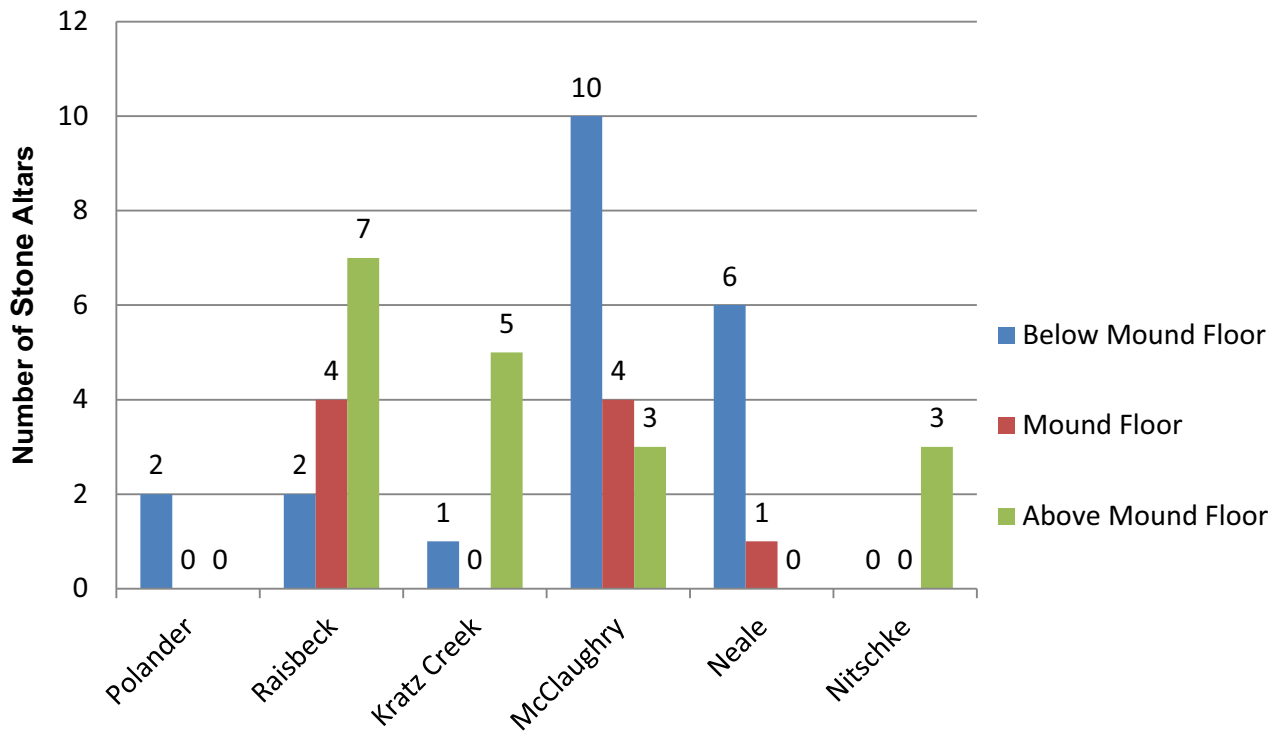
Figure 6.6. Frequency of vertical position of stone altars among mound groups.

sex could not be estimated for any of the skeletal remains. Data are not presented on the distribution of burials by sex across mound forms because sex could not be estimated for many burials, and the results were inconclusive. Within mounds, our results indicated that roughly equal numbers of males and females were interred among all mound groups, a pattern noted in other studies (Birmingham and Eisenberg 2000; Lackey-Cornelison 2012; Ruth 1999). This was statistically supported and when a FE significance test for sex was examined by mound form, there were no differences. Males and females had apparent equal access to interment among all mound groups and in all mound forms.

An examination of age differences by mound form indicated significant variation for geometric mound forms and effigy mound forms (Figure 6.9). Trowbridge (Western) was a particularly remarkable site as 46 adults and a single juvenile were interred in the geometric mounds at this site. The result of a logistic regression indicates that adults were almost 14 times more likely to be found at Trowbridge than juveniles, relative to other mound groups (Wald Chi-square = 6.135, p = 0.012).

There was significant variation among mound groups as to which age groups could be interred in effigy mound forms (FE, $p = 0.038$) (Figure 6.10). One general pattern was that juveniles were largely excluded from burial in effigy-shaped mounds (Lackey-Cornelison 2012), with Raisbeck,

Trowbridge, McClaughry, and Kletzien mound groups containing no juveniles in effigy mound forms. However, there was a notable exception at Nitschke, where 13 juveniles were found in effigy mound forms.

Epigenetic Structuring Among Mound Groups and Regions

We also investigated whether the biological affinity among groups suggested the construction of mound groups by descent groups. The MMD value (from the MMD matrix) between two groups represents the relative biological distance between the groups; Table 6.3 visually presents the increasing biological distance for each mound group relative to other mound groups (Figures 6.10 and 6.11).

There are multiple distinct patterns that emerge from the biological distance results. First, there may have been a close relationship among the Western Upland Groups of Trowbridge, Polander, and Raisbeck (albeit weaker with Raisbeck). Second, Nitschke presented a close biological affinity with almost all of the mound groups. Third, Kletzien was significantly different and divergent from almost all of the mound groups. Fourth, with the exception of Kletzien, all of the Central Plains and Eastern Ridges and Lowlands groups demonstrated a relatively close biological affinity. Finally, Raisbeck had a tendency to ally closely
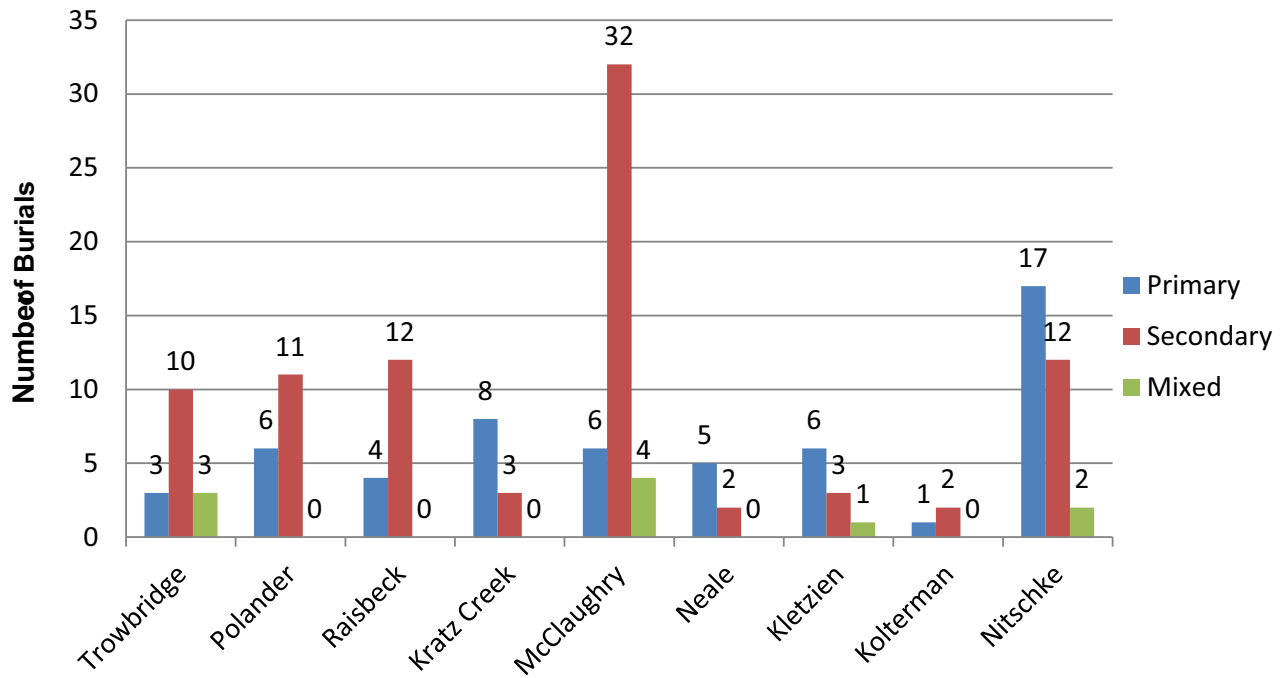
Figure 6.7. Frequency of burial disposition in geometric and effigy mound forms among mound groups.

with the Central Plains and Eastern Ridges and Lowlands groups, especially McClaughry and Nitschke. Interestingly, this may be attributed to the Wisconsin River, which roughly, geographically joins Nitschke and Raisbeck.

Discussion

It has been well documented that mound building and the mortuary rituals associated with them were part of the social and symbolic knowledge that communicated information about local and regional identities in the prehistoric Upper Midwest (Benn 1979; Birmingham and Eisenberg 2000; Buikstra et al. 1998; Charles and Buikstra 2002; Goldstein 1995, 2010). As such, the mounds, burials, and associated mortuary treatments were treated as products of social labor and agency, and were exercised to create representations of community and individual identity (Lackey-Cornelison 2012; Cornelison 2013). It is the authors' position that the social labor involved in Effigy Mound monumental construction and mortuary ritual was actively negotiated among and between participants in mound building communities.
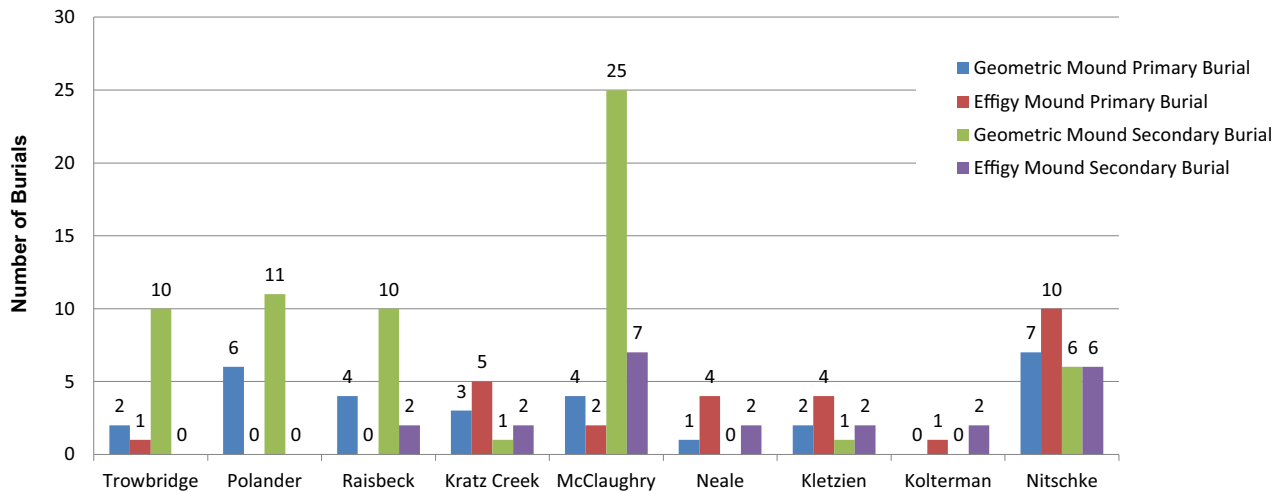

Figure 6.8. Frequency of burial disposition in geometric and geometric mound forms among mound groups.
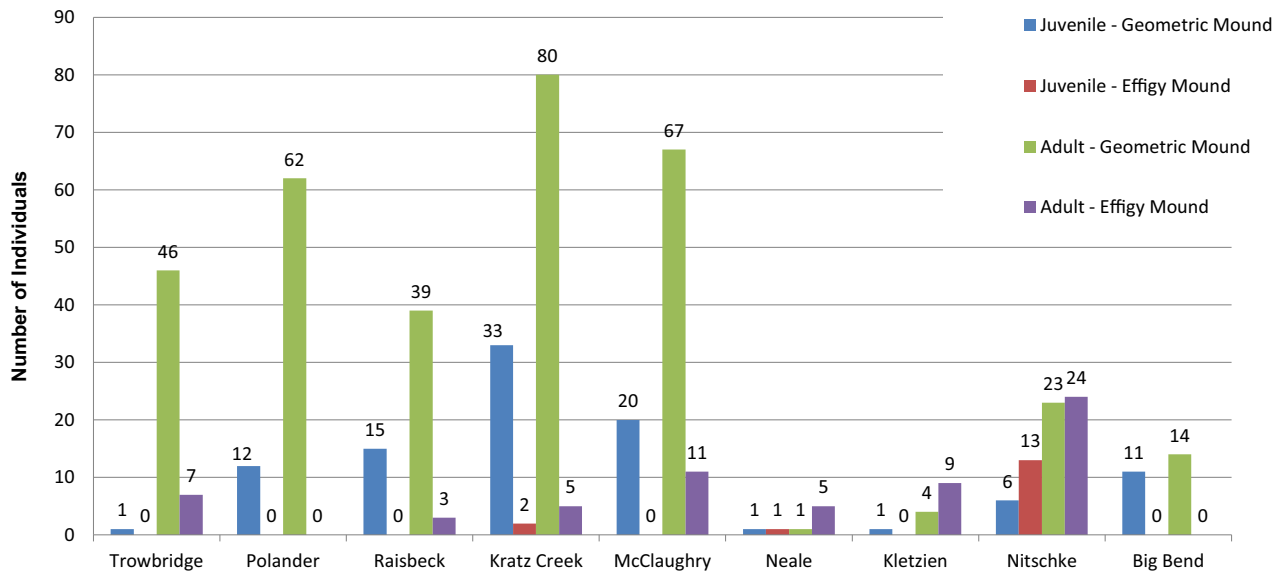
Figure 6.9. Frequency of juveniles and adults in geometric and effigy mound forms among mound groups.

Table 6.3. Biological distance among mound groups from MMD values

Region of Wisconsin	Increasing Biodistance ⟶						
Western Uplands	**Trowbridge**	Polander	Raisbeck	McClaughry	Kratz Creek	Nitschke	Big Bend	Kletzien
	Polander	Trowbridge	Raisbeck	Kratz Creek	Nitschke	Big Bend	McClaughry	Kletzien
	Raisbeck	Nitschke	Trowbridge	McClaughry	Kratz Creek	Big Bend	Polander	Kletzien
Central Plains	**Kratz Creek**	Nitschke	Big Bend	McClaughry	Raisbeck	Kletzien	Polander	Trowbridge
	McClaughry	Nitschke	Kratz Creek	Raisbeck	Big Bend	Kletzien	Trowbridge	Polander
Eastern Ridges & Lowlands	**Kletzien**	McClaughry	Big Bend	Kratz Creek	Nitschke	Raisbeck	Polander	Trowbridge
	Nitschke	Big Bend	Kratz Creek	McClaughry	Raisbeck	Trowbridge	Kletzien	Polander
	Big Bend	Nitschke	Kratz Creek	McClaughry	Kletzien	Raisbeck	Polander	Trowbridge

Hence, this study addressed two main issues regarding the Effigy Mound manifestation: (1) that there was a larger, overarching communal identity with regionally shared effigy mound construction and select ritual paraphernalia, and (2) there was also a localized, corporate kin-based identity with variation in the type and location of goods within and between the mounds. Although the Effigy Mound manifestation has been traditionally defined by a suite of characteristics that are presumed to be shared by all Effigy Mound peoples, we have demonstrated that certain ritual features (i.e., the use of mounds for burial, the co-occurrence of earthen fireplaces, stone altars, and ceramic vessels with burials, the use of multiple and secondary burials) suggest an overarching ritual system. Communities demonstrated their participation internally and externally through the creation of monumental constructs. These constructs, and notably their shared features, were visible markers on the landscape of participation in the larger Effigy Mound regional identity.

