Beads on boats: testing the relation of expected cargo to Philippine maritime activities

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Abstract

What must be considered in an attempt to critically analyse beads? Multiple historic period shipwrecks ranging in dates from the 11th century to the 18th century have been archaeologically excavated from Philippine waters. Past studies have either placed these shipwrecks in the larger network of shipping activities or singled-out one particular ship's function.

In this doctoral developing study the context of shipping activities in the wider Philippine-oriented community was identified through style-types previously established in studies in Terrestrial Archaeology, Coastal Landscape and Historic Records; the core of which was revealed to be the material culture of navigation. Maritime Archaeology methodology was used to approach the tools and symbols used in pilotage by the four main cultural groups to have settled in the Philippines – Austronesian, Arab, Chinese and Spanish. This revealed that pilots may have shared a common language in mathematics. With this potential explanation for communication across the groups the research turned to the shipwreck collections to find a shared commodity, ubiquitously expected – BEADS. The hypothesis that particular beads, representative of specific cultural groups pointed to a probability of beads on all the shipwrecks. This is to be tested by objectively recording the beads in a database. It is expected the end result of which will point to the identification of the bead style, manufacture and provenance which in turn will then be used as indicators to strengthen known stylistic features and shipping activities associated with the cultural groups. Preliminary results indicate this is not the case. The 16th century shipwrecks contain very few to no beads. This critical analysis will continue into the other Periods represented by shipwreck assemblages in the Museum's collections. Could this study be a direct challenge to preconceived ideas of past Southeast Asian economic models?

Introduction

This paper lays out the methodology in the early development of the doctoral thesis 'Historic Period Maritime Archaeology in the Philippines: A critical analysis of bead assemblages from shipwrecks and the coastal landscape of developing trade economies' (Craig in-prep). It aims to reveal how an analysis of beads could interpret aspects of the negotiation between incoming groups and existing populations of the Philippines and how this was played out in the wider interdisciplinary maritime sphere. The framework is largely a critical analysis of beads archaeologically excavated from historic shipwrecks ranging in date from the 11th century to the 18th century. The general hypothesis is that beads recovered from underwater sites would compliment the terrestrial record. Record here refers to the documents with indicative settlement structures identified by names of the main cultural groups which occupied the archipelago. The stylistic

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features of the associated built heritage and any remaining 'footprint' was further studied through text, photographs and visits to relevant coastal areas. Archaeological investigation in these areas has ranged from intensive to non-existant. In the areas of intense analysis this work was discussed with local specialists and they have shared their expertise and publications. In the areas of no historic archaeology I have gone back into the records of previous archaeological investigation in proxy to the main sites of interest and kept record of what beads were found where. These separate approaches will all come together in one visual reference of mapping software.

The main critical analysis for this project is to occur on artefacts recovered from shipwrecks, it is therefore relevant to have a background knowledge in the influential environmental science. Maritime Archaeology is the study of humankind with a directional focus from water to land. Geographic perameters of this paper will therefore adopt this vantage point. The Philippines is located in the centre of Southeast Asia, the far west of the Pacific Ocean and far east of the Indian Ocean. The natural oceanic phenomena of these areas run multiple currents along and through the archipelago of 7,142 islands (number from Oxford Philippine Society, based on Philippine National Tourism Statisitics).

Context

The material culture recovered from terrestrial archaeology throughout the Asia-Pacific region points to large scale and long term trade (Glover and Bellwood 2006). These networks can be extended over the adjacent and proximal waters of the Philippines (Dizon and Ronquillo 2010). The South China Sea connects the shores of China (Bellwood 1978) and Taiwan (Campos et al 2009/10); Indochina/Malay Peninsula (Andaya 2010; Barnes and Parkin 2002) along the Maritime Silk Route to East Africa (Boivin-SEALINKS; Horton and Middleton 2000; Lane-HEEAL; Robinson and Wilson forthcoming), through Arabia (Hourani and Carswell 1995; Lunde 2005) and India (Carswell 2010; Cherian 2010; Varadarajan and Shah 2011). Across the Philippine Sea to the northeast is Japan (DeMorga translated by Cummins 1971). The Pacific Ocean opens to the islands of Micronesia, Macronesia, Polynesia (Clark et al. 2001) and the American Continents (Anderson et al. 2010)[2]. Changes in the scale and nature of this maritime trade can be seen in indigenous coastal landscapes, which for example in the Philippines has changed from roofed shelters along soft-sandy beaches (Pharma 2011; Stewart 2009) to the construction of piers and wharves to accommodate bulkier shipments (Levinson 2006).

