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The Past, Present and Future Values of the Polynesian Stone Adzes and Pounders Collected on the *Pandora*

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After the *Pandora*'s partly unsuccessful pursuit of the *Bounty* mutineers through the Pacific islands in 1791, the ship ran aground on a submerged reef and sank 140km east of Cape York, Queensland. Archaeological excavations revealed that the *Pandora* crew, in addition to their primary objective, made ethnographic material collections during their voyage, including 25 stone adzes and 5 stone pounders. These collected objects are of particular interest because they have escaped the past processes that might have impacted them had they made the journey back to Europe. In archaeological studies, for instance, these adzes were not included in 20th century typological analyses concerned with understanding the initial human migrations into Oceania, or in more recent geoarchaeological research that seeks to understand Polynesian voyaging, social networks and exchanges.

Our paper contextualises the adzes and pounders found on the *Pandora* to understand the engagement between the European crewmembers and the local people they encountered during their journey through the Pacific Islands. The *Pandora* crew had participated in the early colonial collecting practices that were foundational to European museum collections and the beginnings of anthropological and archaeological enquiry in the Pacific. On the other hand, the Polynesian participants likely benefited from the engagement in ways that suited their own agendas. We argue that the *Pandora* objects and similar museum collections as a broader assemblage are important not only for archaeological research, but also because they potentially continue to hold contemporary significance for Polynesian people today and are a legacy that can benefit future generations.

Introduction

Maritime archaeologists were intrigued to find Polynesian objects among the artefacts recovered from the wreck of the *Pandora*, especially because the *Pandora* crew had been issued with a single objective to capture the *Bounty* mutineers; there was no official directive for the collection of curios. Here we focus on a collection of Polynesian objects, namely stone adzes and pounders, which were exchanged in 1791 with the European crewmembers, most likely in the Society Islands. The *in situ* shipwreck deposit provides the opportunity to investigate early collecting practices and the types of cross-cultural interactions that took place between Polynesians and Europeans. We investigate the most likely provenance of these objects by reviewing previous archaeological studies on these artefact categories and consider what type of exchange most likely occurred in 1791. Understanding the type of exchange allows us to examine the social relationships that were afforded through the transaction of the objects. Next, we consider the value transformations that occurred during the movement of the adzes and pounders, which can then be compared and contrasted with their past and present values in Polynesia. The preservation and survival of such artefacts provides people the opportunity to reclaim and re-engage with their past heritage.

In the Pacific there is a long history of collecting 'traditional' or 'indigenous' 'objects' or 'things' as curios (ethnographic and archaeological; e.g. see Harrison 2013), in particular stone adzes and pounders. An early example is William Dampier (1651–1715), who collected a stone hatchet from New Britain, Papua New Guinea, during his voyage on the *Robuck* (1699–1701). This object is still on display today, in its original case, in the Sedgwick Museum of Geology at Cambridge (E-17-7). During the Cook Voyages, adzes and pounders were collected and are now held in several European museum collections. Those at the Pitt Rivers Museum, for instance, include two Tahitian pounders (PRM Banks 1887.1.391 and PRM Forster 28; 1888.1.1164) and two adzes (PRM Banks 1887.1.10 and Forster 23: 1886.1.1334) collected by Sir Joseph Banks (1743–1820) on Captain James Cook's (1728–1779) first voyage aboard the HMS *Endeavour* (1769–71) and by Johann Reinhold Forster (1729–1798) and Georg Forster (1754–1794) on Cook's second voyage aboard HMS *Resolution* (1772–1775). Interestingly, some of Cook's crewmembers later sailed aboard the *Bounty* and *Pandora*, most notably William Bligh (1754–1817). Considering the *Pandora*'s strict objective, the discovery of Polynesian

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objects on the *Pandora* wreck might seem unexpected, however given the historical context, it might have been more surprising not to have found evidence of curio collecting aboard the ship as this was undoubtedly becoming a common colonial practice.

Method

This paper challenges the perceived divide between disciplines identified as limited archaeological approaches for understanding social processes versus anthropological approaches for examining longer-term transformations (Thomas 1991, 1996). We argue that examining the continuity and change in values attached to the *Pandora* collection is important not only for archaeological research, but also, because these objects are part of broader assemblages that continue to hold contemporary significance for Polynesian people today and are a legacy that can benefit future generations. That is, these objects or 'things' are not simply 'art' as opposed to 'artefacts' but can be studied comparatively to understand indigenous social values and agency in different temporal contexts (Harrison 2013). Our assemblage-based approach (see Flexner 2016; Harrison 2013) combines anthropological and archaeological methods to investigate the tangible links to the people and places visited by the *Pandora*, and highlights the importance of these objects for learning about the lives and relationships of people in the past as well as connecting them to the present.

Here we demonstrate the usefulness of the assemblage-based approach, rather than single object biographies, for investigating the cross-cultural exchange of the *Pandora* objects (Flexner 2016; Harrison 2013; Joyce 2015). The 'assemblage' of adzes and pounders we consider here includes those collected on the *Pandora* along with those collected since Western contact in Polynesia that are now held in museum collections worldwide. We also include a broader body of materials that may include intangible forms that are reproduced in contemporary objects, art or otherwise, that continue to be produced today. Our contrasting archaeological and anthropological approaches to this assemblage use inference- and reflexive-based methods. Expanding from this, we argue that the *Pandora* adzes and pounders may be studied for more than just the Western colonial values identifiable from the historic record and infer how the Polynesian values attached to these stone objects as an assemblage may be traced from pre-contact through to the present – with a specific focus on their specialised manufacture and exchange. The results show that the agency involved in the production of these artefacts, particularly pounders, is not exclusively 'archaeological' or 'prehistoric' but also extends to a living practice involving contemporary social interactions (cf. Byrne et al. 2011; Harrison 2013; Sloggett 2016).

Our second aim is to look at the transformations the objects have gone through since their collection and assess the value of the assemblage – the *Pandora* artefacts as well as comparable museum objects – can have for people today. Although value creations undoubtedly occur through museums and exhibition displays too (Byrne et al. 2011; Harrison 2013), this paper focuses on the ways that people descendent from the communities that once produced and used the artefacts (still) value their ancestors' dispersed objects within museum collections. Anthropological theory and methods are considered crucial to approach and answer such questions. Research was conducted during a long-term stay in French Polynesia (March 2017 to February 2018, mainly on Tahiti) and shorter subsequent visits that included semi-structured interviews and unstructured discussions with local interlocutors and experts that resulted in the exchange of knowledge about the HMS *Pandora* collection. Furthermore, these research stays drew attention to the visibility of comparable objects in Polynesia today. Old (museum) artefacts continue to be present in the context of contemporary practice and creation, particularly in the realm of (tourist) art, even though they may have transformed, taken different sizes or shapes and made new connections.