At the same time, we can argue that specific communities were using burial as a way, as noted by Chesson (2007:120), to "reassert and renegotiate their identities" given the amount of local variation in burial placement and burial type. Specifically, the rituals associated with mound construction, particularly mortuary rituals, likely played a role in the creation of community and individual identities,
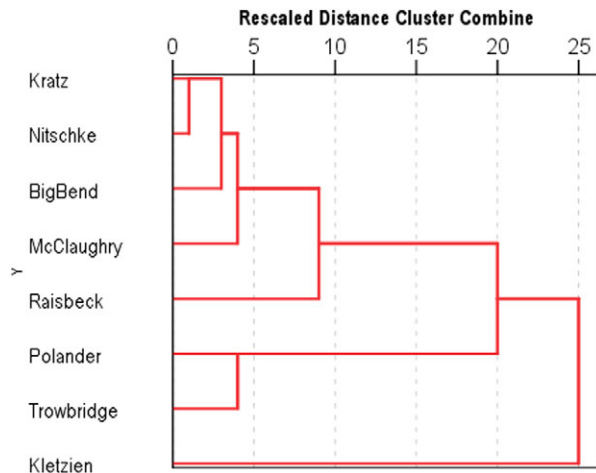
Figure 6.10. Hierarchical Cluster Dendrogram using average linkage (between groups) produced from the Euclidian distance calculation of the MMD matrix. The dendrogram displays the relative biological distance among the groups. The horizontal axis represents the dissimilarity between clusters and the vertical axis represents the clustering of groups based on the MMD.

and ultimately, the reification and/or transformation of the social structure. In the context of Effigy Mound monumental construction, mound building likely had a fairly socially prescribed method of creation. However, this operational process also offered opportunities for negotiation in new and varied mound forms, internal structuring of human and ritual
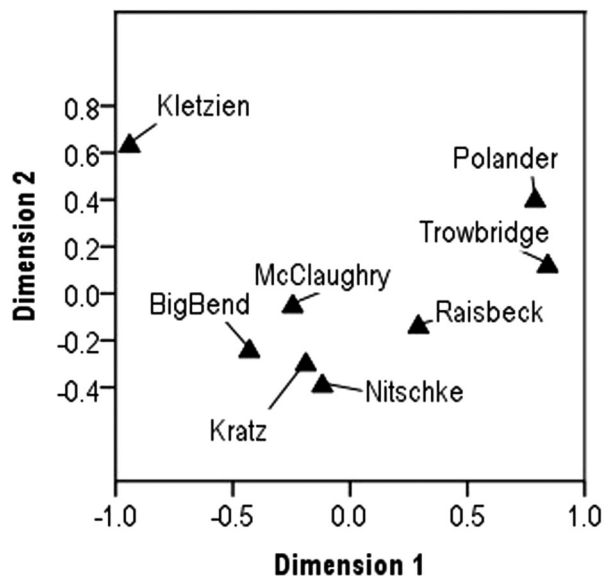

Figure 6.11. Multidimensional Probability Scaling (PROSCAL) scatterplot of the MMD among eight mound groups. This figure displays three primary clusters including a) Kleizen, b) Big Bend, McClaughry, Kratz Creek, Nitschke, and Raisbeck and c) Polander, Trowbridge, and Raisbeck.

paraphernalia, and what human burials (if any) to include (Giddens 1984; Lackey-Cornelison 2012; Mizoguchi 1993).

We also found that the Effigy Mound manifestation was composed of multiple communities with a kin-based social organization, as established by the biological distance evidence, differential postmortem treatment, and the internal structuring of the mounds among mound groups. However, these lineages were variable and show differential intergroup interaction in this Late Woodland period. The evidence indicates intraregional homogeneity and interregional gene flow, a pattern consistent with other areas of the Upper Midwest in the Late Woodland period. The general pattern suggests homogeneity within the Western Uplands and homogeneity among the Central Plains and Eastern Ridges and Lowlands groups, demonstrating how epigenetic analyses can inform the social organization of the Effigy Mound peoples. This echoes patterns in Rosebrough (2010) who found significant differences in mound form between southeast Wisconsin and Western Uplands mound groups. Interestingly, the biological distance results indicated that almost all groups were biologically distant from Kletzien. This divergence corresponds with the contextual data of the Kletzien group that was dominated by deer effigy mound forms, excluded children from burial, and was represented mostly by single primary burials. This may suggest a deemphasizing of the corporate group, and instead, emphasized specific individual identities, rituals, or ritual positions (Lackey-Cornelison 2012).

Although these groups were broadly related and participating in the same ritual system, they were locally distinct, as shown by the idiosyncratic inclusion of features in mounds. Examples of this distinctiveness include use of stone plats and stone tombs at Polander; extended burials at Polander and Trowbridge; prevalence of single individual burials at Kletzien; burial in three distinct locations in effigy mound forms at Nitschke; organized stratigraphic layering of light and dark sands and fire layers at Kratz Creek, and inclusion of clay and pebble cists at McClaughry and Neale. The idiosyncratic context and the systematic variation in the use of symbols (both of human and non-human sources) may have been badges for identity that were specific to each lineal group and community.

Thus, two distinct corporate identities are interpreted from the results of this research: 1) an overarching, regional, community identity represented by similar mound-form construction and ritual paraphernalia in the mortuary program across southern Wisconsin and marked by intraregional epigenetic homogeneity and 2) a localized corporate lineage based community identity represented by internal feature variation and distinct biological variability among some of the mound groups. Because local community

identities were created and reproduced through the agency of participants in Effigy Mound ritual, it is our opinion that local community identity was marked by a combination of differential burial dispositions, internal structuring of mound features, exclusion of age classes, and variable biological affinity among mound groups.

Community identity is not just imbued in the contents of the mounds, the mounds, and mound groups themselves, but also in the location, landscape, and surrounding geographic features. It is important to view the mound groups, both in light of their symbolic placement on the landscape *and* in terms of their physical construction (Bradley 1993, 1998), as those maintaining the mound groups and those outside the community likely recognized. Goldstein (1995) noted that no obvious ordered pattern could be recognized other than the mound groups tend be located along bluff tops, on high ground very near rivers and wetlands. However, there was probably an intentional planning of the space, which incorporated the landscape with the monuments, resulting in a pattern that likely venerated the ancestors, sacred offices, or may have communicated a social narrative.

Mallam (1976) and Goldstein (1995) found that the mound groups tended to be dominated by certain classes and types of effigy forms. This likely represented a shared symbolism by the community that communicated group identity to others. Shared symbolism was assuredly communicated at the level of the mound group, mounds, and the ritual paraphernalia contained within the mounds. In this study, we found variation among mound groups in feature type, in the spatial dimension of features, in burial disposition, and in the age of individuals interred in the mounds. We extend the premise of Morris (1992) on how community identity may have been communicated symbolically. First, the same objects could have been employed to symbolize the same thing among mound groups, but used or positioned in different ways. Second, the same objects carried differing symbolism among mound groups. Third, different ritual paraphernalia (features) symbolized the same things among the mound groups. For example, alternating stratified sands at Kletzien may have carried the same symbolism as some other feature within another mound group.

In this scenario, structures of society can be interpreted, purposely subverted, or creatively reinterpreted. The expected outcome of the relationship between the structure, agent, and the collective agent is that there may be a) common shared ritual patterns among related social groups, b) ritual variability among related social groups, and c) creative idiosyncratic rituals. The existence of secret ritual societies, in which a small number of people are mentored in ritual rites, could result in such variation. Alternatively, if rituals were performed infrequently, ritual elements may have been improvised (Pollock 2012). Another possibility might be that ritual practitioners were asserting their own individual identity and status through creative ritual practices. Finally, it could be that ritual practitioners were materially asserting their community identity through ritual practice by purposely placing unique features in the mound to set themselves apart from other corporate groups (Pollock 2012). Some combination of these possibilities is the most likely approximation of Effigy Mound social organization.

Conclusion

This research addresses important issues concerning the social organization of what has been traditionally referred to as the Effigy Mound manifestation. Like other prehistoric periods, the Effigy Mound manifestation has been characterized by a suite of traits for simplification of a widespread social phenomenon. The data from the 10 sites studied here demonstrate that these traits were not universal. However, the use of mounds, particularly for burial, the co-variation of earthen fireplaces and stone altars with burials suggests an overarching ritual system that may have operated to communicate both local and broader regional community identities. In contrast, it has been demonstrated that the Effigy Mound manifestation was composed of multiple societies organized by lineal decent. The epigenetic, age structure, and contextual analyses highlight the variation among mound groups. In fact, the biological distance analyses parallel the contextual differences among mound sites. Furthermore, the idiosyncratic variables that cannot be analyzed statistically, may reflect the demarcation of a society's identity within a larger overarching ritual system. Examples of this include the use of stone plats and stone tombs at Polander, the extended primary burials at Polander and Trowbridge, the prevalence of single adult primary burials at Kletzien, the stratigraphic layering of alternating and fire layers at Kratz Creek, and the inclusion of clay and pebble cists at McClaughry and Neale. These idiosyncratic traits and the systematic variation in the use of symbols, both of human and non-human sources, were likely badges for identity that were specific to each lineal group. The variability we see may be the result of deliberate actions by the group or ritual leaders demarcating community identity by branding it into the ritual performance, and as a result, into the physical remains of those performances. However, communities simultaneously communicated identification with a broader regional identity through consistencies in general mound construction and shared ritual. Finally, a practice approach is valuable for interpreting systematic patterns, variation, and idiosyncratic uses of ritual paraphernalia.

The results from this study show that community identity was represented on at least two scales: 1) a larger regional community identity represented by consistencies in general mound forms, shared ritual paraphernalia in the mortuary program, and results of the biological distance; and 2) a local corporate identity reflected by idiosyncrasies in specific material items and the spatial patterning of those items. Specifically, local community identity was demonstrated by differential burial dispositions, variable internal structuring of ritual paraphernalia, and exclusion of age classes at some mound groups. Ultimately, we have demonstrated that societies may communicate multiple identities through shared ritual and mortuary practices and, as such, bioarchaeologists and archaeologists must examine biological and material patterning at both the regional and local scales to truly elucidate how identity is reflected.

Acknowledgements

Notes

1. However, two sites in western Wisconsin included many extended burials.

2. A clay and pebble cist is "a small bowl-shaped structure with more or less vertical walls of red, unbaked clay, reinforced to some extent with pebbles, and with a slightly concave bottom lined with small stones" (McKern 1928:263).

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Living Among the Dead: Establishing and Maintaining Community in Northern Albania

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ABSTRACT

  While bioarchaeology and mortuary analysis are inextricably woven into the study of past populations, modern communities provide valuable insight into the complex relationships between past and present. Population movements, both past and present, affect community dynamics and can be traced through careful, diachronic study of regional mortuary monuments and practices. The northern Albanian province of Shkodër is an ideal testing ground for examining social changes accompanying the regional movement of both people and things. I contend that Bronze Age and modern communities have used mortuary monuments, mounds, and cemeteries, similarly, to encourage and discourage social contextual interaction. [Albania, Community, Mortuary archaeology, Monuments, Landscape]

The concept of *community*, as well as its usage and applicability to anthropology, is a field of study that is increasingly growing in significance, particularly amongst archaeologists. Canuto and Yaeger (2000), for example, have provided nuanced, regional, and multi-scalar perspectives from the New World on how community is conceptualized, recognized, excavated, and interpreted in the archaeological record. In other words, they provide us with examples drawn from New World regional case studies that demonstrate how archaeologists have defined a social construct in ways we can see and touch, thus lending credence to the "social life of things" (Appadurai 1988). However, the identification of particular communities as manifested in the archaeological record, and, more particularly, in the Balkans, continues to present us with challenges, principally as we try to understand past societal dynamics. How do we use rigid archaeological units of analysis to draw meaningful and contextually appropriate conclusions about past communities that likely existed in continuous states of flux?

  While the social concept of "community" has long been compatible with archaeological units of analysis (Canuto and Yaeger 2000), scholarship must move beyond simple typological classifications since we now know that pots do not in fact equal people, much like piles of bones do not necessarily equal communities; rather, as Becker and Juengst suggest (this volume), skeletal remains reflect the lived experiences of people. If understanding what communities look like in the archaeological and bioarchaeological records is the goal, and if the social concept of community has too long functioned as a static (and useful) unit of archaeological analysis, then perhaps we should continue to periodically revisit the ways in which dynamic communities can, may, and have manifested themselves in the modern anthropological record.

  This chapter presents the results of a case study conducted under the auspices of the Projekti Arkeologjikë i Shkodrës (PASH), the Shkodër Archaeological Project[1].It examines contemporary community dynamics in northern Albania, highlighting the role oral histories, archaeology, and monuments play in establishing and maintaining distinct communities, which have waxed and waned through time. Ultimately, this chapter will focus on social interaction, whether real or symbolic, as an important variable for understanding the construction of community and its associated dynamics.

Here, the concept of "antagonistic tolerance" (Hayden 2002; Hayden and Walker 2013) provides a useful framework for understanding community dynamics in the landscapes of the living and the dead, whereby intermingling groups are characterized as Self and Other. This characterization requires one group to be dominant; a manifestation of this dominance can be physically marked through control of physical structures (i.e., cemeteries, mounds, places of worship). The concept of "religioscape" (Hayden and Walker 2013), which refers to the distribution, through time, of the physical manifestations of specific religious traditions and the populations that build them, provides an additional framework for better understanding the modern community dynamics of northern Albania.

Geographic Setting

The Shkodër Archaeological Project is an international, collaborative, regional research project focused on the Shkodër province of northern Albania, a strategically important region located in the western Balkans along the Adriatic coast (Figure 1.1). Survey, excavation, and interdisciplinary collaboration have been conducted for five years (2010–2014) under this project. The study region encompasses the Shkodra Plain and surrounding hills, and is situated along the eastern shore of Shkodra Lake, the largest freshwater lake in the Balkans.

Sociohistorical Setting

The county of Shkodër is large—3562 square kilometers—encompassing the Shkodra Plain and a portion of the Albanian Alps. Its population in 2011 was 215,347. The region is home to numerous farming villages as well as Shkodër, Albania's fifth largest city, with about 111,686 inhabitants. With the fall of Communism in 1991, masses of people left the surrounding mountains and resettled in and around Shkodër, which is expanding and engulfing the Shkodra Plain. My research targets the Shkodra Plain for two reasons: 1) the city's alarming growth rate is drastically altering the archaeological landscape; and 2) the opportunity to study the dynamics of community amongst inhabitants, both "indigenous" and migrant, who, under Communism, once occupied relatively non-interacting, "closed" social systems.

The Shkodra Plain, much like Shkodër itself, is home to individuals of several religious affiliations: Muslim, Catholic, and Eastern Orthodox. Further sociocultural divisions can be made based on ethnic affiliation, such as "Albanian" and "Montenegrin." Generally speaking, Muslim Albanians are considered to be the indigenous inhabitants of the Plain, whereas Catholic Albanians are migrants who came from the surrounding mountains beginning three decades ago. The Montenegrin Orthodox are viewed as foreigners, despite having lived on the Plain for at least 200 years, according to the oral histories of some families.

This understanding of Shkodër's modern history is, of course, oversimplified and betrays underlying concerns about land ownership and scarcity. Prior to the Ottoman occupation of Shkodër in 1478, all Albanians were nominally Christian, whether Catholic or Orthodox. At the onset of Ottoman rule, Catholics fled into the mountains to escape conversion. Thus, the Muslim claim to primacy stretches back no farther than the late-15th century. Moreover, the border separating Albania from Yugoslavia has moved frequently in the past, creating a mixed "frontier" population. Until recently, there were as many Orthodox, Slavic-speaking people in Albania as there are now Albanians in southern Montenegro. The interesting anthropological question is just how the myth of Muslim-Albanian autochthony was created and sustained. I maintain that a careful study of these various communities and their mortuary practices helps answer the question, and can serve as an analogy for the functioning of the prehistoric communities that occupied the Shkodra Plain in the Bronze Age.

