

Chapter 2

Theoretical Approaches

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2.1. INTRODUCTION

In recent years Australian maritime archaeologists have developed some innovative theoretical approaches. The recent publication of two Australian doctoral dissertations in the Plenum Series in Underwater Archaeology (McCarthy, 2000; Staniforth, 2003) and the awarding of the 2004 Society for Historical Archaeology Dissertation Prize to another Australian doctorate (Richards, 2002) attest to this productivity. In this chapter twenty-one Australianist studies, which represent a sample of long-term and substantively-based projects where an explicit statement of theory and research design might be expected, are critiqued.

There are numerous recent and competent reviews, syntheses and readers covering theory in archaeology including Whiteley (1998), Dark (1995), Trigger (1993), Harrison and Williamson (2002), Shanks and Tilley (1992) and Johnson (1999). Volumes presenting theory in maritime archaeology include Gould (1983) and Staniforth and Hyde (2001). The first two chapters and bibliography in Gould (2000) are also worthwhile, as are several of the papers in the reader by Babits and Van Tilburg (1998).

As Staniforth and Hyde (2001:v) note, there are a number of excellent books available on method and technique (e.g., Green, 1990). There are also a considerable number of earlier papers which aim to identify research domains – such as the interface between maritime and terrestrial archaeology (e.g., Henderson, 1986; Nayton, 1992; Hosty and Stuart, 1994; McCarthy, 1998b; Stanbury, 1998). There is, however, clearly a paucity of effective publication on theory and research design in maritime archaeology. This is surprising given repeated criticisms from terrestrial archaeologists to the effect that maritime archaeology is an expensive discipline and produces little more than the

documentary record. It should be noted that there is also resistance to such material from some established maritime practitioners who appear to hold the view that active engagement with theory is simply unproductive.

The vast majority of major works, which contain explicit and persuasive theory have originated from University postgraduate initiatives – and most of these from only the last decade. Equally, despite repeated pleas for “reform” in the research focus and rationale of the cultural heritage management agencies which host the majority of positions and resources for maritime archaeology in Australia (see McCarthy, 1998a; Staniforth, 2000a), these organizations have not been the productive sites for theory that these critics have demanded.

As noted above, twenty-one works have been selected which represent long-term projects dealing with the recovery and analysis of substantial sites, features and assemblages and which could reasonably be expected to have at least a cursory discussion of theory and key research questions. These studies are grouped into two broad categories, as follows:

Group A – Papers/studies which clearly outline high-level theory (e.g., historical materialism, neo-Marxism, ideational approaches) and which develop archaeological mid-range theory (Erskine, 2004; Gibbs, 1996; Lawrence & Staniforth, 1998; McCarthy, 1998a, 1998b, 2000; Staniforth, 1995, 1997, 2003; Veth and McCarthy, 1999; Ward, 1998);

Group B – Studies which are comparative and empirical in their focus with an explicit statement of theory and clear analytical structure – containing some evidence of mid-range theory and behavioural explanation (Doyle, 2000; Garratt et al., 1995; McCarthy, 1988a; McPhee, 2001; Nash, 2001, 2002a; Richards, 2002).

This chapter provides a summary of each of these works and in doing so draws attention to current archaeological debates about the nature of explanation in underwater archaeology. It will also highlight studies that have questioned the value of the archaeological studies of iron vessels, steam ships, abandoned hulks and port-related structures.

2.2. GROUP A

In his doctoral thesis Nigel Erskine (2004) tackled the archaeology of the wreck of HMAV *Bounty* and the mutineers’ settlement of Adamstown on Pitcairn Island. Despite a plethora of both reliable and less reliable documentary and oral evidence, this archaeological work remarkably had never been attempted before. Erskine examined the efficacy of different theoretical constructions of colonization with the particular insights afforded by the Pitcairn case study, where the hybrid British-Polynesian society remained undiscovered for 18 years. The Swiss Family Robinson model (Birmingham and Jeans, 1983) and the phases of establishment (i.e. exploration, learning, colonial enterprise and developmental change) is critiqued and found to be wanting (although representing a useful first base). Some of the limitations identified include a) the

need to accommodate reversals/failures in the initial colonization process (i.e. near-failure of the mutineer colony due to the imposition of a solely British land tenure system); b) the lack of an historical context for the colonization event. Pitcairn was neither historically unknown or unmapped (unlike the Robinsons' island); c) while the colonisers clearly relied on the skills, social structure and equipment they brought with them – the hybrid society was not culturally homogeneous nor exploiting a naive landscape; and finally d) the Swiss Family Robinson model is best suited to a trajectory of permanent settlement that does not easily accommodate diverse settlement types that may have had episodic and profound engagement with a larger world system.

