AN INTERDISCIPLINARY APPROACH TO THE STUDY OF BOATS OF CENTRAL VIETNAM

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ABSTRACT

Despite a growing academic literature on maritime trade, shipping and navigation in the South China Sea, there is little information about how local societies negotiated their maritime environment, or how it influenced their daily life. This is most particularly the case for Vietnam, often considered through its history as an agrarian state. Nonetheless, with a coastline of over 3400 km located along a major shipping route between Malacca and China, Vietnam has a long-lasting historical connection with its maritime environment and an exceptional boat diversity. Yet again, little is known about local boatbuilding traditions, boat use, seafaring skills and navigation, related maritime activities, about the organisation and role of the many harbours that dotted the coast of central Vietnam.

As a step in the development of maritime archaeology in Vietnam, a combined approach in the research of archives and ethnography can contribute to build up knowledge about maritime aspects of life in Vietnam, and can also provide context and understanding for potential maritime archaeological finds. At the same time it can push the boundaries of maritime archaeologists to incite research that goes beyond nautical technology.

INTRODUCTION

Vietnam has an extraordinary wealth in terms of nautical technology that shows a wide variety of hull forms and construction methods. Traditionally, the boats of Vietnam were propelled by oar and sail, and their construction methods as well as rigging and fishing gear exhibited in the past considerable diversity and regional variation. Every harbour had its own characteristic fleet and specific boat types. The past diversity of Vietnam's nautical traditions is well attested in nineteenth and twenieth centuries traditional boat studies (for an overview of the literature, see Pham et al. 2010), in the European archives formed between the seventeenth and nineteenth centuries, and it somehow just survives in the present day. Through the analysis of these written records and of ethnographic research conducted by the author between 2009 and 2014, over 60 types of boat were catalogued and identified. These boat types were categorized according to their construction traditions, hull types, fastening techniques, construction materials, and according to their uses. Preliminary finds show that in the present, construction techniques and hull-shapes have become more standardized but that a few traditional elements have nonetheless been retained (Pham 2015a). It is still possible nowadays to see boat construction features that have roots in pre-colonial times and that have survived 300 years of European presence and the unrest of the wars and migrations in the twentieth century (Pham 2016).

Boat construction is however changing at a fast pace, so how then, can we document these changes? How can we track technological evolution and transformation overtime, and address this diversity of shapes and forms, and the reasons behind the differences in boatbuilding traditions? In other words, how can we give meaning to the different types of boat and understand the diversity? And, are the reasons behind differences and changes related to a socio-cultural profile or a historical context?

Given that boatbuilding and boat use are central to the numerous maritime activities people conducted along the coast, the study of boats can be a lens through which to study the past interactions between humans and their maritime environments. Maritime material culture is a subject seldom addressed in Vietnamese studies, despite the growing literature on maritime trade. Important studies from the 1940s, the American *Blue Books* (Dalby *et al*. 1962, Westerman *et al.* 1967), and a few subsequent articles have described boats and their nautical technology (Pham et al. 2010), but these belong to the field of nautical studies alone or to "traditional boat studies" (Ransley 2011: 881). These studies do not address the boat in its entirety. There is also sparse archaeological and iconographic data to illustrate the connection between boat and people across time. Therefore, to alleviate the scarcity of conventional evidence, boats as objects can be studied as an alternative source of data. In order to provide a full understanding of this type of maritime material culture, the disciplines of history, ethnography and archaeology can be brought together.

A framework that combines the interdisciplinary approach from the *Annales School* to the study of mankind and the sea, with a focus on the sea advocated by the *New Thalassography* (Horden and Purcell 2006; Miller 2013; Vink 2007), allows to bring together various research

methods into a single enquiry in order to approach human-environmental interactions and the reality of coastal life, maritime activities, related ecology, boat types, and boatbuilding traditions. As such, maritime ethnography and history are combined here in a first instance to collate all the data available on boat construction and boat use in order to create a reference collection. In a second instance, the combined data serve to provide meaning to this collection, by integrating it into a socio-cultural context across time and space. In a final instance, the results can then be used as correlating data for new archaeological finds, although that research process is out of the scope of this paper and of the available source material, and thus not discussed here.