Archaeological Setting

The late prehistoric occupants of Shkodër buried (at least some of) their dead in mounds (tumuli). The practice of tumulus burial appears to have emerged suddenly, beginning in the Early Bronze Age (ca. 3100 B.C.E.), about the same time that hilltop settlements were first occupied. In the subsequent Iron Age, social organizations underwent changes resulting in so-called Illyrian tribes, which were described by Greek and Roman writers (Mazzini et al. 2016). Albanian archaeologists, such as Aristotel Koka and Bep Jubani, excavated several of these burial mounds in the 1980s and early 1990s during Albania's communist era (Jubani 1983, 1992; Koka 1983, 1985, 1986, 1988, 1990, 2010). However, until PASH, systematic survey had never been conducted; the exact number of burial mounds and their state of preservation remained unknown. In five years of survey, we have mapped 175 burial mounds (Figure 1.2). Those in Shkrel are associated with the prehistoric settlements of Zagorës and Marshej, while those in Shtoj are associated with the prehistoric settlements of Vorfë, Kulaj, and Kratul i Madh. Unfortunately, many of these mounds are being destroyed by farmers as the regional population expands. Consequently, in 2014, I targeted two threatened tumuli for immediate rescue excavation.
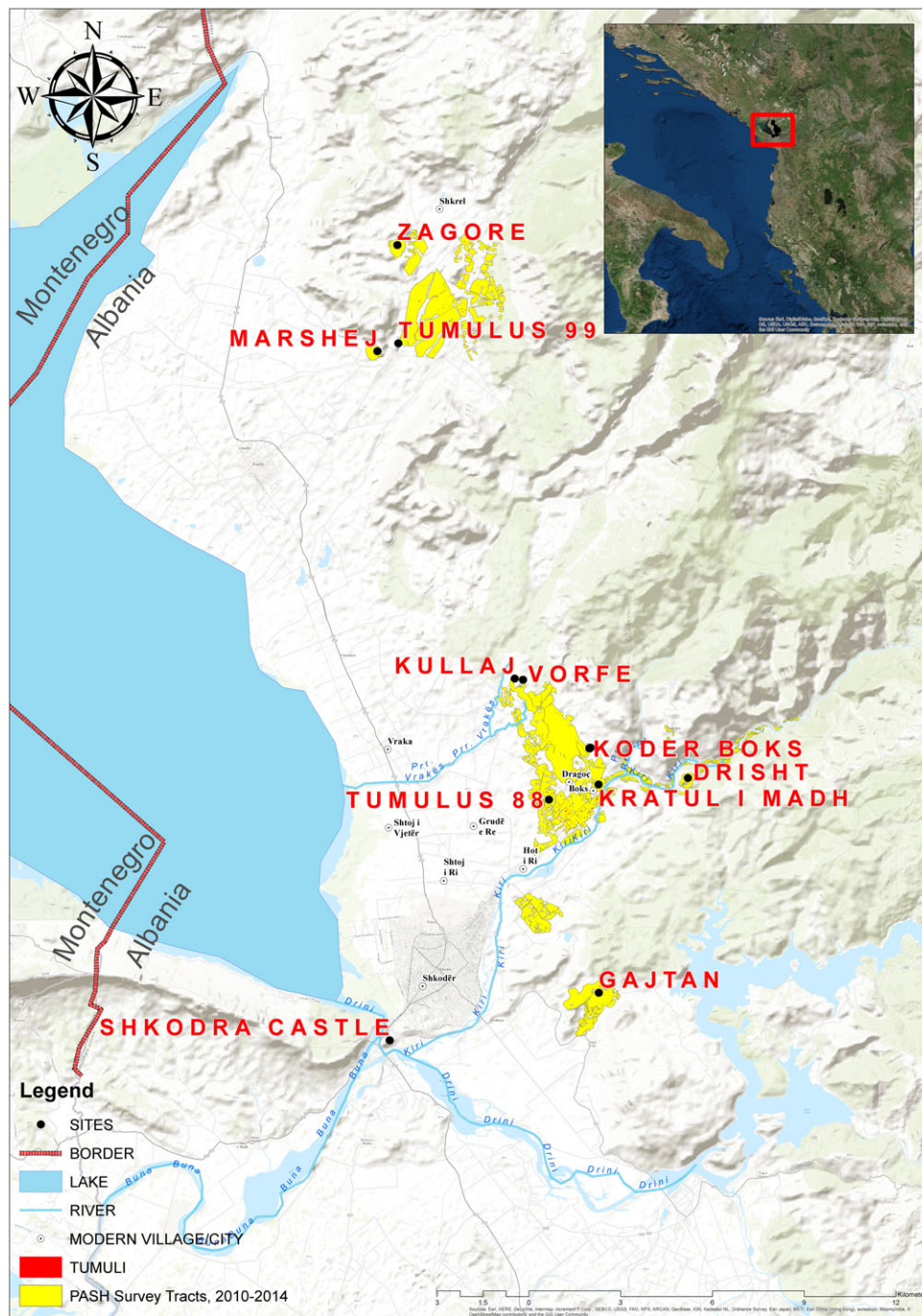
Figure 1.1.   The Shkodër Archaeological Project located in the Shkodër Province of northern Albania. Map courtesy of Shefqet Lulja.

Tumuli stand out on the flat landscape and appear as discrete, constructed piles of soil and stone (Figure 1.3). Some are several meters tall, with diameters of 10+ meters. Fieldstones were used as part of the fill, whereas larger rocks from the nearby hills were used to delineate burials. Tumuli construction varied from mound to mound; of the 11 tumuli previously excavated, some contained central graves while others did not (see Koka 2010). Additionally, some tumuli had one construction phase, whereas others had several. Exact dates of construction have been difficult to obtain since absolute dating methods were not part of the previous archaeological program in the region. The first
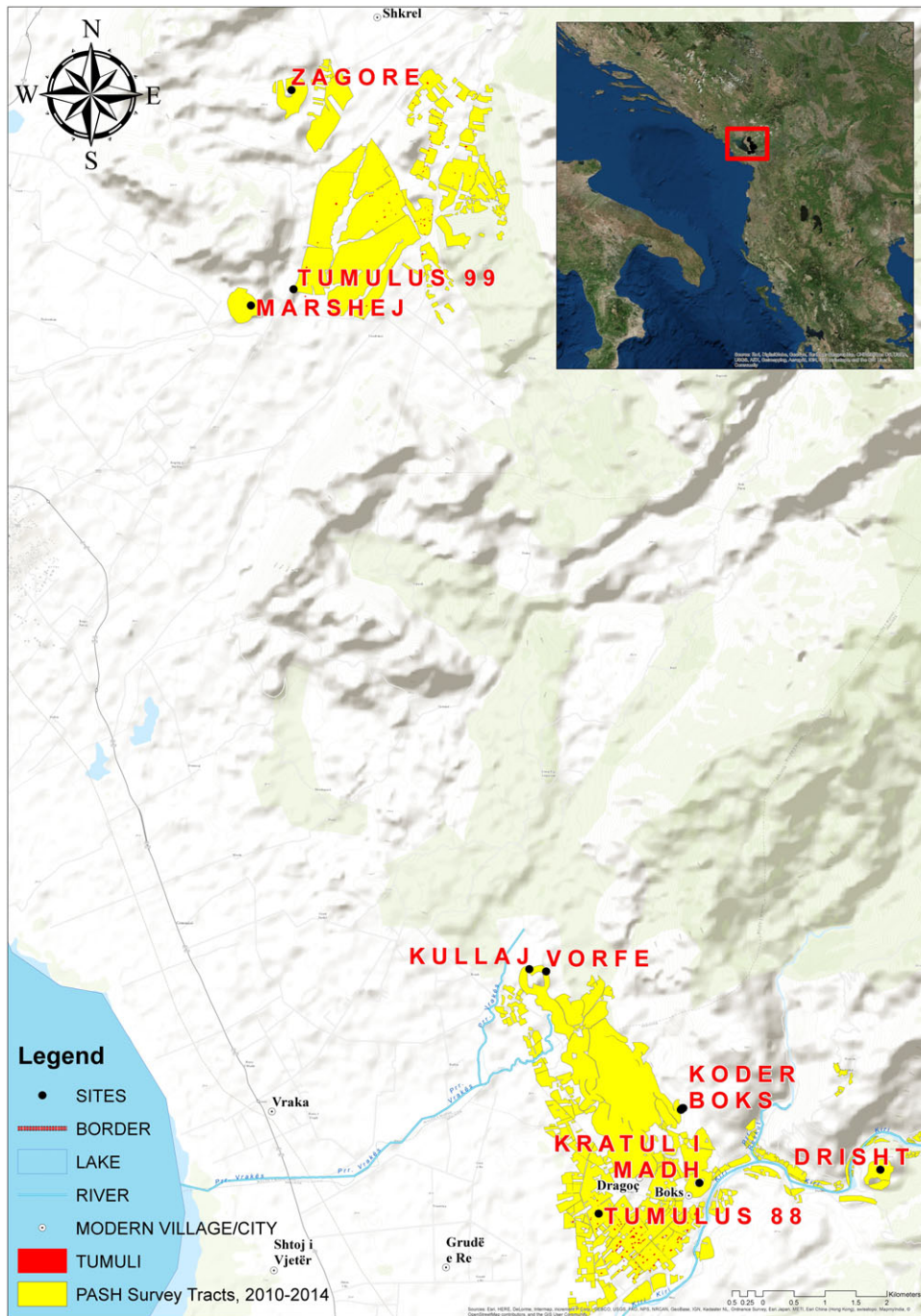
Figure 1.2. Map of mound and settlement distribution in the Shkodër Archaeological Project survey and excavation area. Map courtesy of Shefqet Lulja.

tumuli were built in the Early Bronze Age, with mounds added or added to throughout the Middle and Late Bronze and Iron Ages.

A map of hill forts and tumuli together (Figure 1.2) indicates that while living prehistoric people occupied hill forts, the dead occupied the spaces in between these living communities. In other words, tumuli were not just places where the dead were put—they occupied spaces, which were (and still are) very visible to the surrounding communities. In order for people to get from one settlement to the next, prehistoric people, much like current inhabitants, would have had to avoid or traverse these

Figure 1.3. Photo of a typical mound located in the Shkodër province of northern Albania.

spaces—thus signaling that the mortuary landscape of these communities served and facilitated important social roles.

Archaeological Survey and Excavation

PASH intensively surveyed 2518 tracts covering approximately 16 square kilometers in the areas of Shkrel and Shtoj and intensively investigated eight late prehistoric archaeological sites: Zagorës and Marshej in Shkrel and Vorfë, Kodër Boks, Kulaj, Kratul i Madh, Drisht, and Gajtan. Additionally, we conducted excavations at the hilltop settlement of Zagorës, the inland settlement of Kodër Boks, and the large hill fort at Gajtan, generating evidence for pre- and proto-historic occupation. The sites produced pottery from the Final Neolithic through the Classical period, with the bulk of the material dating to the Early and Late Bronze Age. A Final Neolithic date from Gajtan (Unit 3, Level 12, 3765–3645 cal. B.C.E.) likely represents the initial late prehistoric occupation of the region. Clays and pottery from these sites and from tumuli have been analyzed by inductively-coupled plasma mass spectrometry (ICP-MS) to measure intra-regional interaction.

In 2014, I excavated two mounds: T088 in Shtoj and T099 in Shkrel. The former monument was not apparently used for burial; rather it represents some kind of long-term ritual installation, used (probably discontinuously) from the

Final Neolithic through the Late Roman period (i.e., over the course of several thousand years). Cenotaphs are, in fact, known in the region, several of which were already excavated by Koka. The latter tumulus produced a single, rock-built central grave that had been disturbed, but contained the remains of three individuals, two adults and one sub-adult. An AMS radiocarbon date on two adult teeth produced results of 1740–1610 cal. B.C.E. and 1885–1690 cal. B.C.E., at the beginning of the Middle Bronze Age. The latter tooth was submitted to the Laboratory for Earth, Atmospheric, and Planetary Sciences at MIT for strontium isotope analysis and preliminary results indicate a non-local origin for one of the adults. It thus appears likely that movement of people to Shkodër occurred during the Bronze Age, thereby affecting community composition, just as it has occurred in modern times.

Oral Histories

While archaeology and bioarchaeology are inextricably woven into the study of past populations, the modern communities in which we work also provide valuable information and insight into the complex relationships we aim to understand in the prehistoric record. The ebb and flow of populations due to movement and associated social interactions in the past and present have an effect on community dynamics and social relationships. These dynamics, while

Figure 1.4. Photo of the Medieval Church of St. John of Rash, located in the Shkodër province of northern Albania.

sometimes difficult to observe in the (bio)archaeological record, can perhaps be augmented by examining the various types of social interactions that occur between the current communities that inhabit the same landscapes in which we conduct our archaeological investigations. Here, I focus on those social interactions facilitated or inhibited by mortuary behaviors, including access to cemeteries by various communities in Shkodër.

Current inhabitants of the Shkodra Plain, much like their prehistoric counterparts, are confronted with changing inter- and intra-community dynamics, partially as a result of "new" people moving in. Throughout the span of two weeks, I, along with a local field assistant, Besmir Bercaj, collected oral histories from inhabitants of two extensive village communities, Shtoj and Shkrel. We walked around the villages and conversed with the local inhabitants and, upon request, were granted interviews, which mostly took place inside of people's homes. In collecting local oral histories, several differences were noted between villages. For example, people

have lived in the Shtoj villages of Dragoç and Boks for so long that they do not preserve origin stories, despite other claims that they are of "Turkish" stock. In fact, these village settlements share common medieval origins and are located near the best land in the region, in quite close proximity to prehistoric hill forts and tumuli. These villages form "closed corporate communities" (Netting 1981) and outsiders (i.e., non-members, particularly non-Muslims) are carefully excluded; they cannot buy property, including land, in the village. Conversely, the land inhabited by Catholics elsewhere on the Plain, in villages like Hoti i Ri and Gruda, is rocky and poor. Cemeteries reinforce these social divisions. Muslims and Catholics only bury their dead in their respective village cemeteries with other village inhabitants. Mortuary behaviors serve to divide communities, not unite them. However, right down the narrow, winding road in Shkrel, oral history paints a different picture.

The region of Malësi e Madhe, which includes Shkrel, is home to Muslims, Catholics, and Orthodox. The Muslims

Figure 1.5. Map depicting linkage of mounds and surrounding settlements via Least Cost Path analysis. Least Cost Path analysis is a Geographic Information Systems function that determines the most efficient route from a source point to a destination. It takes into account variables like distance and slope in making these calculations. Map courtesy of Dora Lambert.

and Catholics in Shkrel have a reduced sense of separation as compared to Shtoj; their oral histories suggest that their founding ancestors were brothers. Depending on the village, Muslims and Catholics have lived side by side with the Orthodox since their historic arrival from Montenegro. Additional recent waves of Catholics arrived and settled sometime after the fall of Communism. Muslims and Catholics have historically been buried together in Shkrel since before Communism and the Muslims here consider themselves to be secular. Thus, in Shkrel, cemeteries function (and have done historically) to mitigate against the kinds of social (and economic) divisions identified in Shtoj.

The Orthodox in Malësi e Madhe have historically lived in nucleated communities like the village of Vraka, which

has experienced enormous change in community dynamics since 1991. The village (and region) of Vraka provides us with a heightened sense of changing community dynamics within a short period of time; some residents, although aged, are still alive to share their memories. The region of Vraka, according to oral history, experienced a surge in Montenegrin Orthodox migration sometime around 1820 and most of the houses in the surrounding villages are said to have been inhabited by this large and thriving community. Edith Durham (1909:39), who passed through the village in 1908, describes it as being "Serb." She also describes Slavic place names in Muslim territories (1909:40). After Communism ended, many (if not most) Montenegrin Orthodox fled north to Montenegro for the (failed) promise of a better life. Recent Catholic migrants, in turn, breathed new life into the vacant houses. The Catholics and Muslims now share a space that remains important to the former Orthodox inhabitants and their descendants; the importance of which is marked by a newly built Orthodox church, which remains closed except for important holidays when the diaspora are said to return, like pilgrims, each year.

In the absence of their own church, the early 19th-century Orthodox immigrants buried their dead in the nearby medieval church of St. John of Rash, which predates the Ottoman conquest and was neglected under Communism (Figure 1.4). This same church has recently been embraced by the local (and recent migrant) Catholic community, despite the fact that the Montenegrin Orthodox have claimed this space as well. The church, which is a registered monument of culture, sits in the midst of dispersed Catholic homesteads and nucleated Muslim villages, and symbolizes difference and potential conflict. Catholic migrants, having brought with them a suite of new cultural practices, have infused old sites with new religious identities. They have also constructed new cemeteries in vacant areas, which stand in stark contrast to the much older Muslim and Orthodox cemeteries found nearby.

Thus, the situation in Vraka is completely unlike Shkrel and Shtoj; most of the Montenegrin inhabitants have relocated and the landscape having been largely stripped of Orthodox monuments and memories. Only the cemeteries remain and they are slowly falling into disuse. In Shkrel, a stable, long-term system of interaction and accommodation formed, linking Muslims and Catholics, marked by integrated cemeteries. In Shtoj, a more recent period of migration has led to opposed systems of settlement—nucleated and dispersed, Muslim and Catholic, the latter relegated to infertile, unproductive land—and a lack of meaningful social interaction, marked by segregated burial. What then of prehistoric Shkodër?

Conclusion

When Shkodër's prehistoric mortuary and settlement systems are compared to those of today, they appear to mimic more closely Shkrel, where independent Catholic and Muslim communities share cemeteries. The idea that tumulus fields linked disparate hilltop settlements, occupied by separate interacting communities, is borne out by the results of Geographic Information Systems (GIS) analyses conducted by Lambert (2015). Least-cost paths between settlements tend to pass near or through mound groups (Figure 1.5), meaning travelers regularly saw and interacted with these monuments. The exceptions are paths heading from Shkrel and Shtoj to far-off Gajtan and Shkodër Castle, which by-pass mounds, perhaps indicating that these two settlements were part of a different, non-affiliated community and thus mounds did not need to be visited.

Based on the results of PASH and my oral-historical data, I argue that mortuary landscapes in Shkodër structured the relationships between people from different communities from the Early Bronze Age, through the Roman conquest, and into the present whereby the separation of burials in the modern era are both a cause and an effect of social divisions since they recapitulate and reinforce one another. The situation in prehistoric Shkodër thus bears similarity to the modern situation, in Shkrel specifically. Bioarchaeologists would do well, therefore, to remember that prehistoric people were dynamic agents, both in life and in death, and that mortuary landscapes were used in various complex ways, both to facilitate and confound social interaction. Moreover, Goldstein (1976, 1995) has suggested that the study of mortuary practices is especially beneficial when examined at the regional level, particularly since mortuary rituals are multidimensional. My research certainly supports this assertion. By placing mortuary monuments, such as tumuli, within larger regional frameworks, it becomes possible to understand better their role within multidimensional social systems.