The Polynesian adzes and pounders found on the *Pandora* help us understand the engagement between the crewmembers and the local people they encountered during their journey through the Pacific Islands. The *Pandora* crew participated in the early colonial collecting practices that were foundational to European museum collections and the beginnings of anthropological and archaeological enquiry in the Pacific. On the other hand, the Polynesian participants also benefited from the engagement, which may or may not have been considered as an equal exchange by either party, yet both needed to be satisfied (Byrne et al. 2011; Thomas 1991). From their perspective, this early colonial-era exchange may have been part of creating and maintaining social relationships, which were important in Polynesian chiefly societies. As Thomas (1991: 88) has argued, 'There is … scope for a reexploration of the political dynamics of early transactions, aiming to establish not that islanders welcomed colonialism but that the early phases of their entanglement were grounded in local cultural and political agendas, rather than naïveté.'

For the *Pandora* crew, collecting and storing the Polynesian artefacts was evidently considered worthwhile despite the fact that the additional cargo occupied space, which was at a premium on their ship. On the other hand, the Polynesian exchange partners thought of the objects as appropriate offerings to the person in front of them. Some pounders and adzes of premium material and workmanship were specifically made for high-ranking members of the society and became symbols of (their) power and prestige, preserved over generations (Mu-Liepmann and Milledrogues 2008: 113; Hermann 2016: 206; Molle and Hermann 2018). Sometimes it was decided to give these objects away to create or strengthen bonds with other chiefs; both materials and finished products were part of inter-island exchanges and could have been found far from the places of their extraction or making. When the first European voyagers arrived, they entered these exchange systems and, from their first-hand accounts and the artefact collections they made, we know that stone pounders and adzes were among the objects exchanged. However, whether they were used and perceived as tools, ceremonial objects or objects of prestige before and after the moments of their passing from one person to the next – and whether they were understood as such by all

parties – depended on the situation and the individuals involved. If such information has not survived, the materials remain as the sole traces of these past encounters and may forever remain mute in regard to certain aspects of their past and the people they were once connected with.

Additionally, museum artefacts, like the ones from the *Pandora*, are intriguing subjects of research. Although the world has undergone many changes since the *Pandora's* journey and other voyages to the Pacific more than two hundred years ago, the objects have survived often in an almost unchanged condition. They bring the past into the present in an immediate way, while history has, at the same time, created a distance between them (Morphy and Hetherington 2009: 1). With this in mind, it is important to consider the value transformations that are caused by the movements of (these) things by acknowledging that the artefacts only *appear* to have remained the same (Hauser-Schäublin 1998: 11). Over time and with every new epoch, attitudes and views of people have changed and with them the questions posed about these particular objects and how we choose to understand them (Harrison 2013).

Museum adzes and pounders were repeatedly recontextualised and have, despite their material stability, continuously 'changed' as well. Over the course of time and with their movements from one place to another, Oceanic artefacts in museums have been attributed various labels, such as 'gifts', 'artificial curiosities', 'scientific objects', 'museum objects', 'art', and so forth. Their potential recontextualisations, in accordance with the number of people they were or are entangled with, are manifold. These processes are accompanied by complex and fluctuating value creations and transformations, in which value is assigned or even denied to artefacts in the transactions between the different parties involved (Henry et al. 2013).

HMS *Pandora*

In November 1790, HMS *Pandora* was sent to the South Pacific as a direct response to the mutiny on the *Bounty* in the previous year. The objectives of the *Pandora* crew were clear: to recapture the *Bounty* and bring the insurgents back for trial and punishment. Captain Edward Edwards was the officer chosen to command the 133 men on the ship, which took the route around Cape Horn, via Tenerife and Rio de Janeiro to Tahiti. The beginning of the mission was promising, as 14 of the 25 mutineers had surrendered or were captured soon after the *Pandora*'s arrival at Matavai Bay on 23 March 1791. After a little over six weeks on the island, Edwards was unable to gather any further information on the whereabouts of the remaining mutineers and decided to continue the search to the west of Tahiti.

Over the course of the next three months, HMS *Pandora* visited other islands within the Society archipelago (**Figure 1**), the Cook Islands, Tokelau, Samoa and Tonga. However, the search for the *Bounty* and the remaining mutineers was unsuccessful and by the beginning of August, after nine months out from England, the crew set a course home. Yet the *Pandora* would never make it back to England; the seamen reached the Great Barrier Reef but failed to find a safe passage, and on 28 August 1791, the *Pandora* ran aground on a submerged reef. Although the crew battled a whole night to avert further damage, it eventually became clear that the ship could not be saved, and Edwards gave the order to abandon ship. The survivors – 89 of the crew and 10 mutineers – escaped to a nearby sand cay and prepared themselves for a long and difficult journey home (see esp. Gesner 2000b, 2016 for detailed discussions about the background and history of the *Pandora*'s voyage).

The *Pandora* had sunk off the Queensland coast, approximately 140 km east of Cape York, and it was not until November 1977 – 186 years later – that the wreck site was located. After an archaeological assessment survey was commissioned in April 1979, maritime archaeologists from the Western Australian Maritime Museum examined the site and positively identified the wreck as that of the *Pandora*. Following this report, the area was declared a protected site under the *Historic Shipwrecks Act 1976*. Since 1982, its management has been the responsibility of the Queensland Museum, which organised nine major excavations between 1983 and 1999 planned by its maritime archaeology section. More than 6,500 objects were transferred from the hull of the wreck to the Museum of Tropical Queensland in Townsville, where they are stored and some displayed to this day (Campbell and Gesner 2000; Mann 2001). The collection is considered significant because it can be ascribed to a specific time, place and context. Furthermore, many objects remained

