

The Archaeology of Our Lady of the Holy Rosary

Bombon, Camarines Sur, Philippines

Continuities & Changes in the (After)Lives of the Dead in the
Early Modern Central Philippines

UCLA Interdepartmental Archaeology Program
Dissertation Proposal

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14 April 2023

ABSTRACT

The dissertation examines continuities and changes in Indigenous funerary practices (and their underpinning religious beliefs) in a cemetery that was actively in use during the pre-, peri-, and early Spanish colonial period (ca 11th-17th centuries) in the Bicol region of the Philippines. The Bicol region is largely unstudied archaeologically, with early Spanish colonial narratives of the Indigenous peoples' swift political subjugation and total Catholicization still prevailing in the histories of both the educational system and popular imagination. This project aims to ask: how did Indigenous people of the central Philippines, particularly in the Bicol region, preserve and transform their relationships to the dead during the Early Modern period? The research thus aims to center the obscured histories and agency of Indigenous people in the Philippines and the Spanish Empire more broadly. The dissertation will examine three bodies of evidence (human skeletal remains, faunal remains, and ceramics) from Bombon cemetery to elucidate Indigenous peoples' decision-making and agency over centuries of dramatic social, political, and environmental change during the Early Modern period. Analysis of preliminary excavations suggests longer, negotiated, and multidirectional processes of social and religious transformations between the Indigenous and Spanish populations.

INTRODUCTION

Despite its economic centrality to the development of the Spanish Empire's globalization, the Philippines remains largely unstudied in the Early Modern archaeology of Iberian colonialism (Acabado et al 2019). This project aims to study Indigenous responses to Spanish colonialism, by braiding together data derived from human skeletal remains, faunal remains, and ceramics excavated from the site of an Early Modern Catholic church site in the Bicol Region of the Philippines.

To examine a specific localization of the effects of Early Modern globalization brought on by Spanish colonization, the project aims to answer the following questions:

1. How did the skeletonized lifeways of subadults buried in the Bombon church site change before and after Spanish colonization?
2. How did the mortuary treatment of subadults buried in the Bombon church site change before and after the Catholicization of the Bicol region?
3. How did Spanish colonialism affect shellfish consumption and disposition at the Bombon church site?
4. How did Spanish colonialism affect shellfish collection practices at the Bombon church site?
5. How did the production standardization of ceramics found in the Bombon church site change between the pre- and early Spanish colonial eras?
6. How did the raw material source of ceramics found in the Bombon church site change between the pre- and early Spanish colonial eras?

Each pair of questions will be answered via the physical and chemical examinations of a specific artifact type: questions 1 and 2 via human skeletal remains, questions 3 and 4 via faunal remains, and questions 5 and 6 via ceramics. Preliminary results suggest longer, negotiated, and multidirectional processes of religious, social, and economic transformations as the result of Indigenous choices to resist, accommodate, co-opt, and/or transform colonial processes.

BACKGROUND

Early Modern Globalization & The Philippines

In June 1565, Miguel Lopez de Legazpi and Rajah Tupas of Cebu signed the treaty of Cebu, with Cebu representing the first Philippine settlement established by the Spanish Crown and Spanish Cortes (Scott 1992). Three months later in September 1565, admiral Pedro Menendez de Aviles founded St. Augustine, La Florida, the oldest continuously occupied Spanish settlement in the Americas (Steigman 2005). These foundings represent the beginnings of trade networks that would develop into the world's first globalized economy (Headley 1995, Valle et al 2019).

The 1571 Spanish founding of Manila was the final link in this chain, marking the Philippines as a key node of the commercial and cultural exchanges that would come to define the early modern Spanish empire's—and thus modern—globalization (Clossey 2006, Mehl 2016). Manila served as a key commercial hub, with its geography allowing for both regular transpacific travel and a new avenue for the integration of China's economy into the economies of the early modern European empires (Clossey 2006). These new global economic entanglements are perhaps best exemplified by the annual Manila-Acapulco galleon trade voyages from 1565 to 1815, wherein Chinese goods were exchanged for American silver for largely European and (later) Euro-American profit and consumption (Mehl 2016).

Despite Manila's proximity to and prominence in the processes that contributed to the emergence of early modern globalization, the early modern period remains critically understudied in historical and archaeological work on the Philippines (Acabado 2018, Barretto-Tesoro and Hernandez

2017, Bayman and Peterson 2016). This dearth is even more drastic in regions of the Philippines distant from Manila, with a few exceptions (Acabado 2016). One such understudied region is the Bicol Region, located in southeastern Luzon.

The Bicol Region: Early Modern Churches

Bicol, also known as the Bicol Region or Bicolandia, is a region of south eastern Luzon comprising six provinces: Albay, Camarines Norte, Camarines Sur, Catanduanes, Masbate, and Sorsogon. A series of small Spanish expeditions with both military and missionary personnel were launched to pacify the area now known as Bicol between 1567 and 1573 (Newson 2009). The region was thought of as an isolated economic backwater because of its distance from Manila, but oral historical and historical evidence suggests that Bicol-sourced hardwoods may have been used to repair Manila-Acapulco galleons using local boat building techniques (Newson 2009, Marcaida n.d., Jago-on and Orillaneda 2019).

Bicol is notable for its unique place in Philippine colonial history discourse: official and popular understandings posit that the region was swiftly pacified and the people conquered and completely converted to Catholicism in the span of two years (Owens 1974, Newson 2009). The Catholic Church's historical and contemporary presence and prominence throughout the Bicol region are undeniable: extant parishes and parish churches founded and/or built during the Early Modern period dot the landscape (Figures 1 and 2).

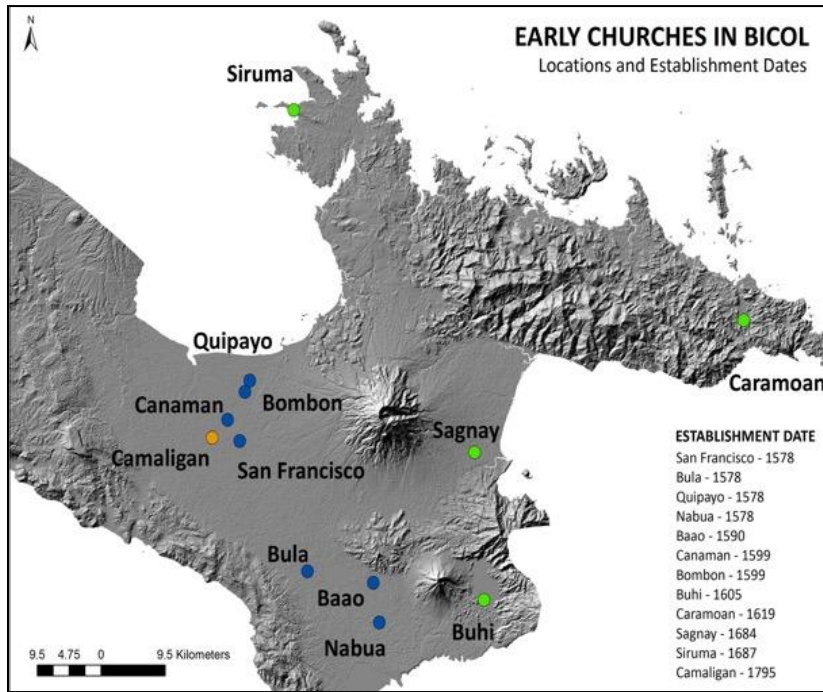


Figure 1. Extant churches in the Bicol Region built during the Spanish colonial period