This short paper outlines briefly the methodology that can be applied, and how data gathered from maritime ethnography can be combined with data drawn from European archives, to provide a diachronic perception of boatbuilding and boat use.

THE CONCEPT OF A BOAT

For Jacques Ivanoff, French anthropologist and student of G. Condominas, who explored the boat in the Moken society, "*the boat is the most living cultural object ever known*" (Ivanoff 1999: 1). His study is an excellent example of the extent to which boat studies can be central to a cultural and symbolic understanding of peoples. Ivanoff's words draw attention to the idea that boats are indeed the material epitome of human interaction with water; understanding their production and use therefore lies in the duality between a functionalist approach and a cultural anthropology approach. Functionalism in this regard refers to how hull shapes respond to physical and environmental constraints. Boats are considered as the product of function and need, of adaptation to the environment, and of the tools and materials available. Concurrently in cultural anthropology, boats can be considered as a reflection of the boat-builder's mindset, culture, background, habits, and system of ideas about how the boat should be designed and constructed (Adams 2001). Boats are thus the product of both a wider economic, political, and cultural context which instills the need for a fleet, for transportation, for maritime trade, for subsistence or for naval warfare; and the product of environmental and functional delimitations.

Since the 1950s, French anthropologists (Haudricourt 1988; Lemonnier 1993; Leroi-Gourhan 1943; 1945; Mauss 1948; 1950) have developed a theoretical approach to technology or the "Anthropology of Technology" in which objects are not considered solely as a material product but as part of a process that implies the social understanding of the producers, and of the users. In their eyes, technology is not just about objects and tools but is crucially about the way in which they are utilized. Thence, behind conception, design, construction and use, there are human gestures. So following this concept, maritime material culture – and boats in particular – can also be considered as social productions that go beyond constraints of matter and beyond functionalist approaches. This concept is at the heart of the field of maritime archaeology. Maritime archaeologists who focus on shipwrecks have refined over the years their understanding of the meaning of ships and boats and advocate for integrating boat conception, design, construction and use in the study of this specific maritime material culture (Adams 2003; Crumlin-Pedersen and Munch-Thye 1995; Hasslöf *et al.* 1972; Maarleveld 1995). Therefore studying boats also goes beyond the mere typological characterisation of specific groups of boats or technological features. This does not reduce the importance of studying in very minute details boatbuilding technology. Of course, patterns of characteristics can be related together in order to suggest "main types" and a typology is necessary to structure the data and to proceed to a methodical analysis of variability and transformation. But, the main types cannot be reduced to a typology alone and need to be embedded within a socio-cultural context, as well as within a natural environment. The way to build a boat and to conceive its design is very important in assessing where a tradition comes from, and thus observe its evolution and change. It is relatively easy to copy the shape of a foreign ship, but the basic way of building is much more resistant to change (see Maarleveld 1995 and McGrail 1985). This is because the development of boats and ships is the function of human decisions regarding continuity and adaptation. Boat building traditions depend on human action and on human choice. This is why archaeologists have been pointing out the dangers of focusing on the archaeology of ships without considering their wider social context (Breen and Lane 2004). In order to do so, boats can be studied by addressing a set of factors or variables that define their shape, and above all, that lie behind the question of choice and innovation and explain "*how or why a boat is the shape it is*" (Blue 2003: 334). Adams (2001) and Blue (2003) have provided grids of analysis, in which different variables have been identified, which act with various degrees of intensity on boatbuilding, and which bring forth the fact that it is a product of culture and of human action. The variables, or factors, identified include function, technology, material resources, environment, and economics, but also the socio religious context, or tradition, the ideology and purpose. All these factors need to be taken into consideration. Boat construction details, hull shape, steering devices, and decorations do not only vary geographically according to a particular environment but also vary according to the people who produce and use them (see for example McGrail 2001 for regional variations across the world). Thus the study of boats also includes grasping the seafaring skills of the sailors and fishers, their cognition of their environment, the maritime activities, the fishing techniques, the operation hours, the nets and fish types, and also maritime trade, naval warfare, transport of people and goods. It also includes understanding elements such as the provenance of the material, its price, extending to the shipyard, including its organisation, number of shipwrights, task distribution, hierarchy, and wages, because these allow to integrate the boat, and boatbuilding, within a social and economic