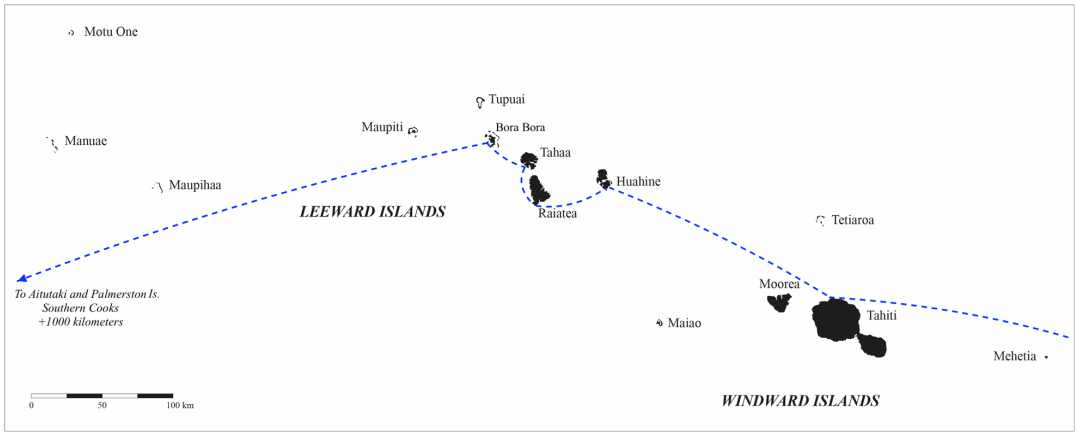

Figure 1: Map of the journey of the Pandora 1791 through the Society Islands (Base map courtesy of Guillaume Molle).

in remarkable condition and more or less undisturbed in their original setting because the *Pandora* did not break up on the Great Barrier Reef; instead it settled virtually intact into the sea bed (Henderson et al. 1983: 31–32; Gesner 2000a: 23). There it subsequently deteriorated and was buried over time. The exposed upper levels of the vessel gradually disintegrated and collapsed. It has been estimated that up to 30% of the hull has been preserved and that roughly only 35% of the estimated total amount of the sediment cover where the hull remains lie has been excavated to date (Gesner 2016: 8).

Among the objects retrieved from the wreck were parts of the ship, equipment, tools, instruments, personal belongings of members of the crew, natural history specimens as well as artefacts classified as Polynesian material culture (see the two artefact catalogues by Campbell and Gesner 2000 and Gesner 2016). The latter mainly comprised stone pounders and adze blades, wooden clubs, fishing implements, modified shells and an object assemblage suggesting that there was a Tahitian mourner's costume on board. Although collecting was not an explicit objective for the *Pandora*'s crew and space was scarce on-board the ship, these objects proved that the seamen considered the Polynesian objects worth acquiring and storing to take them back to England. There a market for such 'artificial curiosities' had emerged, especially since James Cook's three extensive voyages of exploration (1768–71, 1772–75, 1776–79). The existing eyewitness accounts of the *Pandora*'s journey, such as those by Captain Edwards and surgeon George Hamilton, do not go into great detail regarding the collection of the Polynesian artefacts. However, these accounts do provide useful and valuable information about the chronology and sequence of events and the islands visited by the crew.

From comparison with other contemporaneous voyages, it can be assumed that the Polynesian artefacts recovered from the wreck of HMS *Pandora* had made their way on board the ship mainly through mechanisms of exchange, of which barter and gift giving seem most likely. Furthermore, confiscation of objects originally belonging to the *Bounty* mutineers can be ruled a possibility in the context of the *Pandora*'s story. Examining other 18th century voyages to the Pacific and, in particular, the (museum) collections made during this time, was helpful for making comparisons of the artefacts, in addition to consulting experts in Oceanic material cultures worldwide. Importantly, these objects remained *in situ* on the shipwreck and were excavated as an assemblage. This assemblage was not subject to additional 'middle-man' exchanges that resulted in the objects being dispersed and deposited in museum or private collections (Byrne et al. 2011). Such an assemblage is significant for the initial period of cross-cultural interactions in Polynesia; as many researchers have previously identified, it is particularly difficult to know where all the objects from early voyages ended up, for example those collected by Cook, Banks or George Vancouver (1757–1798) (Coote 2015; Kaeppler 1972; 1976; Thomas et al. 2016; Whitehead 1969; see also Sloggett 2016 for discussion about lack of context).

The stone artefacts recovered from HMS *Pandora*, which are in focus here, can be divided into two broader categories: pounders (5) and adze blades (25). The adzes were recovered as individual pieces, that is, not complete hafted adzes – either because they were collected (or stored) as such or because the fibers that were once holding them together dissolved during the wreck's 186 years under water. The adzes have an assumed provenance from Tahiti or the Society Islands. In this broader region, where they are known as *to'i*, this provenance would be unsurprising considering that the *Pandora*'s crew spent a comparatively longer time on Tahiti. Similarly, the five pounders most likely share a provenance from the Society Islands, where they are known as *penu*. Three pounders (MA1143, MA4138 and MA4724) can be attributed to what is called the 'Maupiti type', which is quite distinct by the T-shape and length of the handles (**Figure 2a–c**) (Lavondès 1976: 396ff). Another pounder (MA7954) has a shorter handle in comparison to the three 'Maupiti type' pounders and is very likely from the Society Islands but not necessarily from Maupiti or Tahiti (**Figure 2d**). One pounder (MA8820) can be presumed to be the 'Tahiti type', characterised by handles with upright prongs at each end and a raised rib over its centre, however, this is not entirely clear as the handle of this pounder is covered in shell and calcified deposits left by oysters (*Ostrea*) that were not fully removed from this object after excavation (**Figure 2b**).

Polynesian adzes, pounders and archaeology

Descriptions of stone adzes have been recorded in Oceania since the 17th century (Cleghorn 1984, 1992; e.g. Malo 1885; Gill 1876; Percy Smith 1892; Rutland 1894). Ralph Linton's (1923) archaeological study and Karl von den Steinen's (1925–28) ethnological study of the Marquesas included descriptions of both adzes and pounders. The typological studies of adzes, and to a lesser extent of pounders, were used in culture historic studies (c.1920s–1950s). Culture historic groupings were constructed using a type-variety method for categorising artefacts, in particular the variation in pottery forms and decoration was argued to be representative of cultural phenomena. That is, artefact *types* were believed to have formed within societal boundaries and thus to conform to that society's operational value system (Gifford 1960). The lack of pottery in central Polynesia meant that adze and fishhook typologies were used instead. Additionally, these typologies were formulated as pseudo-chronological markers because at the time there was a lack of evidence from stratified excavations (relative dates) and absolute dating techniques had not yet been employed (e.g. radiocarbon dating).