Parish Name	Municipality	Visita Date	Parish Established
Saint Mary Magdalene	Bula	1578	1578
Holy Cross	Nabua	1571	1578
Saint Bartholomew	Baao	1590	1590
Saint Francis of Assisi	Buhi	1578	1605
Saint Michael the Archangel	Caramoan	1619	1619
Our Lady of the Assumption	Canaman	1578	1669
Saint Anthony of Padua	Iragá	1578	1683
Saint Andrew the Apostle	Sagnay	1684	1684
Saint Anthony of Padua	Siruma		1687
Saints Philip and James	Lagonoy	1734	1700
Finding of the Holy Cross	Manguiring, Calabanga	1701	1733
Saint Bernard Abbot	Ocampo	1735	1735
Nuestra Señora de La Porteria	Calabanga	1578	1749
Most Holy Trinity	Bato		1753
Saint Anne	Magarao		1754
Saint John the Baptist	Goa	1700	1777
Saint Paschal Baylon	Tinamboc		1781
Saint Clare of Assisi	Tigaon	1701	1794
Saint Anthony of Padua	Camaligan		1795
Saint Joseph	San Jose	1816	1801
Parish of our Lady of the Holy Rosary	Bombon	1578	1804

Figure 2. Parishes in the Bicol Region established during the Spanish Colonial period

Per common Early Modern period Catholic practice across the globe, many of the churches in Bicol were built atop sites that held social, religious, political, and/or economic importance to

indigenous peoples (Wrobel 2012, Escandor 2016). This often meant the building of churches and churchyard cemeteries atop indigenous cemeteries used for many years before contact (Stojanowski 2013). Bioarchaeological work examining the Early Modern Americas explores this spatial and spiritual displacement attempted by missionaries and indigenous peoples' diverse means of resisting, accommodating, co-opting, and transforming of Catholic burial practices amid periods of dramatic social change brought on by Early Modern globalization and colonization (Winkler et al 2017, Ortiz et al 2017, Murphy et al 2017, Klaus and Alvarez Calderon 2017, Harvey et al 2017, Stojanowski 2013, Loren 2013, Wrobel 2012, Silliman 2009). This project aims to put colonial Philippine mortuary archaeology in conversation with colonial Americas mortuary archaeology through a comprehensive study of human skeletal remains, faunal remains, and ceramics excavated by the Bicol Archaeological Project at the Parish of Our Lady of the Holy Rosary Church site during the 2019 field season. The church site is located in the municipality/town of Bombon and is thus sometimes referred to as Bombon church colloquially and in historic and contemporary records.

The Parish of Our Lady of the Holy Rosary Church Site in Bombon, Camarines Sur



Figure 3. Photograph of contemporary facade of Parish of Our Lady of the Holy Rosary Church taken in 2018. Courtesy Wikimedia Foundation.

The Parish of Our Lady of the Holy Rosary first appears in historical records (as Bombon) in 1578 as a visita site. Visita sites were small, local churches or chapels that were visited by itinerant clergy on a semi-regular basis (Recto et al 2018, Kuethe and Andrien 2014). It is one of five visitas first recorded in 1578, strongly suggesting that the formation of the church was part of the Bicol-wide evangelization mission launched by a separatist Franciscan order known as the Alcantarines in that year (Recto et al 2018). The parish was formally established in 1804, when the extant Baroque-style church was built (Figure 3).

During the over 200 year long visita period, smaller structures served as the complex's main worship space. One such structure was the Santo Domingo Chapel, which was in use during the Early Modern period until 1804. Santo Domingo Chapel sat just south of the footprint of the future church building proper (Figures 4 and 5).

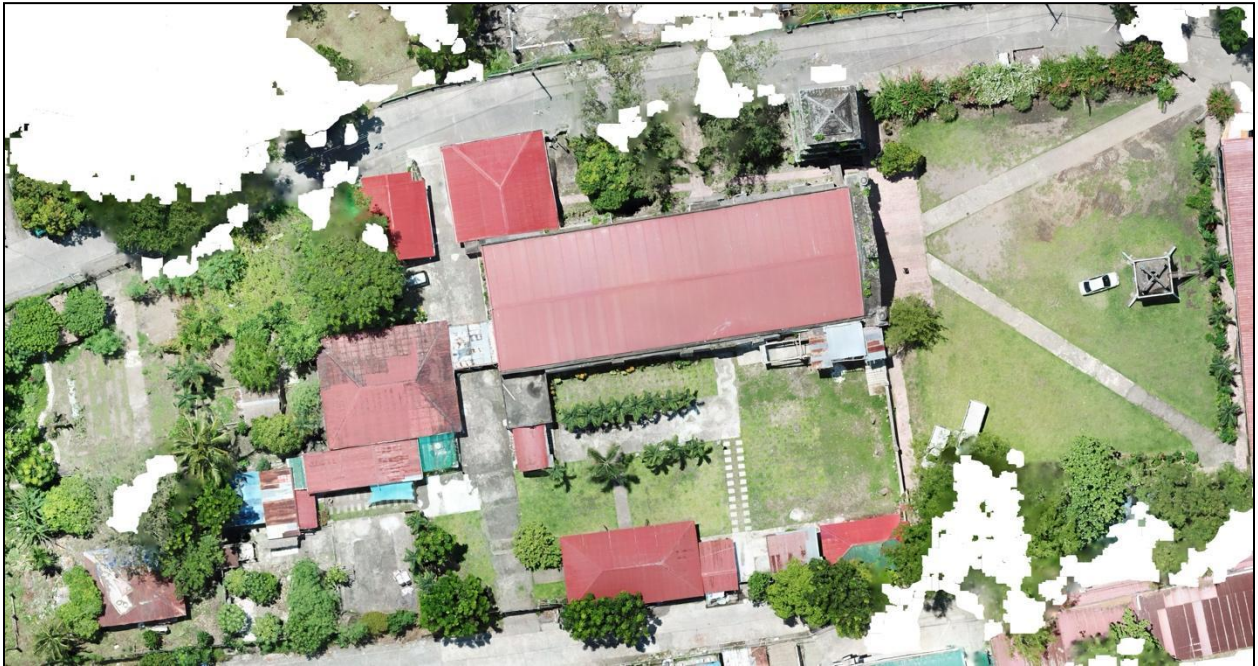


Figure 4. Drone Imagery of the Parish of Our Lady of the Holy Rosary Church Site collected in July 2022. Courtesy R. Meyer-Lorey