The main historic record of the Philippines is Blair and Robertson's 'The Philippine Islands'. These 55 volumes are a synopsis of the known historic accounts of Spanish occupation in the Philippines. Its review, along with other cartographic evidence in the Bodliean Library, noted relevant archive locations

[2] This is a non-exhaustive list of references. There are of course many other Social Scientists to whom I could refer.

and specific coastal areas of intense activity related to Philippine marine trade. Awards granted by the Society for Nautical Research, Brasenose College, Friends of Darshak Itiahas Nidhi, the School of Archaeology and Study Abroad Department at the University of Oxford provided the funds and encouragment to travel and conduct anthropological fieldwork. Specifically, the opportunity to note stylistic preferences in architectural features of coastal infrustructure. This exercise has helped to point out culturally indicative patterns transmitted to the Philippines.

Archaeological, anthropological, and historic document studies of past peoples indicate multiple cultural groups inhabited the Philippines during the historic period between 9th to 19th centuries (adapted from Beyer 1947: 208[3]). Historiography indicates Philippine Regions were periodically inhabited by Chinese, Spanish and Arab-Indian diasporas. Archaeologists who worked on the islands have produced monographs and publications identifying culturally distinct artefacts and features of Philippine inhabitants over time[4].

Attempts to pull together the cultural evidence from various environments and disciplinary approaches has been ongoing in the Philippines for decades (Dizon 2004:1363). To date, the most comprehensive book on economics based on archaeological-evidence is Laura Junker's (1999) 'Raiding, Trading, and Feasting: The Political Economy of Philippine Cheifdoms'. It compares historic, anthropologic, and archaeologic records spanning over two millenia from 1061 B.P to the end of the 15th century. Her fifteen years of experience working in Philippine archaeology, at the time of publication, connects the coastal and mountain people through their trade to reveal complex chiefdoms operated from the mountain tops to the coastal settlements across the whole of the archipelago. Wilhelm Solheim (1984-5) suggests a severance between marine and inland people and produced decades of publications on the coastal people of the archipelago, coining the term 'Nusantao' for maritime traders throughout Southeast Asia[5]. In fact, his work is based on beads dated to 2650 B.P.(Dizon 2004: 1362 based on Soliheim and Higham 1996). Anthropological methods have recorded a group of people severed from the land by choice - the Bajao (Hoogervorst in-prep; PCCO 46) - continuing to live as they have for centuries, perhaps millennia.

Since the early 20th century Archaeology and Anthropology activities in the archipelago have been headed by the National Museum of the Philippines. An attempt to conduct thorough research on the Philippine culture lead to a reconnaissance trip to Manila[6], courtesy of the Brasenose College Annual Fund

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[3] Henry Beyer dates these horizon's as Porcelain Age: (Pre-Spanish: 9th to 16th century A.D.); and Spanish Period Remains: (Historic; 17th-19th century).

[4] Especially works by the Head of the Archaeology Division in the National Museum of the Philippines: Henry Otley Beyer, Robert Fox, Wilfredo Ronquillo; and at the University of the Philippines - Wilhelm Solhiem and William Scott.

[5] Solheim first introduced the 'Nusantao' term in the *Asian Perspectives* journal in 1975 18(2):151-158. He expanded on the hypothesis in the same journal in 1984/5 26(1):77-88.

[6] Meetings revealed that the publication record is wide-reaching as the staff travel abroad often to deliver papers or are invited to write chapters for books. A visit to the Archaeological Studies Program of the

and the Society of Nautical Research's Tomlin/Anderson Fund. Meetings were held with the director and staff of the Museum, Head of the Archaeology Division, and the professionals within the Underwater Archaeology Section.

Professionals within this department are now gathering the geographic information of underwater sites into a visually comprehensive medium (Ligaya Lacsina pers. comm.). This adds specific context information on provienence to other geographic focused projects within the country and surrounding Regions. For example, in the Philippines linguistic patterns (see www.muturzikin.com) largely parallel the archaeological record and can be identified in the poster map, 'The Filipino People: Differentiation and Distribution based on Linguistic, Cultural and Racial Criteria'.

Natural Science

Science of the natural phenomena over sea-scapes can help to point-to optimum locations for settlements. Oceanographic data can indicate shallow-water currents (Bonjean and Lagerloef 2002) that run consistently due to natural universal laws. Meteorological studies point out regular weather patterns such as Monsoon Seasons when the winds move in particular directions. The Philippines have the Southwest Monsoon Season from June to September when winds blow profusely diagonally across the archipelago from the southwest to the northeast.