Archaeologists observed the distribution of adze types throughout Oceania and created age-area diffusion hypotheses in an attempt to understand the initial migration routes people took through the islands (e.g. Duff 1956; Duff 1970; Figueroa and Sanchez 1965; Skinner 1940). Ideally, however, a typology is a classification system where artefact attributes distinguish one class from another while also demonstrating regional and chronological variation (Dunnell 1986). Consequently, it has been argued

Figure 2: Pounders (**A**: MA1143, **B**: MA8820, **C**: MA4724, **D**: MA7954) (scale = cm) (Photographs M. Richards 2018; *HMS Pandora collection objects courtesy of the Museum of Tropical Queensland, part of the Queensland Museum Network*).

that in Polynesia, adze typology (e.g. Duff 1977) is more a way of grouping artefacts with shared attributes (e.g. adzes, bone and shell fishhooks) into manageable units for ease of description and comparative study (Cleghorn 1984; Kahn and Dye 2015; Shipton et al. 2016). This has also been the case for stone pounders, although they have received much less typological attention than adzes.

An archaeology of stone pounders

The neglect of stone pounders in archaeological studies is probably due to the relatively recent age of these artefacts and because the distribution of pounders is more restricted. In fact, very few pounders have ever been found in excavations and they are not found everywhere in Polynesia; for example, they are absent from Rapa Nui and New Zealand (e.g. Linton 1923; Emory 1988). It has been suggested that stone pounders might have replaced wooden pounders (Kirch and Green 2001). There are also pounders made of coral (Lavondés 1966: 414; Liepmann and Milledrogues 2008: 113). Silverthorne (1936) conducted one of the few typological studies on pounders with the assistance of Kenneth Emory at the Bishop Museum (*cf.* Garanger 1972; Lavondès 1966). They examined 155 pounders in the Bishop Museum's collections and 66 pounders from other collections including Bouge's (1930) study. Six stone pounder types were defined, plus a miscellaneous category, and the coral and wooden pounders were also described. It was observed that certain pounder types were restricted to particular islands in central Polynesia. Emory (1988: 49) perceived:

> 'Food pounders are not found in West Polynesia, on Easter Island or in New Zealand. Except for a block form, they are not found in the early levels of the Marquesan sites. Therefore we have assumed that the obviously related food pounders of Tahiti-Hawaii-Marquesas developed in central east Polynesia after the primary dispersal of Polynesians to the distal corners of the Polynesian triangle.'

Emory (1988: 49) also identified the similarity between the Hawaiian pounder and the Marquesan pounder, suggesting an initial diffusion from the Marquesas to Hawaii, prior to a Tahiti-Hawaii connection. Importantly, Bouge (1930: 3) recognised 'that a pounder found in use on a certain island may not have been made there' because 'in some islands material of suitable quality … was entirely lacking' and that exchanges 'between natives of different

archipelagos [had] taken place from remote times, particularly between Tahiti and Raiatea.'

An archaeology of stone adzes

Roger Duff (1950, 1956, 1977) developed a Polynesian adze typology based on his archaeological excavations at the Wairau Bar site on the South Island of New Zealand and by studying adzes in several museum collections in Britain. He followed the methodology of his teacher and mentor, H.D. Skinner (1886–1978). Skinner had been influenced by the work of Austrian ethnologist Robert von Heine-Geldern (1946) and both looked at the diffusion of people from South East Asia into Oceania by mapping the distribution of adze forms. Duff's adze typology has come under much scrutiny, not least for employing museum objects that were surface collected, in contrast to Roger Green's (1972) adze study that included a much larger number of excavated adzes (Cleghorn 1984). Despite these criticisms, Duff's typology was and still is used by some archaeologists.

Recent studies have identified morphometric credibility in certain Duff types and archaeologists often still look to identify out-of-place Duff types in adze provenance studies (e.g. Collerson and Weisler 2007; Kahn and Dye 2015; McAlister et al. 2013; Shipton et al. 2016). Notably, Figueroa and Sanchez (1965) expanded upon Duff's typological groupings but developed an altered age-area hypothesis. Most notably, Figueroa and Sanchez (1965) argued for the *in situ* development of certain adze types, rather than direct diffusion, more in line with the Lapita Triple I model (intrusion, innovation and integration) that was later put forward by Green (1991) and most recently, the Polynesian Triple I model proposed by Addison and Matisoo-Smith (2010). For this paper the 25 adzes were identified according to Duff's (1957) and Figueroa and Sanchez's (1965) typological groupings. The majority of the adzes (20/25, 80%) recovered from the *Pandora* are Type 3-A (**Figure 3**) and the remaining five comprise one each of Type 2-A, Type 3-E, Type 3-H, Type 6 (chisel) and one broken tang (handle) fragment (**Table 1**).

The adze types are shown in **Table 1** and their observed distributions are summarised in **Table 2**. Type 3 adzes are described as having a triangular or sub-triangular section (Duff 1956; Figueroa and Sanchez 1965: 171). Type 3-A has a tang, while Type 3-E is without a tang and Type 3-H is short, has a tang but the cross-section tends towards plano-convex or biconvex (Duff 1956; Figueroa and Sanchez 1965: 171). Type 2-A is a quadrangular adze without a tang and Type 6 are described as small chisels or gouges with circular cross-sections (Duff 1956; Figueroa and Sanchez 1965: 171). The broken tang adze fragment (MA8519) is triangular in cross section and was probably part of a Type 3-A adze.

Interestingly, only Type 3-A was observed as being present in Tahiti or the Society Islands, where the *Pandora* crew are assumed to have engaged in the exchange of these objects (**Table 2**) (Duff 1965; Figueroa and Sanchez 1965). Type 3-E, Type 3-H and Type 6 are all present in the Southern Cooks where the *Pandora* had stopped at Aitutaki and Palmerston Island on the journey back to England (Duff 1956; Figueroa and Sanchez 1965). Type 3-A is also present in the Southern Cooks (Figueroa and Sanchez 1965). According to Duff's (1956) and Figueroa and Sanchez's (1965) studies Type 2-A adzes are not found on any of the islands visited by the *Pandora*, however, they are found on Tubuai, visited by the *Bounty* (**Table 2**).