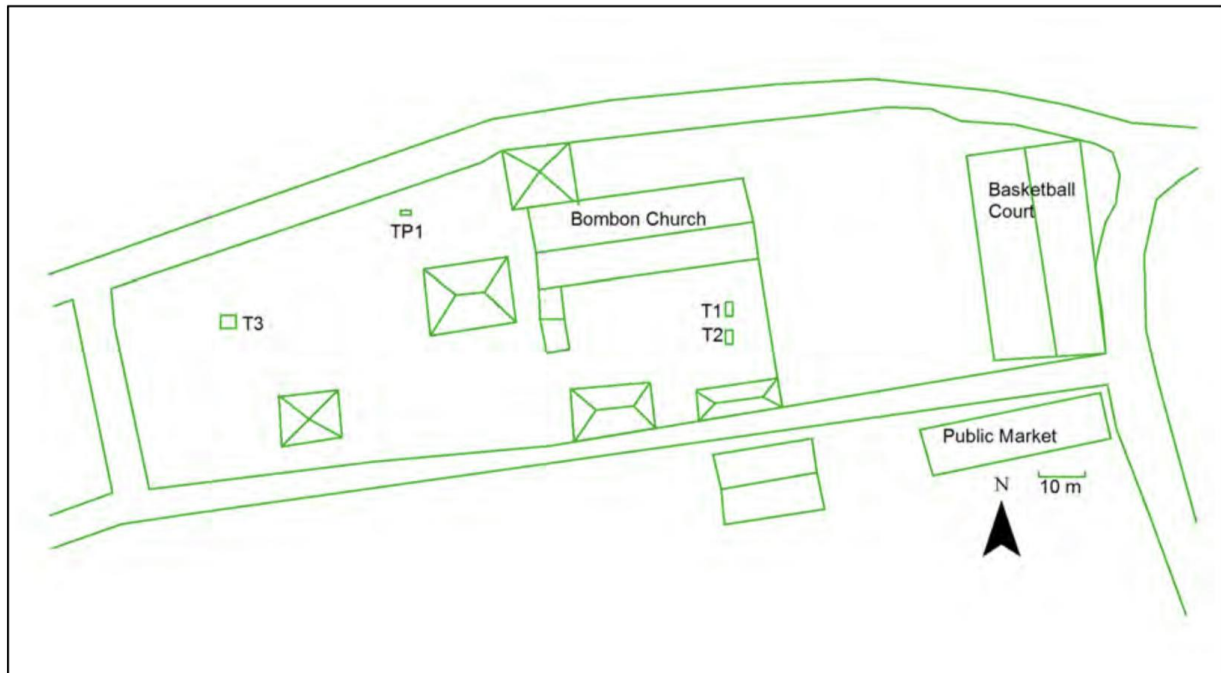


Figure 5. Schematic map of excavations of the Parish of Our Lady of the Holy Rosary Church Site. Note: map is not spatially corrected. Courtesy R. Meyer-Lorey.

During the 2019 field season, the Bicol Archaeological Project opened several test pits and trenches on the grounds of the Parish of Our Lady of the Holy Rosary Church (Figure 5). Test Pit 1 and Test Pit 3 were opened in areas where recent construction had revealed archaeological material, and Trench 1 and Trench 2 were opened on the likely site of the former Santo Domingo chapel. Excavations revealed a plethora of materials including human skeletal remains, faunal remains, and ceramic sherds.

THEORY

Indigenous Responses to Colonialism

This project is fundamentally concerned with indigenous responses to colonialism in the lowland Philippines. Despite narratives of near-instant colonization and Catholicization, previous research across the Philippines, the Americas, and beyond during the Early Modern period compellingly argue that indigenous people resisted, accommodated, co-opted, and transformed colonizing phenomenon and processes in myriad ways (Acabado 2018, Fitzpatrick 2013, Winkler et al 2017, Ortiz et al 2017, Murphy et al 2017, Klaus and Alvarez Calderon 2017, Harvey et al 2017, Stojanowski 2013, Loren 2013, Wrobel 2012, Silliman 2009). These diverse responses to colonialism were materialized in equally diverse and fundamentally innovative forms, particularly in the creation of novel material culture that (re)combined features from multiple cultures in contexts of newfound, sustained contact (Liebmann 2013, Silliman 2009, Stockhammer 2013). The diverse responses also likely manifested in emergent social practices, but those practices are very difficult to access archaeologically (Scott 1990, Stockhammer 2013).

Theory, interpretation, and analysis of these new social/material forms have formed the bedrock of the archaeology of colonialism for decades (Croucher 2012, Liebmann 2013). Much of this scholarship, unfortunately, skewed toward essentializing indigenous peoples (Silliman 2009, Liebmann 2013). In response to these interpretive issues, multiple theoretical models for explaining and examining material culture that exhibits multiple cultural origins in contexts of new, sustained

cultural contact between multiple groups of people have been proposed and hotly debated, including syncretism, bricolage, creolization, mestizaje, hybridity, and entanglements (Liebmann 2013). Though none of the models are perfect, hybridity—as posited by postcolonial theorists—may lead to the richest, most nuanced interpretations of novel material culture forms (Liebmann 2013).

Postcolonial Hybridity

Postcolonial hybridity refers to the processes in contexts of colonization that produce material culture forms that do not neatly fit into a single cultural origin category (Liebmann 2013). These forms are often called hybrid materials, hybrid forms, or hybrid objects. Postcolonial understandings of hybridity emphasize the inherent subversive/counter hegemonic nature of forms that defy colonial categorization, the power inequities inherent to contexts that produce hybridity, the agency of the subaltern, and the ambivalence of desire and disgust that those with the power to categorize feel toward hybridity, hybrid objects, and the usually marginalized people who produce hybrid material culture (Liebmann 2013, Villaseñor-Black 2019, Bhabha 1994).