The technology of marine-craft would have harnessed these phenomena so as to move as swiftly as possible over the water. The main logistical concerns when sailing are the speed at which vessels travel and the amount of people on board. With the domestic needs of food, water and sleeping facilities met, aside from warfare equipment, the rest of the craft can be used for cargo.

Terrestrial/Coastal

Forts with specific stylistic features were built by culturally distinct groups of people to defend their important economic transport features – ports. What constitutes a port can be widely debated according to the needs of the vessels[7]. To understand the phases of occupation of people on any island of the archipelago then it is useful to investigate the architectural features of their harbour structures. In keeping with the disciplinary vantage point we will turn to the maritime technology to define the terrestrial needs for the cultural groups. Specifically I will discuss the needs of the hull. The super-structure of masts, sails and rigging are more for use at sea and often tied-down and set-aside by sailors when porting.

Nusantao sailed in outrigger-canoes (Galang 1941; Scott 1981; Scott 1994; Stead in-prep). These are long, narrow, shallow boats with one or two stablizer(s) off the port or starboard that can be sailed by one individual or the larger ones

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University of the Philippines indicated the program's library to be a rich deposit for publications in Philippine social and natural sciences.

[7] This is a major object of inquiry within the Oxford Centre for Maritime Archaeology. A large contributing factor to choosing this Centre for this doctoral research is due to this subject-oriented community of scholars.

can accommodate small groups of people (Eusebio Dizon – Anuta Lapita project notes; Hontiveros forthcoming). When beaching the boats are sailed in as far as the waves will naturally bring the boat; then carried, pushed and/or pulled ashore by man-power onto soft sandy beaches so as not to destroy the hull. To keep the wood of the vessel from too much sun exposure and therefore destructive drying-out it may be brought under the protection of a roofed hut-like structure (Pharma 2011). These boats are still used today and the hut-structures can be viewed along the edges of soft-sandy beaches (Pharma 2011).

When the Spanish arrived in the 16th century they came on galleons. These are large, deep, wide ships[8]. Hundreds of people could sail aboard this vessel. It required deep harbours with wind-protected anchorages; and lighters to bring the sailors ashore (until wharves and piers were built). Various landscapes were built upon to accommodate these deep-hulled ships. Star-shaped forts were built on the raised land next to deep waters; examples include a hill-top next to a river billabong (Fort Santiago, Manila, Metro Manila Province, Philippines), a complex bathymetric approach (Fort St.Augustine, St.Augustine, Florida, USA) or a mountain encased deep-water harbour (Fort San Diego, Acapulco, Guerrero, Mexico). These structures were made of brick, stone, wood and plaster. Their characteristic feature being the compass-needle-like pointed bastions on which sat large guns to fire cannon-balls on foes.

Arabs sailed markab (or the better known term *daw*/dhow), the smaller of which would have been of similar dimensions to the outrigger-canoe, or larger double-ended boats ending with pointed stern and bow (Hourani and Carswell 1995: 89) probably similar in size to the galleon. The terrestrial structures required for these vessel-types probably varied between the structures built by the Nusantao to the Spanish forts. Arabs occupied Manila before the Spanish and had built a wooden structure (Bacus 2004: 207). What this exactly entailed is still to be investigated. However, in order to get a sense of the possibilities I traced the Arab background to Arabia via Gujarat, India (Craig 2011). At the Darshak Itihas Nidhi Conference held in Mandvi (within Kutch, Gujarat, India) I had the opportunity to walk around the river-side harbour with reporter and curator Sarah Bancroft[9], where boatbuilding facilties loomed along the edge of the estuary. Perhaps the wooden structures Bacus (2004:207) refers to were not fortifications as descibed by the 16th century Spanish governor Antonio deMorga (trans. by Cummins 1971: 281) but instead the large boat-encased frameworks as noted along the littoral of the River Tapi of Mandvi.

The Chinese from China sailed into Manila on somas and junks (deMorga trans. Cummins 1971: 305); while sampans were used to lighter from the larger ships to shore the cargo of mainly silks, spices, metals and beads (deMorga trans. Cummins 1971: 306,307). Those who lived in the Philippines[10] sailed small

[8] According to the Oxford English dictionary *ships* are defined as 'a sailing vessel with a bowsprit and three or four square-rigged masts' (Soanes and Stevenson 2008:1329).

[9] Sarah Bancroft curator for 'Gujarat and the Sea: the Theatre of the World', Darshak Itihas Nidhi, Exhibition on 'Gujarat and the Sea' in Mandvi, Gujarat, India, 1-3 October 2010.