Reconstruction of the social roles of prehistoric mortuary systems is greatly aided, I would assert, by analogy to modern mortuary systems. For the modern Balkans, I have found Hayden's (2002) concept of "antagonistic tolerance" to be very useful. Hayden argues that relationships between different ethnic groups in the Balkans have always been fraught. Sometimes conflicts erupt into open war, but more often than not there exists uneasy coexistence. Religious monuments have been used historically to mark territory creating complex, mixed "religioscapes" (Hayden and Walker 2013). In analyzing the mortuary landscapes of prehistoric Shkodër, together with their associated settlement systems, I am revealing similar, complex religioscapes, marked not by mosques and churches, and their associated cemeteries, but rather by burial mounds.

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The "Poxed" and the "Pure": A Bioarchaeological Investigation of Community and Marginalization Relative to Infection with Acquired Syphilis in Post-Medieval London

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ABSTRACT

This research evaluates mortuary evidence from post-medieval burials (N = 823), including 5 with evidence of acquired syphilis, e.g., "the pox," from four London cemeteries to determine if the strong social stigma and community exclusion associated with this disease during life continued in death. Mortuary context of skeletons evidencing syphilis was assessed against those without, but no evidence of non-normative burial was detected. However, this may be less reflective of the effects of stigma than pervasive poverty, an intense pressure to efficiently bury large numbers of dead during the high mortality early industrial era, and social pressure to have a normative burial. [Paleopathology, Bioarchaeology, Syphilis, Treponematosis, Post-Medieval England, Gender, Socioeconomic status]

Acquired syphilis, which was commonly referred to as "the pox" and a variety of other epithets following Renaissance medical concepts, was likely introduced to England around in approximately 1497 (Fabricius 1994). Historical records suggest that it spread quickly, and was perceived as endemic by many physicians and chroniclers by the mid– to late–16th century (Milburn 2004). It increased in prevalence throughout the 17th and 19th centuries, becoming one of the most profound public health problems facing the post-medieval period in England (Siena 1998). This period spans the mid–16th century into the modern era, though burials in and around London ceased in the mid–19th century, effectively capping the burial sample employed within this study—as well as osteological analyses of health and disease in pre-modern London overall—to this point in time. Like all pre-modern infectious diseases, the pox[1] was likely more common among poor and lower social and economic

status communities (Arrizabalaga et al. 1997). However, as a sexually transmitted disease, it was found throughout all socio-economic strata within post-medieval English society (Siena 2001, 2005), though those of higher and middling status went to great efforts to conceal evidence of infection with the shameful condition (Healy 1995).

Historical documents indicate that lived experiences of the disease varied relative to the sufferer's social status, but that the stigma associated with the pox often cut across status (Siena 2004, 2005). Simultaneous with its increased prevalence in the 17th to 19th centuries, the pox became increasingly stigmatized, moving from a sign of divine retribution in the 16th century to a powerful mark of social and sexual deviance by the mid– to late–17th century. In particular, many of the highly distinctive symptoms of syphilis, such as the patchy baldness (alopecia) of secondary stage syphilis and the destruction and collapse of the nose and

hard palate in tertiary stage disease, became highly symbolic of sin and moral corruption (Quétel 1990). These visible, publicly recognized signs of infection, particularly for women, caused a loss of sexual and social honor, which was the primary determinant of socio-economic status in post-medieval England (Foyster 1999). In addition, the pox's stigma was also not limited to sufferers. Reflective of Goffman's (1963) concept of "courtesy stigma," those affiliated with pox sufferers (i.e., the "poxed") were stigmatized by association, putting their sexual and social honor at risk. This is evident in a comment by Samuel Pepys (1904), a famous middling status 18th-century diarist. Upon learning that his brother had become infected with the pox, Pepys wrote that "if [my brother] lives, he will not be able to show his head—which will be a very great shame to me." At least among the middling and lower status, the stigmatization of the pox could pervade family and social networks.

In this chapter, I investigate whether social ideologies of discrimination centered on the pox's stigma resulted in the marginalization of poxed individuals and exclusion from their communities in post-medieval England. Following Becker and Juengst (this volume: page #), *community* is defined here as a "group of people that share some kind of real and/or imagined connectedness," which is signified through practice and repetitive performance and is highly historically contingent. As they discuss, material evidence of community membership and social exclusion can be difficult to identify in archaeological and bioarchaeological evidence of skeletal remains. However, a growing body of work from social history and mortuary archaeology indicates that mortuary context can be highly reflective of social attitudes towards the dead, including community affiliation and the transgression of community norms. Here, both the performative aspect of mortuary culture and the high volume of death, and thus high volume of burials, involved in the high mortality demographic regime of early industrial London (Wohl 1983) provide an opportunity to explore evidence of the practice of community through the practice of burial. Following this, and relying on precedents set within archaeological analyses of social deviance (Murphy 2008), it is proposed here that community inclusion may be signified by normative burial, while marginalization and community exclusion may be signified by non-normative burial, diverging from typical practice. Accordingly, I ask whether individuals with gross, skeletal evidence of acquired syphilis are associated with a normative mortuary context, consistent with other burials in their cemetery without evidence of acquired syphilis, or an interruption in this standard mortuary schema: a non-normative mortuary context. Here, mortuary context consists of body position, burial alignment, coffin type, and when found, mortuary artifacts, following Fay (2006). In order to evaluate this, I assessed the mortuary context of burials (N = 823) from four post-medieval London cemeteries, which includes five individuals recognized as manifesting skeletal lesions attributable to acquired syphilis. The cemeteries represent impoverished to relatively affluent communities, with the majority of them of lower social and economic status to poor.

Background

Acquired syphilis

When not treated with antibiotics, syphilis is chronic and multi-stage, with diverse and highly variable manifestations. Like its fellow treponemal variants, yaws and bejel (endemic syphilis), it is also one of the few infectious diseases to leave distinctive skeletal lesions, though these are transient and non-diagnostic in the first two stages of the disease (Ortner 2003). Primary stage syphilis involves a characteristic chancre, or painless sore, and systemic inflammation. Secondary stage, occurring weeks to months after primary stage, produces a range of often-conspicuous symptoms, from fevers, meningitis, and malaise to rashes and patchy baldness (alopecia). Sufferers next enter the latent stage, which is asymptomatic. Approximately 25 percent of cases experience the return of secondary symptoms within the first two years, but in most, latent stage is permanent and uneventful. However, a minority of cases—15 to 40 percent—experience tertiary stage disease, which is symptomatic and can initiate several years to several decades after initial infection. Tertiary infection includes cardiovascular involvement, such as aortic aneurysms, and neurosyphilis, which can include "lightning pains," dementia, tremors, and movement and balance disorders. Tertiary disease can also feature gummatous involvement, the development of gummy, destructive tumors with a necrotic center, which can affect any tissue or organ system. Gummata can reduce motor and joint function, cause debilitating pain, and result in disfiguring lesions, particularly on the face and cranial vault (Singh and Romanowski 1999). Approximately 10 to 20 percent of tertiary cases manifest skeletal involvement (Resnick and Niwayama 1995). This can include gummata affecting the skeleton, as well as periosteal reactions, in which abnormal bone is deposited below the periosteum; osteomyelitis, or infection within the medullary canal; osteitis, or the abnormal deposition of bone within the medullary canal of a given skeletal element; and *caries sicca*, a sequence of destructive lesions on the cranium

associated with soft tissue lesions on the face and scalp (Ortner 2003).

The Pox in Post-Medieval London

Acquired syphilis was medically recognized in 1905, with identification of the causal pathogen, *Treponema pallidum* subspecies *pallidum*. However, conceptualized as "the pox," the disease and its distinctive symptoms were notorious and highly symbolic in post-medieval England. Specifically, they were infamously associated with illicit, promiscuous sexuality and transgressions of Christian mores and the social order (Fay 2006). More fundamentally, they were associated with the violation of pre-modern standards of living, which emphasized temperance, or moderation and self-restraint, in all aspects of behavior (Salter 1926). Temperance was required from individuals, as well as their community and society as a whole; it was critical for maintaining the civic order of a given community and for preserving the health of the "body politic." Conceptualized corporeally, the physical, visible presence of the poxed, especially those who were impoverished and indigent, as contagious and immoral individuals constituted a threat to the moral and physical health of their communities, and risked the health of English statehood (Fay 2006).

These dynamics progressively intensified during the 16th and 18th centuries, primarily driven by fear over perceived increases in the prevalence of the pox. As Milburn (2004) notes, many contemporary observers, from physicians to chroniclers, thought that the pox had achieved epidemic proportions, plunging England into a "poxy" apocalypse. William Clowes (1579), a surgeon at St. Bartholomew's Hospital, one of London's public Royal Hospitals, wrote that

> it is wonderfull [sic] to consider how huge multitudes there be of such as be infected with it [the pox], and that dayly increase, to the great danger of the common wealth and the stayne of the whole nation: the cause whereof I see none so great as the licentious and beastly disorder of a great number of rogues and vagabondes: the fithye lyfe of many lewd and idell persons, both men and women, about the citye of London, and the great number of lewd alehouses, which are the very nests and harbourers of such filthy creatures [sig. B1v-B2r].

This excerpt demonstrates how quickly fears about the prevalence of an infectious disease could translate into the identification, stigmatization, and blaming of select social groups thought to be responsible for spreading the condition. According to Siena (1998), discourses in post-medieval England regularly employed this tactic, linking sexual dangers to social dangers. In particular, symbolism relating to moral and sexual pollution was used to enforce social rules, both for society in general and for certain population sub-groups specifically, ranging from lower social and economic status women suspected of being street walking prostitutes to wet nurses and frequenters of alehouses. In particular, post-medieval writers, from physicians to dramatists to clerics and chroniclers, used the pox as a rhetorical tool to police social and sexual behavior (Siena 2001). Many historians and sociologists have identified continuities between this strategy, the demonization and marginalization of select groups of individuals, such as the "filthy creatures" above, and the identification and ostracism of "high risk groups," such as homosexual men, during the early years of the HIV/AIDS pandemic, with consequent prejudice, discrimination, and ostracism of members of these groups, and suspected members, from their original communities (Allen 2000).

Contemporary religious and political anxieties also crosscut many of the social and sexual anxieties associated with the pox (Siena 1998). The social and sexual deviance associated with the pox and the moral corruption symbolized by its distinctive symptoms were likely exacerbated by shifts in the moral climate of Europe associated with the Protestant Reformation, which produced ideologies that tied sexuality to vice and moral ruin. The relatively more intense stigma associated with low social and economic status to poor pox sufferers than middling to affluent sufferers likely directly relates to Luther's work on welfare reform in the 1520s, which effectively moralized poverty, and to the rise of Puritanism in England, which propagated providentialist ideas of divine retribution (Allen 2000). Calvinistic fears are also echoed in apprehension over the rise of "lewd," socially and sexually dangerous alehouse subcultures (Siena 1998). Anti-Catholicism, which Siena and other historians have identified as one of the post-medieval period's most powerful animating forces, are also replete in religious and literary texts, with images of poxed Catholic priests seducing and infecting good Anglican English wives and daughters with the pollution of both Francophilia and the pox (Siena 1998). More generally, the strategy of isolation and demonization associated with the pox is perhaps best reflected in the centuries-long English tradition of referring to the pox as the "French Disease." This epithet functioned to pathologize England's primary economic, social, religious, and political national competitor (Foa 1990). Overall, the pox functioned as a rhetorical tool for drawing meaningful contrasts between socially and sexually honorable from dishonorable entities, from individuals to institutions, and preserving the national integrity and civic salubriousness of England.

Mortuary context, disease culture, and ideologies of othering

Archaeologists have long recognized that some members of past societies were accorded different burial treatment relative to other members of their society (Murphy 2008). These burials are archaeologically recognizable through variables such as location and external characteristics of the gravesite, the position of the body, and the presence and type of grave goods. Among other social categories, these individuals often include criminals, women who died in childbirth, unbaptized infants, and people with disabilities and pathological conditions. The motivations behind these differential, non-normative burials are highly diverse and cross-culturally variable, especially in regards to disability and disease (Murphy 2008). Mortuary context can grant specific insight into these motivations and rationales for signifying the non-inclusion of various individuals within their mortuary 'community'. Particularly relative to disease, this is because the spatial and cultural aspects of mortuary context can act as reflections of social attitudes towards the anomalous, diseased individual and, by extension, towards concepts of disease in a given society (Fay 2006). This is especially true of post-medieval England and highly stigmatized conditions such as the pox (Fay 2006). Archaeological and historical research suggests that post-medieval English mortuary context reflects a number of social factors. Perhaps most prominently, it reflects that adherence to specific modes of funerary observances and protocols were key aspirations of Christian communities in medieval (ca. 5th c.–C.E. 1549) and post-medieval England during normal circumstances, specifically those not characterized by crisis mortality from epidemic disease. The funeral length and content and mortuary structures depended on the social and social and economic status of the decedent and their family, available resources, and the ability of the decedent's kin to pay a mortuary fee (Harding 2002). However, even the poorest had a good chance of a normative Christian burial. Charitable burial of the poor, especially during the medieval and early post-medieval period, was viewed as both a practical necessity for civic health and a doctrinal commission (Salter 1926).

However, Gordon and Marshall (2000) note that the decedent's spiritual and personal status also influenced the exact form of their final interments. Particularly after the Protestant reformation and the rise of Puritanism, personal agency was conceptualized as being part of the development of disease, especially one like the pox, which produced social ambivalence towards the chronically diseased (Rawcliffe 1995, 2007); diseased individuals were often conceptualized as being directly responsible for their con-

dition. Given that the pox was perceived as a direct indicator of spiritual status, with visible signs of infection acting as an external indication of internal corruption (Pelling 1998), pox sufferers were often conceptualized by other members of their communities, particularly those with religious authority, as being morally transgressive and corrupt (Siena 2004, 2005). Moore (1987) has argued that as with leprosy, the pox was employed as a "flexible principle upon which almost anybody might be excluded from the community on the basis of a minimal consensus that they ought to be." This phenomenon was clearly at work for leprosy (i.e. Hansen's disease), an equally stigmatized and disfiguring infectious disease, in medieval and postmedieval England. During life, "lepers" were spatially and symbolically isolated from healthy communities in leprosy colonies or hospitals. After death, as several bioarchaeologists have confirmed, many with leprosy seem to have been buried in the cemeteries of these institutions (Crane-Kramer 2002; Møller-Christensen 1969), rather than being integrated back within their original communities. In this way, their disease status required both spatial and symbolic exclusion from their communities, both during life and after death.

Archaeological evidence suggests that a muted form of this exclusionary phenomenon might have been at work with the pox[2] in medieval England (Fay 2006). Stirland (1991) documented that several skeletons displaying skeletal evidence of chronic illness, specifically lesions highly diagnostic of acquired syphilis (e.g., treponemal disease), which were recovered from the cemetery of St. Margaret's, in medieval Norwich, were buried non-normatively. They were buried in their clothes, instead of following the normative practice of stripping the body, shrouding it, and placing it in a coffin, as others at the site were. Less unusually, several of these diseased skeletons were also buried in a group, a practice found in 40% of other burials at the site without lesions diagnostic of syphilis. Importantly, the cemetery and associated church served a low status to poor community. Fay (2006) interprets this variation in mortuary context for the chronically diseased as a result of expediency in the face of high mortality and intensive cemetery use, combined with a low level of personal agency relative to burial form. For Fay, this reflects that medieval attitudes towards the chronically diseased were ambivalent and variable. They reflected disease burden, but also the social and economic status of the decedents, those responsible for burying them, and their community (Rawcliffe 1995). Working from these prior finds, this chapter evaluates if a variable, nonnormative mortuary context for the chronically diseased, specifically the poxed, is evident in the mortuary schemas of post-medieval London cemeteries.

Methods and materials

Skeletal material

For this analysis, a large sample (N = 823) encompassing skeletal assemblages from four different cemeteries was employed. The sample contains skeletons (n = 5) previously published as exhibiting lesions suggestive of and specific to acquired syphilis (e.g., treponemal disease) (Zuckerman 2010), as well as those (n = 818) without evidence of these lesions (see Methods). The assemblages are also accompanied by data on mortuary context that was available to the author. All of the burials were excavated from cemeteries by the Museum of London Archaeological Service (MoLAS) after 1990 and all are currently curated at the Museum of London's Centre for Human Bioarchaeology (CHB). Summaries of these cemeteries and assemblages follow.

City Bunhill (GDA06): A portion of the City Bunhill cemetery, dating from 1832 to 1853, was excavated in 2006, yielding 248 burials, 239 of which were retained for osteological analysis. Based on burial registers, this represents 1.37 percent of burials on site. All 239 burials were included in this analysis. Irish immigrants, who were largely Catholic, were the primary users of the ground, which was viewed as a non-conformist ground for religious dissenters (i.e., members of non-Anglican churches). This non-conformist religious social grouping means that the socio-economic spectrum of the burials is broader and potentially more representative of London's population than other cemeteries from the city, such as Chelsea Old Church, but the community surrounding City Bunhill was generally poor, with a large number of alehouses and high rates of crime. Many contemporary accounts, such as from Victorian social investigation volumes published in the mid–19th century, described the entire community as being composed of drunks, scoundrels, thieves, "urchins," and "vagabonds" (Miles and Connell 2010).