Despite these emphases in postcolonial theorizing, scholars have argued that the archaeological uses of the term hybridity have significant interpretive flaws, including: imprecise definition and application to the point of meaninglessness (Stockhammer 2013); hybridity’s reliance on essentializing cultural categories (Croucher 2012); and an interpretive overemphasis on origins and not practices (Silliman 2015). In the context of Spanish colonial period Philippine archaeology, these flaws can be significantly mitigated through explicit defining of hybridity (see above and Liebmann 2013), category

consciousness, and the application of practice theory (Bordieu 1977).

Postcolonial Hybridity in the Philippines: Categories & Practice Theory

For the application of hybridity to the archaeology of the Philippines during the Spanish colonial period, the very categories that hybrid cultural material by definition defy must be reckoned with. Categories have an incredibly fraught history in anthropological and archaeological research (Croucher 2012). Despite this, it would be absurd to ignore the fact that the people living in the Early Modern Philippines thought in, used, and navigated people-categories in significant ways and that some material culture and cultural practices were strongly associated with people from certain people-categories (Martinez 2019). These people-categories were socially important enough to be codified into laws and socially dynamic enough for their meanings to be contingent upon time period and/or location (Martinez 2019, Mehl 2016, Mawson 2013). Further, Philippine people-categories far predate the Philippines, as seen in indigenous terms such as rajah, maharlika, datu, catalonan, and timawa (Owen 1974, Scott 1992, Barretto-Tesoro 2008). With this emic milieu of categorization in mind, the application of postcolonial hybridity to archaeological interpretations of Spanish colonial Philippine history is best served by: the explicit definition of the categories material culture is to be divided into; the presentation of evidence of the (emic) relevance of the categories to the social contexts being studied; and the discussion of the shortcomings and limitations of the categories being used (Fitzpatrick 2013, Beaulieu 2017).

For Early Modern Philippine archaeology, the application of postcolonial hybridity is

innervated and strengthened by a pairing with Bourdieu's practice theory (Silliman 2013, Bourdieu 1977). Practice theory posits that ethnogenesis—the 'creation' of (new) identities—is historically contingent, emerging from cultural practices and their attendant materializations, in recognition of differences from the cultural practices of one (or many) other groups (Bourdieu 1977). With this theoretical interface, postcolonial hybridity interpretations can expand beyond artifact origins and categories to also reckon with the social practices that hybrid materials were materially and symbolically embedded in (Silliman 2013, Stockhammer 2013).

Further, the simultaneous consideration of hybridity and practice allows for an understanding of a change-continuity dialectic, rather than viewing them as simply opposite processes (Silliman 2009). Previous theoretical models argue that change represents the death or disappearance of culture (Liebmann 2013, Silliman 2009). This change-as-cultural-death concept has been disproportionately (and sometimes exclusively) applied to indigenous peoples' cultures, even in colonial contexts wherein European cultures are changed as or more dramatically by sustained cultural contact (Silliman 2009). This disproportionate application has been brutally effective as a tool in the continuing colonial processes of indigenous land dispossession, in the Americas and far beyond; however, a change-continuity dialectic understanding of cultures in colonial contexts may become an effective countermeasure for archaeologists working with, by, and for indigenous communities today (Atalay 2006, Colwell 2016, Nicholas and Hollowell 2016).

A change-continuity dialectic views cultural change over time—particularly the creation of

multiple-origin material culture and social practices—as evidence of continuity and cultural persistence (Silliman 2009). This continuity and cultural persistence is brought about by indigenous people making strategic decisions to resist, accommodate, co-opt, and transform colonialism in diverse, innovative ways, and these decisions were materialized and inhumed in many places, though particularly in mortuary contexts that dot Spain’s former colonial possessions across the globe (Acabado 2018, Fitzpatrick 2013, Winkler et al 2017, Ortiz et al 2017, Murphy et al 2017, Klaus and Alvarez Calderon 2017, Harvey et al 2017, Stojanowski 2013, Loren 2013, Wrobel 2012, Silliman 2009).

BRIDGING ARGUMENTS

Early Modern Philippine Mortuary Contexts as Hybrid Sites & Hybrid Artifacts

Indigenous Philippine peoples' responses to Spanish colonization and Catholicization are uniquely accessible via mortuary contexts throughout the Philippines (Fitzpatrick 2013, Beaulé 2017). In the lowlands, the majority of these mortuary contexts are ostensibly Catholic churchyard cemeteries; however, global patterns and local examples abound of Catholic structures purposefully built atop indigenous cemeteries and other holy sites (Beaulé 2017, Escandor 2016). These Early Modern Philippine mortuary sites, the graves therein, and the contents of these graves defy simple categorization and should thus be understood, analyzed, and interpreted via category conscious hybridity and practice theory (Liebmann 2013, Silliman 2009). Even ancestors or objects deposited long before Spanish arrival—which may have been categorized as 'purely' indigenous through less nuanced hybridity analyses—may have acquired new social meanings or been integrated into new social practices and thus warrant archaeological (re)consideration (Silliman 2009). Examples from mortuary archaeology of the Spanish Americas and other Early Modern colonial contexts provide compelling models of analysis, through their nuanced examination of hybrid materials (and their possible social meanings to the individuals who placed them with deceased loved ones), including beads (Loren 2013), textiles (Murphy et al 2017), repurposed ceramics (Wrobel 2012, Barretto-Tesoro 2008), and even the skeletal remains of the deceased themselves to examine changes in violence, metabolic stress, and labor practices in colonial contexts (Murphy et al 2017, Klaus and Alcaez-Calderón 2017, Mayes and Barber

2008).

The excavations at Bombon church have unearthed human skeletal remains, faunal remains, and ceramics, so these artifact types will be examined for materializations of changing social practices in Early Modern Bicol.

Bridging Arguments: Osteobiography

The human skeletal remains excavated from Bombon church were largely fragmentary, but two burials of subadults—one burial in Test Pit 1 (hereafter TP1) and Trench 2 Burial 2 (hereafter T2B2)—were found largely intact. This small sample size necessitates a particular bioarchaeological approach: osteobiography (Stodder and Palkovich 2012). Though bioarchaeological research sometimes favors larger sample sizes, single case studies can provide nuanced insights into the health, social statuses, and agency of the individuals under study through the production of osteobiographies (Hosek and Robb 2019, DiGangi and Moore 2013).