context. Unfortunately, in Vietnam there is yet little evidence about ancient boat construction, boat use or seafaring, and the limited data available has not been fully exploited yet. Historical and archaeological material related to maritime culture such as a few recently discovered shipwrecks, the famous representations of the "Cham" boats on the carvings of the Bayon temple in Angkor, or the boats represented on the Dong Son drums, have not been set into an appropriate context of conception, production and use. This is due mainly to the current bleak state of the discipline in the area, where knowledge about the different local boat traditions is lacking. Nevertheless, the situation can be improved by starting to grasp the "big picture": the range and the diversity in which the maritime material culture extends. To do so, a boat record can be created based on historical descriptions in the archives and on present day material culture through an ethnographic survey, as will be discussed in the following sections.

MARITIME ETHNOGRAPHY

Maritime ethnography is nowadays considered as a subfield of maritime archaeology. From the field of anthropology, it has been applied by maritime archaeologists and refined over the past years to ultimately participate in interpreting archaeological material and investigating related maritime communities in a way that goes beyond the mere recording of technology (Ransley 2011).

Maritime ethnography "*is the study of contemporary maritime cultures and their materials, through first hand observation*" (Blue 2003: 334). The underlying purpose of maritime ethnography is based on the notion that studying living traditions and compiling contemporary data on boat uses and technology increases the sources of information relevant to understanding boats as significant artefacts of the past. This in turn helps to interpret the material retrieved from archaeological excavations, from textual descriptions, as well as to understand past maritime societies. Furthermore, the results of ethnographic studies assist in recording traditional practices, preserving fast disappearing maritime craft traditions over the long term, and also helps to more fully understand the reasons for technological innovation and cultural change (Blue 2003).

Practical aspects

In terms of the practicality of maritime ethnography, in-depth recording of contemporary boat traditions implies primarily field work and first-hand observation, but also requires serious preliminary desk-based research and planning. First, it entails an analysis of historical documents and iconographic data, to collect old descriptions or representations in past accounts, and to acquire a thorough knowledge of the environment and of the socio-economic-historical factors that shaped the cultural background in which the boats were built and used (McGrail *et al.* 2003, Pham 2012). This context provides a deeper understanding of the various cultural variables that may be reflected in a boat and that may have shaped its *chaîne opératoire*, as defined by Leroi-Ghouran (1964: 164). This is a most essential methodological step that should contribute to understand and analyse the boat from a holistic and not simply functional point of view, and to set its specific tradition in a socio-cultural context.