Despite heavy post-depositional salvage from HMAV *Bounty* and recycling, transfer and commoditisation of these goods, Erskine was still able to synthesise archival and archaeological sources and critique an identifiable body of theory. In concluding his observations on both the efficacy and limitations of the Swiss Family Robinson colonization model, Erskine (2004:248) noted:

...while aspects of the Exploratory and Learning Phases of the model partly accommodate colonisation processes...in general the model fails to adequately represent the reversals that occurred at Pitcairn during the study period and is very limited in its ability to represent the colonisation process at Pitcairn Island. In this respect it has been shown that the colonisation process at Pitcairn Island is representative of a maritime frontier type and that the development of the settlement is directly associated with the evolution of an interconnected Pacific transport network during the nineteenth century.

The burgeoning study of whaling industries, both pelagic and shore-based, in Australia and New Zealand has been especially productive in generating theories of colonial survival, engagement with global economies and jurisdictional dilemmas faced by fledgling colonial authorities (cf. Gibbs, 1996; Lawrence and Staniforth, 1998; Nash, 2003b). As noted in a previous review of the Lawrence and Staniforth volume on whaling in southern Australia and New Zealand (Veth, 1999) “this project seeks to integrate the approaches of maritime and terrestrial archaeology. By synthesising data across the two countries and taking a regional and comparative approach, a number of key issues can be addressed for the first time”.

This volume demonstrates conclusively that Aboriginal people and Maori were significantly involved in the whaling industry, unlike other industries that were to follow. There are references to equal pay and conditions for Aboriginal workers. It also seems that Maori comprised the majority of workers in whaling crews and that they held supervisory positions. Shore-based whaling stations are seen to have underpinned a number of early colonial economies, providing the mechanism for the subsequent adoption of pastoralism or by generating revenue to service rents owing on unproductive leases. The rhetorical question of whether the study of this industry could “provide the metaphor for the early and indiscriminate exploitation of the resources of the new frontiers of these southern continents?” (Veth, 1999:61) can be answered in the affirmative, as the

shore-based whaling stations rapidly depleted local stocks. Shore-based whaling stations are argued to represent significant cultural sites the careful study of which, paraphrasing Susan Lawrence, can overturn notions that these were frontier enclaves of rugged white male individuals operating largely in isolation.

In his doctoral thesis, Gibbs (1996) examined the historical archaeology of the shore-based whaling industry in Western Australia. In discussing the development of archaeological theories of adaptation he draws attention to frontier models and how colonisation was driven by information exchange and learning systems. Here the works such as Birmingham and Jeans (1983), Lewis (1977) and Hardesty (1985) as cited in Gibbs (1995:316, 328) are relied on. Following Hardesty's distinction between insular and cosmopolitan frontiers, Gibbs (1995:329) concludes that while the whaling camps were short-lived and economically specialized with production and revenue provisioning local consumption, they also were part of global networks with oil and bone sent for sale on the London market. A consistent pattern is detected in the west and south coast whaling stations whereby they "seem to have followed the same series of adaptations, decreasing in size, reducing capital expenditure and fixed works, and later increasing their mobility and using multiple stations" (Gibbs 1996:330).

Through a study of archival, trading and archaeological data, contextualised within a menagerie of theories that roost in neo-Marxist, cognitive, historical materialist and evolutionary ecology explanatory frameworks, Gibbs argues that the shore-based whaling industry was significant in two domains. Firstly, it underpinned early pastoral initiatives and provided a psychological remedy to the vicissitudes of these fledgling terrestrial industries. Secondly, it became part of a seasonal round for settlers based outside of Fremantle (and its colonial administration) hedging other local production. As Gibbs (1996:332) concludes "the Western Australian whalers were part of an international tradition, using the technology, terminology and techniques employed throughout the European world".