Osteobiographies aim to interpret the life histories of individuals that are recorded in their skeletal remains through comprehensive analysis of the skeletal materials and the individuals' archaeological context (Saul and Saul 1989). This is done via a multiscale approach, analyzing microscopic features of bony tissue, individual bones, the individual's skeleton as a whole, grave goods, orientation of the grave, location of the grave within the mortuary context, location of the grave within the decedent's community, and so on (Stodder and Palkovich 2012). Data collected from these multiscale analyses are integrated into a detailed life history or osteobiography. Due to the logistical,

legal, and ethical constraints of locating, excavating, preserving, transporting, and analyzing of human remains faced by (often international) research teams, osteobiographies have emerged as an important and relatively popular methodological approach and anchorpoint for bioarchaeology in the 21st century (Buikstra and Beck 2006).

Like other bioarchaeological research, osteobiographies require clear alignment between problem-based questions and hypotheses, data collection, statistical analysis, and theoretical frameworks for interpretation (Buikstra et al 2022). Without this alignment, osteobiographies risk being seen as simple listings of data or unempirical conjecture (Hosek and Robb 2019, Buikstra and Beck 2006, Buikstra et al 2022).

For this project, the osteobiographies to be produced are concerned with interpreting the life histories of two individuals, one who lived before the Spanish colonial period and one who lived during the early Spanish colonial period. Preliminary C-14 dating suggests that TP1 lived and died during the precolonial period, and T2B2 lived and died during the early colonial period (Acabado 2022, personal communication). T2B2 was unearthed, alongside other fragmentary individuals, under what was likely Santo Domingo Chapel or its immediate vicinity. This may suggest that T2B2 was immediately outside the chapel after its construction or that the chapel was built atop the recent burial of T2B2. Regardless, the temporal distinction between TP1 and T2B2 aligns well with the project's concern with indigenous responses to Spanish colonialism.

TP1 and T2B2 will be physically and chemically analyzed through many methods in order to

elucidate as much information about their lives as possible. The osteobiographies of TP1 and T2B2 from Bombon church will also benefit from previous work of the Bicol Archaeological Project: excavations and surveys throughout the Bicol Region can help to inform site- and region-scale analyses necessary to contextualize the lives of TP1 and T2B2 in broader phenomenon.

Bridging Arguments: Zooarchaeology

Zooarchaeological remains can be powerful proxy indicators of both foodways and broader ecological and social phenomena (Newsome et al 2004). In complex and/or complexifying societies, zooarchaeological analysis can reveal diverse variability in how humans used animals—particularly as economic generators, markers of status differentiation, and symbols through feasting—across time and space (deFrance 2009, Hunter et al 2014). Analysis of the faunal remains excavated from Bombon church may provide a window into possible changes to foodways, food production systems, and other social practices that implicated human/animal interaction brought about by the social, ecological, and economic, political, and religious transformations inherent to Spanish colonization.

Shellfish will be a research focus because of their durability, ubiquity, and diversity in Philippine sites (Ochoa et al 2014). This is particularly important in sites in Bicol: nearly all early Spanish descriptions of the communities and polities of the region mention a stunning array and volume of shellfish being consumed (Escandor 2016, Marcaida 2018). Excavations in other Bicol churchyards have revealed enormous shellfish middens that also contained human skeletal remains, suggesting that there may have been a relationship between human body disposition, shellfish disposal,

and sacred spaces, further underscoring the importance of shellfish analysis (Escandor 2016). More broadly, previous research in the Philippines strongly suggests that changes in shellfish collection and consumption are particularly sensitive to ecological changes (Ochoa et al 2014) while research across the Americas suggests that analysis of shellfish collection and consumption, because of their centrality to food production as well as Indigenous social-environmental relationships, can provide insights into community decision making during times of intense social change (Hunter et al 2014).

Bridging Arguments: Ceramics

Previous research in Southeast Asian archaeological contexts strongly suggests that ceramic procurement and production practices—and the resultant form and composition variabilities of finished ceramics and sherds—are sensitive to sociocultural, political, economic, and environmental changes in the lives of the people who conduct the procurement and production (Stark and Fehrenbach 2019). This is likely due to changes in access to raw materials, organization of labor, and/or other means of production. As such, the mutually constitutive relationship between ceramic production (including the procurement of raw materials) and social, political, and economic changes has been the focus of archaeological study for decades (e.g. Berg 2004, Blackman et al. 1993, Earle 1981, Evans 1978, Longacre and Hermes 2015, Niziolek 2013, Rice 1981, Wang and Marwick 2020).

Archaeological examination of pottery standardization—largely via analysis of dimensions such as sherd thickness or chemical analysis to pinpoint the sources of raw materials—has emerged as a particularly valuable avenue of investigation, as increases in pottery procurement or production

standardization have been posited as signals of increasing social complexity and differentiation (Benco 1988, Clark 1995, Cobb 1996, Costin 2001, Longacre 1999).

Scholars have compellingly demonstrated the correlation between increasing pottery standardization and increasing social complexity across many different contexts, including across multiple regions of the Philippines (Acabado et al. 2017, Barretto-Tesoro 2008, Earle 1981, Evans 1978, Longacre 1999, Junker 1999, Stark 1995). In Philippine archaeological contexts, scholars have thus argued that the standardization of pottery production can serve as evidence of the emergence of centralized, elite control of economic processes while diversity of pottery forms and techniques can serve as evidence of heterarchical organizations of power (Barretto-Tesoro 2008, Crumley 1995, Junker 1999, Stark 1995, Stark et al. 2000, White 1995). Despite the relative wealth of archaeological investigations of ceramics across the Philippines, ceramics from the Bicol region remain almost completely unstudied.

The indigenous polities and peoples of the Bicol Region undoubtedly experienced sociocultural, political, economic, and environmental changes as a result of Spanish colonization of the area (Owens 1974, Newson 2009), and these changes likely manifested physically in some form in material culture (Liebmann 2013, Stark and Fehrenbach 2019). Ceramic's durability and use in Bicol before and during Spanish colonization thus mark it as a potentially fruitful avenue of research.

METHODS

Methods: Osteobiography

The human skeletal remains excavated from Bombon church were largely fragmentary, but two burials of subadults—one burial in Test Pit 1 (hereafter TP1) and Trench 2 Burial 2 (hereafter T2B2)—were found largely intact. The burial found in TP1 is the mostly complete skeleton of a subadult, associated with an earthenware coffin (Figure 6). T2B2 is the near complete skeleton of a subadult (Figure 7). Preliminary analysis in field laboratory conditions found that: dental development strongly suggests that both individuals were 6 ± 2 years old at time of death; both individuals displayed mild evidence of metabolic stress in the form of cribra orbitalia; TP1 displayed extensive dental wear, dental caries, and dental decay throughout the dental arcade; T2B2 displayed very minor wear on the occlusal surface of the incisors; excavated remains were relatively complete, suggesting primary burial and that the burials were largely undisturbed until excavation in 2019. This completeness is particularly notable for T2B2, who was found next to T2B3, another subadult burial consisting of many fragmentary skeletal elements.