Then only, the fieldwork can be conducted. The fieldwork aims at recording samples of different surviving boatbuilding traditions and different boat types, vocabulary, tools, and above all, it should aim at interviewing the boat-builder and the boat owner/user. On the one hand, the fieldwork consists of producing a graphic record that is essential to create a useful typology to mark technological changes and adaptations and to map boat diversity, and on the other hand, it also consists of documenting the living tradition by interrogating boat-builders and boat users. The systematic recording draws from archaeological methods. It entails taking measurements, photographs, and notes of details and main features, and to draw the boat (plan view, profile and section) with its related instruments and appendages. "*The standard to be aimed at when recording a traditional boat is the same as in a boat excavation: to compile a record from which a competent model builder could build an accurate model and from which a detailed account of the boat's routine uses could be written*" (McGrail 2001: 18). Nowadays, this can be done through laser scanning and digital tools that produce accurate boat plans (Mac Cartaigh *et al.* 2007; Mac Carthaigh 2008). It requires however an adequate budget and a great amount of time for post-processing. The classical methods require more time in the field, during which, if possible, a recording of the full construction sequence (notes, photographs and video) should also be included along with the listing of specific vocabulary related to particular boat types, and of the tools and how they are used (see Pham 2012). This complementary data allows discussing more precisely about local boat traditions and can also feed into additional linguistic analysis which in turn can contribute to the debate of cultural and technological exchanges (Blench and Spriggs 1997, 1998, 1999; Hoogervorst 2014; Mahdi 1999). Context is fundamental to the validity of the primary data, so extending the survey to the boatyard, the landing and launching places, the anchoring or mooring locations, and the observation of the boat in action is also fundamental.

Conversing with the boat-builders and fishers, and recording interviews systematically is at the heart of this approach. It allows capturing some cultural components that may be reflected or related to the boat building tradition. Topics of discussion can include design concepts, folklore, beliefs, taboos, religious practices, but also choice and availability of materials and supplies, costs, apprenticeship, operational performances, navigation, local sea conditions and characteristics, weather, climate, boat uses, cargo types, and recent changes and transformations. The interviews can reveal cultural choices not always readable in material culture. In summary, the use of the maritime ethnography approach offers a holistic appreciation of boat use and production, and allows one to discover the essence of boatbuilding traditions. In that way, this methodology can provide a deeper understand-

ing of the boat as a product of culture and can enable us to grasp the realities that are often hidden in archaeological contexts, iconographic data or textual descriptions.

Advantages and disadvantages of maritime ethnography

Objects, and boats in this particular case, were not conceived to convey the information we intend to decode from them and "archaeology is not a field that can study the past directly… on the contrary it is a field wholly dependent upon inference to the past from things found in the contemporary world" (Binford 1983: 19-21). Cultural connections between the archaeological material and the ethnographic material do not always exist. Therefore, maritime ethnographic field work does not aim at directly explaining how or why nautical technology came to be, but rather to provide a framework to understand it. The biggest risk of using an ethnographic approach resides in the excesses of analogy (Burningham 1998; Blue 2003; Ransley 2011). The long debate about direct analogies between archaeology and ethnography that exist since the seventies (Binford 1983; Fewster 2001; Hamilakis 2001; Hamilakis and Anagnostopoulos 2009; Lucas 2001; Stahl 1993; Wylie 1985) is applicable to boat ethnography and to the study of maritime communities (Ransley 2011; for a critical discourse see Vermonden 2006). In the context of Vietnam particularly, the intense waves of migration since the fifteenth century and the cultural exchanges and adaptations that have occurred between the main cultural groups, supplemented by the twentieth century wars and dislocation of people have created a complex cultural weave where traditions are hard to isolate or identify. This makes it difficult and it would be unwise to directly connect past artefacts with present day practices. Furthermore, maritime ethnographic fieldwork has also shown that there is quite rarely a direct connection between the shape of a boat and its environment (Blue et al. 1997, 1998; McGrail et al. 2003; Pham Fieldwork 2013-2014). In Vietnam, the same boats can be used in different areas for different activities, or different kinds of boats can be used for the same activities in a same area. For example, the ghe bau and the ghe cau are very similar boats in terms of their construction tradition, in terms of their hull shape, rigging, and steering device, but one is used for trading and one for fishing. In terms of fishing boats, there are numerous kinds, the most remarkable being the ghe nang, a boat whose hull is constructed according to another boatbuilding tradition and made of woven-bamboo. The geographical distribution of this unique boatbuilding tradition is widespread along the coast of Vietnam, and woven-bamboo boats exist in many shapes, sizes and are meant for different uses. Both common fishing and trading boats until the 1940s were constructed according to this tradition. These observations support the fact that boat traditions are the result of various factors, and that boat traditions need to be fully and carefully understood in their socio-cultural context without assuming connections, even if they are sometimes apparent. Another example is the presence of Chinese characteristics on different boat types in different areas across the country. These can be related to different historical periods during which Chinese migrants settled in Vietnam, and not to a broad and undefined "Chinese influence over Vietnamese technology". These periods of migrations and exchanges have resulted in some technological features that differ geographically. Likewise, despite obvious similarities between current Vietnamese and Southeast Asian boat features which suggest connections between Cham boat technology and the wider Malay Peninsula, direct connections without a full understanding of the context need to be demonstrated very carefully.