[10] The Spanish called them Sangley and forced them to live outside the Spanish quarters and in their own 'suburb' called *parians*. This is where the main Chinese trade within the Philippines was conducted. The

shallow-hulled sampans (deMorga trans. Cummins 1971: 314; for description see Worcester 1971) so for this reason the coastal landscape boat-needs were similar to the Nusantao. The Chinese also traded with the Muslim-run southern islands of Mindanao, the Sulu archipelago and the Calamianes, especially for their pearls (deMorga trans. Cummins 1971:261-2). The main harbours in the Southern Region were Butuan of Mindanao and Cebu of Cebu. Both of these harbours are naturally safe, large and at the estuaries' mouth of the Butuan/Agusan River and the complex southeast coastline due to the proximity of Mactan Island. These conditions seem similar to the needs of the Spanish galleons so perhaps this trade was conducted by the larger somas (perhaps in conjunction with sampans but the sailors aboard the smaller vessel would not have been the main trader and instead facilited the porting of sailors from the larger vessel to trade with the islanders).

Historical

One of the benefits to working during the historical period is the ability to turn to historic records to locate sites of occupation. Keeping in mind the needs of the marine technology (as described in the previous section – Terrestrial/Coastal) and the scientific data of the natural phenomena (see Natural Science section) we can largely view charts and read rutters to find exact areas to then survey. The formulation of charts has also become an important point of investigation but this has been severed from the doctoral study and instead is being developed as part of the major-collaboration of the Social Sciences and Humanities Research Council of Canada project 'The Indian Ocean World: The Making of the First Global Economy in the Context of Human-Environment Interaction' headed by Gwyn Campbell at McGill University[11].

Underwater

If vessel stylistic features are known and partnered with scientific data, historic records and terrestrial/coastal architecture one can narrow down the location of culturally specific clusters of shipwrecks (Craig 2004). In the Philippines variations of this approach have been undertaken and resulted in large-scale bathymetric survey (Goddio 2009) and site-specific archaeological excavation (Dizon and Ronquillo 2010; Goddio 1988; Goddio 1994; Goddio 1996). Of which the indicative artefacts have been stored at the National Museum of the Philippines.

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term was also adopted in Mexico City, and is still used today, for the trade of goods from the Manila-Acapulco Galleon Trade.

[11] In this major collaboration I am a Research Assistant to Professor Brendan Gillon of the Philosophy Department at McGill University. We are undertaking research in how navigation tools reveal sailors' metaphysics and their transmission of ideas over the Indian and Pacific Oceans.

Further Research

I have noticed a gap in the knowledge on artefacts recovered from ship's cargo. I intend to address this gap by running a parallel seriation study to ceramics - on beads. Beads and ceramics are ubiquidous objects throughout the world. Ceramics has had much attention and now with the identification of pottery in an archaeological site one can date the site as clearly as using numistics. The Philippines is an excellent location for this study due to its established terrestrial/coastal Type Collection of Beads at the National Museum of the Philippines.

The main foci of this research are the nautical archaeology sites of the Philippines. These include the 11th century junk Breaker; the 13th century junk Investigator; the 15th century[12] junks Lena Shoal, Santa Cruz, and southeast asian boat Pandanan; the 16th century[13] southeast asian boat San Isidro, and galleon *San Diego*; and 17th century galleon the San Jose. Depending on the volume of materials this project may extend to include the 18th century galleon Santo Christo and East Indiamen *Griffin* and *Royal Captain*.

Comment [GL1]: San Isidro is a southeast Asian boat

The general hypothesis is that beads recovered from underwater sites would compliment the terrestrial record. In order to appreciate the terrestrial record I am currently researching the extent of known historic period sites within the Philippines and gathering descriptions of each sites' beads. This is possible through publications and reports produced by archaeologists and anthropologists associated with the National Museum of the Philippines and the University of the Philippines. The reviews largely focus on works produced by Robert Fox and Rey Santiago as their discussions figure largely on beads recovered from terrestrial and coastal Philippine sites. I am also conducting a literature review of known historic sites with bead assemblages throughout the the Asia-Pacific Region. Much work has been done on this due to the prevalence of bead enthusiasts in the region. The review includes multiple journals, books and websites.

