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Cross-cultural interaction on Wuvulu Island, Papua New Guinea: the perspective from use-wear and residue analyses of turtle bone artifacts

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ABSTRACT

Recent studies have emphasized the importance of Indigenous producers and traders in the formation of ethnographic museum collections, but have found difficulty in finding concrete evidence for their active roles. A use-wear and residue study of turtle bone cleavers from Wuvulu Island, Papua New Guinea provides the opportunity to test whether objects that comprise a significant component of early collections were made specifically for sale, as hypothesized by contemporary observers in the late 19th century. Comparative studies of used and unused turtle bone artifacts from the Caroline Islands and Papua New Guinea identified differences between wear traces resulting from manufacture and use. Analyses of the Wuvulu turtle bone cleavers showed they had been heavily used prior to sale. Rather than produce artifacts to meet the high demand from German traders, the local people sold old, worn-out objects, many of which had been repaired. The study demonstrates that archaeological approaches to ethnographic museum collections can trace Indigenous agency within cross-cultural interaction. It also showcases the potential of use-wear and residue analytical techniques for the analysis of bone tools and the utility of digital, hand-held microscopes for the analysis of large artifacts.

1. Introduction

Recent post-colonial historical scholarship has demonstrated the active role that Indigenous societies played in the creation of colonial societies (e.g. Poddar and Johnson, 2005). Having recognized that ethnographic museums are largely the product of colonial activities, research has begun to explore how the collections themselves can inform on the processes that framed cross-cultural negotiations involving objects (e.g. Thomas, 1991; Gosden and Knowles, 2001). Since the actual voices of the Indigenous actors are poorly represented in the historical record, many studies have emphasized the impacts of the collectors on museum collections rather than the role of producers of the ethnographic 'curios' (e.g. O'Hanlon and Welsch, 2004; Cochrane and Quanchi, 2007).

Archaeology has a potentially important role to play in correcting this imbalance in research on colonialism. The discipline's success with studying large-scale processes, material culture (which Gosden (2004) has argued persuasively is fundamental to colonialism), and the agency of people who produced objects and offered them for exchange (e.g. Dobres and Robb, 2000) should place it at the forefront of research on the role of Indigenous people in shaping museum collections. For example, Torrence (2000) showed that chronological changes in the size, decoration, standardization, and manufacturing methods of obsidian-tipped spears and daggers now housed in ethnographic museums reflect the active engagement of Admiralty Islanders in trading relations with Westerners throughout the past c. 150 years. Our case study of cross-cultural negotiation on Wuvulu Island, Papua New Guinea, beginning in the late 19th century, introduces new archaeological methods for reconstructing the role of Indigenous agency within early colonial settings. An investigation of use-wear traces, a technique most frequently applied to ancient stone tools, is used to evaluate whether turtle bone artifacts were specifically made for sale to Westerners. The paper also expands residue studies from stone to bone tools. A supplementary aim is to assess the utility of digital, low-power, hand-held microscopes for use-wear studies of large, bulky objects.

2. Indigenous agency on Wuvulu

The study examines turtle bone cleavers derived from Wuvulu Island (formerly Matty or Maty Island), a coral atoll located 150 km north of the New Guinea mainland (Fig. 1). During the late 1890s,

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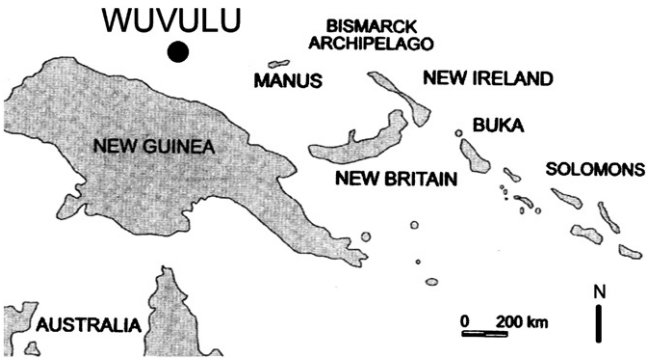

Fig. 1. Location of Wuvulu Island 150 km north of the mainland of New Guinea (drawing by Peter White).