This raises two important issues. First, archaeological studies have now shown that Polynesian people continued to exchange adzes from the initial Polynesian settlement of the islands into the post-contact period (e.g. Bayman 2003, 2009). Second, if these adzes had safely made the journey back to England aboard the *Pandora*, for instance to the Pitt Rivers Museum, they might have been included in Duff's and Figueroa and Sanchez's studies. Hypothetically,

Figure 3: Example of a Type 3-A Adze (MA7721) (scale = cm) (Photograph M. Richards 2018; *HMS Pandora collection objects courtesy of the Museum of Tropical Queensland, part of the Queensland Museum Network*).

Table 1: Pandora adze types according to Duff (1956) and Figueroa and Sanchez (1965).

Accession No.	Object	Type	Maximum Length (cm)
MTQ MA7799	Adze	2-A	7.3
MTQ MA4876	Adze	3-A	18.5
MTQ MA1186	Adze	3-A	19.7
MTQ MA1387	Adze	3-A	17.9
MTQ MA4812	Adze	3-A	10.5
MTQ MA4520	Adze	3-A	15.4
MTQ MA4521	Adze	3-A	14.0
MTQ MA4762	Adze	3-A	12.4
MTQ MA4910	Adze	3-A	11.7
MTQ MA1123	Adze	3-A	25.5
MTQ MA1159	Adze	3-A	25.0
MTQ MA4927	Adze	3-A	28.0
MTQ MA4506	Adze	3-A	24.3
MTQ MA7638	Adze	3-A	28.0
MTQ MA8236	Adze	3-A	20.0
MTQ MA1563	Adze	3-A	11.2
MTQ MA7721	Adze	3-A	22.3
MTQ MA8270	Adze	3-A	19.0
MTQ MA8134	Adze	3-A	18.5
MTQ MA8189	Adze	3-A	13.8
MTQ MA8914	Adze	3-A	13.5
MTQ MA1311	Adze	3-E	14.0
MTQ MA4618	Adze	3-H	11.3
MTQ MA8519	Adze	Broken (Tang)	8.0
MTQ MA6273	Adze	6 (Chisel)	4.3

this means they could have included the presence of the Type 2-A adze in the Society Islands or Southern Cooks in the typological adze sequence. These studies assumed that the adze 'find spot' was the artefact source and manufacture location and people only migrated outwards in a one-way direction. This emphasises the point that neither Duff's nor Figueroa and Sanchez's studies considered the potential for continued adze exchanges in Polynesia, but rather they were limited to contemplating the diffusion of technology to investigate initial one-way migration routes. Therefore, while it has been possible to identify that it was very probable that the adzes found on the *Pandora* were exchanged in Tahiti and/or the Southern Cooks, a consideration for the role of these objects as exchangeable goods, prior to European arrival, must also be factored into understanding the types of exchange that took place and the relationships that were afforded in this negotiated cross-cultural engagement.

The investigation of initial migrations into Oceania using age-area hypotheses is no longer considered a valid avenue of enquiry, particularly because there are now numerous radiocarbon dates from stratified excavations (e.g. see Green 1991; Horsburgh and McCoy 2017; Mulrooney et al. 2011). More recently archaeologists have studied adzes as a means of identifying movement and exchanges between Polynesian islands to investigate past social networks. This was preceded by the revolution of geochemical analyses, that chemically characterised the basalt used to make the adzes, making it possible to identify long and short distance exchanges from the source quarries to other islands sometimes thousands of kilometres away, thus revealing the large extent of Polynesian voyaging and social networks. Importantly, for this paper we seek to understand the type of exchange that occurred between the crew of the *Pandora* (or possibly the *Bounty*) and the local people they encountered by considering the indigenous archaeological record (Clarke and Torrence 2011; Harrison 2013). Previous studies of the indigenous archaeological record in central Polynesia have revealed that adzes were part of ongoing exchanges used to maintain social networks and sometimes elevate social status (aggrandising) even if only temporarily (e.g. Allen and McAlister 2013; Collerson and Weisler 2007; Hermann et al. 2017; Kahn et al. 2013; Kirch et al. 2012; McAlister and Allen 2017; McAlister et al. 2013; Mills et al. 2011; Rolett et al. 2015; Thomas 1991).

The *Pandora* adzes and pounders have recently been analysed with portable x-ray fluorescence (pXRF) to match the basalts back to their geological origin and further understand the inter- and intra-island exchanges that occurred before the arrival of Westerners in the region (Richards, Günther and McAlister *in preparation*). Overall, the results confirm that pounders were produced more opportunistically on a wider variety of basalts compared to adzes, which were produced on very similar basalts suggestive of quarried or targeted stone sources. The difference in the production of adzes and pounders is likely associated with the functions these objects served and perhaps because pounders were a more recent invention (Conte and Molle 2012; Emory 1988; Suggs 1961: 99). Certainly, from the first stage of stone procurement adzes and pounders employed different traditions of production and craft specialisation that, as well as function, may be linked to their distinct social values.

Polynesian-European exchange values

The exchange of the adzes and pounders can be examined for more than simply fulfilling the collecting desires of the Europeans. There were most certainly cultural motives and agendas influencing the people in Tahiti or the Southern Cooks to engage in this negotiated transaction. Already, we have identified that not all the adze types found on the *Pandora* were common to Tahiti; however, it is important to also realise that even though the Type 3-A adze form is known to be common in Tahiti, it still may have been manufactured elsewhere (**Table 2**). Similarly, only one of the pounders is identified as a Tahiti type, while three others are the Maupiti type and one could have come from anywhere in the Society Islands. The *Pandora* and *Bounty* did not visit Maupiti. If all the adzes and pounders were exchanged in Tahiti, it might be easy to assume that many of these objects had already been part of previous Poly-

Table 2: Summary of the Duff (1956) and Figueroa and Sanchez (1965) adze types found on the Polynesian islands visited by the *Bounty and Pandora*.