McCarthy (1998a and elsewhere) has probably been the most persistent and sometimes strident critic of the lack of explicit theory in Australian maritime archaeology. In his paper, which aimed to track theory and practices from 1971 until 1998 he asserts that a historical particularist/mitigation approach has dominated practice at the Western Australian Museum. In fact, earlier in the mid-1980s Henderson (1986) had already noted that a theory of maritime archaeology had yet to be developed, and in doing so raised influential issues and questions which led to theory building.

In his review McCarthy notes that although a philosophical broadening of explanatory frameworks was taking place, the overall picture was still essentially negative. Indeed, Hosty and Stuart (1994:17) had previously concluded that for maritime archaeology "its isolation from other branches of archaeology, lack of strong theoretical approach, inadequate representation in tertiary education, the ad hoc attitude to individual sites, lack of overall management strategies and the lack on interdisciplinary exchange all need to be addressed".

In McCarthy's opinion, the intake of students from 1996 and onwards into the Postgraduate Diploma in Maritime Archaeology, who had been exposed to undergraduate method and theory courses in archaeology, and the establishment of undergraduate and postgraduate courses at both Flinders University and James Cook University, represented a turning point (see Figure 2.1). Although the University initiatives were well supported by the traditional centres of maritime practice, and heavily subsidized by the host Universities, their forays into traditionally maritime areas were not always welcomed. McCarthy concludes by noting that the legacy of predominantly descriptive "grey literature" as the major output from the major maritime heritage regulators/ museums was still the major outstanding issue.

In a somewhat complementary paper McCarthy (1998b) provides an overview of the question of whether the study of iron steamship wrecks actually constitutes archaeology and indeed whether it meaningfully engages with theory (see earlier volume by McCarthy, 1988a, below). Previous declarations by Muckelroy (1980) and Lyon (1974), as cited in McCarthy (1998a), that the study of such wrecks was redundant, as they overlapped with the historical record, posed a serious challenge in Australia – where virtually all wrecks date to the historic period and the majority of these are iron-hulled and steamships.

McCarthy's long-term work has focussed on the colonial trader SS *Xantho* (1848-1872) and its colonial entrepreneurial owner Charles Broadhurst. The insights gained from examination of such a hybrid vessel, combining a

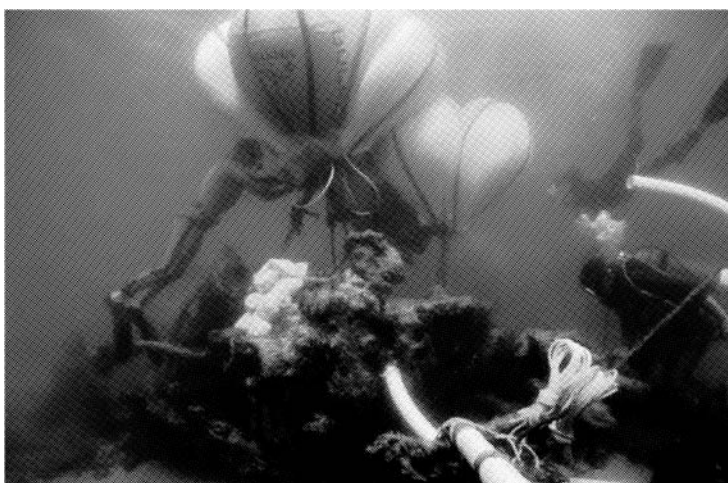


Figure 2.1. Raising the *Xantho* engine using lift bags (photo courtesy of the Department of Maritime Archaeology, WA Maritime Museum).

clinker-built inshore hull (from Scotland) with a Crimean War steam engine, and the de-concretion/reworking of the engine (which highlighted many anomalies) has provided a solid case for the study of this category of wreck (McCarthy, 1988a, 1998b). When viewed in economic and social context it holds significance as a forerunner of extensive steam vessel trade along the west coast of Australia into Indo-Malaysian *entrepôts*. The hull and particularly engine provide valuable insights into practices of recycling and abandonment in the latter half of the 19th century. Specifically the engine reflects a range of innovations made by the Royal Navy – such as standardization (coded parts), mass production, use of high-pressure steam, high-speed revolution and placement below the waterline (McCarthy, 2004b). The choice of this hybrid vessel and the modifications and repairs made to the vessel engine have been analysed using a range of theoretical approaches which illustrate that such constructions still contain “untold stories”, above and beyond the documentary record (see Veth and McCarthy, 1999).