However, observations made during maritime ethnographic fieldwork can nonetheless lead towards paths of interpretation and bring a deeper understanding of nautical technology and maritime culture that undoubtedly help to apprehend more "locally" the boats under study, and help to understand change and innovation from the perspective of the boatbuilders and boat users. *"Exploring potential alternative ways of fishing, boat building and engaging with the maritime world in order to open up our perspective is different from extracting "ethnofacts" in the present to transfer to the past. Successfully managing this involves being explicit about what we are using these sources for and how, and allowing such traditions to tell their own stories"* (Ransley 2011: 894). In this way, it is possible to steer away from the pitfalls of ethno-archaeology and focus on broadening and opening our understanding of yet unexplored boat traditions.

The ethnographic enquiry is a powerful research tool that helps produce an alternative source of data for archaeology and for the study of maritime communities, by giving access to the minds of the boatbuilders and to their traditional practices.

The obvious advantage of the maritime ethnographer compared to the archaeologist documenting excavated timbers lies in this opportunity to talk with the boatbuilder and the boat user, and the fact that the boats under study are complete (which is often not the case in archaeological sites) and can be observed in action. A second advantage is that this research method builds knowledge about nautical technology that can be used to interpret eventual new archaeological finds and prepare for future excavations. Thanks to an ethnographic survey, it is also easier to create a typology of local boat traditions that will make it easier to identify earlier boat types and characteristic main types. For example, in Vietnam, three main boat traditions can be identified, and twelve main types of boats were noted to have been used historically (Pham 2016). Moreover, an additional advantage for countries where maritime archaeology is developing is that it is also a cheap and easily applicable research tool that can be used for the protection of maritime related heritage. In Vietnam, the production of a systematic and accurate record could safeguard traditional practices and boat traditions that are disappearing very fast. As observed through the field work conducted by the author in 2013-2014, and comparing the boat record from the 1940s with the contemporary record, 75 percent of the traditional boat types have disappeared, materials have radically

changed and shapes have been modernized (Pham 2015a). Shapes are sometimes maintained but plastic composite and aluminum hulls are replacing the traditional wood and bamboo ones. Vietnamese boat-builders who remember the last decades of the age of sail are now in their 80s and their knowledge and experience is likely to disappear with them.

It is here that the main asset of maritime ethnography lies, in the fact that it connects living tradition and material culture, past and present, that it links archaeological finds and human behaviour in a way that archaeology in itself cannot.

Exploiting the maritime ethnography data

As stated, maritime ethnography data can be used for two main purposes. First as a research tool, to set a typology or to create a boat record representative of the present time which can be then compared, interrogated and analysed to answer specific questions about boatbuilding traditions and related maritime culture. Second, it produces a framework and a set of data that can help to interpret archaeological material (Blue 2003: 334) through careful analogies.

The boat record or the typology that is created can be used to outline the diversity of boat types in a region, which is a critical first step in its own right. From there, it is possible to highlight specific features, unique construction details, or even to draw general regional characteristics and patterns of distribution. This is essential to steer away from the general concepts of "Southeast Asian" or "Chinese" boat types that oversimplify the issue, and to initiate the debate of defining the characteristics of a "Cham boat" or a "Vietnamese boat" (Pham 2016).