Type Description	Island/Groups Duff (1957)	Island/Groups F&S (1965)	*Pandora* & *Bounty*
2-A is a 'quadrangular adze without a tang. 2-A is an offshoot of 1-A but the size prevents it from having a "grip" or tang. Rectangular cross-section, occasionally irregular or sub-triangular and the front is always wider than the back' (Duff 1956). 'Tangless adzes generally thin, and tending toward quadrangular cross-section with front equal to or wider than back. Front is rarely equal to and usually wider than the back, and cross-section, though usually quadrangular, is occasionally irregular or sub-triangular.' (Figueroa and Sanchez 1965: 171).	New Zealand Chathams Rarotonga Marquesas Mangareva Pitcairn Easter Is.	Chathams, New Zealand Tubuai Pitcairn Marquesas Hawaii Mangareva Easter Is.	**Polynesian Islands visited by the *Pandora*** (1790–91) Matavai Bay, Tahiti (Society Is.) Raiatea (Society Is.) Bora Bora (Society Is.) Aitutaki (Southern Cooks) Palmerston Is. (Southern Cooks)
3-A 'triangular or sub-triangular section (apex downwards). Triangular cross-section, broad bladed. Naturally waist tanged (or spade-shouldered)' (Duff 1956). 'Adzes with triangular or sub-triangular cross-section with a vertex opposite the front. Tanged with sharply defined angles and usually thick' (Figueroa and Sanchez 1965: 171).	Cook Is. (Rarotonga) Austral Is. (Tubuai) **Society Is. (Tahiti)** Marquesas New Zealand	Chathams New Zealand Southern Cooks **Society Is.** Tuamotu Austral Is. Pitcairn Marquesas Hawaii	
3-G 'triangular or sub-triangular cross-section with a vertex opposite the front. Distinguished from 3-A by lack of tang' (Figueroa and Sanchez 1965: 171).	n/a	New Zealand Aitutaki Raivavae Marquesas Fanning Hawaii	
3-H 'triangular or sub-triangular cross-section with a vertex opposite the front. Short, broad, tanged adzes with, or tending toward, thin plano-convex or biconvex cross-section. Type defined by authors' (Figueroa and Sanchez 1965: 171).	n/a	Chathams New Zealand (?) Southern Cooks Tubuai Raivavae	**Polynesian Islands visited by the *Bounty*** (1788–1789) Tahiti (Society Is.) Huahine (Society Is.) Palmerston Is (Southern Cooks) Tubuai (Austral Is.)
6 (chisel) 'Small, circular or sub-circular section, bevels taper towards cutting edge' (Duff 1956). 'Tangless gouges with circular cross-section' (Figueroa and Sanchez 1965: 172).	South Island, New Zealand Chathams	Chathams New Zealand Southern Cooks Austral Is. Pitcairn Marquesas Mangareva (?) Easter Is.	

nesian exchanges. However, the entire *Pandora* voyage through Polynesia must be examined.

The *Pandora* had passed Rapa Nui and sighted several islands in the Pitcairn, Gambier or Tuamotu groups but, under Edwards' command, they did not stop and sailed directly to Tahiti, thus missing the *Bounty* mutineers hidden on Pitcairn Island (Gesner 2000b, 5) (**Figure 1**; **Table 2**). While it has been assumed that the adzes and pounders were acquired in Tahiti, it is also possible they were received during stops in the Leeward Societies where 2 or 3 lieutenants were sent ashore at Huahine in Little Owharre Harbour (5 May 1791), Ulietea Harbour (Ra'iātea) and Ohamene Harbour (Taha'a) (11 May 1791) (Gesner 2016: 99) (**Figure 1** and **Table 2**).

One particular cross-cultural exchange occurred on 12 May 1791 after Edwards sent three lieutenants 'with the yawl and tender' to look into the harbours at BolaBola (Bora Bora). The *Pandora*'s log recorded, 'Taatoo the chief of BolaBola came on board and several other natives in canoes – they brought with them a few hogs, fowls, coconuts and plantains' (Gesner 2016: 99). While the ship's log only describes the food supplies, it is very possible other

objects were exchanged during this engagement. Food has been identified as extremely important in Polynesian social exchanges (Bell 1931; Thomas 1991). The *Pandora* also stopped at 'Whytootakkee' (Aitutaki) (19 May 1791) and Palmerston Island (22 May 1791) in the southern Cook Islands to search for the *Bounty*. The lieutenants are recorded to have 'bought a number of coconuts.' Interestingly, Lieutenant Hayward is recorded as having 'spoke[n] to 7 or 8 sets of different people' about the *Bounty* on Aitutaki. Hayward was part of the *Bounty*'s crew with Bligh and had become a proficient communicator during his five months on Tahiti (Gesner 2016: 100). Being able to speak with the islanders would have strengthened and encouraged participation on both sides of the cross-cultural engagement that involved the exchange of goods – including items that may be considered valuables, such as the finely crafted basalt adzes and pounders.

This particular exchange of objects can be examined for more than opportunistic gifting; there certainly were aggrandising motives and rewards influencing the people in Tahiti, the Leeward Islands and the Southern Cooks to engage in negotiated transactions with the crew aboard the *Pandora*. However, unlike the Marquesan feasting motives explored by Thomas (1991), there is comparatively less historic ethnographic documentation about the Society Islanders and the social role of stone pounders in everyday use, ceremony or in exchanges. Examining the historical context of the exchange of the *Pandora* objects collected including the Tongan clubs, fishing tackle and the Tahitian Mourner's costume (e.g. Campbell 1997, Gesner 2000, Fallowfield 2001, Illidge 2002) may narrow the possibilities for identifying the likely type of exchange that occurred between the Tahitians and crew in 1791. Understanding the types of cross-cultural exchanges occurring in the initial Western contact period may also aid archaeological interpretations on the nature of Polynesian exchanges that occurred between the Marquesas and Society groups during late prehistory.

The types of exchange

The exchange of adzes and pounders between the Society Islanders and the *Pandora* crew likely formed part of a barter negotiation and/or a gifting practice. Importantly, Thomas' (1991) discussion of barter considers the existence of such an exchange process in local systems prior to cross-cultural engagements. Consequently, certain items were exchanged more or less frequently than others and the desired outcome or a perceived equal exchange was not always received. Gifting certain objects often had important meanings and may have established obligations intended for long-term social relationships (Byrne et al. 2011). In the case of the *Pandora* exchange there are two individuals who likely increased the significance of objects exchanged and the meaning of the exchange: Chief Taatoo from Bora Bora and Lieutenant Hayward. While the *Pandora*'s logbook recorded food items, likely perceived simply as supplies by the English, the meaning of a food exchange for Polynesians who maintained traditions of competitive feasting was probably quite different and may explain why additional objects were gifted in the exchange to forge social obligations and ties.