Most recently McCarthy (2000) has examined the broader potential of iron and steamship archaeology with reference to the success and failure of the SS *Xantho*. A detailed examination of the archaeology and fabric of the wreck was completed before a contextual and behavioural study of the owner/operator was carried out. McCarthy (2000:190-191) concludes that this approach “is capable of elucidating otherwise unobtainable aspects of behaviour, thereby shedding new light on past human life”. He canvasses a range of theories and propositions about how and why Charles Broadhurst made the purchasing and operating choices that he did, including the fact that he continued to operate the vessel despite the fact it had become uninsured and was patently beyond its reasonable use-life (*sensu* Souza, 1998). Certainly the running repairs on the engine (e.g., lack of condenser, running in reverse) suggest “frontier-style” solutions.



Figure 2.2. Archaeologist examining the *Xantho* engine after deconcretion (photo courtesy of the Department of Maritime Archaeology, WA Maritime Museum).

Importantly, the *Xantho* project explicitly engaged with theory to seek plausible and alternative interpretations about the economic and social context of the vessel's life. It also provided a platform for biological and sedimentary studies that yielded a useful site formation model – not available then for shallow-water iron structures. Equally, the predisturbance survey and subsequent total deconcretion of the engine has provided a useful precedent for the subsequent “excavation” of features recovered from larger maritime sites (such as the “Ali Baba” jar from HMS *Pandora* which contained carpenter's repair gear). Understanding of site formation processes and subsequent management was facilitated through the theoretical and methodological integration of both conservators and archaeologists from the outset. As MacLeod et al. (1986:113 as cited in McCarthy, 2000:186) note:

The wreck site of the iron steam-ship *Xantho* has provided a model for how an underwater archaeological site can be managed. Predisturbance surveys of the marine biology and electrochemical and physical environment of the site established reference criteria for monitoring changes in the site conditions.

Mark Staniforth (1995, 1997, 2003) has probably made the most sustained contribution to theorising in maritime archaeology in Australia. In his initial paper (1995) concerning the dependency of Australian colonies on imported goods he focusses on how successful colonization is underpinned by the ongoing supply of food, drink and material culture. The symbolic capital of such supply is clearly both cultural and psychological. Australia was not just the recipient of material culture from the parent country (Great Britain) but almost immediately joined a wider regional and global system including suppliers based in India, South Africa, Asia, the Pacific Islands and North America.

In a subsequent paper Staniforth (1997) outlines his engagement with the *Annales* school of history. In a “call-to-arms” for theory in maritime archaeology he reminds us that multi-valency in theory and explanation is desirable. Furthermore we should not be seduced by the generalist law-like theories, which indeed under-pinned most of the contributions to the volume on shipwreck anthropology edited by Richard Gould (1983). *Annales* approaches have been utilized by a range of terrestrial archaeologists for some time – however they had still to make their impact in the maritime world. By providing a framework for understanding history at different scales of analysis (a perennial theme for all archaeologists), the *Annales* school opens up numerous opportunities for discriminating between different kinds of explanations for behaviours and events “entrapped” in one episode of wreckage/loss/abandonment. In summary, the scales of history cover a) short-term events and individuals, b) medium-term processes and c) those that are long-term – at the scale of world views and geological change. Simple analogues (using a Dutch VOC example) might include the difference in understanding a) the act of mutiny (and the mutineers) on board *Batavia*, b) the structure and impact of the governance of the Dutch

East India Company, and c) the colonial condition that provided the philosophical basis for appropriating an existing and endogenous trade empire (in this case largely spices).