Secondly, the catalogue of surviving boat types can be connected to a chronological sequence put together with other archaeological, textual and iconographic evidence. This in turn can help to address continuity and change. This is mostly feasible from the early 1800s up to the present, since there is a consistent record of studies on traditional boats and nautical technology of Vietnam since that time to the present day (Pham *et al.* 2010). Archival references can also complete the chronology (see below).

Finally, once a clearer vision of the various boatbuilding traditions and boat types that exist is established, historical maritime events or maritime related activities can be addressed more deeply. Events such as the Bach Dang battles, or the naval battles that opposed Viet, Cham and/or Khmer can be complemented with more precise information on nautical technology, and practical details can be alluded to (ie: types of boats, size, cargo capacity, distances, speed, navigation, maneuvers and evolutions). The navies of the Trinh (1627-1802), of the Tay Son (1788-1802) and of the Nguyen (1627-1885) can be compared in terms of sizes, efficiency or weaponry. Also, data from boat ethnography combined with a strong historical knowledge, can shed light on a whole range of maritime activities and on the life of people along the coast. Towing large foreign ships in the harbours, collecting sea swallow's nests, *nước mắm* [typical traditional fish sauce] trading, rice transportation, and shipwreck salvaging are a few examples of traditional maritime activities that require boats and for which there has been so far a lack of information. So the study of boats can be like a prism to address various aspects of society, from royal parades and galley demonstrations to small time fishing activities off coastal islands. Only then the new archaeological material can be assessed and it becomes possible to hint at correlations and connections between new shipwreck finds and the local traditions (or on the contrary, with foreign traditions). It is appropriate in the case of Vietnam where maritime archaeological material is scarce or in poor condition and the archaeological context is lost in many cases. Only once the main characteristics of boatbuilding traditions are refined and the means by which people engaged with their maritime material culture are better understood, can the archaeological and ethnographical material be connected.

Since the temporal gap between archeological and ethnographical data can cover a few decades or even hundreds of years, another source of data can be used to make the connections. Archival material that includes descriptions of boats and of maritime related events and activities can also be used to complement our understanding of boat use and construction across time, as it is discussed in what follows.

ARCHIVAL RESEARCH

Archival material is another type of source on which the maritime archaeologist can base the research to complement the ethnographic data and to help interpret boat remains. A definite advantage of the European presence in central Vietnam since the sixteenth century is the amount of written records the Europeans produced. Their accounts, reports, travel logs, and diaries contain a myriad of comments and observations relative to their sea travel, arrival in the harbours of Cochinchina or Tonkin, the local naval forces, maritime activities and boat use that have not yet been fully exploited. Researching these archives can help bring back to life aspects of daily boat use and highlight certain continuities and cultural lineages in maritime activities across time.

Archives and classical texts have been exploited to reconstruct Vietnamese history, including some maritime themes and most essentially maritime trade (Farrington 1994; Hoàng Anh Tuan 2007; Lamb 1961; Li 2004, 2006, 2012; Manguin 1972, 1984a; Mantienne 2001; 2003; Nguyên Thê Anh and Ishizawa 1999), but there is still a large amount of data to extract. Even if some of the material is well known and has been previously studied, it can be very fruitful to re-address certain documents with a different perspective and seek new details.

Archives from different nations, of different nature, and written in various languages can be investigated and brought together. Some examples are Dutch *Verenigde Oostindische Compagnie* (VOC) accounts, British East India Company (EIC) logbooks, Portuguese narratives, Spanish letters, French diplomatic or scientific missions' reports, and missionary correspondence, all of which may

contain some information about maritime Vietnam (for a detailed description of the European material related to maritime Vietnam, see Pham 2015b). Most of these foreigners arrived by sea and experienced at first-hand navigation along the coast of Vietnam and life in its harbours. Numerous maritime events occurred along the coast of Vietnam, including shipwrecks and pirate attacks, naval battles, royal parades and ceremonies, as well as daily maritime activities related to trade, fishing, and travelling, which are thus mentioned in various kinds of historical texts describing the country and of its landscape.