Unfortunately, there is little known about competitive feasting in the Societies during this period. Nonetheless, the *Pandora* crew likely did not understand such a Polynesian value system, and this may be seen as an example of a value non-correspondence within the exchange (Thomas 1991). However, value remains difficult to fully understand because we do not know what the Europeans contributed to the exchange. We do know from Hamilton's account that, at the sight of Rapa Nui on 4 March 1791, the *Pandora*'s forges were set to work and 'the armourers were busily employed in making knives and iron work to trade with the savages.' The differently perceived values of adzes and pounders have been less studied in relation to Polynesian agency; for instance, the lack of food pounders in early European collections has generally been interpreted as pounders being less desired for collection by Europeans, rather than Polynesians choosing to restrict these items from cross-cultural exchanges. In this case, the five pounders exchanged with the *Pandora* crew appear to be an exception that might signify that this was a high status negotiation rather than simple trade.

The number of pounders in the *Pandora* assemblage is relatively high compared to other colonial-era museum collections, for instance those held at the British Museum and Pitt Rivers Museum. This suggests that in subsequent collections, and in contrast to adzes, pounders may have been purposely withheld from exchanges with Westerners. Withholding was 'a positive action' taken by Polynesians to exclude certain objects from exchanges, which is evident as 'the absences or gaps in museum collections' (Byrne et al. 2011: 8; see also Küchler 2002). Evidence that pounders were withheld, at least from early colonial cross-cultural exchanges, is apparent in the British Museum and Pitt Rivers Museum collections where few pounders are found in 18th century to early 19th century collections (Coote 2015; McKinney 2012). Pounders become more common in 20th century museum collections, especially from the Marquesas, coinciding with the peak intensity of the European colonial commodities trade (Gossler 2006). Consideration of the wider assemblage of pounders in museum collections suggests that Polynesians initially exchanged pounders with early visitors but then purposely chose to withhold pounders from exchanges perhaps due to supply or for other cultural and social reasons. Additionally, while stone adzes might have slowly been replaced with metal ones and could be more easily parted with, this difference in the perceived values of the exchanged objects might also be examined in later collections as proxy evidence for changes to agricultural practices and other woodworking traditions that were restricted under European colonial rule. These restrictions likely varied under different colonial powers, for instance, stone adze production persisted for decades in Hawaii under English rule (Bayman 2003, 2009). Likewise, the change or maintenance of food preparation traditions involving pounders might be compared over time to understand how these objects retained their social values.

Turning to the present

Previous approaches to the *Pandora* artefacts have been limited to archaeological interpretations with a strong focus on past events and relationships. From this per-

spective, the surviving *Pandora* artefacts and the information attached to them provided insights into aspects of daily life on board an 18th century British vessel and the exchanges between the crew and the islanders they visited during their voyage. By looking more closely at these interactions and exchanges we have made inferences about the motives on each side of the encounter and the values bestowed upon the various objects involved. However, the objects continue to exist up to this day; they have been excavated and transferred to a museum, where they are to be preserved for an indefinite period of time. The *Pandora* adzes and pounders are now part of a greater assemblage of comparable objects. It is therefore possible and important to look into the past *as well as* turn to the present (and the future) and to investigate the kinds of relationships that *were* and *are* afforded by the Polynesian adzes and pounders excavated from the shipwreck of HMS *Pandora*.

Stone pounders are particularly interesting to look at because they are still very visible in everyday life in the Society Islands and continue to be produced by local artists today. In fact, chances are high that one will see a pounder when arriving at Tahiti's airport in the commune of Faa'a, as two exhibition displays in the airport – one by the Musée de Tahiti et des Îles in the arrival area and one by the Centre des Métiers d'Art de la Polynésie française in the hall of the airport – feature *penu*. While the recently opened exhibition by the museum can only be seen by people arriving through the international terminal, the showcase titled *Clin d'oeil sur l'art des 5 archipels* and *Journey in the art of the 5 archipelagoes* in the hall of the airport is visible and accessible to any visitor (**Figure 4**). As the title suggests, the display accentuates artworks chosen to represent the five archipelagoes that make up French Polynesia, namely the Marquesas Islands, the Society Islands, the Gambier Islands, the Austral Islands and the Tuamotus. The objects made in 2011 by students of the Centre des Métiers d'Art in Pape'ete under the supervision of the art school's professors, are not necessarily considered 'original artworks,' but reproductions. Object labels written in Tahitian, French and English give information about the original artefacts, which may be as old as 200 years or more and are now part of museum collections in Great Britain, France, Germany, New Zealand, the United States of America, as well as French Polynesia's very own museum, the Musée de Tahiti et des Îles. The display not only celebrates the arts of Oceania and artefacts that today rest in places far from where they were created, but also allows for both locals and foreigners to relate to the objects and highlights the (already) existing connections between Polynesia and other parts of the world.

Wooden 'anthropomorphic statues' (*tiki* in the Marquesas, *ti'i* in the Society and Austral Islands) each related to a specific deity, feature prominently in the display. Well-known examples are the representations of the deity A'a from the island of Rurutu and of the Mangarevan deity Rao. The original works, from the beginning of the 19th century (or earlier) are today kept in the British Museum and the Musée du Quai Branly respectively. Otherwise the exhibit consists of domestic containers (*'ūmete*) from the Society and Austral Islands, a round dish (*kipo*) and a serving dish (*tanoa)* from the Marquesas and wooden seats from the Society and Austral Islands (*pārahira'a*) and the Tuamotus (*nohoga*). The section for the Society archipelago, which displays the highest number of objects, further includes a god image made from wood encased in plaited coir (*to'o*) as well as a stone

Figure 4: The *Clin d'oeil sur l'art des 5 archipels* and *Journey in the art of the 5 archipelagoes* exhibition in the hall of the Faa'a International Airport, French Polynesia (Photograph: J. Günther 2018).

pounder. The *penu* (MTI, inventory number: 2004.10.31) was, according to its label text, a "pestle from the island of Maupiti sculpted in basalt and used for culinary or medicinal preparations".

Pounders, alongside adze blades, featured prominently in the recently closed permanent exhibition of the Musée de Tahiti et des Îles (to be reopened in 2020), which seeks to inform both tourists and locals about local material cultures and the islands' history. Yet many of these artefacts do not only exist in the museum or other displays to be representatives of a (distant) past, but are visible in other realms of everyday life in French Polynesia today. *Penu* in particular can be found in many households, where they usually serve as decoration, but are sometimes used for the preparation of certain foods or grinding herbs. They are, therefore, actively being made, often in a shape similar to 'older models.' Eric Conte (1981: 870–871) examined the contemporaneous production of *penu* on Maupiti and described the making of a pounder as something that appears to be both an investigation as well as an actualisation of the past. With the working of the stone and the fabrication of a pounder, which he calls a 'recent rediscovery' estimating the ceasing of the 'tradition' at the end of the 19th or beginning of the 20th century to be picked up again sometime after 1970, the artists enter into a dialogue with their ancestors. Conte interprets these actions as a refuge in the past, perhaps vis-à-vis a world that is otherwise constantly changing.