In a subsequent and vigorous broadside at the discipline, Staniforth (2000a) poses the critical question of where the future lies for maritime archaeology (or indeed if there is one). In reviewing attempts at anthropologically-oriented studies in maritime archaeology he cites McCarthy (1998a:33-34) who noted that there was a “fundamental set of interconnected weaknesses that mitigated against debate in maritime archaeology in Australia”. Staniforth is essentially in agreement and concludes that maritime archaeology still lacks theoretical sophistication and is likely to continue in this vein until the number of postgraduate students in maritime archaeology increases. He goes on to profile the lack of job opportunities in Australian maritime archaeology, the under-performing role of Commonwealth-funded agencies in seeding new jobs and theory-oriented research, the important role of avocational groups, and the critical role of further education in maritime archaeology by practitioners who have had adequate exposure to archaeological theory.

Although agreeing with the central tenet of this critique, it is considered somewhat dangerous to polarise the practice of a still emergent (and logistically hungry) discipline into the “haves” and “have-nots” of theory. The writing of some theory-laden pieces may have only taken a few days to pen – while conserving artefacts and gathering appropriate attributes from different assemblages (be they ceramics on the *William Salthouse* or personal effects on *Batavia*) have taken decades. What still seems to be at issue is the (apparent) unwillingness of some practitioners to entertain the notion of providing alternative explanatory frameworks for understanding the different sites, features and assemblages they are faced with – and which have been produced by different site formation processes, technologies and social orders of different scales of chronological resolution. Clearly the major burden for coordinating advances in theory has (reasonably) fallen on to the universities.

Finally, in an impressive reworking of his doctoral thesis Staniforth (2003) looks in greater detail at the theoretical relationship between material culture and consumer societies – by advancing an analysis of the goods destined for the dependent colonies of colonial Australia. The acquisition and consumption of food, drink and other consumer goods by Australian colonists formed part of the conspicuous consumption of the wealthier classes and represented the ideology of prosperity for those who were still aspirant. He concludes that these imported goods reflect cultural morays and behaviours illustrating cultural continuity. They also serve a personal and psychological role in reifying people’s sense of place and purpose in the new colony. Lastly, these goods are seen as active agents in manipulating social relations. The ideational, neo-Marxist thrust of this analysis (albeit within the framework of the *Annales* school of history) is quite evident. Human agency and the process of choice are given voice in Staniforth’s critique (2003:154) in the sense that strategic consumerism either confirmed individual control over circumstance (and thus sustained residence within a frontier context) or allowed aspirants to signal

different kinds of mobility through consumption of premium, prestige goods (e.g., more expensive beverages). Particular attention is paid to the quality of goods displayed, shared and consumed (be they ceramics, glassware or alcohol).

Staniforth (2003:155) explicitly outlines the basis of his journey into new theory and resultant methodological innovation. In short, he aims to move beyond (but not ignore) economic and technological factors to give adequate attention to cultural meaning. The social and cultural aims of the research are identified and then relevant data collected to address these. Although in a sense employing a hypothetico-deductive approach in this selective acquisition of data sets – Staniforth is clearly breaking the shackles of positivist convention. The analysis of the meaning of objects is not new to mainstream archaeology (e.g., Shanks and Tilley, 1992). It is, however, still under-developed in maritime archaeology globally. This volume highlights that the meaning of artefacts can change during their use-lives or when they move between cultures. A one-off functional or stylistic designation of an artefact will unlikely capture the changing meaning of, for example, a cannon salvaged from the HMAV *Bounty* site – which is successively used for display, signalling and then sold-off as a commodity by the mutineers' descendants.

In their paper canvassing frameworks for explanation in maritime archaeology, Veth and McCarthy (1999) identified alternative ways of interpreting anomalies on board the wreck of the SS *Xantho*. This was probably the first paper to consider the attributes of artefacts and features produced from a long-term multi-disciplinary excavation program in the light of different (and competing) explanatory frameworks. In this paper a processual versus post-processual dichotomy was set up. The anomalies associated with the vessel included its comparatively great age, hybrid clinker hull and below-the-waterline high compression engine, lack of condenser, the fact it was running in reverse and a plethora of other running repairs suggesting that it had been “customised” to work off the Western Australian coastline. The vessel was owned and operated by Charles Broadhurst, an early quintessential Western Australian entrepreneur, who pioneered a startling array of industries from pearling and canning of sardines, through to guano extraction and the transport of ore and other commodities along the WA coastline.