St. Benet Sherehog (ONE94): The cemetery of St. Benet Sherehog was excavated by MoLAS between 1994 and 1996, yielding 274 individuals, 39 of which were medieval and 235 of which were post-medieval. Of these, 231 were retained for analysis, and all of them were included in this analysis. These date from 1666 to 1749. The parish church likely dates to the 11th century, and the parish was affluent into the 15th century. However, the parish declined in status in the 16th and 17th centuries, and after destruction by the great fire of London in 1666, the church was not rebuilt. In the 17th and 18th centuries, the cemetery served communities of mixed social and economic status, from low status to those of high status, with most of middling status (Miles et al. 2008).

Chelsea Old Church (OCU00): This cemetery served All Saints Old Church in the Village of Chelsea, a relatively affluent community in suburban London. Prior to 1736, the cemetery acted as the burial place for anyone in the parish, from wealthy gentry to the poor; after 1736, when another cemetery opened in the area, people of varying status were still buried there. Following excavation of 290 burials, including two fetuses, 198 skeletons were retained for analysis. All of these date from 1712 to 1842. Various records and the mortuary context suggest that many of the individuals were of middling to high status (Cowie et al. 2008).

Cross Bones (REW92): The Cross Bones cemetery was employed as "overflow" burial space for the parish of St. Savior's, Southwark, which was founded in 1540. According to long established tradition, it was a burial ground for "single women" (i.e., prostitutes) from nearby brothels, but use of the site was so intensive that these inhumations were likely replaced by the mid–19th century, when the grounds became the parish's pauper cemetery. Archaeological evidence and contemporary documents from newspapers articles to Poor Law Commission reports detail a densely populated community of working poor. Excavations in 1992 and 1993 yielded 148 skeletons, estimated to be less than 1 percent of the cemetery's burials, which mostly date to the mid–19th century; the cemetery was closed in 1853 (Brickley et al. 1999).

Mortuary Context

The author ascertained mortuary contexts from published and unpublished archaeological site reports and excavation records, the latter archived at the London Archaeological Archive and Research Centre (LAARC). These records included illustrations and maps, both hand drawn and computer generated, of each burial and the overall archaeological site, each based on a single planning grid, tied in with the Ordinance Survey national grid and laid out using EDM technology.

Diagnostic Criteria

Skeletons (n = 5) identified as manifesting acquired syphilis exhibit macroscopic lesions that are suggestive of or specific to syphilis (e.g., treponemal disease), following diagnostic criteria developed by Harper and colleagues (2011) based on Hackett's (1976) evidence-based diagnostic criteria for identification of treponemal disease in skeletal material. Importantly, these lesions are associated with treponemal disease, including yaws and bejel, not just syphilis. However, acquired syphilis is the only treponematosis
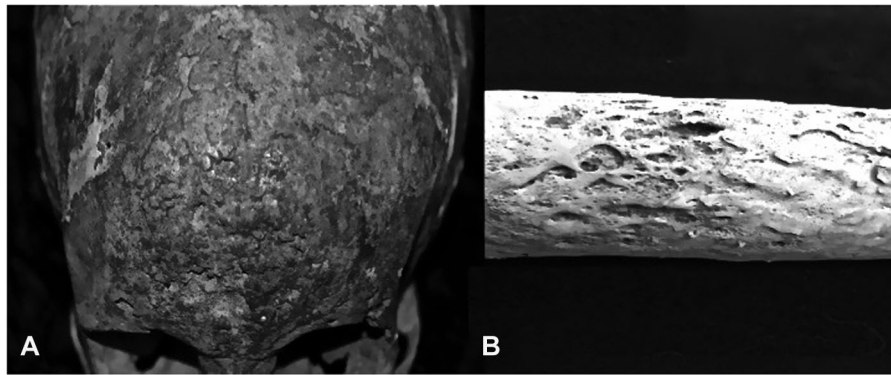
Figure 8.1. Macroscopic lesions suggestive of or specific to syphilis (e.g., treponemal disease): (a) Cranium demonstrating stages three to six of the caries sicca sequence and (b) Femur demonstrating nodes and expansions with superficial cavitations.

documented as being endemic in post-medieval England. Therefore, a parsimonious assumption is made that individuals in the pathological sub-sample bearing these lesions were infected with acquired syphilis. Suggestive lesions include finely striated nodes and expansions, coarsely striated and pitted expansions, and rugose nodes and expansions on long bones or the first three stages of lesions in the *caries sicca* lesions sequence (clustered pits, confluent pits, focal superficial cavitation). Specific lesions include the last three stages of the *caries sicca* sequence (serpiginous cavitation, nodular cavitation, and *caries sicca*) or nodes or expansions with superficial cavitations on long bones (Figure 8.1). Skeletons in the remainder of the assemblages (n = 819) do not display these suggestive or specific lesions. Importantly, conservative criteria were employed to reduce the inclusion of "false negative" cases of acquired syphilis as many of the skeletal lesions generated by this disease, such as periosteal reactions and osteitis, are not diagnostic of the condition. This reduces the number of skeletons archaeologically identifiable as syphilitic, but increases the certainty that these individuals were affected by syphilis and therefore may have been perceived as pox sufferers by their communities. While other venereal conditions were grouped with "the pox" in post-medieval England (Siena 1998), the soft tissue lesions, such as ulcers on the scalp, which occur in conjunction with these skeletal lesions, such as *caries sicca,* were distinctive and highly symbolic of the pox. This allows a cautious translation between skeletons manifesting acquired syphilis and the once living pox sufferers that they may represent.

Age and Sex Estimation

All skeletons with evidence of acquired syphilis (n = 5) were estimated as adult (i.e., 18 years of age or older) based on age-related changes of the pubic symphysis and iliac auricular surface following established standards (Buikstra and Ubelaker 1994). No sub-adults (i.e., younger than 18 years) were included. Sex was estimated using standard methods based on sexually dimorphic features of the skull and pelvis following established standards (Buikstra and Ubelaker 1994). The sex and age of the remainder of individuals in the sample (n = 819) was not estimated by the author or integrated into this analysis.

Results

City Bunhill: Of the 249 burials from City Bunhill, one, an adult (under 45 years of age) male skeleton (SK 826), exhibits lesions specific to syphilis on the crania and long bones. Notably, several of the lesions, including active and healed gummatous lesions, *caries sicca*, and extensive rhinomaxillary destruction, impacted the facial region, covering the entire frontal bone and obliterating the nasal area. However, this individual's mortuary context was consistent with all other adult inhumations at the site: single burials in wooden coffins, supine, and aligned east-west, with the crania at the west end of the burial (Miles and Connell 2010). The burials, including that of SK 826, were densely spatially clustered, patterned by plots, with "stacking" of coffins in single pits, a common feature of heavily used post-medieval burial grounds. All of the coffins were uniform: wooden, fabric covered, decorated with metal upholstery studs, and coffin furniture, most of which were handles (grips) all of the same simple type, which is typical of post-medieval burials. A small number of items were found with fourteen of the burials such as buttons, shroud pins, and eyelets. Coffin plates, the cheapest available at local undertakers, were found with many burials, but most were too poorly preserved to yield stylistic evidence (Miles and

Connell 2010). Importantly, this also made it impossible to identify the burials of non-conformists from conformists, as well as those of Irish descent from those of other ethnic groups, though the unvarying mortuary context across the site does not indicate that members of different religious sects or ethnic groups experienced differential mortuary treatment.

St. Benet Sherehog: Of the 231 post-medieval burials from the site that were retained for analysis, one skeleton (SK 429), exhibited lesions suggestive of syphilis. SK 429 was estimated as likely to be male and adult. The individual manifests non-gummatous periosteal lesions on multiple skeletal elements, specifically bones of the right arm, the clavicles, and the tibiae and fibulae. No cranium was recovered with the burial. SK 429's mortuary context was consistent with that of others from the site. All of the individuals recovered were buried in wooden coffins, supine, and aligned approximately in an east-west direction. A number of copper allow shroud pins were also recovered during the excavation. Overall, the limited artifacts recovered from the site, and the coffin hardware and materials from the burials are consistent with the historical record; they suggest the presence of some high status burials, some low status burials, and a predominance of those associated with the middling status.

Chelsea Old Church: Of the 198 burials from Chelsea Old Church, one (SK 329), a young adult (24–29 years age) female with suggestive lesions, was identified. These include healed *caries sicca* lesions on the frontal bone and cranial vault and finely striated expansions on multiple long bones. As above, SK 329's mortuary context was consistent with that of other burials: supine, aligned east-west, within one of the multiple rows (at least ten) of burials. Many graves contained several stacked burials (Cowie et al. 2008). The cemetery also contained two burial vaults and two brick lined graves, which enclosed family units. The site yielded a great diversity of funerary artifacts, reflecting the array of social strata in the community associated with the cemetery but primarily its general affluence. Most coffins were wooden, decorated with different types of cloth and types and patterns of upholstery studs. Nine were lead-lined, and nineteen individuals could be identified via coffin plates, which were of multiple designs and numerous at the site; SK 329 was not known-named, but was instead recovered from a wooden coffin, like many others. Some fragments of textiles, jewelry, and clothing fasteners were recovered from other burials, and, unusually for a post-medieval cemetery, utilitarian grave goods were recovered with two other burials (Cowie et al. 2008).

Cross Bones: Two skeletons from Cross Bones, a young (18–25 years of age) adult female (SK 99) and an adult (36–45 years of age) female (SK 118), displayed lesions specific to and suggestive of, respectively, acquired syphilis on the crania and long bones. Distinctively, SK 99 exhibits *caries sicca* encompassing the entire frontal bone. Limited archaeological data is available for the site as it was excavated under great time pressure; it was excavated down to the datum level, and in no part of the site was the complete burial sequence revealed (Brickley et al. 1999). The evidence does, however, reveal no variation in burial practice between SK 99, 118, and the other burials recovered from the site. All of the burials were in wooden coffins, with great variation in the quality of manufacture; 23 percent were standard, as found at the above sites, with cloth, upholstery studs, handles, and a coffin plate. The remainder were mostly crudely made, the majority lacking cloth, handles or decorations; SK 118 and 99 were interred in the largely undecorated coffins. A few textiles (e.g., clothing) were recovered, primarily from shrouds and footwear (Brickley et al. 1999).

Discussion

While the sample of skeletons with evidence of acquired syphilis relative to the remainder of burials from the sites is quite small, assessment of their mortuary context against that of other burials from the same cemeteries yields no variation in mortuary context or conspicuously non-normative burial context. At least as shown by mortuary context, there is no evidence that these individuals were marked as deviant, or symbolically excluded from their communities through non-normative mortuary context. By extrapolation, this means that they give no evidence of having been identified as marginalized, sexually or socially deviant or transgressive of Christian mores through the practice surrounding their burials. Additionally, while the sample size of these individuals is small, the larger assemblages and cemeteries that it derives from crosscut economic and social strata, representing poor and lower status to middling status and affluence. There is therefore no evidence found here that this normative mortuary context for those with evidence of syphilis was exclusive to one aspect of post-medieval London society.

The extent of the impact of this interpretation for reconstructing interactions and community exclusion versus inclusion is limited, however. Canuto and Yeager (2000), whose work on the archaeology of community has guided this volume, are committed to establishing patterns of dynamic human interaction as the basis for defining archaeological investigations of community (Kakaliouras, this volume). They remind archaeologists and therefore bioarchaeologists, however, that "the archaeological record

actually represents a palimpsest of the material outcomes of interactions whose contemporaneity cannot be assumed" (Canuto and Yeager 2000:11). Therefore, a mortuary "community"—encompassing the individuals recovered from a given cemetery—cannot be assumed to represent the members of an actual lived, dynamic, and interacting community in the past. This is perhaps especially true for the cemeteries sampled here, which received burials over the span of decades to centuries, mostly through regular attritional mortality and low-level crisis mortality. They were also not the only cemeteries serving their original living communities; Cross Bones, for instance, served as an "overflow" burial space for the parish of St. Savior's, meaning that it captures only a non-random segment of the deceased from this parish. Additionally, all of the assemblages employed here represent only the portion of the cemetery that was excavated, rather than the entirety of decedents buried at site. At City Bunhill and Cross Bones for instance, the recovered burials represent only approximately 1 percent of those buried at the cemetery. This further means that those excavated—and analyzed here—represent only a fraction of the once living members of their original communities. While this sample represents the best available archaeological evidence for assessing the mortuary experiences of pox sufferers in post-medieval London, these five individuals may only be approximately contemporaneous with the hundreds of skeletons interred with them, and can only very loosely be conceptualized as being members of a community with their fellow decedents. Kakaliouras (this volume) encourages bioarchaeologists to embrace the ambiguity inherent in attempting to reconstruct the intangibles of human "community" from archaeological evidence and skeletal material. The findings here align with this message; whether these five skeletons represent individuals who shared human interactions or a sense of connectedness and camaraderie—or exclusion, marginalization, and ostracism courtesy of the stigma associated with their disease—with the individuals in the remainder of their assemblages cannot be extrapolated from the available archaeological evidence. It is lost to history. What remains is evidence that, in mortuary practice, they were not distinguished as being different from their peers or excluded in any detectable way by those responsible for their burial.

Given the strong documentary evidence that individuals socially identified as being infected with the pox were conceptualized as socially and sexually deviant, transgressive, and even potentially worthy of marginalization and exclusion from their communities, why is this not evident in the mortuary context? It is possible that the five individuals analyzed here were not identified by as being poxed during their lives by their communities. This is certainly

Figure 8.2. William Hogarth. A Rake's Progress. Plate 3.

possible for SK 329 and SK 118, from Chelsea Old Church and Cross Bones, respectively, which manifest healed and early stage *caries sicca* lesions, as well as for SK 429 from St. Benet Sherehog, whose post-cranial lesions were also relatively well remodeled and healed. These individuals may have been able to hide evidence of their infection and escape the associated stigma. The soft tissue lesions they bore may also have been socially identified as "ulcers" or "pustules" rather than "spots" from the pox, and therefore associated with another condition (Harris 2005). Any other post-cranial lesions had could have been hidden with clothing. However, this scenario is less likely for SK 99 and SK 826, from Cross Bones and City Bunhill, respectively, who would have had difficulty obscuring their distinctive facial disfigurations; loss of the nose and ulcers on the scalp and forehead were strongly associated with the pox (Quétel 1990). Devices such as false noses and felt spots, as noted on the faces of prostitutes in Figure 8.2, were commonly used to obscure syphilitic sores, especially by middling and affluent sufferers (Quétel 1990). However, these contrivances, and other attempts to physically cover or hide lesions were also strongly symbolic of the pox (Harris 2005). Given the lesions they manifested, these two individuals bear a likelihood of having been identifiable as poxed within their communities.

There are at least four other complementary explanations for the non-variable, normative mortuary context of these five individuals, which largely dovetail with each other. The first is derived from the above-mentioned social pressures to produce normative Christian burials for all members of society. These may have buffered any prejudicial dynamics that were driven by the pox's stigma, perhaps overriding any impulses to signify the bodies of pox sufferers as different and non-normative with an assertion of "communitas," a

generous spirit of community, and inclusivity, and therefore a normative mortuary context. A second explanation derives from the endemicity of the pox during the post-medieval period. As discussed above, the pox was largely perceived as widespread and extremely common in London, especially in the 17th and 19th centuries. While this might be expected to translate into high numbers of skeletons with syphilitic lesions in contemporary skeletal assemblages, the low frequency of skeletal involvement within syphilis likely means that many individuals in these samples, including those employed here, were infected with syphilis during their lives, and may even have been identified as poxed. However they bear no lesions from the disease and therefore are archaeologically invisible. They may have manifested primary and secondary stage disease, but not progressed to tertiary, or may bear tertiary lesions that are not suggestive or specific to syphilis. Additionally, the high mortality and generally low longevity (<60 years) which characterized the early industrial period in England (DeWitte 2014) means that many pox sufferers may not have lived long enough to manifest tertiary disease. These disease characteristics, combined with the endemicity of the condition, mean that the non-syphilitic portion of the sample (n = 819) may contain many archaeologically invisible false negatives for syphilis. That the disease was endemic, as were many other chronic infectious and degenerative conditions in post-medieval London, such as tuberculosis (Roberts and Cox 2003), may also mean that chronically diseased individuals were such an omnipresent component of post-medieval urban communities that they became part of the status quo and background environment (Dobson 1997). By sheer volume, many of the chronically diseased may have necessitated inclusion rather than marginality and exclusion both within their living communities and, at death, within the cemeteries of these communities.