Wuvulu and neighboring Aua (formerly Durour) islands were the scene of a virtual collecting frenzy by German traders. Initially, objects collected on Wuvulu as part of a trip to search for plantation labourers were sent to the Berlin Museum following an agreement with the German New Guinea Company. The ethnology curator, Felix von Luschan, was fascinated because he noticed that the particular forms and styles of the Wuvulu objects, particularly turtle bone 'clubs' with multiple sharks' teeth insets, were very similar to those from the Micronesian islands to the north rather than those of their closest neighbors in New Guinea. He therefore suspected the material culture might reflect a history of migration in the region. To stimulate research into the inhabitants of the island, he wrote an article with illustrations of key objects (von Luschan, 1895) and sent copies to representatives of several German trading companies operating in New Guinea. Although mainly focused on natural resources such as coconuts, which they struggled to get New Guinea islanders to supply in adequate quantities, this list of supposedly desired goods sent the traders scrambling to obtain objects they assumed would fetch good prices back in Europe (Buschmann, 2009: 41–43). When the trader and amateur ethnographer Parkinson visited the island in 1899, he was met by 110 canoes with 600 people eager to exchange local items for Western glass beads and metal tools. Both Parkinson (1999 [1907]: 184–185) and, more recently, Buschmann (2009: 123–124) have hypothesized that many of the artifacts collected in this period were specially made by the islanders to take advantage of this new market opportunity. In only a few years German museums, and eventually the general curios market, were flooded with turtle bone cleavers, wooden bowls, clubs, and spears from Wuvulu. Consequently, these are common objects in British auction catalogues of that period and are currently found in abundance in major ethnographic museums around the world (Hennell, 2009).

These Wuvulu artifacts, now largely hidden away in museums and ignored by ethnography, comprise an important source of data about how an Indigenous group responded to contact with Western commercialism, because they represent the concrete, material consequences of cross-cultural interaction. Von Luschan decried the activities of the greedy traders, stating that they had 'deprived the poor people of thousands of artifacts… enough to supply all the museums of the world' (Buschmann, 2009: 44). This view of Westerners stripping helpless Indigenous communities of all their valuable goods is widely shared in popular imagination, but only represents one side of the interaction (e.g. Thomas, 1991; Meleisea and Schoeffel, 1997: 140–143; Torrence, 2000: 107–110). Viewed hypothetically from the perspective of active Indigenous agents, however, the new markets offered great potential for profits as well as access to metal tools and other non-utilitarian goods that played an important role in local social spheres.

An archaeological analysis of the Wuvulu assemblages in museums can help monitor local reactions to turn of the century German trading opportunities. One way to access how the Wuvulu Islanders actually responded to contact with the outside world is to test the hypothesis posed by Parkinson and Buschmann that the goods offered were made specifically for trade. Two approaches are useful. Firstly, one can follow Torrence's (2000) study of changes in standardization and simplification of objects through time; however, this approach requires large sample sizes and good chronological control. A second method is to use the presence/absence of microscopic wear traces and residues to assess whether the traded objects had been used prior to exchange. As part of a larger study of Wuvulu museum and auction catalogue assemblages, in this paper we focus on one widely traded type of object: turtle bone cleavers.

3. Turtle bone artifacts

The case study examined 11 objects from Wuvulu now housed in the Australian Museum and variously known as turtle bone cleavers or spatulas (Fig. 2, Table 1). Details about their history are poor, but they were mainly obtained from Australian dealers or collectors around the turn of the 20th century, approximately contemporary with the early German traders. Ten have wooden handles with a stepped groove into which a pleural (expanded rib) of a large sea turtle, cut to create a tang on one side, was carefully slotted to secure the blade: one blade is an unidentified hardwood similar to the species used in the hafts. In 8 examples, an iron nail was added to reduce the mobility of the blade. The cleavers were called *vigo* on Wuvulu and *tawe, tigo* and *vigo* on Aua (Hambruch, 1908: 60). Parkinson (1999 [1907]: 188) states that the tools were used to divide up a mass of pulped breadfruit (*Artocarpus altilis*) or swamp taro (*Cyrtosperma merkusii*) as part of food preparation. Oral history collected by Kristian Lagercrantz (personal communication) records they were used in the garden to cut the tops off swamp taro tubers, ensuring that all the waste was left behind as mulch. A cutting action seems the most likely since the blade is hafted parallel to the shaft, as for an axe.

Since Pacific sea turtles are currently protected under international legislation, it is not possible to conduct the experimental studies that are fundamental to the interpretation of ancient microscopic wear traces, especially on a type of material rarely studied previously. Following Frazier's (2005: 370) suggestion, a comparative study of two similar types of turtle bone artifacts from ethnographic collections provided useful models. The first object from the Australian Museum comes from the Caroline Islands (Fig. 2E and F). Based on the hafting arrangement, at a right angle to the shaft, and the very obvious macroscopic edge damage, as well as similarity to published examples (e.g. Frazier, 2005: 370–371), it is assumed to have been used as a hoe. The second example (Fig. 3) was collected in the 1960s by an Australian naval officer (Meredith Hinchliffe, personal communication). Due to significant changes in form and a major decrease in the size of the shaft from those made in the 19th century (cf. Hambruch, 1908: pl. 30), it is assumed to have been made for sale. The tool is quite important because the deliberate pointing and sharpening of the blades would have created obvious traces of manufacture that provide a useful contrast to the use damage sustained on the hoe.

4. Use-wear and residue methods

Frazier (2005: 370) notes that it could be difficult to identify deliberate human modification and use-wear on turtle bone, but his review was limited to macroscopic traces. Microscopic use-