The processual and positivist approach examined the anomalies aboard SS *Xantho* and entertained a number of scenarios for the nature of its operation and loss. A hybrid vessel capable of operating without regular supplies of freshwater and quality coal, and with an engine coded and designed for interchangeability of parts and robustness, was an ideal configuration for a frontier situation of this kind. The vessel was designed to have maximum cargo space, it could accept most kinds of cargo and it was a relatively robust and easy to maintain system. It was competent to steam the length of the west coast and to run to key ports in the Indo-Malay archipelago with valuable commodities such as mother-of-pearl. Typically, as with many other under-capitalized entrepreneurs, the vessel was run past its use-life and was uninsured when lost. Much of the cargo, however, was salvaged.

A post-processual (here ideational) approach depicts the owner Charles Broadhurst as a risk-taking entrepreneur, typical of later generations to call Western Australia their home. The anomalies recorded from *Xantho* may be seen to reflect the idiosyncratic and often flawed decisions made by this highly energetic, though technically ill-prepared and counselled, individual. An analysis of the inter-personal and family relations experienced by Broadhurst show that he was rarely to profit, either financially or arguably emotionally (in terms of his own perceived standing in “society”), from these initiatives. Broadhurst signalled his success through the purchase of a “new” coastal steamer, as well as the high profile sponsoring of a land-allocation in the East Kimberley and the beginning of a fleet-based pearling operation in Shark Bay. He was also thwarted time and again due to lack of relevant technical knowledge and what might be labelled today as a sustainable business plan. On each occasion he combined vision about a new industry with a high-risk approach, including lack of recurrent funding and often *ad hoc* technical advice, to take a fledgling industry to the first stage of establishment – after which time others (including his sons) took them over and made them profitable. Both business and parliamentary acclaim evaded Broadhurst for most of his life. The purchase and fitting of a comparatively cheap coastal steamer (*Xantho*) to operate in remote and sometimes high energy conditions, followed by a series of quixotic modifications and repairs, is entirely consistent with other documented behaviours of the owner.

In her Masters thesis Ingrid Ward (1998; and see also Ward et al., 1998, 1999) tackled the need to re-visit site formational processes on maritime sites. With a background in geochemistry and marine systems, she was struck by the fact that although human behavioural processes (such as abandonment and salvage) had been considered, the physical processes of transformation had not been adequately covered. Her thesis was to consider far more complex models incorporating physical, chemical and biological changes as these affected wreck sites variably through time. Central to her argument was the notion that wreck disintegration did not necessarily occur in a unidirectional fashion or in an evenly timed manner. It could not be assumed that physical disintegration would always be followed by subsequent biological and chemical changes. The main reason for this lack of predicability in succession, order and magnitude of impact was essentially due to the dynamism of sedimentary regimes around a wreck site. Due to effects such as variation in tides, surge, storm events and the different entrapment scenarios offered by the physical profile of the wreck’s fabric as it collapsed, structural features might be exposed to aerobic conditions and hence biological colonization and oxidation or alternatively might become covered by accumulated sediments and reach stasis in anoxic conditions. Evidence for burial of wreck sites in deep marine sediments and then their subsequent (re)exposure and transformation through kick-started biological colonization and further physical transformation, comes from the SS *Xantho* (McCarthy, 2000).

Ward and colleagues carried out detailed logging of currents, directionality, salinity and modelling for seabed contour change through time

from the site of HMS *Pandora*. Although this is a deepwater site (>30 metres) strong bottom surges and local storm events are documented. Ward's work focussed on site formation "processes", rather than retrospective and intuitive reconstructions based on the "outcomes" of this process (i.e. the contemporary configuration of the wreck). Some of the major implications of the work were to draw attention to the fact that a) wreck disintegration/formation is likely to be highly episodic and unlikely to progress at a steady rate, and b) any meaningful site management plan needs to gain a basic understanding of the parameters of these physical processes.