The third relates to the effects of social and economic status on the lived realities of those with the pox, as well as the demographic and epidemiologic regimes characterizing the post-medieval period in London. In particular, it relates to the overall poverty of the communities associated with two of the cemeteries, City Bunhill and Cross Bones; as Fay (2006) noted, poverty is associated with low levels of personal agency over burial form. At Cross Bones, for instance, newspaper articles and undertakers' records detail that family members of decedents were often unable to afford the most basic, conventional aspects of post-medieval burial: coffin plates, decorative studs or even coffins that were comprised of more than a few planks tacked together (Brickley et al. 1999). Instead, the mortuary context of many individuals represented a compromise between personal agency and financial restrictions. In this way, poverty may have blunted

or overridden any social tendencies towards symbolic exclusion of the poxed and chronically diseased poor from their communities through non-normative mortuary context. In contrast, at Chelsea Old Church, SK 329's normative mortuary context may have been an outcome of relatively high social and economic status, which was common within Chelsea and may have characterized this particular individual as well. Reflective of Samuel Pepys' comments above, intensified pressure to maintain social and sexual honor for SK 329's family and friends may also have discouraged post-mortem identification of this individual as poxed. Diverse historical sources clearly indicate that pressures to avoid being labeled as poxed—and the downwards social mobility that could follow—and to maintain privacy surrounding diagnosis and treatment, were especially strong for middling to affluent women and their families (Merians 1996; Siena 2001). This may have increased societal pressure for a normative burial and non-differentiation of this individual at burial. It may also have buffered stigma associated with the pox in this individual, if they were even socially identified as poxed at the time of death; as noted above, SK 329's pathological lesions were largely remodeled and healed.

Poverty likely acted synergistically with the intensive use of these cemeteries and the high pressure that existed at these sites to efficiently bury large numbers of the deceased. The post-medieval period in England overlaps the demographic transition—the shift from a high mortality and high fertility regime to a low one with associated increases in longevity—and the second epidemiologic transition, the shift from a burden of mortality from epidemic infectious disease to that of one from chronic and degenerative diseases, both associated with urbanization and industrialization (Zuckerman 2014). Overall, many post-medieval London communities were afflicted by exceptionally high rates of mortality, both crisis and attritional, generating a steady flow of burials. At City Bunhill for example, burial registers indicate that 18,036 burials were made between 1833 and 1853 in an area spanning roughly one and a quarter acres. These registers further document that multiple burials happened each day in a given plot, resulting in the extensive coffin stacking seen at the site (Miles and Connell 2010). At Cross Bones, which also featured extensive recycling of pits across the decades, coffins were found stacked seven or eight abreast and three of four in depth in a pit. When this pit filled, a new pit was dug next to it, leaving the sides of the adjacent coffins exposed. In this type of mortuary environment, variable alignment and potentially even variable body position, even if desired by those responsible for burial of a given individual, might have complicated the efficiency of this strategy and reduced the site's capacity for high volume burial. Perhaps expediency and efficiency, rather

than societal pressures, religious mores, and the symbolic inclusivity of communitas trumped any cultural inclination towards marking the chronically diseased as marginal, different, and excluded as they entered the afterlife.

Conclusion

Overall, low social and economic status to outright poverty, the high mortality that was characteristic of post-medieval, pre- and early industrial urban areas, and the endemicity of the pox may have largely eliminated opportunities for variable burial and indication of social deviance or community exclusion via mortuary context. This may have synergized with extreme pressures at the included cemeteries to bury large numbers of the dead in as efficient a manner as possible. Despite clear social and religious discourses relegating the poxed to the margins of their societies because of the pox's stigma, individuals in this study with evidence of acquired syphilis are not associated with a variable or non-normative mortuary context. There is no post-mortem evidence of symbolic, physical, or spatial exclusion from their local communities. In wider context, however, this may say less about post-medieval attitudes towards the pox than it does about the wider societal, demographic, and economic pressures in London. High levels of poverty and mortality in pre- and early-industrial London, as well as the consequent need to bury the dead efficiently in a way that did not endanger the living, may have helped to eliminate any potential mortuary differences associated with this highly stigmatized disease. Future work may better differentiate and substantiate these interpretations by employing larger, and more socially and economically diverse samples, potentially including additional cases of syphilis. It may also be fruitful to compare the mortuary contexts of those with evidence of syphilis against those with evidence of other chronic but less stigmatized infectious diseases, such as tuberculosis, to potentially parse the effects of stigma versus chronic disease in the mortuary signification of community exclusion and inclusion. These endeavors may be facilitated as more post-medieval urban skeletal assemblages, including those from London, as well as information on their archaeological and mortuary context, become available to bioarchaeologists.

Acknowledgements

Notes

1. To accommodate Renaissance-era disease concepts, here "the pox" refers to the disease present in post-medieval England. "Acquired syphilis" refers to the biomedical conception of the disease as well as the pathological condition detectable in skeletal material.

2. Fay (2006) argues that these individuals could not have been conceptualized as "poxed," as the concept of the pox only emerged in the 1490s, but there is very low certainty that these individuals' interment predates the 15th century (Harper et al. 2011).

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A Bioarchaeological Perspective on Community and the Tension between Individual and Population

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ABSTRACT

The community framework this volume champions is a fruitful addition for anthropological bioarchaeologists seeking to understand ancient population dynamics. The breadth illustrates the importance of the concept of community, the difficulty of moving beyond definitions restricted by geography, and particular challenges of bioarchaeological datasets. Population- and spatially-based analyses are critical and generally most appropriate in our discipline; yet, they can inadvertently present pictures of homogeneity that do not accurately characterize the ancient communities we study. We must continue to seek productive ways to appreciate diversity within the ancient communities though contextually based and "multi-subdisciplinary" approaches. We continue asking in what way the patterns in mortuary and other bioarchaeological variables are culturally meaningful from real or ideal culture perspectives, seeking to move beyond geographically bound approaches. [Bioarchaeology, Community, Contextualized approaches, Multi-subdisciplinarity, Ethnicity, Identity]

Introduction: Establishing a Bioarchaeology of Community

This volume contains papers that are noteworthy in the breadth of approaches to a bioarchaeology of communities and adds considerably to several recent volumes which have placed social theory and an integrated use of the archaeological record at the forefront of bioarchaeological studies (e.g., Agarwal and Glencross 2011; Alfonso-Durruty et al. 2014; Baadsgaard et al. 2011; Buikstra and Beck 2006; Knudson and Stojanowski 2009; Stodder and Palkovich 2012; Tiesler 2014; Tilley 2015a). The perspective here joins these recent approaches in seeking to understand ethnicity, group dynamics, and identity formation in ancient populations. In the introductory paper to this volume, the editors, Juengst and Becker, set the stage by purposefully and wisely suggesting a broad definition of "community":

We deliberately define community very broadly as a process by which a group of people share some kind of real and/or imagined connectedness. We see community as something that can be repetitive, contextually flexible, and temporally changing, with categories that are not mutually exclusive, but emphasize the importance of connectedness in daily life [7].

Their discussion of community is complemented by further dialogue in the chapters by Kakaliouras (Chapter 2) and Novotny (Chapter 5). The broad definition proposed by Juengst and Becker is appropriate here. While most archaeologists use the term "community" to describe human groups at a scale between kin and society, we often waffle back and forth about more precise meanings, collectively as scholars, and even within our own writings (Isbell 2000).

The ambiguity in the use of "community" archaeologically should not be surprising considering that the concept is a construct with no inherent meaning to the ancient populations we study. However, we can attempt to approximate a

more culturally relevant view of community-type groupings, especially where we have the benefit of rich ethnohistorical records or substantial ethnographic research revealing a degree of consistency, such as in the Andes with the *ayllus* mentioned in Juengst's Chapter 4. At the same time, we must be sensitive to criticism such as those directed at some Andean ethnographies where societies under study are represented as static and homogenous (Jamieson 2005; Starn 1991; Weismantel 1991), especially since this precisely counters the idea of the community proposed by other scholars, as well as Juengst and Becker here, as variable and fluid.

In the second introductory paper to this volume, Kakaliouras provides an important foundation to the volume by discussing theoretical approaches to the study of community, drawing on, for example, the influential volume edited by Canuto and Yaeger (2000), where they argue in the introduction for an interactionist approach to communities and where, in the conclusion, Isbell (2000) calls for archaeologists to decide exactly what they mean when they talk about "communities." Kakaliouras addresses the problems and pitfalls, as well as promise, of establishing a bioarchaeology of community and notes that while bioarchaeologists are more theoretically aware than ever before, as a group we definitely trend towards processualism. As Kakaliouras points out in her thought-provoking essay, communities are not equivalent to kin groups or populations, but what are they, and, specifically, how have the various papers presented here grappled with the idea of community and the relationships and interactions inherent in the concept? While the definition suggested by Juengst and Becker does "not limit community to ideas such as physically proximal households, burial areas, or shared iconography," these, by necessity, tend to be the archaeological correlates of "real and/or imagined connectedness" that the authors in the volume ultimately use.

The benefit of a bioarchaeological approach to community is revealed in the range of datasets and approaches the chapters in the volume represent. Working with pre-Tiwanaku, Formative period contexts in the Lake Titicaca Basin, Juengst (Chapter 3), compared individuals buried in seven sites on the Copacabana peninsula, five of which contained temples and two that did not. Juengst's biological distance analyses on samples from five sites (four which contained temples and one that did not) revealed little variability within and between sites. In order to more fully interpret her biodistance data, Juengst performed strontium isotope analysis on teeth, which demonstrate that 20 percent or more of the individuals buried at the sites lived in various other locales, *in utero* and/or during early childhood.

Bioarchaeologists have a powerful tool available to us in being able to investigate biological distance, or biodistance, through DNA, metric or non-metric analyses, as Juengst (Chapter 3) and Cornelison et al. (Chapter 6) have done in this volume. Biodistance is a proxy for genetic relatedness between study samples. Because of the nature of our data, which come primarily from mortuary samples, we are potentially measuring several phenomena at once, including the degree of sexual reproduction between groups (admixture, or gene flow), common ancestry, and the amount of migration either of living people or through transport of the dead to the final burial location. Which of these various phenomena resulted in the apparent biological relatedness can often be discerned with other available data, as Juengst does in her chapter, establishing the importance of a contextualized approach to the bioarchaeology of communities.

In addition, the chapter by Juengst and that by Novotny (Chapter 5) utilize strontium isotope signatures to address paleomobility and place of residence (see also Knudson and Price 2007). As an addition to the other methods illustrated in this volume, these methods can provide a means of accessing fluidity and change over the lifecycle of individuals (dental enamel developed at different ages tell us about childhood residence, while analyses on bone provide information on later life). In Juengst's study, whether the individuals lived on the Copacabana peninsula during their later childhood or throughout their lives is unknown; they could have been first-generation migrants, travelers, or corpses brought to the area for burial. Further analyses, including with strontium, can help to differentiate between these possibilities.

Thus, strontium isotope studies allow our investigations of community to move beyond the limitation of burial location, which does not always correlate with residence. However, while the data can tell us where people lived, at least in childhood, on their own, they say nothing about identity or community, and this is especially true when we consider that communities often inhabit non-continuous space. Individuals from elsewhere are not necessarily outsiders, and local residents can be foreigners in the sense of community. Again, careful, contextualized interpretation is essential in these interpretations.

Using data on bony changes resulting from repetitive activity (see Pearson and Buikstra 2006), Becker's work (Chapter 4) seeks to address how labor was organized in the ancient Andean Tiwanaku state. For Becker, community is built through the practice of shared labor and through reciprocal relationships. She argues that people living in certain areas may have had more demands of reciprocity placed upon them. Put that way, "community" does not sound "warmly persuasive" (Williams 1985 as cited by Kakaliouras in this volume), and we are reminded of Janusek's (2004)

suggestion that the Tiwanaku elite may have overstepped boundaries in their demands for ever-increasing labor couched as reciprocity.

In addition, Becker's contribution is significant in that her work most closely touches on the daily practice and lived experience of community as measured through groups of individuals buried at locations viewed through a multiscalar perspective—regional, intra-regional, site, and intra-site—as called for by Canuto and Yaeger (2000). Becker is able to discern likely communities of individuals who shared economic specialties such as pottery production and llama herding. Becker's interpretations are only possible through careful attention to the rich history of (bio)archaeological work in the region, which have shown spatial patterning in dietary resources, cranial modification and ceramic styles (Berryman 2010; Janusek and Blom 2006; Vallières 2012). It is here that Becker again shows the importance of a contextualized approach to bioarchaeology (Buikstra and Beck 2006). Her statistical methods, using generalized estimating equations, are also an important contribution for future bioarchaeological analyses.

Novotny's chapter also includes a compelling discussion of the concept of community, and her work on Maya sites in the Belize River Valley approaches community through the study of co-residential groups and burial patterns over time at two sites. In order to more fully interpret her data, Novotny looks to the outside, drawing on information about social dynamics in the surrounding region and using strontium isotope analysis to discern relative amounts of population movement into and out of the sites. By doing so, she highlights the fluid nature of communities and ways in which burial practices might delineate local communities who share everyday interactions and/or link them to regional "imagined communities" (following Isbell 2000).

The chapter by Cornelison and colleagues also examines mortuary patterns, this time at Late Woodland mound sites, to investigate regional and local identities. The study uses intra- and inter-site burial patterns and biodistance analyses to demonstrate lineal organization and the presence of local identity displayed through idiosyncratic mortuary ritual while regional identity was expressed through shared burial practices. This highlights the importance of recognizing that individuals can simultaneously take part in multiple, crosscutting or embedded communities and the framework of "imagined communities" used by Novotny could also apply here.

Through historical and ethnographic research, the final two papers in the volume illustrate the difficulties and complexities in interpreting mortuary data. Deskaj's chapter on her work in Northern Albania focuses on modern inhabitants' use, re-use, and even destruction of sacred sites, such as a medieval church and multiple Bronze Age tumuli dispersed throughout the landscape. She uses modern case studies to illustrate how cemeteries can be used in diverse and contradictory ways for identity formation and differentiation or integration.

Using historical and paleopathological evidence, the final case study chapter by Zuckerman on stigma seeks to address whether individuals with syphilis in 17th- to 19th-century London were marginalized from their communities. While Zuckerman's historical analysis indicates that these individuals likely would have been marginalized, she finds no discernable differences in the way that they were interred. In this case, we know nothing of the funerary rites, etc. afforded to these individuals by their communities since actual burial involved institutional, mass processing of dead bodies at this time of high mortality and cemetery crowding. This is an important cautionary tale about the limited data that we often have available to us.

The two datasets by Deskaj and Zuckerman on mortuary practices add considerably to a bioarchaeology of communities by further reinforcing the importance of context and multiple data points. They also remind us of the limitations we often face and the need to consider alternative interpretations of our results since the use of standard hypothesis testing in both cases, especially that of Zuckerman's, would have likely resulted in the erroneous conclusion that individuals with disfiguring syphilis suffered little marginalization in 17th- to 19th-century London.

As Becker and Juengst (Chapter 1) and Kakaliouras (Chapter 2) point out in this volume, skeletal biological studies in archaeology have undergone a significant change over time, from reports mostly consisting of descriptive appendices or individual case studies, to a more modern, population-based, processual approach, often using quantitative statistical analyses and hypothesis testing aligned with the trends in New Archaeology. There is no question that this has been a healthy and fruitful trend in our field. However, as anthropologists we also realize that there are hermeneutic alternatives. More recently, post-processual influences have encouraged more consideration of the role of agency (e.g., Tilley 2015b) or a return to a focus on individuals, in the form of life histories or osteobiographies (see Stodder and Palkovich 2012), and this has added a richness to our knowledge of past lived experiences.

While it might first seem counterintuitive, the study of individuals and the "noise" from statistical analyses can enrich the approach highlighted in this volume by bringing to light diversity within communities. Although we have long known that communities are not homogeneous (see discussion of Redfield 1955 by Novotny in this volume), in some cases the methods of analysis that have been used

historically in bioarchaeology may inadvertently give this false impression. This can be illustrated in the way in which data are often analyzed and interpreted. For example, biodistance studies provide us with invaluable data about population dynamics in past societies. Biological distance is measured between groups that we define archaeologically using variables, such as burial location, ceramic style, or even cranial modification; the groupings are not created using genetically determined traits. This is entirely appropriate and necessary. For further discussion on why this is the case, one need only review the extensive anthropological literature on the failure of earlier typological approaches, in which individuals were sorted into various, fixed categories, such as races, which we know to be a problematic means of biologically explaining human variation and ancestry (American Anthropological Association 1998, 2014, 2016; Fuentes 2012; Smay and Armelagos 2000). While analyses sometimes seek to identify outliers, variation is often small in the populations that we study (e.g., Juengst, this volume), so the focus is on the degree of variation between groups.