Figure 6. Photograph of the earthenware coffin associated with TP1 (burial)

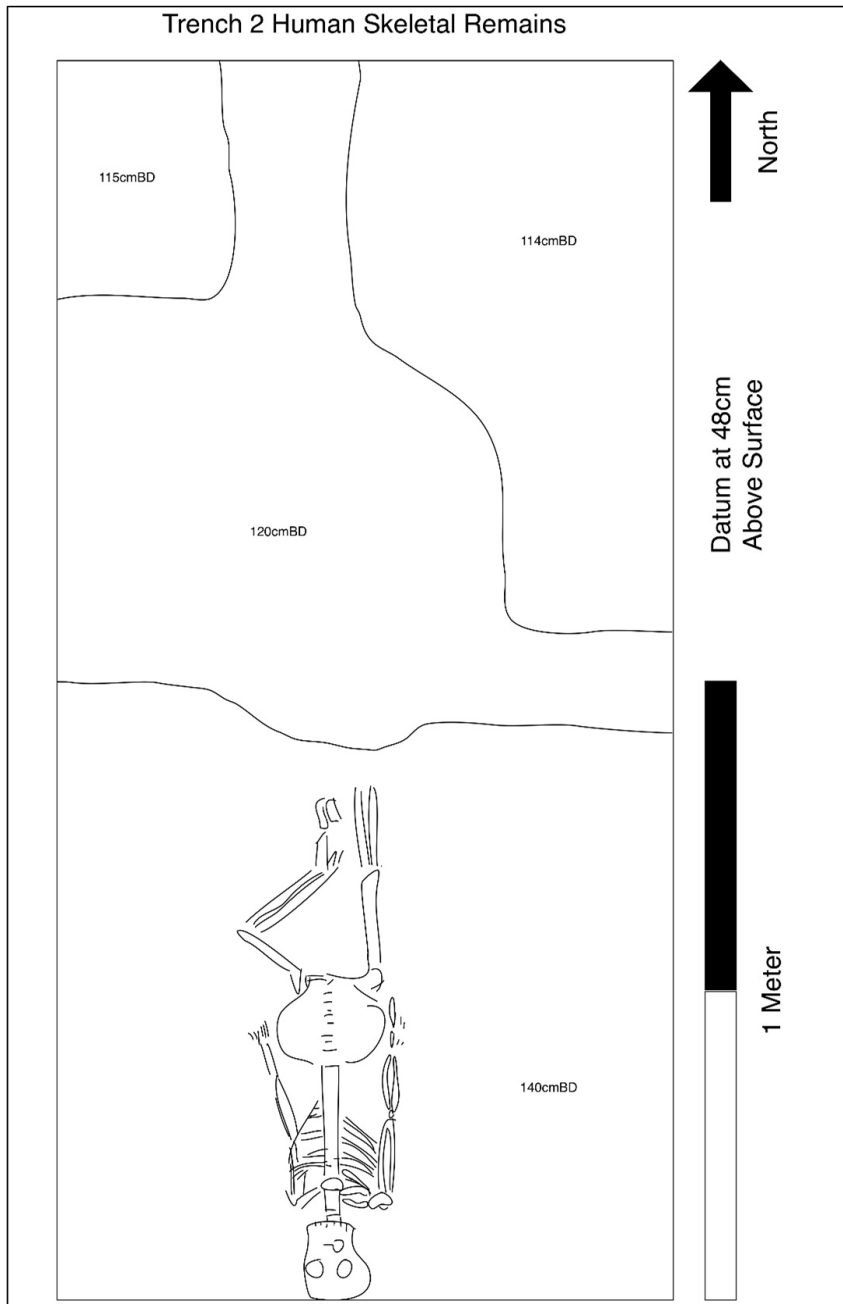


Figure 7. Drawing of excavation of T2B2

Myriad physical and chemical analyses of the human skeletal remains will be done to elucidate as much information about their lives as possible, with particular emphasis on estimating age at death, estimating sex, assessing paleopathology, reconstructing diet, and tracing mobility.

Age Estimation

Age estimation on both individuals was conducted by assessing permanent teeth development and eruption using standard age ranges (Larsen 2015, DiGangi and Moore 2013). In order to more accurately and precisely estimate age, histological aging techniques will be used (Antoine et al in Katzenberg and Grauer 2018). 100 micrometer thin buccolingual slides will be cut, prepared, mounted, viewed in 100x-400x polarized light microscopy and intensively photographed in order to view and count Retzius lines (Antoine et al in Katzenberg and Grauer 2018).

Skeletal age estimation was attempted in the field, but epiphyseal fusion examination was limited by taphonomic processes and the produced age ranges were imprecise (DiGangi and Moore 2013). Due to the presence of subadults, the human skeletal remains will be reexamined for specific subadult age markers, particularly anteroposterior vertebral neural canal size (Lewis 2018).

Sex Estimation

Sex estimation during field laboratory analysis was largely inconclusive. Due to the estimated age range, the angle and depth of the sciatic notch will be reassessed following Olivares and Aguilera's methods for sex estimation for 3 to 6 year old subadults (Olivares and Aguilera 2016 in Lewis in Katzenberg and Grauer 2018).

Paleopathology Assessment

Preliminary paleopathology assessment was rudimentary. Preliminary skeletal analysis showed cribra orbitalia on both individuals but the size/severity were not described. Because appropriate paleopathology assessment for individuals is fundamentally descriptive, the cribra orbitalia will be reexamined, described, and photographed (DiGangi and Moore 2013). Other skeletal elements will also be reexamined for any paleopathological lesions missed during initial assessment.

Preliminary dental analysis revealed varying amounts of occlusal wear but no linear enamel hypoplasia (LEH) or dental caries. The lack of LEH reported will be reexamined: field analysis used no magnification nor a quantitative threshold which may have resulted in the underreporting of LEH (Hassett 2012, Goodman and Rose 1990). The occlusal wear will be reanalyzed with the completion of stable isotopic and zooarchaeological diet reconstruction.