In another Masters thesis Shane Brown (1996) examined several colonial period iron and steel wrecks around Magnetic Island, North Queensland, whose date of loss (due generally to scuttling) was known to be around the turn of the nineteenth century. Their role as datable artificial reefs was of use to marine biology, in terms of understanding succession of marine organisms. The distribution and effect of these organisms on the structural integrity of the wreck was also of interest – as it had been suggested that once climax communities were established – they may in fact act to slow down rates of corrosion. Quadrat surveys of sessile marine growth on and off the wreck sites, mainly on comparable platform reefs, showed that indices for both richness and diversity of marine species were higher on the wreck sites. Both the complex architecture of the structures, sitting at least partly proud of the seabed floor, and their metallic composition, appear to have generally provided a highly productive micro-environment.

All of these wreck sites were located in low to medium energy shoal waters. Clearly similar work is now required in higher energy and deepwater sites so that meaningful comparative statements can be made about the nature and rate of biological growth and its possible role, once at climax, in stabilizing or slowing down corrosion rates. Certainly disturbance of previously buried wreck timbers to aerobic conditions has been linked to an increase in microbiological activity. These two studies examining physical and biological systems operating at wreck sites (and there are others) make a theoretical contribution as they explicitly aim to identify and control for the natural transforms operating at cultural sites. Without an adequate handle on natural site formation processes and subsequent taphonomic changes at a wreck site any subsequent analysis of associated assemblages and their behavioural correlates is potentially compromised.

2.3. GROUP B

As noted above, this group of papers contain evidence of mid-range theory and behavioural explanations, however their explicit identification of theory (rather than just research design or methodology) is less developed and/or explicit than Group A. Indeed works such as that of Nathan Richards (2002) are excellent in both their methodological rigour and interpretative value – it is just that the theoretical basis of the resulting explanations is less developed. My

discussion of these works will be somewhat brief in contrast to Group A, simply due to the fact that their theoretical and methodological basis is easier to encapsulate.

In his Masters thesis Coleman Doyle (2000) examined the significance of associations between vessel loss and discard and major social and economic events in the Cleveland Bay catchment of North Queensland. He canvasses a wide range of theory concerning vessel loss, risk-taking behaviour and recycling (covering seminal works by Dumas, Lenihan and Souza; amongst others). Doyle demonstrates (in a probabilistic sense) that the patterns of loss and discard were not random and were likely linked to several major episodes of change in port-related facilities, events such as the gold rush and the transition from sail to steam. There was also a pronounced recycling of vessels as breakwaters following major cyclones.

In examining archaeological remains at the Albany Town Jetty, Garratt et al. (1995) provide a clear research design and detail their research hypothesis. They recognize the inherently stratified nature of materials lost from jetties and therefore predict for stratigraphy revealing the passage of time. They consider the discard/loss zone from moored vessels (using analogues from the Long Jetty at Fremantle) and target recovery towards this area of the seabed.

As noted above, the need to study iron ships and steam shipwrecks has been persistently championed by McCarthy and colleagues. A collection of papers in the late 1980s dealt specifically with the research and management values of these sites (McCarthy, 1988a). In a section entitled "Management programs and the theoretical base", papers by Henderson (1988), Clark (1988), May (1988) and McCarthy (1988b) tackle this issue. For example Henderson (1988:11) notes "archaeologists have only recently begun to contemplate iron and steam shipwrecks as a truly significant part of this Nation's cultural heritage". Clark takes up the issue of a lack of publications on what constitutes historical significance in maritime archaeology, whereas May targets lack of continuity of resourcing of the Maritime Archaeology Section of the Queensland Museum (and its research) as a major impediment to effective site management in that State. Finally, McCarthy raises the need to create a nexus between scientific archaeology on wreck sites and their effective presentation and interpretation to the public (through wreck trails, public education programs and the like).