Population-based approaches are generally also encouraged for other datasets, such as those involving activity patterns and paleopathology, while individual, case-study approaches are often discouraged. For example, Becker's work recognizes that skeletal biologists have largely abandoned hopes of delineating signatures of specific activities undertaken by individuals (e.g., degenerative joint changes in the elbow caused by metate vs. atlatl use (see Bridges 1992 for a review of this)). Instead, studies examine average differences or similarities between groups, which are often defined by burial location, finding that, for example, one group labored more extensively or used their upper limbs more than another. As bioarchaeologists, population-based perspectives can color our interpretations in such a way that it may seem as if populations averages are indicative of all individuals in the groups we are analyzing—all laboring with their upper arms, all being biologically related, all eating a diet with more maize, or all using a particular cranial modification style—and this artificially homogenizes our samples. By looking to the information that deviates from the average (or not), we can move away from the potential pitfalls of focusing largely on burial location or assuming homogeneity and tap into the richness of diversity within the community concept.

Future studies can attempt to access within-community diversity by using multiple variables in addition to burial location and by placing more focus on individual case studies (and I should note that potential hurdles to this are editors or reviewers who do not appreciate this sort of work). Much of this is a matter of time or the likely next step

that the researchers will surely take, such as in the case of Becker's work, because of the availability of considerable comparative data such as sex (as done in Becker 2013), age (Becker's pilot analysis of activities in childhood for Blom et al. 2016), diet (Berryman 2010), cranial modification style (Blom 2005), residential location at various times in individuals' lives, including perhaps "natal community" (Knudson et al. 2004), and ceramic style or mortuary goods (Janusek and Blom 2006). Where larger sample sizes and comparative data are available, such as in this example, viewing smaller scale variation can provide more fine-grained data about communities. In many cases, one might look instead to individual outliers as an important source of information.

A typical argument against viewing data at the individual level is that it might not be culturally relevant. We might be accessing individual idiosyncrasies instead of community-based patterns. In fact, as we know, interpretation of data and its meaning is a constant challenge faced in bioarchaeology. However, we can prevent this through thoughtful analysis, and this might even better allow us to tackle post-processual foci, such as agency, which can be more difficult to investigate with bioarchaeological data.

Bioarchaeological data is focused on *populations* through the study of *individuals*, and we can utilize the tension between these two scales of analysis for deeper understanding. Becker's data on activity, for example, uncover lived experience, the "real" aspects of community culture and complement studies that prioritize more of the "ideal culture," as we might expect from, for example, analysis of mortuary practices. Women can do "men's work" and men can do "women's work," and often do. "Agriculturalists" sometimes fish, and "potters" likely perform agricultural tasks. Becker's data reflects actual activity, which may or may not align with identity, much as style can be seen as emblematic, passive, or active (Sackett 1990; Wiessner 1983; Wobst 1977). Shared practices can tell an outsider that one is a member of a group but may not be an intentional marker on the part of the cultural actor. We can, in theory, have shared practice without shared meaning or identity. Nevertheless, difference in mortuary practices or other data that we discern between our samples could be inconsequential in identity formation per se but valuable in identifying communities. It is here that we see the importance in Juengst and Becker's definition of community that includes "a group of people [who] share some kind of real or imagined connectedness."

The importance of "some kind of real or imagined connectedness" in community also extends to biodistance studies. Can biological relationships, be they produced through sexual reproduction or common biological ancestry (no

matter how long ago), be equated with kinship or community? In other words, does a lack of biological relationship mean a lack of kinship or community? In many cases, we can answer with a resounding "no." Turning this on its head, does having sex with someone necessarily indicate "marital relationships?" Does it mean that you are members of the same community? We could answer "yes" to stress the idea that communities are fluid and often temporary. However, community may not be exclusionary when it comes to sex. The shared practice of sex in and of itself does not create "community," and, in the case of warfare, rape might even be a way to reinforce boundaries between groups. If we keep this in mind, our biodistance data, when taken in conjunction with other lines of evidence, can powerfully inform our questions about community. In the end, tapping into the information that deviates from the average can help us interrogate the differences between the ideal and the real, between natural and imagined communities.

A particular strength of a bioarchaeology of community is the ways in which the various lines of evidence complement one another to form a more complete means of addressing ancient community dynamics. Communities vary in their fluidity and the degree to which cultural actors can affect change. Even when cultural change might occur rapidly, within a few months or years, some biological information is slow to change. Biodistance data can preserve ancestral relationships long forgotten, and some of the conditions of one's infancy and early childhood are permanently recorded in adult skeletons, such as in isotopic values in teeth or cranial modification styles. Other data, such as dietary or paleomobility isotopic signatures in bone, trauma, or mortuary treatment can tell us more about short-term dynamics.

Bioarchaeological data available for the study of community also varies in the degree to which they can be altered purposefully by the people studied, and hence, is measuring different aspects of culture. While one cannot readily change one's genetics or the ways in which bone respond to labor, parents can manipulate the cranial modification styles of their children and, perhaps even more so, the way in which they bury their dead. Additionally, we see the importance of context here. For example, cranial modification has been linked to ethnicity (Torres-Rouf 2002) in some areas, even while there is no such link in nearby groups (Alfonso-Durruty et al. 2015); in other communities, religion is a better explanation for the patterning observed in modification styles (Tiesler 2010). Because of the high degree of agency involved in this practice, its meaning cannot be generalized from one community to another, and it can only be inferred through contextual analysis. Only through the use of multiple variables, with various resolutions and degrees of fluidity, can one best access past communities.

In summary, while they are critical and appropriate levels of inquiry, analyses that focus on statistical averages can inadvertently present pictures of homogeneity that do not accurately characterize the ancient communities we study. Interrogating the "noise" of these analyses and taking a contextualized and "multi-subdisciplinary" (to quote a reviewer) approach can deepen our knowledge about communities. This approach is not without potential pitfalls and challenges. We should not simply replicate the descriptive case-study methods of the past, and we must be willing and able to tackle data sets – archaeological, ethnohistorical, and beyond – that require specialized knowledge and come with their own particular challenges. Building collaborations with other scholarly experts may be, in many cases, a more fruitful means of carrying out these endeavors to derive subtler and more accurate explanations of the past. By acknowledging the complexities of communities, we can generate data that address the broad scale social processes of populations while being true to the individual remains that we study.

This volume demonstrates the utility of using multiple lines of bioarchaeological evidence to elucidate the complex relationships within and between communities. It also establishes the importance of a contextualized approach to the bioarchaeology of community, both in the ways that data are interpreted and in how community is defined in culturally appropriate ways. Because our studies are almost exclusively focused on mortuary samples, bioarchaeological studies are frequently grounded in spatial analyses based on burial location and we must seek ways to broaden our perspective and to access additional information about diversity within the communities we study. While bioarchaeology has a distinct set of challenges, which touch on but differ from those of archaeology in general, the multiple lines of evidence available to bioarchaeologists allow various aspects of ancient community dynamics to be addressed.

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Might Community be the Key to Unlocking the Social Potential of Bioarchaeology?

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ABSTRACT

From the perspective of social archaeology, it seems bioarchaeology has been slow to recognize its social-interpretive potential. However, I think that "community" might be the key to unlocking this potential. As an interested outsider, I try here to explain the motivations and priorities of social-interpretive archaeologies, and to place the papers in this volume within the broader network of anthropological and archaeological theory. I also comment on the issues of boundaries and boundedness, scale, metaphor, and memory, all of which, one might argue, are social topics that have remained just beyond the reach of "traditional" bioarchaeology. [Social and interpretive archaeologies, Community concept, Boundaries and boundedness, Scale, Memory]

To paraphrase the old cliché, "some of my best friends are bioarchaeologists." I would like to start by thanking two of these friends, Sara Becker and Sara Juengst, for inviting me to comment on this thoughtful and thought-provoking collection of essays. I recognize that I am a curious choice of discussant. I have not worked in an osteology lab since I was an undergraduate and I am by no means a bioarchaeologist. What I am, however, is a social archaeologist with an interest in landscape and a strong commitment to generalist anthropology. As such, I have ideas of my own about "community" as a concept, as well as about how bioarchaeology might become a more "social" or "interpretive" approach. I am, therefore, not a disinterested observer. Rather, I am eager to see the insights provided by these authors circulate throughout the broader anthropological community of which we are all members.

In their introduction to this collection, Becker and Juengst correctly observe that bioarchaeology, as an inherently interdisciplinary endeavor, is uniquely poised to provide information about the human condition and human relations in the past. Little of this information is accessible through other anthropological subdisciplines or approaches, and many of the proxies upon which archaeologists tradi-tionally rely mask the kinds of detail provided by human skeletal remains.[1] Quite simply, bioarchaeology is an indispensable tool in the quest to understand what it means—and has meant—to be human. Simultaneously addressing both individual biology and shared cultural-social lives, it is ideally situated to consider people as agents in broader "nature-cultures" (following Latour 1993)—complex hybrid ecologies that continually act upon us physically, socially, mentally, and biologically, just as we act upon them.

Approaching the topic as a relative outsider, I came to the task of evaluating this collection of papers with the impression that bioarchaeologists have been slow to recognize this potential to its fullest. This impression was not entirely accurate: even a casual exploration of the bioarchaeological literature quickly turns up remarkable social treatments and efforts, at least in some quarters, to craft a more interpretive subdiscipline (e.g., Agarwal and Glencross 2011; Buikstra and Beck 2006; Geller 2005, 2008, 2009; Killgrove and Tykot 2013; Knudson and Stojanowski 2010; Knüssel 2002; Scott 2017; Sofaer 2006; Stodder and Palkovich 2012; Thompson et al. 2014). The chance of happening upon these gems has increased in recent years as such publications have become more numerous and related efforts more frequent.

Similarly, one might encounter socially sophisticated bioarchaeological considerations in the grey literature of conference presentations (e.g., Fahre 2010) and unpublished Ph.D. dissertations (e.g., Scott 2006).

In some part, my initial assumptions about the lack of an interpretive bioarchaeology may result from a deeply entrenched insularity that continues to separate the anthropological subdisciplines nearly 30 years after Jin Choi's (1988) publication of a citation analysis showing the "'holistic' study of humanity" to be little more than an enticing ideal. Were I marginally less familiar with the bioarchaeological literature, I might accept that my perception of bioarchaeology's social reluctance is simply the result of not having read enough, of not having had my attention drawn to the correct sources. However, while I am not a practicing bioarchaeologist, neither am I completely unfamiliar with this subdiscipline and its literature. Thus, while my first impression may have painted the discipline with too broad a brush, it does seem that the kind of work that I mention above remains exceptional (rather than widely emulated) within the broader field of bioarchaeology. Further, as suggested by many of the authors in this volume, even these notable contributions often leave room to stretch further into the realm of the social.

Many bioarchaeological treatments, even some that claim to be "social," continue a long-standing trend wherein biological data about sex, age, biodistance, and health status are presented as adequate or self-explanatory, failing to consider fully the impact that these biological realities might have had upon social life in the past. In such studies, the presentation of biological data seems to be an end in itself, not a stop on the road to engagement with broader anthropological questions. Other authors continue to rely on what Geller (2005, 2009) has pointed out to be unreflexive categories and methods. This reliance on accepted tradition and the *status quo* risks projecting the present onto the past in subtle and not-so-subtle ways, seriously limiting the potential of bioarchaeology to reveal a biocultural past different from the present.

A few years ago, I attended a lecture that cast these limitations in stark light. The scholar presented sound data about biodistance and genetics from a medieval cemetery, but insisted upon using the words "family," "kin," and "marriage" in unconsidered ways. I pointed out that these are social categories and institutions, full of assumptions and subject to a great deal of variability across space and through time. The presenter responded that my concerns were those of a cultural anthropologist, that physical anthropologists and bioarchaeologists understand "family" in different manners. I was dissatisfied with the response. For one thing, I do not subscribe to the belief that different kinds of anthropologists

study fundamentally different things at the end of the day. However, I was particularly troubled that this researcher saw his or her own concern as separate from those of sociocultural anthropology, stumbling into a version of the emic–etic trap faced by ethnographers more than 25 years ago: defining family solely in terms of conventional Western biology. The research potentially overlooked a number of non-biological (or "alternatively biological") ties that may have been important to defining family in the society studied. Consider, for example, that biodistance studies and ancient DNA are unlikely to identify forms of "ritual" or "fictive" kinship,[2] like fosterage, god-parenting, and milk kinship, that we know to have been important in several Iron Age and medieval European societies (Hammel 1968; Hansen 2008; Jussen 2000; Lynch 1986, 1998; Parkes 2004, 2006, 2007; Smith 1992). The osteological evidence presented was important and interesting, but it was not necessarily adequate to describe the complexity of the medieval family. Sadly, like many contemporary academics, this presenter had been conditioned to see Boasian four-field anthropology as some kind of anachronism or disciplinary foundation myth (Borofsky 2002; Rubel and Rosman 1994). She had long passed a critical threshold beyond which the practical integration of the subdisciplines would require focused effort and an epistemological reorientation.

These observations bring me to the articles in this collection, and specifically to the second chapter by Kakaliouras. I appreciate the historiography presented here. As Kakaliouras suggests, an important feature of much so-called "post-processual" thought was a rejection of *scientism*, the belief that empirical science constitutes the most valuable part of human knowledge. This scientism was characteristic of the New Archaeology, whose practitioners subscribed to the belief "that there was a single truth about the past that could be accessed as long as one had the right approach and did the right kind of science" (Thomas 2000:1). As Thomas (2000) suggests, the shared notion that nomothetic laws might explain all past human behavior (regardless of historically particular circumstances) allows us to think of the New Archaeology, along with its descendant processual movement, as a "unitary project" that drew much of its inspiration from the natural and "spatial" sciences (i.e., human geography). Given that the human organism responds in a finite number of ways to ecological stimuli, molding both bone and soft tissue in patterns that are often predictable and reproducible, it is not surprising that bioarchaeology has maintained a strong tie to this scientistic way of approaching the study of the past. Even where minor variations in pattern occur, it is difficult to deny that human skeletal remains, and the record(s) they constitute, seem to indicate some universal human truths.

While the practitioners of "post-processual archaeologies," now more commonly referred to as "social" or "interpretive" archaeologies, that arose in response to the New Archaeology have never been truly unified under a single approach (Thomas 2000:1-2), they do share a healthy disbelief in the notion of universal human truths. Prioritizing the diversity of human experience, social archaeologists have sought explanatory mechanisms and models rooted in sociocultural anthropology, sociology, philosophy, psychology, cultural studies, art history, technology studies, performance studies, and other disciplines. This has resulted in approaches that tend to privilege *social structure* over *social system*,[3] *social action* over *behavior*, and that seek to overcome the "radical occlusion of the individual" characteristic of aggregating processual approaches (Shanks and Tilley 1987).

During the grand "theory wars" of the 1980s and 1990s, proponents of New Archaeology and of interpretive approaches alike spent a great deal of time and ink constructing what Wylie (2002:171) has aptly referred to as "heavily decomposing red herrings." Each tried to portray the other as off-base, misguided, or completely unhinged. Neither did so for entirely selfless reasons or without significant exaggeration. Thus, while there may have been some cause to believe in a navel-gazing, just-so-storytelling, and experience-seeking post-processual "bogey man," in truth very few interpretive archaeologists ever completely rejected the scientific method or even hypothesis testing. Rather, the various interpretive archaeological approaches called upon archaeologists *as scientists* to do more than simply present their data as self-explanatory, to consider that various chains of events might have led to particular arrangements of features and artifacts, to consider the provenance and political import of the methods and categories we employ, and to think about how they might shape the interpretations we make (cf. Barrett 2000).

None of these priorities, not even the last, was particularly anti-scientific. As former American Anthropological Association President Leith Mullings observed in her 2013 Presidential Address, "to analyze the politics of knowledge production and to address the hegemonic view of history is not to suggest that all narratives are equal or that history and science do not exist" (2015:8). Important to the current discussion, I can see many of these priorities embedded in Kakaliouras' call for a bioarchaeology that seeks a "*sociohistorical* bedrock for its scientific and interpretive work." With the "theory wars" some 20 years behind us, and many of their most vocal generals now safely retired or in the grave, the latest generation of interpretive archaeologists tends to recognize that the clearest picture of human life in the past might only be created with input from both

the New Archaeology (for understanding broad biological and cultural processes) and the various post-processual approaches (for understanding local interactions and histories of development). If a commitment to science has in fact led to the conservatism of bioarchaeology, as Kakaliouras suggests, then this would appear to be the right moment to craft something more social: something that strives to be "'empirical' but not 'narrowly empiricist'" (Wylie 2002:169). This seems to be what is going on in this shared *community* project.

As our editors' introduction and several other papers indicate, the "community" concept has a complicated history in social theory. In their 2014 Society for American Archaeology (SAA) session that led to this publication, one participant comically referred to community as "the dark matter of archaeology" (Valentine 2014). Community might mean anything from a place-specific, bounded human settlement, to a feeling of "togetherness" and "belonging" that unites people at various human, spatial, and temporal scales. These articles creatively explore this range of meanings. Along the way, they consider issues of boundaries and boundedness, scale, metaphor, and memory, all of which, one might argue, are social concerns that have remained just beyond the reach of bioarchaeology.