To address such a varied set of archival sources has the advantage of avoiding nation–centered narratives and it allows the researcher to focus on the quality of the descriptions rather than on the sometimes complex unraveling of historical events. Secondly, it increases the multiple aspects and perspectives from which boats and seafaring or maritime practices are described. From Captains, to missionaries, envoys or supercargoes, their diverse writings provide a wide spectrum from which to investigate boat use and construction.

Paradoxically, the obvious disadvantage of such a collection of disparate sources is the lack of direct continuity. Chronologically, comparisons are not always possible because there are not enough descriptions for a particular time period or because only one aspect is mentioned in just one document. However, since the aim of such a research is primarily to create a panorama of boat types and of boat uses, it is possible to compensate for this lack of continuity by discussing themes instead of attempting to create a linear chronology of events and descriptions. Consequently, themes such as boat types, fishing activities, trading activities, war vessels, harbours, hazards and anchoring locations, or landscape markers, can be investigated across time (Pham 2016).

From memoirs to journals, nautical instructions, reports, maps, charts, photographs, postcards and drawings, the archival material can be categorised based on its purpose and its use (Pham 2015b).

The different kinds of archival materials can be briefly summarized as follows:

The richest category of documents is composed of travel accounts, narratives and memoirs that provide a general view of the country. They tend to be addressed to a reader and focus on reporting and explaining the context of a mission or a journey. Harbours, fishing fleets, local boats, and maritime activities are sometimes mentioned amongst the general descriptions.

Travel logs, journals, and diaries are another category of documents that are characterized by a day-to-day structure which enables the reader to grasp the passage of time between events or for conducting certain activities, and for sailing from one point to another. They provide a good insight about the experience of sailing along the coast of Vietnam, and of arriving into a Vietnamese harbour. Sometimes these documents also vividly describe the first official encounter between the foreign author and the local Cochinchinese/Tonkinese customs officers, tax collectors, fishers who tow the European vessel in the local harbor, and pilots who provide guidance along the rivers, or refer to more informal encounters with locals offering translation services, boat repairs, provisions, and water. Sometimes, the accounts also include advice on local navigation as well as descriptions of the local fleets, boatbuilding, and other maritime activities. These documents are very useful in reconstructing maritime aspects of daily life, and are even more valuable when written by naval officers who have professional understanding of matters of the sea or a particular inclination for boatbuilding. For example, the famous work of Admiral Pâris, father of maritime ethnography, "*Essai sur la construction navale des peuples extra-européens*" (1843), results from his travels on board the *Astrolabe* (under Dumont d'Urville), the *Favorite* and *Artemise* (under Laplace). It is composed of hundreds of watercolors and descriptions of the watercraft he encountered. The accounts of Captains Laplace (1833) and Dumont d'Urville (1830) are also full of details on the local boats they encountered, on maritime activities, as well as on navigation and on the waters and coastline of Vietnam.

Ship logs and diaries along with nautical instructions are also extremely valuable (Manguin 1984b) since they describe the journey day-by–day, and the coast the vessels sailed along landmark per landmark. They can be used to reconstruct the ship's itineraries, the coastal ecology, the chain of harbours and ports, but also to highlight their significance along the route, the location of the anchorages and of water supplies, to hint at local sailing and navigation experience.

Diplomatic, trading, and scientific missions produced an important and well documented archive, providing in reports some information relative to the overall historic, economic and social context of the mission. The reports usually comprised of a general description of the place, introducing the history, trade, customs, language of the country, in order explain either the mission's success or failure. These reports also include information that can link maritime activities, harbours, particular fishing practices and even superstitions and legends together. In addition, these missions often had on board naturalists and illustrators, whose careful descriptions and drawings are also extremely useful.