Standard Database

This research aims to add a database of bead-artefacts from archaeologically excavated shipwrecks of Philippine waters to the established Type Collection of Beads in the National Museum of the Philippines. A preliminary visit to the National Museum of the Philippines confirmed beads recovered from the above mentioned historic shipwrecks are included in the Museum's archaeological inventories. However, this database is currently incomplete. The database to be produced from this thesis work will add to the Museum's larger site database. In order to conduct this work I plan to travel to the Philippines and analyze the beads. First the beads will be gathered from storage. All the beads are in plastic baggies with labels indicating where in the shipwreck they were excavated. Keeping the beads associated to these labels is of utmost importance in

[12] I will also look at the *Española* site artefacts but this is not a wreck site (pers. comm. Gay Lacsina and Bobby Orillaneda).
[13] I also considered the *Royal Capitan Shoal* site but this is not a wreck, its only ceramic concretion (pers. comm. Gay Lacsina).

understanding their archaeological context. So the beads will be analyzed baggie by baggie. Headings will be adapted from the Type Collection of Beads in the National Museum of the Philippines. The specifics of the analysis are still to be confirmed as I am to undergo a training internship at the Western Australian Maritime Museum[14]. This internship will result in transferable skills with which I can successfully record the beads in a database, analyze their material and appreciate the context of this study in the larger Material Culture Studies and historical sea-scape of shipwrecks in the surrounding seas of the Philippines.

Once the typology is complete an analysis comparing the beads from the shipwrecks to contemporary sites will be conducted. Jun Cayron's (2006) 'Stringing the Past: an archaeological understanding of early Southeast Asian glass bead trade' is the first work in the Philippines to show strong evidence of similarities in beads excavated from shipwrecks to land sites. Peter Francis Jr's (2002) 'Asia's Maritime Bead Trade: 300BC to present' also discusses comparison of shipwreck assemblages with terrestrial finds in an attempt to connect vast networks of shipments over the Indian and Pacific Oceans. Large assumptions of the marine activities have been proposed based on very few examples of critical analysis of underwater sites. Further critical analysis of beads recovered from shipwrecks is required to test the 'Francis hypotheses'. The examples Francis relies on are of the work produced by Laure Dussubieux's Lazer Ablation - Inductively Coupled Plasma - Mass Spectrometry (LA-ICP-MS) Laboratory at the Field Museum in Chicago, Illinois. My thesis work will include review of this work as well as debates outside of chemical analysis. It will include the work of Bérénice Bellina**-**Pryce (2003; 2004:74), of the Centre National de la Recherche Scientifique, on craft-style-identification theory for generally connecting networks from India to Southeast Asia.

Preliminary results

Research of the 16th century shipwrecks indicate that beads were not found as abundantly on all shipwrecks as suspected. It was assumed that boats transporting goods from the home port would be of the same cultural characteristics as the original manufacturing sites. However, this is not the case and it seems the Philippines may have been a mix of entrepôt and knowledge-based-item-trade. These results are inconclusive and require further investigation. The comparison to historic periods before and after the 16th century may also indicate presently unknown patterns.

[14] In my career progression I have not conducted a formal analysis on a finite collection of categorically similar objects (i.e. pottery, beads) held in museum stores to note patterns in styles and materials; nor have I formulated a database to record such information. Through the literature and discipline's network I have identified the strongest institution as the Department of Maritime Archaeology at the Western Australian Museum. I will train in a four month internship on a Southeast Asian pottery collection recovered from an underwater site. This transferable skill in database construction to record archaeological analysis will occur under the guidance of respected professionals in Maritime Archaeology. This arrangement is bilaterally beneficial in that it provides the Museum with a formal analysis of a collection previously not examined.

Remarks

What is the significance of beads and what can it tell us about past peoples? The terrestrial context of beads can point to sites of manufacture or deposition. For example, part of what distinguishes the Manila Chinese settlement, or *parian,* from the Spanish quarters are the preference of beads as indicated in the archaeological record by type and quantity (Beyer 1947; Fox 1977). Raw-material sources can be deciphered from chemical analysis (Dussubieux et al. 2010; Pollard et al. 2007). Direct trade connections have been postulated by comparison of beads on shipwrecks to terrestrial manufacture centers (Cayron 2006; Francis 2002). This approach has indicated potential connections between the making of a bead and delivery to its intended destination (Cayron 2006; Cuevas unpublished; Dussubieux and Gratuze 2000; Francis 2002). By understanding the context of beads this small object can point to larger studies in the social sciences and humanities. Subjects centering on economic wealth, social-cultural preferences in fashion, and trade networks through cultural connections are some. Thus far, pottery is the only material culture capable of such world-wide and longue-durée intricate information. Local typologies of pottery and ceramics now expand across the globe and can be used to date sites, origins, indicate cultural connections and point to stylistic preferences. Could beads be as reliable a record as ceramics for the formulation of the trade routes and dating of archaeological sites? The cross-sections of this could reveal new connections, and cultural preferences hitherto unknown.

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