Chemical Analyses: Stable Isotope Analysis for Diet Reconstruction & Mobility

Stable isotope analysis represents another avenue for data collection in the development of osteobiographies (Katzenberg and Waters-Rist in Katzenberg and Grauer 2018). Carbon isotope analysis of human skeletal remains can be used in dating techniques and to estimate the proportion of certain types of plants in the diets of the individuals and the diets of the animals consumed by the individuals under study, and nitrogen isotope analysis can be used to assess the relative consumption of terrestrial, freshwater, and marine protein sources (DiGangi and Moore 2013). Oxygen isotope analysis can be used to study mobility and is particularly sensitive to detecting the distance from the

coast and altitude, both of which are geographic factors that have had significant impacts on Indigenous Philippine peoples' strategies for navigating Spanish colonialism (Larsen 2015, Acabado 2018, Fitzpatrick 2013).

After exportation from the Philippines, dental and skeletal samples from TP1 and T2B2 will be sent to a research laboratory to undergo isotopic analysis. In order to assess dietary and mobility patterns over the admittedly short life course of the two subadults being profiled, tissue samples will be collected from both dental enamel and cortical bone (Agarwal 2016). Enamel isotopes will be more indicative of early lifeways, and cortical bone isotopes will be more indicative of lifeways close to the time at death (Agarwal 2016).

Methods: Zooarchaeology

Molluscan Remains

Particular attention must be paid to molluscan shellfish because of their ubiquity, endemic diversity, and taphonomic durability in the Bicol Region (Escandor 2016, Marcaida 2018). Anticipating potentially thousands of specimens, individual specimens will be organized by excavation level to investigate potential changes over time. Specimens will be identified to calculate the number of identified specimens (NISP) present within different excavation layers and thus time periods in Bombon church.

Mollusc taxa in the Philippines are incredibly diverse, so quantifications of mollusc taxa for analysis may use aggregate habitat categories (such as marine, estuarine, freshwater, and terrestrial)

instead of species or genera in order to avoid the potentiality of dozens taxa categories, which would be likely to inhibit interpretable statistical analyses (Ochoa et al 2014). The relative proportions of specimens from habitat categories will be used to assess any differences between pre- and early colonial period shellfish collection, consumption, and disposal patterns of the Indigenous population of the Bombon church site between the pre- and early Spanish periods.

Stable Isotopic Analysis

Per level shell bags' accession numbers will then be randomly selected for further physical and chemical analyses via RANDOM.org's true random number via atmospheric noise service (Haahr 2021). Selected shell specimens will be examined under polarized light microscopy to identify growth increments and perform schlerochronological analysis. Schlerochronological analysis examines trends in incremental growth markers present in most shellfish, akin to incremental growth markers found in tree rings and dental histology (West 2013, Antoine et al in Katzenberg and Grauer 2018).

The selected shell specimens will then be sent for oxygen isotope analysis using high resolution sampling, wherein samples are taken from multiple incremental growth markers in order to assess ecological influences over the lifespan of the mollusc. Selection of which individual shells to high resolution sampled and how to best sample them will be done in consultation with a biochemical analysis expert (Buikstra et al 2022). The oxygen and growth increment analyses will then be compared in order to estimate season of collection and other ecological phenomenon that may have affected shellfish collection and other human activities (West 2013).

Methods: Ceramics

Coefficient of variation analysis has been used by scholars studying the standardization of the production of Southeast Asian ceramics for decades: the analysis has been popular due to its relatively low technical/laboratory requirements and its ability to inform comparisons between pottery samples within and across regions. (Longacre 1981, Benco 1988, Stark 1991, Junker 1993, Junker 1994, Stark 1995, Longacre 1999, Underhill 2003, Longacre and Hermes 2015, Acabado et al. 2017, Wang and Marwick 2020). Previous research on pre-colonial Philippine ceramic production has compellingly used coefficient of variation to examine pottery standardization (Longacre 1981, Acabado et al 2017), arguing that coefficient of variation values of ≤ 0.06 signifies the emergence of specialized pottery production and that values of ≥ 0.12 signifies pottery production at the household level by non-specialists.

A growing body of research has chemically analyzed Southeast Asian and Pacific ceramics using Laser Ablated Inductively Couple Plasma-Mass Spectrometry (LA-ICP-MS) to examine the organization of raw material procurement and pottery production, less variation is argued to correlate with increased centralization of labor organization or raw materials sourcing, but the quantification of variation varies between studies (Cochrane and Neff 2006, Niziolek 2013, 2013, 2015).

Individual sherds will be organized by excavation level to investigate potential changes over time. Sherds' accession numbers per level will then be randomly selected for physical and chemical analyses via RANDOM.org's true random number via atmospheric noise service (Haahr 2021).

Assessing Production Standardization with Coefficient of Variation

Visual analysis of sherds will be used to determine vessel function, charring, and vessel part. The overwhelming majority of excavated pottery in Early Modern Philippine contexts are utilitarian earthenware ceramics, which were usually used as water jars or cooking vessels. Certain traits (such as lumpy interiors, exterior red-slipping, interior red-slipping, black-slipping and burnishing) have been previously correlated with water jars or cooking vessels and will be used as diagnostic criteria (Acabado et al. 2017). The presence of interior and/or exterior carbon deposits/charring will be noted, and sherds will be identified as rims, bases, and lids/handles based on shape and comparison to previously excavated and reconstructed pots. All others will be classified as body sherds.

Thickness of the selected sherds will be measured using NEIKO 01407A digital calipers (0-150 mm range, 0.01 mm resolution, ± 0.02 mm accuracy). Three measurements at the center of sherds' largest faces will be taken per sherd and averaged to account for inconsistent thickness sometimes present in Early Modern Philippine ceramics. Average sherd thicknesses will then used to calculate descriptive statistics, particularly coefficient of variation (CV) values to quantify ceramic production standardization.

Assessing Raw Material Sourcing via LA-ICP-MS

After these analyses, the sherds will be sent to the Elemental Analysis Facility (EAF) of the Field Museum to undergo Laser Ablated Inductively Couple Plasma-Mass Spectrometry (LA-ICP-MS) analysis using a Thermo Fisher ICAP Q quadruple ICP-MS with a 230nm laser. During

analysis, samples will be tested to measure: 1) the abundance of 50 elements measured in parts per million and 2) the concentration of 18 mineral oxides, per laboratory standards.

Though previous scholars have emphasized the importance of the relative abundances of elements in differentiating the geological sources of archaeological materials, certain elements in previous analyses of Early Modern Philippine ceramics (Cleofe 2021) were excluded from analyses due to consistently low concentrations (Gliozzo et al., 2014, Roll et al., 2005, Speer 2014a, Speer 2014b). The base-10 logarithm of the abundance of elements will be used for analyses to account for the typically large variations in the range and concentrations across elements. Following other LA-ICP-MS analyses based on archaeological materials done by the EAF, elements whose mean of the base-10 logarithm of abundance values or mineral oxide concentration below the limits of detection (<0.50) will be excluded (Niziolek 2013, 2013, Sharratt et al. 2009).