Before moving on to discuss the other papers, I should say that I very much like the note of caution that Kakaliouras sounds concerning the unconsidered application of the community concept. I agree with her implication that, if we are not careful, this concept could become yet another reified, *a priori* category that we seek to identify in the archaeological past, painting all "communities" with a broad, uniform brush. A central and very productive tension found throughout this collection is that different understandings of the community concept by contemporary researchers, as well as by people in the past, led and lead to very different forms of community and attendant biocultural impacts. This tension (or realization) provides a valuable landmark that we need to keep clearly in sight as we proceed along the path laid out by Becker and Juengst.

Further, as Kakaliouras suggests, the unconsidered reification of the community concept might have consequences beyond setting us up to do sloppy science: notions of community are directly implicated in our dealings with the public, and especially with the members of descendant groups. The relationships that archaeologists form with non-experts, many of whom may be biologically (or otherwise) related to the people we study, has grown as a concern within 21st century archaeology (e.g., Castañeda and Matthews 2008; Tarlow and Stutz 2013). It is becoming clear that the careful maintenance of such relationships may be essential to the continued success of our discipline, and that this

concern structures a conversation in which archaeologists might find common ground with sociocultural anthropologists and linguists. Kakaliouras' references to the Kennewick experience and to the complexities of NAGPRA more broadly, both here and elsewhere (e.g., Kakaliouras 2012), serve to remind us that bioarchaeology is not outside of this conversation. Rather, contrary to the admonishment that a number of my graduate school colleagues and I once received from a celebrated visiting archaeologist—that "the North American experience [of descendant community relations] should not be taken as a model for anything"—US-based bioarchaeologists have quite a bit to tell the rest of us about how to manage our relationships with the publics we serve. Recognizing the diverse identities and needs of archaeologists and non-experts, and determining who reasonably constitutes a "descendant community," are processes that fundamentally rely on questions of *boundaries and boundedness*, a theme that has long interested archaeologists from across the theoretical spectrum (e.g., Kimes et al. 1982; Kowalewski et al. 1983; Mantha 2009; Parkinson 2006; Stark 1998). As stated above, I see a similar concern with boundaries elsewhere in this collection and in the symposium that generated it. For example, in his SAA presentation, which has regrettably not been reproduced here, Valentine (2014) urged us to think of communities as fundamentally exclusionary, noting that boundaries are part-and-parcel to the operation of a community, as well as to any archaeology that hopes to understand community more broadly. Starting from strontium isotope data, Valentine suggested that immigrant bodies might, themselves, have been the boundaries of Indus Valley communities. I agreed that immigrant bodies likely *marked* and *reinforced* important boundaries in the past, and may continue to do so in the bioarchaeologist's lab today. As Valentine eloquently noted, "we can imagine that archaeological immigrants, just like modern ones, were powerful reference points for defining 'those like us' and 'those not like us'".[4]

Exclusion from community lies at the heart of Zuckerman's (Chapter 8) consideration of syphilitic, or "poxed," individuals from 17th to 19th century London. As Zuckerman points out, the marginalization of such people is well attested in English medical, civic, and ecclesiastical documents from the Renaissance through the early Modern period, revealing common judgments about temperance and indulgence, as well as notions of divine retribution and fears about pollution, both physical and spiritual. In other cases where infected individuals were similarly marginalized, for example in cases of leprosy, exclusion from the community of the living appears to have been reflected in death, with non-normative burials occurring in separate cemeteries. Examining these historical data, Zuckerman is led to ask, "is

variable, non-normative mortuary context for the chronically ill, specifically the poxed, evident in post-medieval communities in London?" To answer this question, she considers material derived from three separate London cemeteries, contexts that were likely themselves somewhat exclusionary based on such social differences as religious denomination, ethnicity, geographic location, social class, and gender. Surprisingly, despite the marginalization described in the historic sources, she finds no evidence for post-mortem exclusion from her cemetery sample.

It would seem that Zuckerman has stumbled upon the complement of community exclusion—community *inclusion*—leading her to surmise that perhaps the pressures of poverty, high mortality rates, and the need to bury the dead efficiently and hygienically outweighed concerns about pollution in the afterlife. While this interpretation opens up interesting questions not only about community inclusion, but also about early Modern English pragmatism, I fear that Zuckerman's results have to be read with a degree of caution. The explanatory recourse to the pressures of poverty and funerary efficiency does little to explain why lepers were prepared and interred separately from the general population, but pox victims were not. If these two groups were similarly marginalized in life, why were they not so at death? Zuckerman, herself, may provide the answer to this question when she notes the four individuals in her sample who exhibit evidence of syphilis very well might have gone undetected by the members of their community, thereby allowing them to escape exclusion. However, without a larger corpus or estimates of the frequency of advanced acquired syphilis in London during this time period, it seems best to think of this piece as an example of how we might use multiple sources of evidence to generate testable hypotheses in a bioarchaeology of community.

A more compelling case of community inclusion is the paper by Juengst (Chapter 3) on the Early Horizon period in the Titicaca Basin. There are abundant non-biological data to suggest the growth of the Yaya-Mama ritual complex might have created exclusive spatial and social segments within the Titicaca region. Nevertheless, focusing primarily on temple and non-temple contexts on the Copacabana Peninsula, Juengst is able to demonstrate a relatively homogenous burial practice throughout the area. This burial tradition even included individuals that had clearly emigrated from elsewhere. Further, drawing on biodistance and strontium isotope data, Juengst has made a convincing (if preliminary) case for community inclusion at broader scales within the basin, through the development of an incipient *ayllu* extended-kinship network. She thereby provides a plausible explanation for the inclusion of immigrants in the burial contexts she studies.

These cases demonstrate that not only are boundaries important to understanding community, so too is *scale*, another concept with a rich life in archaeology (e.g., Ames 1991; Kowalewski, et al. 1983; Lock and Molyneaux 2006; Marquardt 1985; Meyer and Crumley 2011; Robb and Pauketat 2013; Stein 1993).[5] Becker's case study (Chapter 4) of labor organization in the Tiwanaku state provides a very good exploration of scale. Like Juengst, Becker considers patterns visible at the settlement and inter-settlement levels, demonstrating differences in labor-related musculoskeletal stress and osteoarthritis between heartland and hinterland communities. She then goes on to consider community at a finer scale: what might be considered the *intra*-settlement level. Becker makes a strong case for the existence of labor syndicates, united by shared tasks, the rhythms and maladies of working life, and defined *barrios* within the broader settlement.

As a landscape archaeologist, I particularly appreciate the spatial aspect of Becker's contribution, which suggests that living and working conditions in the city of Tiwanaku likely differed by location within the settlement. Becker's recognition of intra-settlement diversity here is an outcome of considering bioarchaeological data across multiple scales, demonstrating what ecologist Pielou (1975) observed 40 years ago: that our choice of scale makes diversity visible or masks it. The apparent existence of *barrios* and isolated syndicates within a broader settlement is a strong reminder for archaeologists to avoid what Nigerian author Chimamanda Ngozi Adichie refers to in her first celebrated TED talk as "the danger of a single story" (2009). Not every part of a village is precisely the same as every other; not every person within a population has the same life experience as every other person; and, as Kakaliouras writes in this volume, "populations and communities are not immediately equivalent." Any one of us, as Valentine observed in his SAA presentation (2014), belongs to several communities at once. "Traditional" bioarchaeology has been quite good at mapping the complexities of social diversity in terms of age, sex, and (often) race, class, and occupation. The papers in this volume offer hope of expanding our understanding of past diversity into the other, often-intersecting domains of identity by which humans define community. These include, among other things, gender, sexuality, ethnicity, ritual sect, political faction, and kinship (following Boellstorff 2007; Brumfiel 1992; Crenshaw 1991; Mullings 2015).

Several of these domains of identity appear in Cornelison et al.'s (Chapter 6) contribution concerning southern Wisconsin's Late Woodland effigy mounds. Kinship, measured through biological descent, but with a serious nod to socially meaningful lineage, is particularly important to these authors' exploration of community, which is material-ized not only in the skeletal remains they examine, but also in the mounds in which said remains were interred. Like the papers by Juengst and Becker, these authors demonstrate the value of examining several lines of archaeological and bioarchaeological evidence across a number of scales.

Further, reading Cornelison et al.'s analysis as a landscape archaeologist, what stands out is the degree to which it underscores the importance of metaphor and symbol to understanding past human practice. While even practitioners of social-interpretive approaches (e.g., Barrett 2000) express doubt at the possibility of excavating ideas and symbols, and while there is a great deal of skepticism about symbolic interpretations of archaeological materials, it is still the case that the archaeological literature is loaded with discussions of symbol and meaning (e.g., Ballard et al. 2003; Bradley 2009; Hays 1993; Hodder 1982; Renfrew and Zubrow 1994; Robb 1998). Symbolic-metaphorical readings of material culture have even made significant inroads into studies of archaeological landscapes (e.g., Boivin and Owoc 2004; Schmidt 1983, 1994; Schmidt and Mapunda 1997; Tacon 1994). With its geometric and zoomorphic mounds, Cornelison et al.'s contribution can be read against this backdrop of symbolic archaeology. The individuals in this study were not only buried in relation to other members of their lineages, it appears they were interred at specific places in the animal bodies of the effigy mounds, especially near the hearts. This observation leads to a number of questions, which might drive further inquiry into the Effigy Mound culture. For example, did these animals, themselves, represent a part of the lineage and, thus, signal a form of community that included more than humans alone? Did burial in an animal's stomach or between its legs signal membership in a different community, or different *kind of* community, than placement in its heart? It is worth noting that not only do these questions bring this paper into dialogue with a broader conversation about symbolic practice, they also draw attention to the fact that recent efforts to establish a social bioarchaeology have parallels within zooarchaeology (e.g., Oma and Hedeager 2010; Russell 2012).

Another brilliant treatment of symbol and metaphor is provided in Novotny's chapter on community in the Late Classic Upper Belize Valley (Chapter 5), which beautifully traces a link between corn and bone. She reveals the role of maize in ensuring both the sustenance of Mayan bodies and the reproduction of Mayan communities. Like her colleagues, Novotny reviews the broader archaeological literature on community, but she takes her consideration one-step further to engage with the classic work of historian and political scientist, Benedict Anderson (1991). This engagement sets up a very compelling exploration of "natural" and "imagined" communities in the Maya context, participation

in which was both metaphorically and literally shaped by the interplay of the built environment with cosmology and social memory. The building of Maya communities involved interactions of the living with the dead, as residents of the valley re-opened the tombs of their ancestors to remove bone and other materials that would foster bonds between generations. Imagining the rites that likely accompanied these re-entries and removals brings us closer than any other paper in this collection to Turner's (1969, 1974) notion of *communitas*: a critical accumulation of the sense of togetherness and belonging that leads to important cultural rediscovery and reaffirmation. With its emphases on metaphor and memory, this is clearly "not your father's" bioarchaeology.

Novotny's contribution places bioarchaeology in conversation with an extensive archaeological and broader anthropological literature on social memory (e.g., Bradley 2002; Bradley and Williams 1998; Connerton 1989; Crumley 2000; Halbwachs 1992; Holtorf and Williams 2006; LeGoff 1996; Lillios 1999; Lillios and Tsamis 2010; Maříková-Kubková et al. 2008; Nora 1972, 1989; Olivier 2004; Radley 1997; Rowlands 1993; van Dyke and Alcock 2003; Williams 2003). Social memory is also at the heart of the final case study in this collection, the funerary archaeology paper offered by Deskaj in Chapter 7. Deskaj studies the "lives" of Bronze and Iron Age burial mounds in northern Albania, mirroring my own dissertation work in Burgundy, France (Meyer 2010, 2012). Coupling archaeological information with insights generated by contemporary ethnography in Shkodër, Deskaj sets out to demonstrate that, through their visibility and durability, ancient tumuli marked important community boundaries, defining in-groups and out-groups, both at the historical moment of their construction and in subsequent periods. She reminds us that "bioarchaeologists would do well . . . to remember that prehistoric people were dynamic agents, both in life and in death, and that mortuary landscapes were used in various complex ways, both to facilitate and confound social interaction."

The community boundaries discussed by Deskaj cross generations and even centuries, linking modern Albanians to the people who lived on the Shkodra Plain in the past. There is currently a strong tendency within interpretive archaeology to understand all reuse of landscape elements as related to social memory. This is a kind of "intellectual illusion," made possible by the 20/20 hindsight of contemporary archaeology. While the area around burial mounds often hosts later cemeteries (especially from the immediately subsequent periods) and provides landmarks by which to orient later activity, there were often long historic periods when tumuli were not recognized as distinct or human phenomena. During such periods, my Burgundy tumuli, for example, were either completely forgotten or were thought to be the homes of spirits, monstrous creatures, and witches, and thus, were avoided. I suspect that as Deskaj continues her work, she will turn up similar moments in the lives of the Shkodra tumuli. Hence, while they may have remained important in the construction of landscapes and even in the development of communities, they need not necessarily have been "sites of memory" (*sensu* Nora 1972, 1989).[6] What is particularly interesting (especially in the context of this volume), and what deserves further research, is the role that skeletal material from within Deskaj's mounds may have had in the construction of folklore about these features *and* in producing the kinds of historical understanding that could properly be considered memory.

In closing, I would like to congratulate Juengst and Becker on having drawn together a very diverse, but nonetheless internally coherent, collection of papers. These essays demonstrate the remarkable potential of bioarchaeology and funerary archaeology to infer complex social relations, often in ways that contradict or significantly exceed inferences drawn from other proxies. As a non-bioarchaeologist, I have tried here to explain the motivations and priorities of the social-interpretive archaeologies towards which this publication project seems to be reaching, and, largely through citation, to place these papers into a broader network of anthropological and archaeological theory so that they might capture the attention of a larger public. I hope that these authors, as well many readers, will continue to build on the work presented here, and that this will be only the first in a number of volumes dedicated to the bioarchaeology of community.

Notes

1. Juengst's contribution to this collection (chapter 3) provides a straightforward demonstration of the ways in which skeletal and non-biological data can provide different, even contradictory, understandings of life in the past.

2. The expression "fictive kinship" is a holdover of anthropological habits developed in the 19th and early 20th centuries. It privileges consanguine relationships and, to a lesser degree, affinal (i.e., marriage) ties over myriad other kinds of familial relationship that anthropologists now recognize (see, for example, Carsten 2004; Schneider 1984; Weismantel 1994; Weston 1997). To be clear, the suggestion that these are somehow more "fictional" or "made up" than understandings of heredity and connectedness that rely on the assumption and recognition of shared (and largely imperceptible) genetic material is a classic emic–etic trap (Schneider 1984). It has the potential to produce serious misunderstandings of human relations in the communities

we study, past or present. We need to come up with more creative and precise ways of referring to non-biological kin.

3. Shanks and Tilley (1987:51) noted that "system refers to the patterning and organization of social relationships; structure refers to the rules and concepts which give meaning to the system." This distinction is related to the variance between biological descent and familial relations that I found lacking in the presentation I have discussed previously, and still find lacking in much published bioarchaeology.

4. The heated debate about the "belonging" of immigrant bodies and other bodies of color that currently ties up our news cycle is reminiscent of earlier debates about the same kinds of body. These discussions attracted the attention of Franz Boas (e.g., Boas 1912), whose commitment to the political and social engagement of our discipline led him to conduct empirical anatomical research in immigrant communities. His major finding, that immigrant bodies can be quite plastic when considered over generations and across diverse ecologies, flew in the face of conventional wisdom about the generally static nature of what the experts of his time thought of as "ethno-national body types" (more akin to what we would now call "race"). My support of the papers presented here stems, in part, from a firm belief that bioarchaeology might make similar contributions to contemporary debates about the "bodies that belong" in our society.

5. As suggested by Kenneth Ames (1991:935), the importance of geographic and temporal scale in archaeology may be traced to the influence of French *Annales* school of history (e.g., Bintliff 1991, 2006; Barker 1995; Lewthwaite 1988; cf. Bloch 1949, 1953; Braudel 1949, 1958, 1980). Following *Annales* thinking, "scale" is also an important concept with which to approach economic, social, and political questions in archaeology.

6. This tension was embedded in one of the widely cited volumes on the archaeology of memory, the 1998 special issue of *World Archaeology* dedicated to "The Past in the Past: The Re-Use of Ancient Monuments" (Bradley and Williams). In their contributions, both Howard Williams and Sarah Semple discussed the importance of prehistoric burial mounds to medieval Anglo-Saxon life and cosmology. Williams specifically described how these features were reused by Germanic groups during the medieval period to establish and maintain long-term community claims to particular territories. Semple, by contrast, explored the associations that tumuli came to have in the medieval Anglo-Saxon worldview. Such landscape features were considered the dwelling places of fantastical and dangerous creatures. Throughout the medieval period, barrows were typically avoided and seen as fit only for outcasts, exiles, and witches. The singular exception seems to have been important multi-group meetings that were held on top of them, as they provided a kind of neutral ground.

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