Inline with Philip J.C. Dark's (2002: 34) speculations about the future of contemporary arts in the Pacific, which included the suggestion that old forms can function as national emblems, pounders seem to have become emblematic and this is especially true for the 'Maupiti style' *penu*. The distinct form of the T-shape pounders can be spotted as tattoos on skin or imprinted on t-shirts and *pāreu* (wraparound cloth), amongst other things. In these cases, they usually represent the island of Maupiti and the families attached to it; the *penu* even features as the central emblem of the island's flag. Yet the pounder has clearly gone beyond the space of the westernmost volcanic high island in the Society archipelago – it can, for example, be found as a registration device on the 10,000 CFP franc banknotes. In fact, interlocutors with whom the Polynesian artefacts recovered from the wreck of the *Pandora* were discussed quickly identified MA1143, MA4138 and MA4724 as pounders in the 'Maupiti style', most likely originating from the Society Islands (and not from any of the other islands visited by the ship's crew).

Unsurprisingly, pounders are also very visible in Tahiti's realm of art, notably markets and galleries, which are mainly, although not exclusively, aimed at tourists. This is also true for otherwise seldomly encountered adzes as well as other objects similar to 18th and 19th century Polynesian artefacts. Some of these objects were made with high resemblance to the original work or 'model' (however, this does not mean in the same fashion, i.e. with the same tools), while others have taken other forms, were crafted from different materials, such as wood, and were made for different purposes. These processes of continuity and change fittingly correspond to Dark's (2002: 34) other points about the developments of Pacific arts, namely that 'the old' and 'the new' would be found compatibly side by side and that new forms of expressions would emerge, which would differ from the old but without transcending the style.

What all of the artworks – whether they were conceptualised as reproductions or creative works – seem to have in common, though, is some degree of engagement with the past. In discussion with various artists, it was frequently noted that they found inspiration in what their ancestors had brought into existence. For some this resulted in reproductions, for others in the creation of something new and unique, yet rooted in what was identified to be their Polynesian culture and history. To engage with this culture and history, some artists would turn to old publications and museum collections – both at the local Musée de Tahiti et des Îles and elsewhere.

Likewise, with a focus on the flourishing arts of Tahiti, Karen Stevenson (1993) investigated this role of museums in present-day Pacific society. Considering the potential of the arts as a medium for identity construction and the reiteration of 'traditional uniqueness', people (re-) evaluate their histories and traditions, possibly choosing to renew them and thus giving them relevance in contemporary society. Stevenson (1993) identifies museums as playing a vital role in contemporary art traditions as a resource of information. They can therefore become tools for research and documentation not only for (Western) scholars, but also for an active engagement of (Pacific) people with their past (Stevenson 1993: 74–75). Similar to how we value the *Pandora* artefacts for their potential to tell us something about the past, people in Polynesia may use them to engage with their own histories. These objects are the tangible links to their ancestors that extend back to a time before contact with Westerners changed the material cultures and traditions of these islands. People are reclaiming and re-engaging with their past in many ways, partly through (old) objects, which is why the preservation of artefacts is very important to some (Hooper 2006: 20).

Discussion and Conclusion

The *Pandora* adzes and pounders are unique in the wider assemblage of adzes and pounders in museum collections, especially for archaeologically considering their multiple social values. Harrison (2013) discussed how an 'archaeological sensibility' can be used to study objects to approach indigenous agency involved in the formation of museum collections. It has also been argued that indigenous perspectives in past cross-cultural engagements, involving the exchange of objects, are well suited for investigation with the indigenous archaeological record (Byrne et al. 2011; Clarke and Torrence 2011). Indeed, archaeologists who study stone tools are focused on understanding the many perspectives and agencies involved. Flexner (2016) illustrated how an assemblage-based approach to museum collections combined with the archaeological sensitivity to context, provenance and provenience can inform us of people's past motilities in the Pacific. However, this is often difficult in decontextualized museum collections when objects have been dispersed or lack documentation of the find spot or collection locations, resulting in a risk of reinforcing out-dated historical paradigms and Western intellectual constructs (Sloggett 2016).

Significantly, the *Pandora* objects are unique because they remained in their original 1791 collection context for over 200 years until they were excavated from the shipwreck. Additionally, this collection is on the cusp of the period of contact and increased entanglements between Westerners and the peoples of Oceania.

This paper has further demonstrated the importance of the assemblage-based approach for studying objects to understand multiple agencies. Our contrasting approach has considered the indigenous agency involved in the stone object production, use and exchange (or collection) contexts, and within different temporal and cultural social structures, rather than focusing on single object biographies. Examining the continuities in these stone object categories has allowed us to see that longer-term value transformations are part of social processes that began in Polynesian history prior to contact with Westerners and will continue to carry linked ancestral identities into the future. The relatively early historical archaeological context of the *Pandora* shipwreck artefacts provides one such departure point for understanding how these stone objects have participated in different relationships over time. Recontextualising the adze and pounder types to consider past exchanges rather than migrations has highlighted just how static the knowledge constructions are within archaeology and anthropology.

The results of our research remind us that museum objects, such as the *Pandora* artefacts, continue to play active parts in various relationships in the present as well as being valued traces of the past. While there are limitations to accessing movements, contexts and people that are far removed in time, these objects have now entered new realms and are part of very different connections, for example in the museum with curators and visitors. Our research has placed a stronger focus on examining (potential) relationships between these artefacts and people in Polynesia today. The presence of certain pounders in Tahiti shows that people are actively engaging with the objects made by their ancestors, including those that are today stored and presented in museums, often elsewhere. These objects are visible in everyday life, whether they are reproductions in an exhibition display or for sale at an arts and craft fair or otherwise influencing and inspiring the people of present-day Polynesia and their arts. The rediscovered *Pandora* artefacts can now be appreciated for their social values as understood through archaeological and anthropological lenses and will continue to provide a tangible link between the past, present and future.

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Competing Interests

The authors have no competing interests to declare.

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