Due to the multivariate nature of the resultant LA-ICP-MS data, principal component analysis (PCA) will be done to reduce the data's high dimensionality (Metsalu and Vilo 2015). PCA on LA-ICP-MS data has been successfully used in many contexts, including on Philippine and other Pacific Island ceramics (Niziolek 2013, 2013, Cochrane and Neff 2006). Using the DATAtab statistics webtool, K-means clustering will be used on the data, with varying k values (Jesussek and Volk-Jesussek 2021). Using the ClustVis PCA and visualization webtool, standard singular value decomposition (SVD) analysis with imputation will be conducted on the element abundance data to calculate principal components (Metsalu and Vilo 2015). The results of these statistical tests will be used to

identify emergent groups based on chemical composition/geological source within the sample. These groups will be analyzed against known parameters (such as vessel type or excavation layer/date range) in order to elucidate any patterning between sourcing and other ceramic features.

MERIT & ETHICS

Despite its economic centrality to the development of the Spanish Empire's globalization, the Philippines remains largely unstudied in the Early Modern archaeology of Iberian colonialism (Acabado et al 2019). The intellectual significance of Early Modern Philippine archaeology is manifold, allowing for knowledge production concerning: Indigenous responses to colonialism (Acabado 2018); the diverse manifestations and configurations of Spanish administration across the world's first globalized political entity (Marrero-Fente and Spadaccini 2019); and the history of the Philippines in conversation with the histories of the Americas (Mehl 2016).

This project is particularly concerned with examining the biocultural responses of Indigenous peoples to the changes brought about by the Spanish colonial project and its attendant integration of the Philippines into a nascent global economy (Bjork 1998, Valle et al 2019). Previous research on Spanish colonialism in the Philippines has been largely documentary, which expectedly privileges the perspectives of colonial and/or clerical administrators while flattening the agency of indigenous peoples (Owen 1974, Bjork 1998, Newson 2009, Wilde 2019, Acabado 2018).

This project aims to elucidate Indigenous strategies of strategic resistance, accommodation, co-optation, and transformation in order to complicate narratives of quick and/or complete colonization or Catholicization in the Early Modern Philippines (Acabado 2017) via examinations of one of the sensitive contexts imaginable: the grave (Fitzpatrick 2013). The inherent intimacy, embodiment, and religiosity of mortuary contexts renders them as sites of intense negotiation between

individuals, communities, institutions, and structures that create rich repositories of material culture that reflect Indigenous agency in perhaps unparalleled ways.

This same richness of cultural meaning, however, implicates significant ethical considerations. In Camarines Sur in the Bicol Region, the Archdiocese of Carceres has allowed for the survey and excavation of churches built from 1573 to 1750. Previous excavations and historical records strongly suggest that these sites are almost certainly pre-Catholic sacred areas and very likely mortuary contexts. However, contemporary research practices and the effects of colonial discourse in the Philippines and the Bicol Region have rendered potentially controversial excavations into potentially transformative opportunities for community curiosity, engagement, and collaboration. Following the model of the Ifugao Archaeological Project, the Bicol Archaeological Project is an engaged and collaborative archaeological project where local communities are deeply involved in research, interpretation, and publication.

Ironically, the popular understandings of Philippine history—wherein ‘real’ Indigenous people fled to the marginal highlands while those in the lowlands were effectively Catholicized and Hispanicized to the point of negating indigeneity (Acabado 2017, 2018)—that this project aims to disrupt may be a significant factor in its feasibility: excavations of the human remains of lowland Indigenous people simply do not seem to inspire the same powerful reactions similar excavations would merit in the highland Philippines and across the postcolonial world (Atalay 2006, Colwell 2016). This is likely due to a much more abstract sense of kinship toward the ‘prehistoric’ Indigenous

people being excavated from modern local, non-indigenous identifying communities in places like contemporary Bicol.

This is not to say that no further ethical considerations are needed. Rather, instead of contending for the mere possibility of this research project, ethical consideration must go into research design and eventual interpretation and publication. This implicates questions of exportation, sampling, and destructive analysis. What, if any, materials should be exported? Why? To where? For how long? Who selects which materials will be analyzed? Who decides if destructive analysis is allowed? These questions must be answered through engagement with multiple stakeholders, including the Archdiocese of Carceres, partner institutions/stewards such as Partido State University, and national entities such as the National Commission for Culture and Arts. For interpretation and publication, this project must contend with best practices for the co-production and co-creation of knowledge via the integration of local epistemologies (Acabado and Martin 2020) and the creation of deliverables, such as public facing literature, public exhibitions, and academic publications, that serve local wants and needs.

TIMELINE

Academic Term	Months	Research Tasks
Summer 2023	Jul - Aug 2023	<ul style="list-style-type: none"> Travel to Partido State University and Local Government Units in Bicol to assess, select, package, and get approval for human skeletal remains (HSR), faunal remains (FR), and ceramics (CM) exportation for 1 year loan with minimal destructive analysis
Fall 2023	Sept - Dec 2023	<ul style="list-style-type: none"> Physical analysis of HSR, FR, CM Photography of HSR, FR, CM Selection, packaging, and shipping samples to Field Museum Elemental Analysis Facility (EAF) and To Be Determined Isotopic Analysis Lab (IAL)
Winter 2024	Jan - Mar 2024	<ul style="list-style-type: none"> Continued physical analysis of HSR, FR, CM Continued photography of HSR, FR, CM LA-ICP-MS analysis conducted at EAF Stable isotopic analysis conducted at IAL
Spring 2024	Apr - Jun 2024	<ul style="list-style-type: none"> Final physical analysis of HSR, FR, CM Receipt of remaining samples from EAF and IAL Packaging of HSR, FR, CM for return Outlining Articles
Summer 2024	Jul - Aug 2024	<ul style="list-style-type: none"> Travel to Bicol to return HSR, FR, CM and assist with any other BAP fieldwork Drafting of Article 1
Fall 2024	Sept - Dec 2024	<ul style="list-style-type: none"> Revision of Article 1 Drafting of Article 2 Drafting of Article 3
Winter 2025	Jan - Mar 2025	<ul style="list-style-type: none"> Revision of Article 2 Revision of Article 3 Drafting of Introductory Chapter
Spring 2025	Apr - Jun 2025	<ul style="list-style-type: none"> Revision of Introductory Chapter Dissertation submission

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