The missionaries' archives are also very rich, and their accounts, letters and publications help us to understand the daily life along the coast, including the nature of regional transportation and coastal boats that sailed from port to port. Due to controls and persecutions, the missionaries avoided on some occasions the main harbours, favouring minor harbours, thus their accounts are useful to grasp the reality of local coastal sailing beyond the main international points of access and interaction for foreigners. Missionaries also sometimes described their journeys, namely the difficulties of traveling by sea, and used the hardships and dangers experienced as opportunities to praise Providence

for saving them from terrible storms, pirates or shipwreck.

Finally, graphic material composes a last category of documents. Charts, coastal profiles, maps, drawings, postcards, and photographs constitute a rich resource to observe change in nautical technology, and are key in the development of a typology.

This brief overview shows the wide range of source materials available to the researcher, but as stated, the quality varies. The nature of the data depends on the author, and therefore misconceptions and misunderstandings are sometimes unavoidable. Missionaries were not the most reliable witnesses to discuss boat construction but their lengthy descriptions are full of details that can sometimes form the evidentiary basis of contemporary ethnographic enquiry (Rubies 2003). Navy officers, on the other hand, tend to be more accurate and trustworthy although they are sometimes less eloquent. Above all, authors describe what they see based on their own observation, and on their own pre-conceived knowledge acquired through first-hand experience, or based on other people's experience or previous accounts. Some authors spent extensive time in Vietnam, some just a few weeks, but the validity of their accounts is not proportional to the length of their stay. Thus understanding the identity, the background, the perspective from which the authors wrote, the reasons of their travel, and purpose of their writing is imperative for using such kind of source material. In terms of boat construction for example, the particular lashing technique of certain planked boats is described recurrently since the late seventeenth century but some other specificities of Vietnamese boat technology on the other hand have been totally ignored, such as the woven-bamboo hulls, which are located under the waterline and therefore invisible to the untrained eye. Descriptions of boat or construction sequences are seldom complete and certainly do not constitute full ethnological studies. This is why archival research and ethnographic data should be combined. Since the information with regards to particular technologies can be partial, confused or not totally reliable, it is then that the textual information can be set against the ethnographic data, not to compare but to juxtapose the different kinds of sources in order to enlarge the scope of our understanding and interpretation of boatbuilding and boat use across time. Comparing certain features with the contemporary record helps understand and interpret some of the archival descriptions, but it is important to remember that it neither implies a direct "evolution" from the archival to the ethnographic boat record, nor seeks to propose an "origin" to these boats. Although the aforementioned textual descriptions can be used as primary historical sources, it is important to make sure that the data are used with a critical mind (Ransley 2011: 891) and set against other sources of data such as the ethnographic material. This is most necessary when technology is being discussed by non-specialists.

CONCLUDING NOTE

In conclusion, the gathering of archival descriptions allows for observation through time of maritime activities and boat use, and to ultimately shift the perspective towards ordinary life along the coast, in the harbours and in the boatyards of Vietnam. Concurrently, conducting archival research can help to go as far back in time as possible and to identify temporal markers that can be fed into a boatbuilding chronology. Even if boat descriptions (or illustrations and photographs) cannot be directly linked to surviving types, the data that they contain allows the researcher to observe boat uses and changes across time.

The combination of archives and ethnography in the context of Vietnam is not only an appropriate but also a necessary tool to stand in for the lack of archaeological evidence. The data that can be extracted from both sources can help create a first overall knowledge of the practical life of boats and of their producers and users. The combination of data sources enriches the field to explore, by allowing the researcher to observe recurrent elements and their continuities, whether synchronic or diachronic, and to somehow get closer to defining what the boats of Vietnam are, see some recurrent characteristics over time, observe how they were produced and how they were used (see Pham 2016). It also highlights new paths of enquiry to explore new shipwrecks and help avoid direct connections, brisk analogies and hasty technological affiliations.

Ultimately, this interdisciplinary approach also brings forward the potential value of boat studies and of maritime archaeology for the wider fields of archaeological and historical studies.

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