The history and archaeology of pearl shelling in Torres Strait forms the basis of Ewen McPhee's doctoral dissertation (cf. McPhee, 2001). In short, the work aims to explore the varied ethnic and cultural groups that made up the original Torres Strait Pearling operation (Torres Strait Islanders, Aboriginal people, Japanese, "Malays", South Pacific Islanders and Europeans). The influence that these groups brought to bear on maritime technology, subsistence and habitation behaviours is examined from detailed excavation and recording of terrestrial pearling sites from Wai Weer and Good's Island, and recording of features at six further islands in the Torres Strait. Wrecked historic luggers have also been examined as part of McPhee's ongoing work.



Figure 2.3 Flinders University students recording an abandoned vessel in the Garden Island ships graveyard in South Australia (photo courtesy of the Department of Archaeology, Flinders University).

In his doctoral thesis concerning the deliberate abandonment of watercraft in Australia, Richards (2002) provides an outstanding review of taphonomic theory and site formation studies. He highlights the need for further study of the cultural factors contributing to shipwreck disintegration, such as strategies employed in salvage. Richards takes a nomothetic comparative approach and in so doing can persuasively argue that discarded vessels are not shipwrecks. Richards (2002:379) notes that: “they are non-catastrophically made a part of the archaeological record. The array of decision-making processes that defines this makes them a reflection of the changing techno-economic circumstances associated with their abandonment”.

It is argued that discard trends of vessels are responsive to changes in the national economy and global events such as war. Discard sites are therefore viewed as a reflection of changes in trade conditions, as are the observed patterns of lateral recycling and re-use of vessels. Richards (2002:387) concludes that this work is innovative in taking a comparative approach and in explicitly combining the assumptions that watercraft are artefacts imbued with cultural norms, and that they are sites for anthropological inquiry. The comparative approach, combined with a range of abandonment and transform theories, are seen to provide the vehicle for the re-evaluation of abandoned vessels as sites worthy of study.

The final discussion of this grouping of theorists touches on the work of Michael Nash (2001, 2002a) and the results of the *Sydney Cove* shipwreck

project. The collection of goods recovered from the 1797 wreck provides an insight into early trade consignments to the colony, including alcohol, foodstuffs and textiles. Although these were mainly sourced from the Indian subcontinent luxury goods such as Chinese porcelain and teas were also present. The cargo represented an extension of the “Country Trade” with links from Europe through to China. As Nash (2002a:57) concludes even at the very start of the colony luxury goods, such as porcelain, were in demand with the suggestion that the supply of desired foodstuffs, beverages and export porcelain was necessary to satisfy the “dietary conservatism” of the colonists (see Staniforth, 2003). From the wreck itself, Nash is able to deduce that the scantlings of the Indian-built vessel were less than those of equivalent European vessels and that the construction of three masts (and their sail area) would have placed additional stress on a lightly built keel. The overall significance of the vessel (following Henderson, 1986:151) is seen to lie in its representativeness of vessels that began the trade between Australia and the outside world, facilitating the transformation of a penal colony to settlement and finally nationhood. In the conclusion to his book Nash provides valuable commentary on the formation of the site and larger economic systems with which the Country Trade engaged.

2.4. CONCLUSION

This chapter began by noting that Australian maritime archaeologists have engaged in innovative theory and practice, and the review of relevant studies from the last 15 years supports this contention. I have also aimed to show where some critiques of theory in Australian maritime archaeology have probably been somewhat polemical in nature. I conclude that it is only reasonable and timely that supervised and guided postgraduate studies of wreck sites, their assemblages and other underwater and port-related features should be located in tertiary institutions and that these will be the power-houses for theoretical innovation. Effective linkage of tertiary guided research into holding institutions (such as museum collections) has still to be achieved nationally.

What is unique to maritime archaeological practice (be it survey, excavation, mitigation or management) is the scale of the logistics and costs associated with these activities and outcomes. To not facilitate or expedite linkage between holding institutions, statutory heritage authorities and tertiary-based research is to potentially compromise a non-renewable resource. I have no doubt that the pace and quality of theoretical innovation will increase over the next decade, given maritime archaeology will be taught and studied in at least three Australian Universities. The remaining challenge is whether or not the “guardians” of the major maritime collections will develop a unified policy to release the “fuel” for such endeavour.



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